Final Master Plan/
Final Environmental Impact Statement

For

Clarence Fahnestock Memorial State Park
and
Hudson Highlands State Park Preserve

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Appendices

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List of Appendices

Appendix A – Analysis and Alternatives

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Introduction

This appendix contains the results of discussions on resource protection and recreation resource development proposed for each park. Each proposal is analyzed using information from Chapter 2 – Park Background, Chapter 3 – Environmental Setting, and Chapter 4 – Vision and Goals. The analysis results in considerations as to the appropriateness of each alternative for the parks. Findings from this analysis are used in identifying preferred alternatives for each of the resource categories. The status quo, alternatives, considerations and preferred alternative for individual issues are described in tabular form.

A complete description of the master plan that results from these preferred alternatives is found in Chapter 6 of this document.

Resource Designations

The Fahnestock and Hudson Highlands State Parks master planning process is addressing three laws which allow OPRHP to designate parks under its jurisdiction as Park Preserves or areas within parks as Park Preservation Areas (PPA). Another law provides that state agencies may designate lands under their jurisdiction as Natural Heritage Areas (NHA). A third designation law, the Bird Conservation Area (BCA) program, also applicable to state agencies, is discussed in this section even though a BCA already exists within the parks.

Park Preserve / Preservation Areas

Background for Analysis:
The Park Preserve law (article 20 of the Parks, Recreation and Historic Preservation Law) provides for designation of park land containing wildlife, flora, scenic, historical and archeological sites that are unique and rare in New York State. Designating the Park as a preserve would provide legal protection to all of the park's resources—natural, historic and archeological. A park-wide designation would also come with restricting the creation of developed areas. A developed area is considered any portion of the park that is paved or has another hard surface, an area that contributes to the built environment of the park, or an area that is landscaped and not managed for habitat protection. This designation would also preclude moderate and high recreational use from occurring at the park. Existing compatible recreational uses can continue.

The designation of a Park Preservation Area(s) would provide legal protection for the area of the park with the highest ecological value. It would entail everything stated in the preceding paragraph, but the restrictions would apply only to the selected area. Figure 17 is map of the Park Preservation Area.

	Alternatives	Considerations
Alternative 1	Status Quo (No Park Preserve or Park Preservation Area)	• Does not legally recognize the significant natural features within the park. • Sensitive areas could continue to be susceptible to more intensive use/development pressure. • SEQRA reviews would continue.

Alternatives		Considerations
Alternative 2	Designate Hudson Highlands as a Park Preserve	• May limit certain activities (moderate and high intensity) within the park. • Passive and low intensity recreational activities will be supported. • Would protect the park as a whole to ensure the land would be safeguarded against incompatible uses in the future. • Recognizes the importance of the park as a whole, instead of as individual areas that are not connected, and facilitates management that recognizes this.
Alternative 3	Designate a Park Preservation Area in selected locations within Hudson Highlands	• Designated areas would protect the most significant resources. • Passive and low intensity recreational activities will be supported. • Impacts to resources by more intensive recreational uses will be minimized. • Would leave areas with more intensive uses out of the PPA, thus, ensuring that the PPA includes only the most notable natural resources of the park.
Alternative 4	Designate a Park Preservation Area in selected locations within Fahnestock	• Designated areas would protect the most significant resources. • Passive and low intensity recreational activities will be supported. • Impacts to resources by more intensive recreational uses will be minimized. • Would leave areas with more intensive uses out of the PPA, thus, ensuring that the PPA includes only the most notable natural resources of the park.

Preferred Alternative: Alternatives 2 and 4

Natural Heritage Areas (NHA)

The goal of the NHA Program is to provide state land managers with a tool to recognize and assist in the protection of rare animals, rare plants, and significant natural communities on state-owned land. The New York Natural Heritage Areas Program (NHA) was established in 2002 in amendments to the Environmental Conservation Law (§11-0539.7). The NHA designation does not preclude existing or future land use proposals nor should the designation prohibit park development or operational needs. In order to be eligible for NHA designation an area must meet any one of the following criteria.

- provides habitat for "endangered species" or "threatened species" of animals or plants;
- provides habitat for rare species as defined by the Natural Heritage Program (NHP); or

- contains "significant ecological communities" where such term means all rare ecological communities that are rare in the state as well as outstanding examples of more common communities.

Unlike the Park Preserve Law (which provides some reference to recreational uses), there is no definitive statement in the NHA law on allowed uses or recreation. There is an implicit responsibility for the administering agency to assure that existing uses will not be detrimental to the viability of the identified rare, threatened or endangered species or significant natural communities. No provision in the NHA legislation is made to prohibit or hinder future recreational uses. The type and extent of any recreation/ development proposal would be evaluated in the context of the scientific criteria (that led to designation) and site characteristics and management recommendations.

Background for Analysis:
As noted earlier, the park contains ecological communities of considerable acreage that have been identified as significant by the NY Natural Heritage Program. In addition, the park contains rare plant and animal species that contribute to a high level of biodiversity in the Highlands region.

	Alternatives	Considerations
Alternative 1	Status Quo (No Natural Heritage Area designations)	• Does not legally recognize the significant ecological communities of the park. • A greater awareness of the significance of the resources will not be created. • Significant natural communities and habitat for rare, threatened and endangered species will still be recognized and managed, but they would not be designated as a NHA.
Alternative 2	Designate Natural Heritage Areas in Fahnestock and Hudson Highlands	• Designated areas would provide recognition to the most significant ecological communities and rare species in the park. • Designate areas that meet the criteria of the law. • Would create a greater awareness of the significance of the resources. • The boundary would not necessarily coincide with other designations.

Preferred Alternative: Alternative 2

Bird Conservation Areas (BCA)

The BCA program aims to integrate bird conservation into agency planning, management and research projects, within the context of the agency mission. Bird Conservation Area (BCA) is described under Article 11, Title 20 of the Environmental Conservation Law (ECL). The designation itself does not preclude existing or future land use proposals, nor should the designation prohibit park development or operational needs. In addition to recognizing the importance of bird conservation within the planning process, BCA designation can create heightened public awareness of the site's important bird community, as well as funding opportunities for bird-related education, research and conservation.

Background for Analysis:

There are existing Bird Conservation Areas at Fahnestock State Park and at Constitution Marsh, located within Hudson Highlands State Park. The BCA at Fahnestock was established in 2000, encompasses 10,050 acres and supports a representative community of breeding birds that prefer mature hardwood forests, as well as some marsh and water-dependent bird species.

The BCA at Constitution Marsh was established in 2001, encompasses 270 acres and is a large brackish tidal marsh located on the east shore of the Hudson River. It is one of only five large tidal marshes on the Hudson River. Constitution Marsh is an important wetland site hosting a diversity of birds (200 species have been identified at the site). As noted earlier, these parks have expanded significantly over the last decade; therefore, their respective BCAs were reevaluated and new acquisitions were assessed as part of the master planning process to determine their importance to the bird populations of the parks.

Alternatives		Considerations
Alternative 1	Status Quo (No changes to existing BCAs)	• Ignores the recently acquired parcels.
Alternative 2	Expand the BCA at Fahnestock	• Would accurately reflect the bird species and habitat in the park as whole. • Would provide updated management guidance for the park including new areas to be added to the existing designation.
Alternative 3	Create a second BCA at Hudson Highlands	• Would provide management guidance for the important bird habitat of the park. • Provides a different habitat than Constitution Marsh and, therefore, has different management direction.

Preferred Alternative: Alternatives 2 and 3

Natural Resource Protection Strategies/Management

Protection of natural resources is an important part of OPRHP's mission. It is imperative that the master plan outline strategies and provide direction for the management and protection of the natural resources of the park. In doing so, the master plan will help carry out the natural resource goals outlined in Chapter 4. Natural resource management strategies should provide guidance for the management of significant natural communities, water resources, flora and fauna, but must also consider potential future impacts to the park, including different user groups and changing environmental conditions.

Effective management strategies derive from a thorough understanding of the significance of each of the resources and elements of that resource. Compiling adequate research and background information is a critical first step toward determining the appropriate management measures that are needed to preserve and protect these resources. The Natural Heritage Survey reports have provided essential baseline information on the park's ecological communities and rare species. Further data collection and analysis is an ongoing process and OPRHP will continue to work with partners including other agencies, non-profit organizations, and universities to assist with this. Such information and additional research can guide decisions and will help OPRHP evaluate outcomes of management actions. This in turn will help determine if goals are met and can provide a basis for

adaptive management if the strategies are not producing desired results. It also allows for learning and can take into account new information.

Deer Management

Background for Analysis:

Evidence of over-browsing by deer has been observed in both Fahnestock and Hudson Highlands State Parks (Smith and Lundgren 2010b; NYS DEC pers. comm. 2010).This is an indication of a high population of deer. The types of damage associated with deer are degraded forest ecosystems, damage to landscaping, and vehicular collisions. Human health concerns related to deer include the transmission of tick-borne diseases such as Lyme disease, Babesiosis, and Ehrlichiosis. Deer management can help protect the biodiversity of the parks as well as provide recreational hunting opportunities. White-tailed deer are a protected game species with a set season when they may legally hunted. The DEC is the lead state agency with respect to deer management. Any control measures that involve the handling of deer requires a permit from the DEC.

Alternatives		Considerations
Alternative 1	Status Quo	• Deer population will continue to impact natural resources.
Alternative 2	Collect information in both parks to better understand the deer population - Establish vegetation monitoring in both parks	• Would help land managers make informed decisions about deer management in both parks. • Would provide information regarding the current size of the deer population and its impact on parkland biodiversity.
Alternative 3	Initiate deer control strategies	• Control of the deer population needs to be based on information gathered under Alternative 2. • Deer control efforts require considerable coordination with DEC and other stakeholders.

Preferred Alternative: Alternatives 2 and 3

Invasive Species Management

Background for Analysis:

A statewide invasive species control program has been established in OPRHP with goals to preserve biodiversity and reduce the threat of invasive species to the quality of the natural, recreational, cultural, and interpretive resources within State parkland.

The NY Natural Heritage survey reports for both parks (Lundgren and Smith 2010a, 2010b) recognize invasive species as one of the greatest threats to their biodiversity. The species of greatest concern are black swallow-wort (*Cyanchum louiseae*), common reed, also known as Phragmites (*Phragmites australis*), multiflora rose (*Rosa multiflora*), mile-a minute weed **(**Persicaria perfoliata), Japanese barberry (*Berberis thunbergii*), and hemlock woolly adelgid (*Adelgus tsugae*). Some invasive species removal efforts are on-going at both parks but further direction and action is required to help protect the biodiversity of the parks.

Alternatives		Considerations
Alternative 1	Status Quo	• Natural habitats and park operations will continue to be impacted by invasive species. • No plan to prevent introduction of other invasive species, including animals, that may impact resources • Invasive species removal efforts are on-going at both parks.
Alternative 2	Develop invasive species management plans for both parks.	• Would provide guidance for invasive species inventories and control and monitoring projects. • Would prioritize projects based on the degree of threat and will direct limited resources to the areas in greatest need. • Would promote a greater understanding of invasive issues and their impact on biodiversity by both agency staff and the public.
Alternative 3	Eradicate and prevent new or recent infestations by developing an Early Detection/Rapid Response (ED/RR) plan and using Best Management Practices (BMPs) to prevent accidental introduction through construction, operations and other activities. Continue precautions regarding invasive forest pests through tree survey and monitoring.	• Removal of these species, followed by native restoration of the area, would result in improved habitat values and functions. • Invasions of the parks environs by recent or yet undetermined invasive species would be controlled, reducing the impacts from invasive species or in some cases removing the species before they have a chance to have a measureable impact on the environment.. • When invasive species are not yet present, prevention of new infestations is the most effective means of controlling invasive species. This is carried out through BMPs or procedures set in place to minimize spread of invasive species, such as proper material disposal and equipment cleaning methods. Managing invasive species at the early stages of introduction tends to be more successful and less demanding than managing well-established populations of invasive species. • Such control efforts should be coordinated with the Lower Hudson Partnership for Regional Invasive Species Management (PRISM) and other partners. • Those species determined to be in the initial stages of invasion would have to be eradicated. Then, effort would be required

Alternatives		Considerations
		to educate park staff and regularly survey the park for invasive species. • Once a new invasive species occurrence is discovered, parks resources would be utilized to eliminate the threat. • Additional resources are available for assistance, particularly for species new to the state or region, through state invasive species program funding and ISC member agencies.
Alternative 4	Remove invasive species at trailheads and along trails and develop informational signage	• May help curtail the spread of invasive species. • Would help inform the public regarding invasive species.

Preferred Alternative: Alternatives 2, 3 and 4

Summit Communities Management

Background for Analysis:

Summit communities are distinct ecological communities that occur on warm, dry rocky ridgetops, summits, and exposed rocky slopes of hills (Reschke 1990, Edinger *et al.* 2002). There are three types of summit communities found in both Fahnestock and Hudson Highlands that are considered significant from a statewide perspective; Red Cedar Rocky Summit, characterized by sparse or patchy vegetation, numerous rock outcrops, and Eastern red cedar (*Juniperus virginiana*); Pitch Pine-Oak-Heath Rocky Summit, characterized by sparse or patchy vegetation, numerous rock outcrops, and pitch pine (*Pinus rigida*), oaks (*Quercus* spp.), and heaths; and Rocky Summit Grassland, characterized by open grassland that may include little bluestem (*Schizachyrium scoparium*) and Indian grass (*Sorghastrum nutans*). Fahnestock contains five significant Red Cedar Rocky Summits in the western portion of the park while Hudson Highlands supports more numerous and larger summit communities of all three types.

Summits, by their nature, are some of the most popular visitor destinations due to the scenic opportunities they afford. This oftentimes makes them susceptible to impacts from heavy recreational use. For example, the Pitch Pine-Oak-Heath Rocky Summit communities in Hudson Highlands provide open, scenic viewing areas along an existing trail system, making them susceptible to erosion. Rare plant populations are often present in these areas and along existing trail systems and become vulnerable to trampling.

Certain species of rare animals are also present in these community types and, depending on the species, may rely on them as their preferred habitat or use the open rocky habitat or the plants they support for critical life functions at various times of the year. Inappropriate use of sensitive wildlife habitat within the rocky summit communities may result in habitat changes through erosion or the introduction of invasive species, disturbance of wildlife during sensitive time periods, and human/wildlife interactions that may result in negative conflicts or lead to illegal collection.

Alternatives		Considerations
Alternative 1	Status Quo	• Some summit communities will continue to be impacted by recreational use. • Summit communities will continue to be impacted by invasive species. • Park visitors will not have a full understanding of the value of summit communities.
Alternative 2	Monitor conditions in specific summits to ensure that the communities and the flora and fauna they support aren't being negatively impacted	• Would provide an accurate assessment of the health and viability of the communities. • Would help inform other management decisions related to the summit communities. • Trail use would continue.
Alternative 3	Develop education programs and materials outlining the importance and fragility of specific summit resources in both parks	• Develop educational signage informing hikers of the sensitivity of the summit communities and encourage them to remain on the trail. • Develop a plan to restore impacted native summit communities to the best extent possible. • Trail use would continue.
Alternative 4	Design trails within summit communities to reduce impacts on the resource	• Would help direct users away from sensitive areas. • Would provide defined paths helping to prevent users from going off trail. • Trail use would continue.
Alternative 5	Develop a fire management strategy for the summits	• Would outline the necessity of fire in specific areas, whether wildfires would be allowed to burn, and the acceptable conditions under which this would be allowed to happen. • Controlled burns mimic the natural disturbance regime necessary to maintain these natural communities.

Preferred Alternative: Alternatives 2, 3, 4, and 5

Rare, Threatened and Endangered Species Management

Background for Analysis:

As mentioned in Chapter 3, numerous rare, threatened, and endangered species of plants and animals have been documented at both Fahnestock and Hudson Highlands State Parks, with Hudson Highlands supporting the majority of these species. In addition, there are several rare species known from historical records in the region and these may be present in the parks.

Alternatives		Considerations
Alternative 1	Status Quo	• Continue to survey parks with the assistance of Natural Heritage staff and Agency staff. • Continue to monitor both parks for rare and endangered species.
Alternative 2	Develop and implement monitoring and management guidelines for the protection of rare species of flora and fauna.	• Would provide specific direction for the management and protection of rare plant and animal species. • Important habitats may be protected through re-routing trails and relocation of vista areas or other human activities. • May impact public access to popular areas. • Trail closure signage would be improved and additional public education would be provided regarding habitat management efforts. • May entail closing sensitive habitat areas.
Alternative 3	Conduct additional research about the rare and endangered flora and fauna of the park.	• Would provide more accurate assessments of the rare ecological community types and rare/endangered plant and animal species of the park. • Would help park managers make better decisions regarding future land management.

Preferred Alternative: Alternatives 2 and 3

Stream Management and Protection

Background for Analysis:

As noted in Chapter 3, there are 48 miles of streams within both parks. These water courses play an important role in the ecosystem of the park and provide habitat for many plants and animals. In addition, some streams within the park are park of a larger hydrological system that is part of the New York City watershed as well as other downstream drinking water sources.

Alternatives		Considerations
Alternative 1	Status Quo	• Would continue to utilize Best Management Practices (BMPs).
Alternative 2	Conduct streamside bio-surveys, visual assessments and periodic	• Would help gather information regarding the health of the streams.

	Alternatives	Considerations
	water quality testing of streams in the parks	• Would provide a baseline to measure stream health against over time. • Would help identify any changes to the riparian habitat. • May help identify the location of potential pollutants.

Preferred Alternative: Alternative 2

Wetland Management and Protection

Background for Analysis:

Wetlands comprise approximately 705 acres in Hudson Highlands and approximately 1,280 acres of Fahnestock. As noted in Chapter 3, wetlands provide a natural bio-filtration function and provide habitat for many species of the parks. There are many ephemeral wet areas and vernal pools in the parks as well that are not wet year-round, but also provide critical habitat. Natural Heritage and regional staff have noted that some trails are encroaching on wetland areas which have the potential to adversely impact the wetland resource.

	Alternatives	Considerations
Alternative 1	Status Quo	• Trails and activity adjacent to wetlands may be adversely impacting the resource by trampling, erosion and the threat of spreading invasive species.
Alternative 2	Survey the wetland areas of both parks that are adjacent to activity areas (roads, trails, buildings)	• Would help gather information regarding the health of the wetlands. • Would help determine if the wetlands are being adversely impacted by adjacent activities. • Would help park managers make informed decisions regarding future management of wetlands and adjacent activities and/or how to mitigate impacts to the wetlands.
Alternative 3	Relocate activities that are adjacent to wetlands	• Would limit access to many areas of both parks. • Would be detrimental to recreational resources of the parks. • May provide a short-term benefit to the wetlands with improved health.
Alternative 4	Develop signage in appropriate locations to help interpret the function and ecological value of wetland areas	• Would help park visitors understand the role wetlands play in the eco-system. • Would provide additional environmental education and interpretation in the park.

Preferred Alternatives: Alternatives 2 and 4

Aquatic Invasive Species Management

Background for Analysis:

Aquatic invasive species are present in Canopus Lake (both the upper and lower sections), Pelton Pond and several other water resources within the park. Aquatic invasive species impact recreation and have the potential to degrade the aquatic environment for fish and other species, as well as other water-dependent activities.

Alternatives		Considerations
Alternative 1	Status Quo	• Aquatic invasive species would continue to impact recreation and the health of the lakes and ponds of the parks. • Weed harvesting would continue, but is not considered the most effective strategy for some plant species.
Alternative 2	Develop an integrated approach for the management of invasive species • May include utilizing herbicides, draw-downs, benthic barriers, or other common management techniques, as well as educating the public about aquatic invasive species.	• Would provide a more sustainable solution that weed harvesting. • Would educate the public regarding the harm of aquatic invasive species will help in the long-term.

Preferred Alternative: Alternative 2

Landscape / Scenic Management

Background for Analysis:

The agency's Policy on the Management of Trees and Other Vegetation allows for "Pruning or removal of trees and other vegetation to maintain or restore important scenic overlooks and views..." (OPRHP, 2009).

Scenic views are important features of the trail systems in both Clarence Fahnestock Memorial and Hudson Highland State Parks. Historically open areas also exist within both parks which require active management to maintain scenic character. Invasive species have become established in some former open fields.

Numerous scenic view points have been identified in Chapter 3.

Alternatives		Considerations
Alternative 1	Status Quo	• Some historically open views from trails have been lost. • Loss of views from highway systems serving the parks. • Loss of habitat (open areas).

Alternatives		Considerations
Alternative 2	Maintain Scenic Views from Trail Systems	• Would enhance the visitor experience. • Adherence to guidelines for pruning, removals and restoration of adjacent area is required. • Would be implemented as part of trail maintenance work plans.
Alternative 3	Maintain existing views from Hubbard Lodge, Bear Mountain Overlook, and Bannerman's Island platform off Route 9D	• Visitor experience is enhanced. • Adherence to guidelines for pruning, removals and restoration of adjacent area is required. • Effort required periodically only and related to control of invasive species
Alternative 4	Manage former and existing open areas at Woodle, Route 9/301 intersection, and south of Glynwood Center as open meadows or fields.	• Visitor experience is enhanced from existing and proposed trails, use areas and highways. • Contributes visual connection to the Hudson River, Highlands, and agricultural land uses. • Effort required to do periodic mowing. or establish agricultural permit (s).

Preferred Alternative: Alternatives 2, 3 and 4

Recreation Management and Development

The purpose of this section of the plan is to assess the feasibility of potential recreational opportunities within the park. The following activities were either suggested during the public information meeting or developed internally by OPRHP.

Clarence Fahnestock Memorial State Park

Camping

Background for Analysis:

Fahnestock currently has seventy-nine campsites within its campground. Many of the sites and infrastructure related to the campground were built during the 1930s by the Civilian Conservation Corps and are considered historic. There are no cabins or tent platforms in the campground. Some recent Health Department regulations are not met.

Alternatives		Considerations
Alternative 1	Status Quo	• Continue operating the campground as is. • Would continue to maintain existing facilities, but would not provide any improvements.

Alternatives		Considerations
Alternative 2	Improve the current campground by relocating sites 1, 3 and 4, as well as some sites in the 50s and 70s lots.	• Would improve the camping experience by relocating sites so that there is more room between sites. • Would require the creation of new sites and the closure of existing sites. • May disturb and impact habitat.
Alternative 3	Identify and develop a second location for camping in Fahnestock	• Would create additional camp sites and help meet demand. • Would serve a greater number of people. • May require additional staff to operate a second campground. • May disturb and impact habitat. • Bathrooms and shower infrastructure would need to be constructed.
Alternative 4	Upgrade existing facilities; campground road, bathrooms, showers and potable water sources; identify locations for and develop additional bathrooms and showers	• Would bring the campground into compliance according to Department of Health. • May disturb and impact habitat. • Would improve the overall user experience at the campground. • Road improvements would include better drainage, surfacing and grading.

Preferred Alternative: Alternatives 2 and 4

Pelton Pond Use Area

Background for Analysis:

The Pelton Pond day-use area consists of a picnic shelter, picnic tables with grills, a comfort station, and a gravel parking lot, all constructed during the CCC era of the park. The setting is a scenic one overlooking Pelton Pond and is well used. The parking lot is not designed to support access for the handicapped, and the shelter and comfort station are in need of improvements. Efforts to make this area fully accessible are also needed. Improved interpretive signage in general is discussed under "Environmental Education and Interpretation" below.

Alternatives		Considerations
Alternative 1	Status Quo	• Facilities will be maintained but not improved.
Alternative 2	Renovate comfort station and improve shelter and overall picnic area (new tables, grills, repairs to pavilion) and replace potable water service	• Would improve upon the existing facilities with respect to accessibility. • Would provide a much needed facelift to this well used area.

	Alternatives	Considerations
Alternative 3	Redesign (raise the parking area to be level with Route 301, pave with a pervious material, if feasible) and improve walkways/steps to picnic area	• Would improve accessibility to the picnic area. • The redesigned parking area will improve safety for cars entering and exiting the lot. • Consider using pervious pavement.
Alternative 4	Improve accessibility (ADA access) to the picnic area and restroom	• Would include redesigning the existing trail between the restroom and picnic shelter to ensure ADA access. • The trail would also connect to the parking area.

Preferred Alternative: Alternatives 2, 3 and 4

Fahnestock Winter Park

Background for Analysis:

The Winter Park is located at the Canopus Beach complex and serves as a destination for cross-country skiers, snowshoeing and sledding. The Winter Park is operated by the staff at the Taconic Outdoor Education Center (TOEC) who maintains the Winter Park trail system, the Acorn Café and ski rental. Comments about the Winter Park during the public comment period related to the expansion of the trail system, an improved rental facility and café, snowmaking machines and night skiing. Fahnestock Winter Park draws people from all over the metropolitan New York area and often operates at capacity during snowy weekends.

	Alternatives	Considerations
Alternative 1	Status Quo	• Facility will be maintained but not improved.
Alternative 2	Expand the existing Winter Park trail system	• This is being addressed in the Trails Plan; see Appendix B.
Alternative 3	Install a snow making system	• May extend the operating season at the Winter Park, therefore, potentially expanding the opportunity to increase revenue. • Requires a dedicated water source and infrastructure.
Alternative 4	Add lights to some trails within the system to allow for night skiing	• Would extend the operating hours of the facility and, therefore, potentially increase revenues. • Would create a permanent structure along some trails which may detract from the natural experience of the park. • The ability to install lighting would be dependent upon the existing electricity infrastructure. • Would increase ambient light in this area and detract from the night sky.

Alternatives		Considerations
Alternative 5	Improve lodge and concession facilities	• Please refer to the Buildings and Parking section under the Canopus Lake Recreation Area.

Preferred Alternative: Alternatives 2 and 5

Canopus Lake Buildings and Parking

Background for Analysis:

Development of the Canopus Lake Recreation Area began in the late 1960s and included a dam forming the upper portion of the lake, the roads, utilities, beach, bathhouse and concession buildings. The facility was opened in the early 1980s and provides the only formal swimming facility at Fahnestock.

In recent years, the buildings have been used as a lodge and changing area for the Fahnestock Winter Park; however, these buildings were never designed for four season use. As a result of age and use, the bathrooms and changing rooms as well as the concession / office building are in need of major renovations and upgrades.

The gravel parking lot consists of approximately 300 spaces. The surface treatment is an issue in the winter months when the parking area is plowed.

Alternatives		Considerations
Alternative 1	Status Quo	• Buildings would remain in need of renovation. • Buildings would continue to serve a high volume of users. • Buildings are not energy efficient as they could be.
Alternative 2	Renovate and expand the existing structures	• Would provide much needed upgrades to the existing facilities. • Would expand the buildings to better accommodate year-round use. • Buildings would have improved energy efficiency.
Alternative 3	Demolish the existing structures and build new structures	• Buildings would be designed to accommodate the existing uses. • Buildings would be designed to be energy efficient. • High cost associated with demolition and construction. • May require closing the area during construction. • Buildings would be designed for four season use.

Alternatives		Considerations
Alternative 4	Renovate the changing rooms / bathrooms and demolish and rebuild concession / office building / lodge.	• Would provide much needed upgrades to bathrooms and changing rooms. • High cost associated with demolition and construction. • May require closing the area during construction. • Would improve the energy efficiency of the buildings. • Would accommodate four season use.
Alternative 5	Improve existing parking area (paving, striping and drainage)	• Would improve the efficiency of the parking area. • Would enhance winter use. • Would not increase the surface area of the existing parking lot.

Preferred Alternative: Alternatives 2 and 5

Canopus Lake Swimming Area and Beach

Background for Analysis:

Formal swimming at Fahnestock is located at Canopus Beach. Canopus Lake was created during the 1930s CCC construction of the park by placing a dam across the Canopus Creek at the present Route 301. The northeast end of the lake was selected as the location for a beach in the 1960s and a second dam was constructed across the middle of the lake to form "Upper Canopus Lake" and add about 6 feet of depth. The beach was opened for swimming in the early 1980s. While very popular, aquatic vegetation and silting plagues the swimming area and creates not only a maintenance issue for park managers, but also degrades the swimming experience.

Alternatives		Considerations
Alternative 1	Status Quo	• Maintenance would continue but the swimming area and beach would remain as is. • Swimming area would continue to have issues with weeds and silting.
Alternative 2	Deepen swimming area, place new sand on bottom and institute aquatic vegetation control within swim area using a buffer or barrier system. Explore aquatic vegetation control in upper lake (e.g. winter drawdown, bio-controls.)	• Would address the issues of shallow depth and invasive vegetation controls for both the swimming area and the remainder of the latke • Dredging would result in short term environmental impacts, however as it would be maintenance-related, required permits should be feasible.

Alternatives		Considerations
Alternative 3	Raise the dam to increase water depth at swimming area	• Construction would be very costly • Would require permits for work in lake/on dam. • The water depth would increase. • Weeds may decrease. • Bottom of swim area may still need improvements.
Alternative 4	Rehabilitation of Beach Area • Would include restoring some of the sand areas to grass.	• Reduce sand surface area and rehabilitate with soil, establish turf, native trees and vegetation. • Establish areas for picnic tables, grills, sand volleyball, pavilion, playground, fishing access, and seating. • A turf and native plant surface around the smaller sand area will be more maintainable for the park staff. It will reduce sand washing into the lake during storm events and create a stable surface for other patron activities.

Preferred Alternative: Alternatives 2 and 4

Canopus Lake Recreation

Background for Analysis:

The Canopus Lake Recreation Area serves as the focal point for most of the active recreation at the park. Between the beach area, fishing, Winter Park, its proximity to the campground, and available parking, this area is well utilized year-round. Facilities are aging, however, and could be improved to provide a better overall recreation experience. Swimming will not be addressed in this discussion as it is mentioned earlier in this chapter.

Alternatives		Considerations
Alternative 1	Status Quo	• Facilities would remain as is.
Alternative 2	Develop a picnic area with a pavilion in the field near the parking area	• Would create a new picnicking opportunity in the park. • Would be available for rental and would potentially generate revenue for the park. • Parking is readily available. • Is close to comfort facilities and beach.
Alternative 3	Develop a ball field (for soccer, baseball, etc) with a backstop near the parking area	• Would support active recreation. • Would create a new recreation opportunity. • Parking is readily available. • Is close to comfort facilities and concessions.

Alternatives		Considerations
Alternative 4	Develop a playground near the beach	• Would create a new active recreation opportunity for kids. • Would be located closer to the beach area to create a recreation node with swimming.
Alternative 5	Develop docks for fishing	• Would be separate from the swimming area. • Would provide dedicated fishing access.

Preferred Alternative: Alternatives 2, 3, 4, and 5

Canopus Lake Boat Launch

Background for Analysis:

The boat launch and boat rental area at Canopus Lake is a small area and in need of upgrading. Other locations for this purpose do not exist although some car-top launching occurs from the parking area slightly west on the north side of Route 301. The existing parking area for the launch exists across Route 301 and pedestrians wishing to launch or rent a boat must cross the road. The existing boat rental facilities are hindered by the poor launch area which is rocky and receives run-off from the highway drainage system. Accessible parking is also an issue at this location due to space restrictions. Route 301 is owned and managed by NYS DOT and is, therefore, beyond the purview of the master plan. However, it is possible to improve the parking on the south side of Route 301 with DOT's approval. (It is recommended that the next time Route 301 is scheduled for repair that DOT consider widening or restriping Route 301 to create additional space for pedestrians and cyclists.)

Alternatives		Considerations
Alternative 1	Status Quo	• Facilities would remain as is. • Boat launch area requires consistent maintenance due to silting from highway drainage.
Alternative 2	Improve existing rental area by enlarging the structure to improve storage for the boats and adding a self-composting toilet. Develop small parking area to improve accessible parking.	• Would improve a well-used recreation area. • Would provide restrooms. • Would help maintain the boats better and for a longer period of time. • Would improve accessibility at this location. • Spatial constraints at the site may limit development.
Alternative 3	Sand reclamation efforts at boat launch area to improve launching conditions	• Would create a better boating experience for park visitors. • Rental boats would be less likely to get damaged. • Would likely require permits from DEC. • Would likely involve some invasive species removal.

	Alternatives	Considerations
Alternative 4	Add a new dock between the shore and a small island behind the existing rental	• Would improve the area as fishing location. • Would improve access to the water and would make it easier for people to get into row boats.
Alternative 5	Improve parking area across Route 301 and create a pedestrian crossing on Route 301	• Would formalize parking area to accommodate additional parking spots within the existing area. • Would require paving additional areas adjacent to the existing parking area. • Would create a dedicated entrance and exit to the parking area to improve safety and separate the parking area from the road. • A crosswalk and signage on Route 301 would improve pedestrian visibility and safety.

Preferred Alternative: Alternatives 2, 3, 4, and 5

Peninsula at Canopus Lake

Background for Analysis:

The peninsula is located adjacent to Route 301 and is a small, but well used recreation area on the lower part of Canopus Lake. There are hiking trails and a small parking area, but the area is in need of some rehabilitation and trail improvements.

	Alternatives	Considerations
Alternative 1	Status Quo	• Existing issues would continue; trails would continue to erode, parking is insufficient and informal.
Alternative 2	Implement erosion control measures at trails near the water	• Would improve the trails. • Would help the plants and trees near that are impacted by the erosion. • Would help stabilize loose soils and may prevent erosion and sedimentation impacts to lake.
Alternative 3	Improve parking by formalizing the park area adjacent to Route 301	• Would include striping and minor repairs to the asphalt. • Would better organize parking and may accommodate additional spaces.

Preferred Alternative: Alternatives 2 and 3

Hunting

Background for Analysis:

There are designated areas for bow and shotgun deer and turkey hunting in Fahnestock. Nearly all of Fahnestock is open for bow hunting and specific areas of the park have been identified for shotgun hunting. Hunting occurs during the designated season in accordance with the regulations set forth by the Department of Environmental Conservation. Hunting serves as both a recreational opportunity and one way to help control the deer and turkey population of the park.

Alternatives		Considerations
Alternative 1	Status Quo	• Hunting will continue in designated areas at Fahnestock
Alternative 2	Expand shotgun hunting in Fahnestock off East Mountain Road, near Wiccopee Lake	• May help with deer management in the park. • May help improve the natural resources of the park. • Would provide a new recreational opportunity where hunting was previously allowed by prior landowners.

Preferred Alternative: Alternative 2

Hudson Highlands State Park

Camping and Overnight Accommodations

Background for Analysis:

There are no formal camp sites in Hudson Highlands State Park at this time. There are designated locations within the park, especially along the Hudson River shoreline, that have been identified as locations where camping is permitted for paddlers on the Hudson River Water Trail. The recent purchase of the former University Settlement Camp property included a number of cabins in an area directly adjacent to the park.

Alternatives		Considerations
Alternative 1	Status Quo	• No formal camping facilities currently exist. • Unimproved campsites along the Hudson River Water Trail would be maintained.
Alternative 2	Identify a location for and develop a campground in Hudson Highlands	• Would provide a new camping opportunity for the region. • Would require the development of the associated infrastructure (showers, bathrooms, water supply, roads, etc.) where it does not exist now. • May disturb and impact habitat.

	Alternatives	Considerations
Alternative 3	Identify a location(s) for primitive camping in Hudson Highlands	• Requires less development than traditional camping. • No more than five (5) camp sites would be developed.
Alternative 4	Utilize the cabins at University Settlement to provide overnight accommodations.	• Would be contingent upon the City of Beacon developing overnight accommodations. • Would be consistent with Beacon's plans for this area.

Preferred Alternative: Alternatives 1 and 4

Hunting

Background for Analysis:

There are designated areas for bow hunting for deer and bow and shotgun hunting for turkey at Hudson Highlands. Hunting occurs during the designated season in accordance with the Department of Environmental Conservation and shotgun hunting is only allowed Monday-Friday and hunters must leave by 10am.

	Alternatives	Considerations
Alternative 1	Status Quo	• Hunting will continue in designated areas.
Alternative 2	Expand shotgun and bow hunting in Hudson Highlands—Expand shotgun hunting on Northeast Fishkill Ridge (formerly Rodman) parcel and bow hunting west of Route 9D	• May help manage wildlife in the park. • May help improve the natural resources of the park. • Would provide a new recreational opportunity in the park.

Preferred Alternative: Alternative 2

Little Stony Point

Background for Analysis:

The 28+/- acre peninsula was formed by the railroad severing it from the mainland and later filling of underwater lands during its use as a processing and shipping area for the quarry east of Route 9D. As a result, the northern portion has a beach of stone screenings mixed with sand, and the southern shoreline is the natural rocky edge dropping sharply to a depth of over 100 200 feet. This well-loved recreation area boasts a modest trail system, shoreline access to the Hudson River, fishing, picnicking, and amazing views of the river and Storm King Mountain.

The Hudson River shoreline is natural, rocky and undeveloped. Because of its natural character (unmonitored water quality, water currents and sharp drop-off), it is not conducive to the traditional beach infrastructure associated with bathing beaches (changing rooms, rest rooms, etc.). There are no designated swimming areas currently located within Hudson Highlands. Historically, Little

Stony Point has been a popular swimming location within the park, but swimming is currently prohibited at this location due to currents, water depth and a lack of water quality testing.

Picnicking areas, the restrooms and the trails are all heavily used at Little Stony Point. Trail improvements are discussed in the Trails Plan, Appendix B and parking is discussed later in this chapter under "Park Operations."

Alternatives		Considerations
Alternative 1	Status Quo	• Swimming would continue to be prohibited within the park. • Maintains the character of the area. • Kayaking and canoe launching will continue to be allowed. • Fishing will continue to be allowed.
Alternative 2	Guarded swimming at Little Stony Point	• Would require lifeguards to staff and monitor the swimming area. • Would require full compliance with the Department of Health regulations.
Alternative 3	Revisit the agreement with the Little Stony Point Citizens Association	• Would help inform the future direction of LSP. • Agreement is currently expired.

Preferred Alternative: Alternative 1

Denning's Point

Background for Analysis:

Denning's Point is a unique area located within Hudson Highlands State Park. A former estate, railroad terminal, brickyard and industrial site, it sits at the confluence of the Fishkill Creek and the Hudson River. It is a highly scenic setting, rich in natural and cultural resources. One section of Denning's Point has recently been revitalized through an agreement with the Beacon Institute. The Beacon Institute offers programs and education about the Hudson River estuary. In addition to the Beacon Institute, the area contains a building that was once a paper-clip factory, trails, and habitat for wintering Bald Eagles. The major issues related to Denning's Point include parking and the bridge over the railroad tracks. Most park patrons utilizing Denning's Point park adjacent to the City of Beacon's waste management facility and walk a mile out to the point. The existing bridge is in need of replacement. An Interim Management Guide (IMG), an internal OPRHP planning document, was developed for Denning's Point in 2007.

Alternatives		Considerations
Alternative 1	Status Quo	• Park patrons would continue to park outside of the point. • Beacon Institute will continue to operate on-site. • Bridge would continue to deteriorate and hinder future use of the point.
Alternative 2	Replace bridge	• Would improve access to Denning's Point.

	Alternatives	Considerations
Alternative 3	Connect to Klara Sauer Trail and Madam Brett Park	• Would improve pedestrian connectivity between areas in and outside the park.
Alternative 4	Revisit the agreement with the Beacon Institute	• Would help inform the future direction of the point.

Preferred Alternatives: Alternatives 2, 3 and 4

Dockside Recreation Area

Background for Analysis:

Dockside is located within the Village of Cold Spring, Putnam County and is a 6.4 acre parcel on the Hudson River. It is located west of the Metro North tracks near Village-owned portions of the waterfront. The property is located in the heart of the community with access provided by village streets. Dockside is a designated stop on the Hudson River Water Trail.

	Alternatives	Considerations
Alternative 1	Status Quo	• Area would continue to be operated without a management agreement with the Village of Cold Spring. • Fishing and boating would continue.
Alternative 2	Finalize a management agreement with the Village of Cold Spring	• Would provide a clear direction with respect to managing this area. • Would define roles, rules and responsibilities for the management of this area. • Fishing and boating would continue.

Preferred Alternative: Alternative 2

North Redoubt

Background for Analysis:

North Redoubt is located adjacent to Philipse Brook Road in the Town of Philipstown, Putnam County. It's a Revolutionary War fortification and offers trails and scenic views. Parking for North Redoubt can be difficult as there is limited space and is primarily located adjacent to the roadway.

	Alternatives	Considerations
Alternative 1	Status Quo	• Parking would continue to be limited.
Alternative 2	Improve parking and access to the trails	• Would require purchasing adjacent land to improve the area. • Would provide better access and a distinct entrance to the trailhead.

Preferred Alternative: Alternative 2

Arden Point

Background for Analysis:

Arden Point is a 37 acre area located in Garrison and is adjacent to the Metro North train station. The point has an easy trail system with direct access to the Hudson River and spectacular views of the Hudson River and West Point.

Alternatives		Considerations
Alternative 1	Status Quo	• Well-used trail; popular local recreation destination. • Entrance is lacking amenities.
Alternative 2	Improve entrance amenities	• Would provide a more clearly defined entrance. • A kiosk would be installed with trail and trail connection information.
Alternative 3	Designate Arden Point as a stop on the Hudson River Valley Water Trail	• Would be for day-use only; no overnight accommodations. • Would provide a new stop on the water trail. • May provide a new opportunity for interpretation.

Preferred Alternative: Alternatives 2 and 3

Both Parks

Trails

Hiking, biking and equestrian activities for both Fahnestock and Hudson Highlands State Parks are addressed in the Trails Plan which is part of this Master Plan. Please refer to Appendix B for the complete Trails Plan and for more detailed information regarding the trail system of the parks.

Environmental Education and Interpretation

Background for Analysis:

Taconic Outdoor Education Center (TOEC) provides the majority of the environmental education and interpretation programming at Fahnestock. The programming provided by TOEC is geared towards school groups and occurs during the school year. TOEC does provide some environmental education programming to the general public, but there is a need for more.

At Hudson Highlands, environmental education and interpretative programming is offered by Audubon at Constitution Marsh.

There are numerous organizations offering programs in and around the parks. Additional environmental education and interpretation opportunities would be beneficial at the park through partnerships with these organizations.

Alternatives		Considerations
Alternative 1	Status Quo	• EE& I programming would continue at TOEC and Constitution Marsh. • Existing programs offered are somewhat limited.
Alternative 2	Expand EE&I programming and partnerships for the general public and Fahnestock and Hudson Highlands	• Would require additional staff time to develop and execute programming. • Would better serve the general public. • Programming could be offered at Hubbard Lodge in Fahnestock and at the proposed Visitor Center at Hudson Highlands. • Would help the general public understand the importance of the biodiversity of both parks.
Alternative 3	Develop interpretive materials and signage for trails at both parks	• Would provide a low-cost alternative to traditional EE&I programming. • Would highlight important ecological features of a trail. • Interpretive trails provide active interpretation for park patrons.

Preferred Alternative: Alternatives 2 and 3

Cultural and Historic Resource Protection and Management

Background for Analysis:

Fahnestock and Hudson Highlands are two parks rich with history and lie within a Federally designated National Heritage Area. The area, as whole, is historically significant from a Native American, early-American trading, Revolutionary War, and Industrial Revolution standpoint. It has a rich history in art, literature and scenic preservation. Hudson Highlands has numerous Revolutionary War sites, former estate landscapes, and remains of mining activities related to quarrying and brick-making within its boundaries. Fahnestock has extensive areas once devoted to iron mining, agriculture, and later park development under the CCC program. Given the wealth of cultural and historic resources of these parks, there is a tremendous opportunity to educate and interpret these resources for the public.

Alternatives		Considerations
Alternative 1	Status Quo	• There is limited cultural and historic education and interpretation offered at either park. • There are historic and cultural elements of the parks that could be interpreted and management could be improved. • There are known historic areas of both parks that are eligible for nomination on the National Register.

Alternatives		Considerations
Alternative 2	Conduct an inventory of cultural and historic elements of both parks	• Would help better understand the historic significance of the area. • Would help with education and interpretation of the historic and cultural resources.
Alternative 3	Expand cultural and historic education and interpretation programming for the general public and Fahnestock and Hudson Highlands	• Would better serve the general public. • Programming could be offered at the proposed Visitor Center at Hudson Highlands. • Would help the general public better understand the importance of the Hudson Valley in the history of the United States.
Alternative 4	Develop interpretive materials and signage for trails and programming in both parks	• Would provide a low cost alternative to traditional education and interpretation programs. • Would provide dedicated interpretive signage to trails that would be available all the time to park visitors. • Interpretive trails provide active interpretation for park patrons.
Alternative 5	Prepare the nomination form for 3,000 acres of Fahnestock	• The 3,000 acres would include the original 2,400 acres donated by the Fahnestock family and an additional 600 acres that relate to the early development of the park and parkway. • The nomination would include the CCC era structures of the park. • Would relate to the Taconic State Parkway, already on the National Register, and bolster the historic significance of that era and the idea of the parkway system.
Alternative 6	Improve the management of known culturally and historically significant areas	• Would include North Redoubt in Hudson Highlands, the Connecticut Camp area. • Would help park managers better manage the resource. • May include the development of resource management plans for specific locations.

Preferred Alternatives: Alternatives 2-6

Park Operations

Park Office—Fahnestock

Background for Analysis:

The existing park office at Clarence Fahnestock Memorial State Park is located directly off of Route 301. In addition to the park office, the park manager residence and the park maintenance facility is also in the same location which causes congestion. In general, the facility provides poor service to the public. In addition, the park office is located away from the activity at the campground and Canopus Lake which is undesirable.

Alternatives		Considerations
Alternative 1	Status Quo	• Park office would remain in its current location. • Conflicts between motorists and park patrons would continue. • Parking would continue to be inadequate.
Alternative 2	Relocate park office to the current location of the Canopus Beach contact station	• Would be a more central location and close to the beach and campground. • Would require new construction and changes to the road system to allow people to turn around. • Would bring additional traffic to this already well-used area.
Alternative 3	Relocate park office to the existing buildings at Canopus Beach (concessions and lifeguard office building)	• Would be a more central location close to the beach and campground. • Would be difficult from a park operations perspective to distinguish between people coming in for camping and those park patrons who are coming to swim. • Would require renovating the existing building. • May create an operational/traffic problem getting people who are not parking at the Canopus Beach area out and on their way.

Alternatives		Considerations
Alternative 4	Build a new park office building off Route 301, between the campground and Pelton Pond picnic area at the site of the former Winter Campground. • Building would be approximately 1,200 square feet • Approximately 16 parking spaces	• Area is located off of Route 301, but set back from the road with better visibility for motorists entering and exiting. • Is located near a trail that leads to the campground; would also be accessible by the Winter Park users. • Would be a new building that would be separate from other park facilities. • May impact some habitat. • The former winter campground area is already cleared. • Is closer to Canopus Lake than the existing park office, but would not create traffic issues.

Preferred Alternative: Alternative 4

Visitor Center—Hudson Highlands

Background for Analysis:

As described earlier in the plan, Hudson Highlands is a unique park in that it's a series of fragmented parcels of land as opposed to a larger, central land mass constituting the park. In addition to its fragmented nature, Hudson Highlands has Route 9D running through many sections of the park and there's no defined entrance or welcome area. In an effort to improve the visitor experience, the planning team felt that a visitor center should be developed for Hudson Highlands.

Alternatives		Considerations
Alternative 1	Status Quo	• There is currently no visitor center in the park.
Alternative 2	Develop a visitor center near the City of Beacon line with a parking area and restrooms • Building would be approximately 1,500 square feet • Would provide parking for approximately 50 vehicles	• Would create a contact point for park visitors and park staff. • Would provide useful information about Hudson Highlands and other parks and/or natural areas in the Taconic Region. • Could provide environmental/cultural education/interpretation opportunities at the park. • Would require construction of a new building. • Building would be constructed to maximize energy efficiency and would incorporate sustainable design practices. • Would provide a new parking area would connect to nearby trails and the visitor center. • Would require demolition of the existing

Alternatives		Considerations
		structures. • Would provide restrooms for this section of the park. • Would provide access from Route 9D and to the Highlands.
Alternative 3	Manage shrubland and fields for habitat	• Would provide habitat for the New England Cottontail, a known rare species in the park. • Would provide a buffer between Route 9D and the visitor center.

Preferred Alternative: Alternatives 2 and 3

Little Stony Point Parking

Background for Analysis:

Parking at Little Stony Point is limited to a small, informal lot across Route 9D which can hold approximately 20 cars and informal roadside parking adjacent to and parallel to Route 9D. The current parking situation is undesirable especially given that cars travel at high speeds on Route 9D.

Alternatives		Considerations
Alternative 1	Status Quo	• Park patrons would continue to park across from Little Stony Point and adjacent / parallel to Route 9D.
Alternative 2	Improve parking areas across Route 9D and adjacent to the road; improve crossing on Route 9D. • Sightline improvements; clearing vegetation; possible reduction of the speed limits	• Would provide designated and formal parking locations for the area. • A crosswalk and signage alerting motorists to the area would improve the crossing for pedestrians trying to get across route 9D. • Pedestrians still have to cross Route 9D.
Alternative 3	Develop a new parking area near the house on Little Stony Point	• Would require significant clearing of trees near the Hudson River Shoreline. • This area falls within the designated coastal zone according to the NYSDOS. Parking is not a water-dependent or water-enhanced use; water dependent / enhanced uses are desirable per the NYSDOS Coastal Zone Management Program. • Would make all parking on one side of Route 9D and would eliminate the need for park patrons to cross Route 9D.

Preferred Alternative: Alternative 2

Trailhead Parking

Background for Analysis:

There are numerous trailheads in both parks and some have more defined areas for parking and others are more informal. Nearly all of these trailheads are well used and there are several trailhead parking areas throughout the parks that area close to roadways. In many cases, it is undesirable to relocate these parking areas due to topography and potential adverse impacts to the environment.

Alternatives		Considerations
Alternative 1	Status Quo	• Trailhead parking would remain as is. • Trailhead parking is insufficient in both parks. • Parking fails to foster a sense of place for the park visitor. • Trailhead parking areas are generally unknown.
Alternative 2	Improve trailhead parking and add informational kiosks	• Would provide informational kiosks for trail users. • The location would serve as a gateway to the park. • Would add parking spaces to the area and create a more organized look.

Preferred Alternative: Alternative 2

Hubbard Lodge Use Area—Fahnestock

Background for Analysis:

The Hubbard Lodge Use Area is located in the western reaches of Fahnestock State Park. It is suitable for year-round use, is served by water, electric and sewage systems, and contains public bathrooms. The lodge is located along the historic Albany Post Road and is currently used for meetings, special events, and is home to the Anne Odell Memorial Butterfly Garden. It also serves as the major trailhead for trails entering Fahnestock from the west. Hubbard Lodge is the closest developed area to Hudson Highlands and is a built, tangible link between Fahnestock and Hudson Highlands.

Alternatives		Considerations
Alternative 1	Status Quo	• Facility will be maintained but not improved. • There is no formal parking at this location.
Alternative 2	Design a parking area to formalize parking and to provide equestrian parking	• Would create a formal parking area. • Would accommodate approximately 40 vehicles, including horse trailers. • Would utilize a pervious paving material.

Alternatives		Considerations
Alternative 3	Utilize Hubbard Lodge to connect Fahnestock and Hudson Highlands	• Could serve as a location to provide environmental education. • Would serve as a gateway between Fahnestock and Hudson Highlands. • Would serve as a satellite park office for this location.

Preferred Alternative: Alternatives 2 and 3

Infrastructure

Former Downhill Ski Area—Fahnestock

Background for Analysis:

The former downhill ski area at Fahnestock is located adjacent to the Taconic State Parkway and was open as a skiing facility during the 1930s and operated until the 1970s. The location of the ski area off of the Taconic State Parkway creates a difficult scenario for motorists attempting to enter or exit this area. From the parkway, only one building and a large former parking lot is readily visible, but there are a total of three buildings (ski rental/ former Police Station, ski lodge, and a building used by the State Police and Park Police) within the area and vary in condition. Currently, the downhill ski area is utilized by the New York State Police Troop K and Park Police as a shooting range and they also occupy one of the three structures (this building is still viable). The ski rental building (visible from the parkway) is plagued with a myriad of issues and the former ski lodge is currently used for storage, but is in need of maintenance.

Alternatives		Considerations
Alternative 1	Status Quo	• State Police and Park Police continue to use the third building for storage and the shooting range.
Alternative 2	Demolish ski rental building and ski lodge, reduce the parking area and actively restore sections of the parking area	• Would remove buildings that are no longer viable. • Would turn the parking lot into a more natural look and feel. • Would leave some room for parking and helicopter landings.
Alternative 3	Remove power line no longer in use	• Would improve the scenic qualities of the area. • Would require the police to depend on a generator for power to the building they occupy.

Preferred Alternative: Alternatives 1, 2 and 3

Bridge at Route 301

Background for Analysis:

Route 301 is a prominent road in Fahnestock. As noted earlier in the plan, improving parking adjacent to the road, crosswalks and sight distance are all recommendation of the document. Route 301, near the entrance to the Fahnestock Winter Park / Canopus Beach Recreation Area is a popular pedestrian connection between the campground and the beach. In the winter cross-country skiers must cross Route 301 to access additional trails. Improving the pedestrian experience and ensuring a safe road crossing is imperative.

Alternatives		Considerations
Alternative 1	Status Quo	• Crossing Route 301 would continue to present a safety concern for pedestrians and cross-country skiers.
Alternative 2	Construct a multi-use bridge over Route 301	• Would improve the crossing for pedestrians, cross-country skiers, bikers and equestrians. • Would be designed to reflect the mountain character of the area. • Would be designed with input from NYS DOT.
Alternative 3	Work with NYS DOT to reduce the turning lanes at this location on Route 301	• May reduce speeds of motorists. • May cause some traffic backups on account of losing turning lanes.

Preferred Alternative: Alternatives 2 and 3

Taconic Outdoor Education Center—Fahnestock

Background for Analysis:

TOEC, located in Fahnestock, is a widely popular resource for schools and organizations looking for an environmental education experience in the Taconic Region. TOEC also offers environmental education programs to the general public. There have been upgrades to its septic system in recent years and many of the cabins have been renovated, however, the main lodge and two of the cabins are in need of rehabilitation.

Alternatives		Considerations
Alternative 1	Status Quo	• Buildings would be maintained, but not improved. • The buildings are older and could be renovated to improve energy efficiency.
Alternative 2	Continue renovations to the remaining cabins	• Would improve efficiency. • Would make the cabins available for year-round use. • All but two of the cabins have been renovated.

Alternatives		Considerations
Alternative 3	Rehabilitate and renovate the lodge at TOEC	• Would greatly improve the energy efficiency of the building and, therefore, cost less to cool and heat. • Would utilize green / sustainable design and building practices. • Energy improvements could be utilized by staff to help educate visitors about the importance of energy efficiency and green design.

Preferred Alternative: Alternatives 2 and 3

Stillwater Lake

Background for Analysis:

Stillwater Lake is a popular area in Fahnestock for fishing and boating. The existing access road is in need of improvements and the dock needs to be replaced. The dam at Stillwater is also overgrown and requires management, including tree removal.

Alternatives		Considerations
Alternative 1	Status Quo	• The road, dock and dam would be maintained, but would still require improvements.
Alternative 2	Improve the existing road	• Would require resurfacing, grading and drainage improvements. • Would be gravel, not an impervious surface. • Would help with stormwater runoff.
Alternative 3	Replace dock and remove trees from dam	• Would improve fishing access from dock. • Would help ensure the future of boating, fishing and recreation at Stillwater Lake.

Preferred Alternative: Alternatives 2 and 3

Buildings for Demolition

Background for Analysis:

Several structures within Fahnestock and Hudson Highlands are no longer viable and are beginning to deteriorate. In an effort to improve aesthetics, revert built areas back to natural areas and as a safety precaution it is recommended that several buildings be demolished.

Alternatives		Considerations
Alternative 1	Status Quo	• Buildings would continue to deteriorate.

Alternatives	Considerations
Alternative 2 Demolish the following structures: • South Zone Police Building • Old Ski Lodge • Storage Shelter • Repeater Building • Pump House • Cook's Cottage • Gas Shed • Wiccopee Barn • Ticket Booths no longer in use • Route 9D Residence • Browne House • Brick Structure at Fishkill Town Park • Ruins at Arden Point (3) • Woodle House	• Would improve overall aesthetics of certain areas. • Some buildings may be unsafe and should be demolished. • Deteriorating buildings are an operational issue.

Preferred Alternative: Alternative 2

Table 1 - Comparison of Status Quo and Preferred Master Plan Alternative

Element/Topic	Status Quo Alternative	Preferred Master Plan Alternative
Park office—Fahnestock	The park office is located within the maintenance area.	A new park office will be constructed off of Route 301 between the Pelton Pond Use Area and the campground. The new office is proposed in a cleared area and on the site of the former winter campground.
Maintenance area	The maintenance area consists of several buildings and is quite small.	No changes are recommended for these buildings; however, when the new park office is built the existing park office will become part of the maintenance area.
Visitor Center—Hudson Highlands	There is no visitor center in Hudson Highlands.	A visitor center is proposed on a property located off of Route 9D. Additional environmental
Picnicking	There are picnic areas in Fahnestock, including Pelton Pond and Canopus Beach; informal picnicking occurs throughout Hudson Highlands.	The picnic area at Pelton Pond will be rehabilitated and improved. The picnic area at Canopus will be improved and a second location and possibly a pavilion will be developed.
Fishing	Fishing is allowed at several locations, including: Canopus Lake, Pelton Pond, Stillwater Lake, John Allen Pond, and the Hudson River.	Fishing access will be improved at select locations within Fahnestock. No changes are proposed in Hudson Highlands.
Trail activities	Hiking, mountain biking, equestrian, cross country skiing and snowshoeing In the winter, the Winter Park provides XC skiing opportunities.	Hiking, mountain biking, equestrian, cross country skiing, and snowshoeing are allowed on designated trails. Improvements will be made to the trail systems in both parks. OPRHP will continue to work with aforementioned partners to maintain and improve the trail system.
Trailhead Parking	Trailhead parking is limited and often adjacent to roadways. There is little room to expand and there is little to no information to orient and educate trail users.	Trailhead parking will be improved where possible. Some areas are limited by the natural landscape and developing a new parking area would not be feasible or desirable from an environmental standpoint. Informational kiosks will be developed at trailhead parking areas to better inform trail users.

Element/Topic	Status Quo Alternative	Preferred Master Plan Alternative
Campground—Fahnestock	The campground at Fahnestock is part of the original 2,400 acres and is in need of upgrades to the campsites, road and additional bathrooms/showers.	The road will be improved and some campsites will be relocated. A new shower/restroom building will be constructed and the older bath/shower house will be renovated.
Overnight Accommodations—Hudson Highlands	There are no overnight accommodations at this time.	The plan supports the recommendations of the City of Beacon's master plan for the former University Settlement Camp. The plan recommends developing overnight accommodations at some or all of the existing cabins. The Taconic Region will work with the City of Beacon on this project.
Hunting	Hunting is allowed at select locations within both parks.	Recreational hunting will be
Roadways	The main roadways are asphalt. Secondary roadways and most parking lots are gravel.	No major changes are proposed to any roadways in either parks, some roadways (at the Fahnestock campground, for example) will be improved through grading and resurfacing.
Bird Conservation Area	The parks have designated Bird Conservation Areas (BCA).	The BCA at Fahnestock will be expanded and a second BCA will be designated at Hudson Highlands.
Natural Heritage Area	There are no NHAs in the parks.	Natural Heritage Areas will be designated in both parks.
Park Preserve / Park Preservation Area	Neither of the parks has been designated as a Preserve, nor contains a Park Preservation Area.	Hudson Highlands will be designated as a Park Preserve and a Park Preservation Area will be designated in Fahnestock.
Cultural Resources	There are known cultural resources at both parks.	A cultural resource inventory will be conducted at both parks. 3,300 acres at Fahnestock will be nominated to the National Register of Historic Places and cultural resources will be protected and interpreted at both facilities.

Element/Topic	Status Quo Alternative	Preferred Master Plan Alternative
Interpretive and Education Programs	Interpretation and educational opportunities are provided through TOEC.	Interpretation and educational opportunities are expanded.
Invasive Species Management	Invasive species are management is on-going in both parks.	An Invasive Species Management Plan will be developed for both parks. Various methods of control will be implemented and studied.
Summit Communities Management	Summit communities are potentially at risk on account of recreational overuse.	The summit communities will be inventoried and assessed to determine what impacts, if any, are occurring. Signage will be developed to help inform the public about the sensitive nature of these areas. Trail use will continue, however some trails may be relocated or redesigned, if necessary, to mitigate impacts to the summit communities.
Rare and Endangered Species Management	Rare and endangered species would continue to be surveyed and monitored by park staff.	Additional research will be done on the rare and endangered species in both parks and habitat monitoring guidelines will be developed.
Stream Management and Protection	Best management practices are employed when any disturbance within a close proximity of a stream occurs. Streams are not actively managed.	Conduct streamside bio-surveys and visual assessments to help establish baseline criteria to gauge the health of the stream. Water quality samples will also be taken.
Wetland Management and Protection	Activities adjacent to wetlands may have an adverse impact to the wetland complex.	The wetlands with adjacent activities (trails, roads, buildings) of both parks will be inventoried and assessed to determine what, if any, impact is occurring. Signage will also be developed at select locations to inform the public of the importance of wetlands.

Element/Topic	Status Quo Alternative	Preferred Master Plan Alternative
Aquatic Invasive Species Management	Weed harvesting would continue, but is not considered the most effective strategy for some plant species.	Develop an integrated approach for the management of invasive species May include utilizing herbicides, draw-downs, benthic barriers, and educating the public about aquatic invasive species.
Landscape and Scenic Management	Some historic views have been lost.	Maintain Scenic Views from Trail Systems. Maintain existing views from Hubbard Lodge, Bear Mountain Overlook, and Bannerman's Island platform off Route 9D. Manage former and existing open areas at the former Woodle property, Route 9/301 intersection, and south of Glynwood Center as open meadows or fields.
Pelton Pond Use Area—Fahnestock	Area is currently maintained, but requires improvements.	The parking lot will be redesigned and raised to be level with Route 301. The existing restroom will be renovated and trail improvements will be made between the picnic shelter and the restroom. The picnic shelter will also undergo minor renovations and the potable water system will be replaced. All renovations/restoration will be done in accordance to the State Historic Preservation Office as these are CCC era structures and original to the park.
Hubbard Lodge--Fahnestock	Area is currently maintained, parking is inadequate.	A new parking area will be developed. A satellite park office will be developed here to be a link between Fahnestock and Hudson Highlands.
Fahnestock Winter Park	The Winter Park is well used and the public was vocal about their desires for the Winter Park during the public information period.	The plan proposes additional ski trails and renovations to the Canopus Lake Recreation Area structures.

Element/Topic	Status Quo Alternative	Preferred Master Plan Alternative
Canopus Lake Recreation Area—Fahnestock	Concession/Lifeguard building and showers/restrooms are in need of renovations. The beach area suffers from poor swimming conditions.	The buildings at Canopus Lake will be renovated. The concession and lifeguard building will also be expanded to better accommodate year-round use. The beach area will be made smaller and grass will be planted to and the swimming area will be improved through dredging/sand reclamation. Docks will be installed at both ends of the beach
Canopus Lake Boat Launch and Peninsula--Fahnestock	Current facilities are in need of improvement; launch area has silted in, fishing access could be better, and existing boat house is small and does not allow for storage. Peninsula parking is informal and the existing trails are eroding.	Boat launch area will undergo sand reclamation to deepen the water and improve launch conditions. A fishing area will be developed on the other side of the boat rental building and parking improvements will be made for accessible parking and across Route 301. The parking area at the peninsula will be formalized with striping and minor repairs to the asphalt. Erosion control methods will be implemented on the trails to stabilize soils and help prevent sedimentation.
Stillwater Lake--Fahnestock	Area is in need of improvements.	Trees will be removed from the dam and routine dam maintenance will occur (may include dam design/repair projects). The existing dock is a maintenance issue and will be replaced. Road requires grading and surface improvements, as well.
TOEC--Fahnestock	Two of the cabins did not undergo renovation and would be maintained as is; the Lodge is older and could be renovated to improve energy efficiency.	The remaining cabins will be renovated so that all of the cabins are available for year round use. The Lodge will be renovated to improve energy efficiency and will be done utilizing sustainable energy and design building practices.

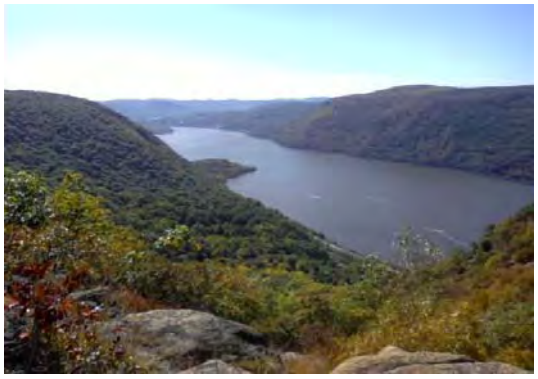
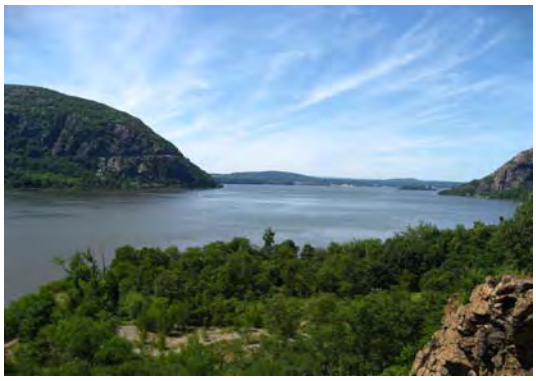
Element/Topic	Status Quo Alternative	Preferred Master Plan Alternative
Former Downhill Ski Area--Fahnestock	Three buildings exist at the former ski area. Two are not maintained and are deteriorating; the third is used by the NYS Police. The parking area is larger than necessary.	The old ski lodge and the south zone police buildings (closest to the parking area) will be demolished. The State Police will continue to use the third building. The parking lot will be made smaller and will revert to grass.
Bridge at Route 301--Fahnestock	Pedestrians, skiers, etc would continue to cross Route 301 to access the campground and the Canopus Lake Recreation Area. Route 301 is a heavily traveled road.	A multi-use bridge will be designed and constructed over Route 301 to facilitate a safer crossing. The structure will be designed with input from NYSDOT.
Buildings for Demolition	Several buildings within the park are no longer viable and would continue to deteriorate.	Several buildings are recommended to be demolished including the following: South zone police building, old ski lodge, storage shelter, repeater building, pump house, cook's cottage, gas shed, Wiccopee barn, ticket booths (no longer in use), Route 9D residence, Browne house, brick structure at Fishkill Town Park, ruins at Arden Point (3), and the Woodle house.
Denning's Point—Hudson Highlands	Parking would continue to be an issue as park patrons cannot park on the point. Beacon Institute would continue to operate Building One and the bridge to the point will continue to deteriorate.	The plan recommends that the bridge be replaced; however, this action would require a supplemental SEQR review. Trails on Denning's Point will connect to the Klara Sauer Trail. The management agreement with the Beacon Institute should be revisited to help inform the future direction of the point.
Little Stony Point—Hudson Highlands	Swimming would continue to be prohibited at this location. Kayaking, canoe launching, fishing, and hiking would continue.	Status quo.

Element/Topic	Status Quo Alternative	Preferred Master Plan Alternative
Dockside—Hudson Highlands	There is no management agreement with the Village of Cold Spring; car-top boat launching and fishing would continue.	Recreation will continue, but a formal management agreement will be developed with the Village of Cold Spring.
North Redoubt—Hudson Highlands	Parking is limited in this area.	The plan recommends that parking and access be improved; however, this would require purchasing adjacent land to improve access and to develop a parking area with kiosks and information about the North Redoubt.
Arden Point—Hudson Highlands	This is a well used hiking area with limited amenities or information.	The entrance to the Arden Point trails would be improved with an informational kiosk to better orient visitors. In addition, the plan recommends that Arden Point be designated as a stop on the Hudson River Water Trail, for day-use. No launching area would be developed, however.

Appendix B – Draft Trails Plan

Final Trails Plan
for
Clarence Fahnestock Memorial State Park and Hudson Highlands State Park Preserve

December 15, 2010

New York State Office of Parks, Recreation and Historic Preservation
Prepared in conjunction with the Final Master Plan/Final Environmental Impact Statement for Clarence Fahnestock Memorial State Park and Hudson Highlands State Park Preserve 2010

Acknowledgements

The Fahnestock and Hudson Highlands State Parks Final Trails Plan is a result of a cooperative effort by many persons. The Office of Parks, Recreation and Historic Preservation (OPRHP) acknowledges the time and effort of each individual who participated in the development of this Trails Plan Document.

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Introduction

Clarence Fahnestock Memorial State Park (Fahnestock SP), comprised of over 14,000 acres, is located in the towns of Carmel, Kent, Philipstown and Putnam Valley in Putnam County, NY. The majority of the park is located between Route 9 on the west and the Taconic State Parkway (TSP) to the east. Other portions of the park lie between the TSP and the NYS Electric & Gas power line corridor to the east. There are two parcels off the northeast and southeast corners of the park that are isolated from the main park area. Conservation easements are held by OPRHP on three parcels (total of 2,018 acres) adjacent to the main area of the park.

The park offers a variety of recreational opportunities including camping, swimming and boating in the Canopus Lake area, as well as fishing, hunting, bird watching and trail-related activities. There are over 50 miles of designated trails (including footpaths and wood roads) that traverse the park and its diversity of ecological communities and varied topography and that provide access to scenic summits and a number of lakes and ponds. Trail uses permitted in the park include hiking, biking, horse-back riding, cross country skiing and snowshoeing.

Hudson Highlands State Park Preserve (Hudson Highlands SPP), comprised of 6,942 acres, consists of 15 areas located in three counties (Dutchess, Putnam and Westchester), three towns (Fishkill, Philipstown, and Cortlandt), two villages (Cold Spring and Nelsonville) and the City of Beacon, NY. The areas vary in size from 2.4 acres to over 4,000 acres. They span a 16 mile stretch along the east side of the Hudson River and extend eastward up to four miles. A conservation easement is held by OPRHP on a 445 acre parcel around Lake Surprise.

The park offers fishing along the Hudson River, two car-top boat launching sites, hunting, bird watching, and trail-related activities. The park is generally divided into a northern and a southern section. The northern section provides 35 miles of hiking trails and 2 miles of hiking/biking trails which include trails that extend onto adjacent properties that allow public access. The southern section of the park provides 10 miles of hiking trails including the Camp Smith Trail which traverses the NYS Military Reservation at Camp Smith within a trail easement between Anthony’s Nose and the Harriman Tollhouse. Snowshoeing is allowed on all designated trails.

The Appalachian National Scenic Trail (AT), a 2,155 mile long hiking trail spanning from Springer Mountain, Georgia to Baxter State Park, Maine, traverses both the southern section of Hudson Highlands SPP and Fahnestock SP. The trail was designated the first National Scenic Trail in 1968 and is part of the National Park System.

As part of the master planning process, it was identified that due to the extensive nature and the high use of the trail systems and the diversity and sensitivity of the natural resources in the parks that a trails plan should be developed in conjunction with the master plan. With the extensive use of the trail systems, changing environmental conditions, and expanded information on significant natural resources within the parks, this trails plan provides direction and guidance for staff in the development, management and maintenance of high quality trail systems that meet the needs of the users while protecting the resources and integrity of the parks.

The Final Trails Plan has been developed concurrently with and as a supporting document to the master plan. Public comments regarding trails and recreation in the park were received at a public

information meeting held in September 2009 as well as during the public comment period during September and October 2009 as part of the master planning process. A Trails Plan Subcommittee comprised of OPRHP staff was formed in October 2009 to provide input during the trails planning process and to make recommendations on proposals for the Trails Plan. This committee met with trail user groups in January 2010 to receive input regarding the trails systems. All of the comments received by OPRHP have helped to guide the development of the Trails Plan. Other factors that were taken into consideration in the development of the plan include current trail conditions, current uses, undesignated trails, needs and trends, current and future demands, and natural resource protection.

Existing Trail Systems

Fahnestock SP and Hudson Highlands SPP provide over 80 miles of designated trails covering a wide range of ecological communities and terrain over a large area. Designated trails are defined generally as trails that are named, marked and maintained for specific uses. When trails are designated, they have designated uses assigned to them; trails are to be maintained to use standards per OPRHP trail standards (see Appendix 1). There are many more miles of trails in both parks that are considered undesignated meaning they are unnamed, unmarked and not maintained.

Trail uses in the parks include hiking, biking, horse back riding, cross country skiing and snowshoeing. Trails in both parks are often extended onto adjacent parcels owned and managed by other entities that allow public access, thus providing a more expansive trail experience in the region.

At **Fahnestock SP**, footpaths are generally designated for hiking only, while designated wood roads are considered multi-use (hiking, biking, equestrian use) trails. **Figure 1** – Fahnestock State Park – Existing Trail System illustrates these and the parking areas currently serving them. Trail experiences at Fahnestock SP include those that offer scenic views of water bodies in the park to trails that traverse the more mountainous areas providing longer range vistas. Winter trail use is focused at the Fahnestock Winter Park in the Canopus Lake area. See **Figure 2** – Fahnestock State Park – Winter Park. There are over 10 miles of groomed cross country ski trails provided in the Winter Park, as well as 4 miles of marked snowshoe trails. All designated trails (except groomed cross country ski trails) are open to snowshoeing throughout the winter.

Parking lots (established parking areas for three or more vehicles) and trailheads (pull off areas for one to two vehicles) are located throughout the park providing multiple entry points into the trail system. There are a number of parking lots to accommodate horse trailers located at access points to the multi-use trails as well. In addition to designated trails in the park, there are many miles of undesignated trails including social trails developed by users over time, remnants of old carriage roads, old town roads and wood roads left from logging and other practices prior to the park's establishment.

At **Hudson Highlands SPP**, all designated trails currently allow for hiking only (except for Denning's Point and the Klara Sauer Trail which allow biking as well). See **Figures 3 and 4** – Hudson Highlands State Park Preserve – Existing Trail System – North/South. Due to the variety of sizes and locations of parcels that make up Hudson Highlands SPP, some longer trails traverse high rocky summits and offer scenic views of the Hudson River Valley to the west and east to Fahnestock SP, while other shorter trails are located along the Hudson River at Denning's Point, Little Stony Point, Dockside, and Arden Point and provide waterfront access. Designated trails are open to snowshoeing in the winter months (with the exception of Denning's Point which is closed from December 1 through March 31). There are no designated cross country ski trails in the park.

As with Fahnestock SP, parking areas are located at multiple entry points to the park. Access is currently provided to most of the 15 areas. There are undesignated trails located in the park consisting of social trails developed by users over time, as well as old wood roads and carriage roads.

Designated footpaths throughout both parks are maintained by the New York-New Jersey Trail Conference (NYNJTC). Trail maintenance includes regular inspections, tree and brush clearing, marking, maintaining drainage structures, and addressing water management issues along trails. In addition, volunteers of the NYNJTC have played a traditional and integral role in trail construction and as stewards for the trail systems by developing and distributing trail maps and providing a presence along trails and on some mountain summits to direct visitors, answer questions and help in any necessary ways to enhance the user experience and protect the parks' resources. Free trail maps are available to the public at the Fahnestock SP office, various kiosks in the parks, and at the trail heads of Mt. Taurus and Breakneck Ridge in Hudson Highlands SPP. Two of the multi-use trails in Fahnestock SP (School Mountain and Moneyhole Mountain Trails) are maintained by a coordinated effort of the NYNJTC and local equestrian groups while the third multi-use trail (Roaring Brook Trail) is maintained by park staff.

Inventory

Table 1 and Table 2 below are inventory lists that provide the name, blaze color, designated uses, and mileage of each designated trail within Fahnestock SP and Hudson Highlands SPP respectively.

Table 1: Fahnestock State Park Trails Inventory

Trail Name	Blaze	Uses*	Length (miles)
Appalachian Trail (AT)	AT	H, SS	10.24
Cabot (CA)	White	H, SS	1.02
Candlewood Hill (CH)	Red	H, SS	2.17
Catfish Loop (CF)	Red	H, SS	3.95
Charcoal Burners (CB)	Red	H, SS	3.33
Clear Lake Scout Reservation (CL)	Various	H, SS	4.66
East Mountain (EM)	Red	H, SS	1.50
Fahnestock (FS)	Blue	H, SS	6.88
Moneyhole Mountain (MM)	Yellow	H, B, E, SS	4.07
Old Mine Railroad (OM)	Yellow	H, SS	1.65
Pelton Pond (PP)	Yellow	H, SS	0.87
Perkins (PK)	Yellow	H, SS	4.14
Roaring Brook (RB)	White	H, B, E, (SS), (CC)	7.53
School Mountain (SM)	White	H, B, E, SS	4.06
Three Lakes (TL)	Blue	H, SS	4.29
Trout Brook (TB)	Yellow	H, SS	0.55
Wiccopee (WI)	Blue	H, SS	1.82
Total Mileage (not including AT)			***51.73***

Type of Use: H (Hiking), B (Biking), E (Equestrian), SS (Snowshoeing), CC (Cross country skiing – groomed).
*Uses noted in ( ) indicate only a portion of that trail is open to the use.

Snowshoeing is allowed on all designated trails throughout the park except for the groomed cross country ski trail at the Fahnestock Winter Park. With the exception of the Fahnestock Winter Park, there are no designated cross country skiing trails in the park. The Fahnestock Winter Park provides a series of seasonally marked snowshoe trails and groomed cross country ski trails. These trails are currently only designated and marked for winter use.

Table 2: Hudson Highlands State Park Preserve Trails Inventory

Trail Name	Blaze	Uses	Length (miles)
Appalachian Trails (AT)	AT	H, SS	4.86
Arden Point (AP)	Blue/ Red	H, SS	1.51
Breakneck Bypass (BB)	Red	H, SS	0.76
Breakneck Ridge (BR)*	White	H, SS	4.40
Brook (BK)*	Red	H, SS	1.48
Camp Smith (CS)	Blue	H, SS	3.67
Carriage Connector (CC)	Yellow	H, SS	0.93
Casino (CT)*	Red	H, SS	2.00
Cornish (CN)*	Blue	H, SS	1.41
Denning's Point (DP)	White	H, B, SS	1.23
Fishkill Ridge (FR)*	White	H, SS	4.99
Klara Sauer (KS)*	None	H, B, SS	0.92
Lonestar (LS)	Blue	H, SS	0.99
Nelsonville (NV)*	Green	H, SS	2.28
North Redoubt (NR)	Red	H, SS	0.65
Notch (NT)*	Blue	H, SS	4.90
Osborn Loop (OB)	Blue	H, SS	2.06
Split Rock (SR)	Red	H, SS	0.26
Sugarloaf (SL)*	Red	H, SS	1.67
Undercliff (UC)*	Yellow	H, SS	3.60
Washburn (WB)	White	H, SS	2.26
Wilkinson Memorial (WM)*	Yellow	H, SS	7.94
Total mileage (not including AT)			***46.74***

Type of Use: H (Hiking), B (Biking), E (Equestrian), SS (Snowshoeing)
* Portions of these trails are located on adjacent properties.

Snowshoeing is allowed on all designated hiking trails throughout the park. There are no designated cross country skiing trails in the park.

The Appalachian National Scenic Trail (AT) transects both parks. The southern section of Hudson Highlands SPP is bisected by the AT from the crossing of the Hudson River on the Bear Mountain Bridge northeast through the Osborn Preserve to Route 9 and is 4.86 miles long within the park boundaries. From Route 9 north to Philipse Brook Road, the AT is located on lands owned by the National Park Service. The AT traverses Fahnestock SP for the next 10.24 miles, entering from the southern boundary of the park east of Catfish Pond, north across Route 301 past Canopus Lake, and exiting the park at Long Hill Road, near the Dutchess-Putnam County boundary. The AT within state parkland is cooperatively managed by the Appalachian Trail Conservancy and the NYNJTC, under a formal Memorandum of Understanding with OPRHP and other entities.

Assessment

As part of the trails planning process for these parks, the trails, all designated and most undesignated trails, were assessed during October 2009. The trail assessment team used hand-held Trimble GeoXT Global Positioning System (GPS) units to accurately collect assessment information. Most trails were assessed for type of use, general condition, degree of erosion, ease of travel, adequacy of signage and issues with water on the treadway. **Figures 5, 6, 7 and 8 –** Trail Assessment Summaries depict the results of these assessments for Fahnestock SP (north and south) and Hudson Highlands SPP (north and south) in that order and represent the conditions found along the trails at that point in time.

Trails are generally very well blazed and well maintained because of the on-going efforts of NYNJTC volunteers, other user groups and OPRHP staff. All designated trails in the parks are marked with color markers or blazes. Designated trailheads and designated trail intersections are generally well marked as well. There are many undesignated trails throughout both parks consisting of wood roads and narrower singletrack trails (trails with a tread width of approximately 18-30 inches). These trails are generally in poor condition as they are not maintained and they are unmarked which causes disorientation for visitors unfamiliar with the parks' trail systems.

The parks' trails receive a high volume of users, including some who are unprepared for the trail experience. The presence of unmarked, undesignated trails in both parks and the high-use and inexperience of some visitors to the parks, contributes to weekly occurrences of lost visitors. Although maps are available in multiple locations, lost hikers are often found without maps in hand. At Hudson Highlands SPP, there is currently no central orientation hub or visitor center where patrons can get oriented and receive information about the trail system including access points and the expected experience, such as length and difficulty. On weekends during the summer of 2009, a Park Ranger was posted on high-use trails within Hudson Highlands SPP to provide an official park presence and help with visitor orientation and safety. NYNJTC volunteers often provide guidance and information to visitors along the trails. Nonetheless, the lack of orientation and informational kiosks, staff presence, and a centralized point of contact are significant ongoing concerns regarding the operation of Hudson Highlands SPP.

A number of trails in Fahnestock SP and the northern and southern sections of Hudson Highlands SPP traverse through or near two types of rocky summit communities (pitch pine-oak-heath rocky summit and red cedar rocky summit), that have been identified as significant ecological community types by the New York Natural Heritage Program (NYNHP). These are generally located along rocky mountain ridge tops. The Camp Smith Trail in the vicinity of Anthony's Nose in the southern section of Hudson Highlands SPP traverses a rocky summit grassland community that is also considered a significant ecological community. These natural communities provide habitat for some state threatened species. High visitor use in these very popular scenic areas may result in adverse impacts to the habitat, such as trampling of sensitive vegetation and erosion of the thin soils. Additional management of these areas should be considered as part of this plan.

All-Terrain Vehicle (ATV) and Off-Road Vehicle (ORV) (including off-road motorcycle) use and impacts are also concerns noted in both parks. These activities can result in significant erosion and other impacts to natural resources. Despite the fact that these recreational uses are prohibited in all state parks, ATV and ORV users access the trail systems from multiple points off both designated and undesignated trails. Use of existing wood roads is prevalent in some areas. In other areas, trail treads have been widened by ATV/ORV use because vegetation is run over by vehicle tires. Additionally, unwarranted trails have been created by users. Easy access to trails off main roads has been identified as a potential reason for the prevalence of use. Efforts to deter use and access, such as installation of signage and gates at trail entrances, have been largely ignored and have proved ineffective.

Fahnestock SP

There are portions of some designated trails within Fahnestock SP that are in need of attention and potential rerouting. Some sections of the multi-use trails have eroded or are located in wet areas and there are also bridge structures in need of repair. The Old Mine Railroad Trail in the vicinity of Hidden Lake is sometimes underwater because beavers have dammed the lake outlet. The Three Lakes Trail crosses the outlet of John Allen Pond near the breached dam and is sometimes underwater and impassable.

The Canopus Lake Area in Fahnestock SP is a high-use area year-round. During the warmer months, the beach and camping areas are very popular and often filled to capacity. In addition, the lake is used for fishing. While there are winter trails in this area (Fahnestock Winter Park), they are currently marked only for winter uses and markers are removed for the summer season. A lack of designated (marked) hiking trails during the summer months in this heavily used area may contribute to its environmental degradation from visitors creating social paths and trampling vegetation.

The Taconic Outdoor Education Center (TOEC) is a year-round facility located next to Duck Pond in Fahnestock SP. The program provides environmental education, outdoor recreation, “Project Adventure”, maple sugaring, retreats, and public programs for Hudson Valley schools, scout troops and clubs. There is a network of trails surrounding TOEC that are used for programs and are not considered open for public through-access. Most of these trails have names but only some of them are marked. Three trails (marked but unnamed) provide connections from the TOEC trails to the Catfish Loop Trail. Trails are generally in good condition, although the assessment noted a number of wet spots along the trail to the north of Duck Pond where wetlands are located.

Hudson Highlands SPP

Some sections of trails in Hudson Highlands SPP are very steep and eroded and follow fall line alignments. In some cases, these sections experience very high use that contributes to tread wear, denuded trailside vegetation and severely eroded sections of trail. Parallel trails have developed in some instances because users try to bypass eroded and/or very steep sections. These sections of trail are considered unsustainable in that the current alignment, the lack of water management measures and the high levels of use are adversely impacting the natural resources. Erosion and trampled vegetation along trails and areas adjacent to trails are causes for concern.

The trail system of the northern section of Hudson Highlands SPP can be accessed by multiple parking areas and trailheads. On busy days, the public demand exceeds the capacity of the available parking spaces. Vehicles are often found parked along Route 9D which in many areas are not designated parking areas and have little sight distance. In some cases, parking areas are located across Route 9D from the trailhead. This issue is addressed in the master plan.

There are three Hudson River shoreline parcels in Hudson Highlands SPP that provide trail experiences for patron use. Denning’s Point offers a designated loop trail that generally follows a former fire road above and set back from the shoreline of the peninsula. The property is accessed via a parking lot on Dennings Avenue Extension. Denning’s Point is also the location of a Hudson River Greenway Water Trail designated site. The Klara Sauer (Beacon Riverfront) Trail, maintained by the City of Beacon, provides hiking and biking access between Denning’s Point,

Scenic Hudson's Long Dock holding, the Metro North station at Beacon, and the City of Beacon's Riverfront Park. The proposed extension of the Klara Sauer Trail eastward would connect Denning's Point to Scenic Hudson's Madam Brett Park, which is located to the east along the Fishkill Creek.

Little Stony Point is a +25-acre peninsula just to the north of the Village of Cold Spring along Route 9D. A one lane bridge crosses the Metro North tracks and provides safe access to the Point. The trail network, wholly undesignated and unmarked, consists of 8-foot wide trails to the beach area and around the base of the upland area. Single-track trails ascend through woodlands to the overlooks on the height of land and descend along the rocky edge left by previous quarry activities to re-join the lower trails. Parking, that provides access to this parcel and designated trails to the east, is located on both sides of Route 9D. The parking areas are often overflowing during busy summer weekends.

Arden Point also offers a designated loop trail with access from Lower Station Road at the Metro North Station in Garrison Landing. Trail connections exist between Arden Point and the Appalachian Trail within the Osborn Preserve area of the park via lands owned by the Open Space Institute and DEC's Castle Rock Unique Area. Arden Point is considered an appropriate stop on the Hudson River Water Trail although it is currently not a designated water trail site.

Other portions of the park provide short trails or access to the Hudson River. The North Redoubt, a Revolutionary War fortification, is a separate 18-acre parcel in the south section of Hudson Highlands SPP with a designated trail to the summit providing views of the Hudson River. A short trail from Indian Brook Road in Garrison leads to the base of Indian Brook Falls. Annsville Paddlesport Center, Bannerman's Island, Constitution Marsh, and Dockside each provide access to a variety of park resources but do not currently offer designated trails. In addition, several railroad underpasses, which connect the river and adjacent park uplands, exist in the brickyard area south of Denning's Point. These are currently undesignated but represent unique, potential access to the shoreline.

Trail System Alternatives

The alternatives and analyses presented here are the result of discussions on resource information provided in the previous chapter as it was analyzed to develop recommended directions for the trail systems in each park. All trails in the park were mapped using a hand-held Trimble GeoXT Global Positioning System (GPS). A conditions assessment of all trails was conducted by OPRHP staff during October 2009. The existing conditions maps, assessment information, Natural Heritage Data and public comments received from the master plan public information meeting held in September 2009 and public comment period, including some specific trail proposals, were all analyzed by OPRHP staff. The following factors were considered in the analysis process:

- Types of trail experiences
- Minimizing user conflicts
- Needs and desires of trail users
- Compatibility with and protection of significant natural and cultural resources
- Accessibility to persons of all abilities
- Support facilities
- Connections within high-use areas
- Linkages to external trail systems and adjacent communities
- Adequacy of parking
- Sustainability
- Parallel trails
- Density of trails
- Opportunities for environmental education and interpretation
- Park operations and management

The status quo, alternatives, considerations, and preferred alternative for uses and/or specific areas in each park are described in tabular form below.

Fahnestock SP

Fahnestock - Hiking-only trails
Background for Analysis: Hiking activities, including walking, running, bird watching, and photography, occur throughout the park. Hiking is currently allowed on all designated trails within the park. There are over 35 miles of designated hiking-only trails. The AT provides an additional 10 miles of hiking-only trail experience within the park. Parking and trailheads are located at multiple locations around the park to access the trail system. Hiking-only trails are generally in good condition. Trailheads and trail intersections with undesignated trails are in some cases lacking in adequate signage and information for visitors. The Highlands Trail is a long distance hiking trail proposed by the NYNJTC to connect Pennsylvania (PA) and Connecticut (CT) through the Highlands physiographic region. The trail currently extends westward from the Hudson River at Storm King Mountain to the Delaware River in New Jersey. Plans to establish the trail eastward from the Hudson River include proposals to align the trail through Hudson Highlands SPP and Fahnestock SP.

See additional hiking-only trail recommendations under Candlewood Hill area and Canopus Lake Day Use Area below.	
Alternatives	**Considerations**
Alternative 1 - Status Quo	• The current network of hiking-only trails is maintained.
Alternative 2 – Improve the existing network of hiking-only trails including upgrades to and installation of trailhead and intersection signage, closure of some undesignated trails, and upgrades to unsustainable sections of trail.	• Visitor experience and safety is improved. • Upgrades to sections of trail may require water management techniques and clearing and grubbing for re-alignment. • Maintenance improvements, including potential re-alignments, increase the sustainability of the trail system and reduce impacts to the natural resources. • Trails along summits and near wetlands will be reviewed on a case by case basis for improvements to natural resource protection measures. • Remaining unsustainable trail sections and undesignated trails will be closed to protect resources and improve visitor safety and experience.
Alternative 3 – Develop a trail from the parking area on Route 301 north to School Mountain Trail near Round Hill.	• Provides additional trail loop opportunities, a unique trail experience through open and forested areas and improves the visitor experience overall. • Undesignated trail exists along portion of this corridor. • Some reroutes will be necessary to bypass unsustainable trail sections. • Trail construction, including vegetation clearing, tread development and stream crossing work, is required. • The existing parking area at the trailhead along Route 301 requires improvement. • The proposed trail alignment is located below sensitive summit areas and away from the steeper section of Round Hill. • Increases the potential for invasive species introduction and illegal ATV activity in current trail-less area; may increase use in areas of summit natural communities. • Additional monitoring will be required to insure there are no impacts to adjacent sensitive environmental areas (e.g. rare plant populations).
Alternative 4 - Designate a trail along Clove Creek from the parking area on Route 301 to connect into the Perkins Trail.	• Provides additional trail loop opportunity that will improve the visitor experience. • Existing undesignated trail is in fairly good condition. • May include bridge upgrade or development across Clove Creek to connect to the Perkins Trail. • Existing parking area along Route 301 requires improvement (same as above). • Additional monitoring will be required to insure there are no impacts to adjacent sensitive environmental areas (e.g. rare plant populations).
Alternative 5 – Designate a connector trail from Roaring	• Designates an appropriate connection already in use that will improve the visitor experience.

Brook Trail to Clear Lake Trails.	
Alternative 6 – Designate and develop hiking-only trails in the park as part of the Highlands Trail.	• Requires additional development of trails to make hiking-only connections. • Includes a connection between Fahnestock SP and Hudson Highlands SPP. • Supports efforts to establish a trail connection from PA to CT.
Alternative 7 – Designate and develop trails (hiking and multi-use) in the park as part of the Highlands Trail.	• Some sections of this trail will be designated on multi-use trails. • Existing trails are used as much as possible. • Includes connection between Fahnestock SP and Hudson Highlands SPP. • Supports efforts to establish a trail connection from PA to CT.

Preferred Alternative: A combination of Alternatives 2, 3, 4, and 5 is the preferred alternative because of the desire to designate some trails already in use and the need for additional connections and loop opportunities. See **Figure 9** – New Trails Alternatives. The preferred alternative includes the designation of 1.2 miles of currently undesignated trail and development of 0.8 miles of new trail.

OPRHP is committed to providing a Highlands Trail connection through Fahnestock SP. **Figure 10** depicts one alternative alignment based on Alternative 7 above. Designation of a Highlands Trail route will require further review and assessment in conjunction with NYNJTC and partners as listed in the Memorandum of Understanding (MOU) for the AT. The Highlands Trail route will need to cross the AT in order to continue its eastward track. The trails plan does not currently recommend a final alignment for the Highlands Trail. In addition, the alignment for the Highlands Trail to the eastern boundary of the park is yet to be determined. Two conceptual routes are shown.

Note regarding Figures: *Proposed Hiking Trail* denotes where an existing undesignated trail already exists and *Proposed Hiking Trail (Conceptual)* denotes a conceptual trail alignment where no trail currently exists. *Development* of a trail implies that at least a portion of the new trail does not currently exist and will need to be developed from design and layout through construction. *Designation* of a trail implies that there is an existing undesignated trail. Efforts will be made to use as much of the existing trails as possible during development and designation of new trails. In some cases, reroutes may be required along existing trails.

Fahnestock - Multi-use trails

Background for Analysis: There are over 15 miles of designated multi-use trails for hiking, biking and equestrian use in the park consisting of three out and back trails. The trails comprise old wood roads and carriage roads.

Some sections of the multi-use trails are in need of maintenance including water management measures and bridge rehabilitation. Trailheads and trail intersections with undesignated trails are, in some cases, lacking in adequate signage and information for visitors.

Parking and trailheads, providing access the trail system, are located at multiple locations around the park.. Horse trailer parking is available for each trail. The parking lot at the terminus of Wiccopee Road near the Taconic State Parkway (TSP), however, is not very well signed or publicized and is rarely used. Most equestrian use of the trails is currently by local riders who access the park and trails from adjacent parcels and/or along roads.

Alternatives	Considerations
Alternative 1 - Status Quo	• The current network of multi-use trails is maintained.
Alternative 2 – Improve the existing network of designated multi-use trails including upgrades to and installation of trailhead and intersection signage, closure of some undesignated trails, and upgrades to unsustainable sections of trail.	• Visitor experience and safety is improved. • Upgrades to sections of trail may require water management techniques and clearing and grubbing for re-alignment. • Maintenance improvements, including potential re-alignments, increase the sustainability of the trail system and reduce impacts to the natural resources. • Bridge rehabilitation is required in some cases. • Trails along summits and near wetlands will be reviewed on a case by case basis for improvements to natural resource protection measures. • Remaining unsustainable trail sections and undesignated trails will be closed to protect resources and improve visitor safety and experience.
Alternative 3 – Develop a multi-use trail to the northeast of Hubbard Lodge off School Mountain Trail.	• Provides a shorter trail loop near Hubbard Lodge that accommodates different uses, persons of differing abilities and improves the visitor experience. • Undesignated trail exists along portion of this corridor. • Trail construction, including vegetation clearing and tread development, is required. • Offers additional opportunity for interpretation of park's natural and cultural resources and complements use of Hubbard Lodge.
Alternative 4 – Designate two multi-use trails east of Catfish Pond in the southeastern corner of the park and reroute a short section of the Moneyhole Mountain Trail off private property.	• Designates an appropriate connection to the trail system and provides access to scenic and cultural resources of the park. • Reflects current visitor uses of these trails. • Relocates section of trail off private property.

Alternative 5 – Designate a multi-use trail between Wiccopee (WI) and Fahnestock (FS) Trails as part of a new multi-use loop consisting of portions of the School Mountain (SM), WI, Perkins (PK), and FS Trails.	• Provides additional multi-use trail mileage and a loop opportunity that meets the needs of the public.. • Uses existing designated and undesignated trails for entire loop. • May require upgrading portions of existing designated hiking-only trails to other use standards.
Alternative 6 – Develop a trail in the northern Wiccopee area to connect the Trout Brook Trail to Canopus Lake area trails and designate the Trout Brook Trail as multi-use.	• Provides additional multi-use trail mileage that meets the needs of the public.. • Provides a multi-use trail connection between the eastern and western portions of the park. • Provides a multi-use access point along the northern border of the park. • Trail construction, including vegetation clearing and tread development, is required. • Uses remnants of an old town road, which is in fairly good condition, to create a portion of the trail. • May require bridge construction at multiple stream crossings. • The Trout Brook trailhead parking area does not accommodate horse trailers.
Alternative 7 - Develop a hiking/biking loop trail east of the Taconic State Parkway.	• Provides additional multi-use trail mileage that meets the needs of the public.. • The Park already works with user groups to clear and upgrade existing undesignated trails. • Trail construction, including vegetation clearing and tread development, is required.
Alternative 8 - Develop multi-use loop trails utilizing sections of Indian Brook and Sunken Mine Roads in conjunction with Moneyhole Mountain Trail.	• Loop trail opportunities enhance the visitor experience. • Uses existing right-of-ways. • The roads are open to vehicular traffic and maintained by the towns of Putnam Valley and Philipstown. • Sections with sharp curves and no sight lines exist along both roads which could create unsafe conditions. • There is very little shoulder area, if any, along roads.

Preferred Alternative: A combination of Alternatives 2, 3, 4, 5, and 7 and a portion of Alternative 6 is the preferred alternative because of the desire to designate some trails already in use, the need for additional connections and loop trails to enhance multi-use opportunities in the park.
See **Figure 9** – New Trails Alternatives depicting the multi-use trail alternatives. See **Figure 11** – Equestrian Trails Alternatives and **Figure 12** – Biking Trails Alternatives for the proposed equestrian and biking trail networks.
Alternative 6: The development of a trail in the northern Wiccopee area to connect the Trout Brook Trail to Canopus Lake area trails will require further review and assessment and consultation with the partners of the MOU for the AT because the proposed trail crosses the AT corridor. (This trail is shown on Figure 9 as an alternative but is not included on the Final Trails Plan map.) The Trout Brook Trail will be designated as multi-use to provide an additional multi-use access point along the northern border of the park.
The preferred alternative will include the re-designation of 2.5 miles of currently hiking-only trails to multi-use trails, 5.9 miles of undesignated trails and development of 2.1 miles of new trail. Horse trailer parking at Hubbard Lodge will be developed and improved per the master plan. Horse trailer parking at the terminus of Wiccopee Road will be promoted through signage and education in conjunction with this alternative.
Note: See additional multi-use trail recommendations under Roaring Brook area and Canopus Lake Day Use Area below.

Fahnestock - Candlewood Hill Area

Background for Analysis: The Candlewood Hill Area is located southeast of the Clear Lake Conservation Easement parcel and to the west of Oscawana Lake and includes a section of lake frontage. Existing roadside parking along Sunken Mine Road provides access to the Candlewood Hill Trail in the northern part of this area. The southern portion of the Candlewood Hill Trail descends sharply to Bell Hollow Road. Recent acquisitions have extended the park southward. A couple of undesignated trails extend from the Candlewood Hill Trail south along the ridge. There is no parking area designated for access from roads to the south.

Alternatives	Considerations
Alternative 1 - Status Quo	• One trail designated in northern section has a steep descent to Bell Hollow Road. • Trails will not be designated in this area. • Visitor access to the Candlewood Hill parcel and lake-front is limited.
Alternative 2 – Designate and develop trails in this area.	• Provides designated trail access to the Candlewood Hill Area and the lake for viewing and fishing. • Trail construction is required to access the lake. • Parking is limited. • May require relocation of trail access points from Bell Hollow Road.

Preferred Alternative: Alternative 2 is the preferred alternative because of the desire to provide designated and sustainable access into this area and to Oscawana Lake. Access will be from the Candlewood Hill Trail to the north and off Bell Hollow Road (trail access may require relocation). Designation and development of trails in this area will require future on-site visits. Development of a parking area will be considered upon future acquisition of adjacent property(ies). See **Figure**

9 – New Trails Alternatives.

Fahnestock - Roaring Brook Area

Background for Analysis: This area is located in the southeast portion of the park on the east side of the Taconic State Parkway (TSP). There is an existing network of undesignated trails composed of old stone wall-lined town roads that run past many remnants of old homesteads and a former Civilian Conservation Corps camp. The trail network connects to the power line corridor on the eastern park boundary and continues east along old town roads to Waywayanda Road and a small Department of Environmental Conservation (DEC) parking area for the California Hill Multiple Use Area.

The area does not offer any parking and there is no easily accessible site where one could be developed. The south and west are bounded by the TSP with private property to the north and a power line corridor to the east.

Alternatives	Considerations
Alternative 1 - Status Quo	• No designation of trails in this area. • There will continue to be limited or no designated access for visitors. • Some sections of trail are very eroded and will continue to erode without maintenance.
Alternative 2 – Designate and develop multi-use trail loops within this area with access through the DEC property.	• Provides multi-use opportunities in the area. • Provides access to cultural resources of the park. • Uses parking facilities located on DEC property. • Maintenance of trails will reduce impacts to the natural resources.

Preferred Alternative: Alternative 2 is the preferred alternative because it will provide trail activities in this section of the park and appropriate access to the area's cultural resources. This plan recommends future designation of multi-use (hiking, biking, equestrian) trail loops in this parcel using sustainable sections of the existing network Additional trail construction will be required to develop the proposed loops. Designation and development of trails in this area will require future on-site visits. Coordination with DEC for parking and access through the California Hill Multiple Use Area is required. See **Figures 9, 11 and 12**.

Fahnestock - Cross country Skiing

Background for Analysis: The Fahnestock Winter Park, developed and maintained by staff of the Taconic Outdoor Education Center (TOEC), currently provides over nine miles of groomed cross country ski trails. Trail alignments occur on a mixture of park roads, road shoulders, and trail corridors through forested areas. Trails are only marked for winter use. Parking and facilities for cross country skiers are provided at the Canopus Lake Lodge.

Concerns have been raised about perceived and potential impacts to the natural resources of the Canopus Lake Area due to the density of cross country ski trails.

Aside from the Winter Park, there are no designated cross country ski trails in the park. Currently, some trails are being used for this winter use.

Alternatives	Considerations

Alternative 1 - Status Quo	• The current network of groomed trails is maintained. • There are no designated cross country ski trails aside from the Winter Park.
Alternative 2 – Reduce the density of the existing groomed trail system.	• Potentially reduces impacts to the natural resources. • Reduces mileage for a highly popular program and will potentially diminished the visitor experience. • Potentially reduces revenues from park programs because of decreased use.
Alternative 3 – Expand the groomed cross country ski trail system into other areas of the park.	• Expands cross country skiing opportunities in the park. • Potentially increases impacts to the natural resources of the park. • Requires additional infrastructure to monitor use and collect fees.
Alternative 4 – Expand the network of groomed trails with one additional trail loop around Stillwater Lake.	• Expands cross country skiing opportunities in the park. • Uses existing park roads and an undesignated trail to the greatest extent possible in order to minimize impacts to natural resources. • Some vegetation clearing and tread construction will be required. • An additional loop opportunity will enhance the visitor experience and will meet public demand.
Alternative 5 – Designate certain trails and a seasonal road for (ungroomed) cross country skiing (School Mountain Trail and a new multi-use loop trail near Hubbard Lodge, Old Mine Railroad Trail, a new designated and developed loop trail east of TSP and Sunken Mine Road (closed to vehicles Dec. - Apr).	• Not all trails in the park are appropriate for this use. • Designation of trails for this use will help direct public winter use toward appropriate trails and increase public safety.
Preferred Alternative: A combination of Alternative 4 and 5 is the preferred alternative because it expands the park's groomed cross country skiing opportunities in an adjacent area and designates trails appropriate for (ungroomed) cross country skiing. The additional loop around Stillwater Lake will include the designation of 1.1 miles of currently undesignated trail and park roads and the development of 0.4 miles of new trail. The newly designated trails and road will be maintained for cross country skiing.	

Fahnestock - Snowshoeing
Background for Analysis: The Fahnestock Winter Park currently provides three miles of marked snowshoe trails. Trail alignments follow a section of the AT but otherwise weave through forested areas. Trail markers are removed after the winter season and trail corridors are generally not distinguishable throughout the rest of the year. In addition, snowshoeing is allowed on all designated trails (with the exception of groomed cross country ski trails). The existing network of

marked snowshoe trails and access to all designated trails currently meets the public demand.

Preferred Alternative: Continue to provide the existing network of marked snowshoe trails at the Fahnestock Winter Park and allow snowshoeing on all designated trails throughout the park (except groomed cross country ski trails).

Fahnestock - Canopus Lake Day Use Area and Pelton Pond Campground Area Trails

Background for Analysis: Some of the existing trails in the Canopus Lake Day Use and Pelton Pond Campground Areas are currently winter use only trails (see **Figure 1**). They were generally designed as cross country ski trails. Trail markers are installed along the ski trails for the winter season and removed thereafter. (The snowshoe trails are also only marked in the winter. The majority of these trails, however, are not identifiable trails in summer.)

Most of these winter use only trails are considered undesignated trails throughout the remainder of the year (they are unmarked, unnamed and have no specific uses associated with them); however, they are used by hikers, bikers, and equestrians in the summer months. There are some sections of the ski trails that become overgrown and are not readily distinguishable during the summer season. Otherwise, the trails are maintained in good condition including a number of wooden platform bridges to the southeast of the campground area.

This is the highest use area of the park year-round. The need to designate some trail loops in this area will enhance the summer trail experiences for the multitude of visitors to the lake, beach and campgrounds. The opportunity exists to designate some of the ski trails as single and multi-use trails for year-round use.

Alternatives	Considerations
Alternative 1 - Status Quo	• Trails in this vicinity are maintained as cross country ski trails for winter use only. • The lack of designated trail loops will not enhance the summer visitor experience.
Alternative 2 – Designate some of the currently winter use only trails for summer use.	• Some of these trails are currently being used by hikers, bikers, and equestrians. • Designating trails would reflect existing use focusing visitors to desired and appropriate trail corridors. • Loop trail opportunities will enhance the visitor experience. • Both single-use and multi-use trail opportunities exist.
Alternative 3 – Designate all of the currently winter use only trails for summer use.	• Some of these trails are currently being used by hikers, bikers, and equestrians. • Designating trails will focus visitors to desired and appropriate trail corridors. • Loop trail opportunities will enhance the visitor experience. • Both single-use and multi-use trail opportunities exist. • Not all trails are aligned appropriately for summer use (through and between campsites).

Preferred Alternative: Alternative 2 is the preferred alternative because it will accommodate existing use and enhance the visitor experience while reducing impacts to the natural resources. Two loops will be designated near the beach area. Two multi-use loops will be designated and developed south of the campground near Stillwater Lake (includes the new cross country ski trail loop around Stillwater Lake as noted in the cross country skiing alternatives above.) Connector

trails, between the campground and campground road and the Pelton Pond Trail will be blazed and signed to enhance the visitor experience. See **Figure 13** – Canopus Lake Area Alternatives. A bridge will be constructed over Route 301 near the Canopus Lake entrance to provide a year-round safe crossing for park users.
The preferred alternative will designate 4.6 miles of ski trails for summer use.
Designating a multi-use trail through the Canopus Lake Area (as shown on Figure 13) to connect to the Wiccopee area will require further review and assessment in conjunction with a potential multi-use trail in the Wiccopee area. This multi-use connection is not shown on the Final Trails Plan maps.

Taconic Outdoor Educational Center (TOEC) – Staff use a network of hiking trails surrounding the facilities to conduct programming. Some of these trails are designated (maintained, marked and named) while some are maintained and named but remain unmarked. Three marked (but unnamed) connector trails provide links between TOEC trails and the Catfish Loop (CF) Trail. This plan recommends closing one unused trail (Old Ski Trail) and one redundant trail (southern connector trail to the CF Trail.) The plan also recommends marking currently named but unmarked trails and signing trail intersections to increase visitor safety and enhance the trail experience. See **Figure 14 -** Taconic Outdoor Education Center.

The Taconic State Parkway (TSP) represents an impediment to trails because at-grade crossings of the parkway are unlikely to receive DOT approval. The crossing of the TSP is limited to the Route 301 overpass. This connection should be maintained and improved during any future DOT construction. The current at-grade road crossing at Pudding Street is being considered for construction of a grade separation between the town road and the TSP. Improved trail connections between the portions of Fahnestock SP lying east and west of the TSP should be incorporated in these and future DOT projects.

Hudson Highlands State Park Preserve

Hudson Highlands - Hiking-only trails	
Background for Analysis: Hiking activities, including walking, running, bird watching, and photography, occur throughout the park. Hiking is currently allowed on all designated trails in the park. There are over 40 miles of hiking-only trails. Parking areas and trailheads that access the trail system exist at multiple locations around the park. The Highlands Trail is a long distance hiking trail proposed to connect Pennsylvania (PA) and Connecticut (CT) along the Highlands physiographic region. The trail currently extends westward from the Hudson River at Storm King Mountain to the Delaware River in New Jersey. Plans to establish the trail eastward from the Hudson River include proposals to align the trail through Hudson Highlands SPP and Fahnestock SP.	
Alternatives	**Considerations**
Alternative 1 - Status Quo	• The current network of hiking-only trails is maintained.
Alternative 2 – Improve the existing network of hiking-only trails including upgrades to and installation of trailhead and intersection signage, closure of some undesignated trails, and upgrades to unsustainable sections of trail.	• Visitor experience and safety is improved. • Upgrades to sections of trail may require water management techniques, rock work, and clearing and grubbing for re-alignment. • Maintenance improvements including potential re-alignments increase the sustainability of the trail system and reduce impacts to the natural resources. • Trails along summits and near wetlands will be reviewed on a case by case basis for improvements to natural resource protection measures. • Remaining unsustainable trail sections and undesignated trails will be closed to protect resources and improve visitor safety and experience.
Alternative 3 – Designate and develop a trail from the parking area located near the entrance of the Lake Surprise Camp south to connect into the Notch Trail. (North section of HHSPP)	• An easement held by OPRHP allows for development of one trail southeast of the camp property. • Uses existing undesignated trail as much as possible. • Provides an additional access point to the trail system from the east side of the park.
Alternative 4 – Designate and develop a trail through the Northeast Fishkill Ridge parcel in the northern-most section of the park connecting Route 9 to the Fishkill Ridge Trail. (North section of HHSPP)	• Provides an additional access point to the trail system and the only access from Route 9. • Completes a trail connection between Cold Spring and Fishkill. • Requires bridge construction over Clove Creek. • Requires development of a small trailhead parking area. • Sensitive summit areas and habitat are located in the vicinity. • Wetlands are located west of Route 9. • There are steep ridges along eastern side of the mountain that pose challenges for routing the trail. • Northern slopes are gentler for potential trail development.

Alternative 5 – Designate and develop an alternate alignment for a section of the AT just south of the trailhead along South Mountain Pass Road to connect into the Camp Smith Trail to the northeast of Anthony's Nose. (South section of HHSPP)	• Provides a less steep trail route than the existing alignment. • Uses the existing military road for the eastern half of proposed trail. • Anthony's Nose is a location of sensitive summit areas and habitat.
Alternative 6 – Designate and Develop trails within the park as part of the Highlands Trail. (North section of HHSPP)	• Existing trails will be used as much as possible. • Trail construction, including vegetation clearing and tread development, is required for the eastern section. • Includes a connection between Hudson Highlands SPP and Fahnestock SP. • Supports efforts to establish a trail connection from PA to CT
Preferred Alternative: A combination of Alternatives 2, 3, 4, and 6 is the preferred alternative because it will enhance the existing system, address the need for additional connections and support a regional trail effort. See **Figures 15 and 16** – New Trails Alternatives (North and South). Alternative 5: Development of a less steep alternate alignment for the AT (shown on Figure 16) (in addition to the existing alignment) will be further reviewed and assessed in conjunction with the partners listed in the Memorandum of Understanding (MOU) for the AT because this additional proposed trail is within the AT corridor. This trail is not shown on the Final Trails Plan maps. The preferred alternative will include the designation of 4.8 miles of currently undesignated trail and development of 2.9 miles of new trail.	

Hudson Highlands - Mountain Biking	
Background for Analysis: The only designated trails in Hudson Highlands SPP that allow mountain biking are at Denning's Point and the Klara Sauer Trail. Mountain biking is not allowed in the Osborn Preserve section of the park because of a deed restriction. In the northern section, many trails (both designated and undesignated) north of the Melzingah Reservoirs, including the Notch Trail, are currently informally used for mountain biking. Mountain bikers also use a number of trails that extend onto the adjacent Scenic Hudson parcels (Mount Beacon Park and Fishkill Ridge) and onto private lands. There are many parking areas located in this vicinity; each is located off park property.	
Alternatives	**Considerations**
Alternative 1 – Status Quo	• Mountain biking opportunities remain limited in the park. • Mountain biking continues in an informal manner.
Alternative 2 – Designate and develop a network of trails in the northern section of the park for mountain biking use (including sections of the Notch and	• Existing trails (designated and undesignated) are used as much as possible to minimize impacts on natural resources. • Unsustainable trail sections will be closed to protect resources and improve visitor safety and experience. • Addresses demand for this activity and directs existing use to appropriate areas.

Casino Trails, a number of existing woods and maintenance roads and singletrack trails near the Melzingah Reservoirs) and develop a connection to the proposed parking area for the proposed Visitor Center along Route 9D (see master plan).	• Loop trails will enhance the visitor experience. • An additional parking lot accessed from Route 9D at the site of the proposed Visitor Center will accommodate users. • Access will be maintained from the former University Settlement Camp. • Includes minor reroutes of the Notch Trail to move alignment off private property. • Includes closing the short section of trail between the existing trailhead sign along Route 9D and the small dam and establishing the parking area as the new trailhead. • Requires coordination with Scenic Hudson for designation of use on trails.

Preferred Alternative: Alternative 2 is the preferred alternative because it addresses demand for mountain biking and directs the existing use to more sustainable trails. See **Figure 15** – New Trails Alternatives depicting the proposed multi-use trails. See **Figure 17** – Biking Trails Alternatives for the proposed biking trail network.
The preferred alternative will include the designation of 2.0 miles of currently hiking-only trails, 8.8 miles of currently undesignated trails and maintenance roads and development of 0.6 miles of new trail.

Hudson Highlands - Equestrian Use

Background for Analysis: There are currently no trails designated for equestrian use in Hudson Highlands SPP. The very steep terrain in the northern section of the park is not conducive to horse back riding.

There are a number of old carriage roads and trails in the Osborn Preserve area (southern section) that extend off park property onto adjacent public and private lands and that are used by equestrians. Equestrians generally enter park trails from adjacent or nearby private property. A portion of the Appalachian Trail (AT) in the Osborn Preserve parcel allows horse back riding because the AT was aligned on a historic carriage road in this section.

There is a car parking area and two trailheads located on park property to access the trails including a number of parking areas available on adjacent public lands. There is no designated horse trailer parking available in the vicinity of the park.

Alternatives	Considerations
Alternative 1 - Status Quo	• There are no designated trails that allow equestrian use within the park. • Equestrian use will continue in an informal manner.
Alternative 2 – Designate a network of trails in the southern section of the park for equestrian use.	• Existing trails (designated and undesignated) will be used to the greatest extent possible to minimize impacts on natural resources. • Addresses demand for this activity and directs existing use to appropriate areas. • Loop trails will enhance the visitor experience. • Horse trailer parking will be provided at the Castle Rock Unique Area in conjunction with DEC.

Preferred Alternative: Alterative 2 is preferred because it directs existing use to appropriate

areas and addresses demand for the activity. See **Figure 16** – New Trails Alternatives depicting the proposed multi-use (hiking, equestrian) trails. See **Figure 18** – Equestrian Trails Alternatives for the equestrian trail network. The network will use existing trails (either adding equestrian use to currently hiking-only trails or designating currently undesignated trails for hiking and equestrian use); there is no new construction proposed.
The section of proposed trail south of South Mountain Pass Road will require further review and assessment with the partners as listed in the MOU for the AT because a portion of this trail is within the AT corridor. This section of trail is not shown on the Final Trails Plan maps.
There will remain no equestrian use in the northern section of Hudson Highlands SPP due to the limitations of the terrain.
The preferred alternative will designate 4.3 miles of hiking-only trails and 2.8 miles of undesignated trails as multi-use (hiking, equestrian) trails.

Hudson Highlands - Cross country skiing

Background for Analysis: There are no designated cross country ski trails in the park. Much of the terrain in Hudson Highlands SPP is not conducive to this use.

Alternatives	Considerations
Alternative 1 - Status Quo	• There remain no designated cross country ski trails in the park. • Many trails are not conducive to this use due to terrain.
Alternative 2 – Designate (ungroomed) cross country skiing on certain trails that are appropriate for this use such as Arden Point Trail, Little Stony Point Trail, Nelsonville Trail and the Klara Sauer Trail.	• Not all trails in the park are appropriate for this use. • Designating appropriate trails for this use will help direct public winter use to acceptable locations and increase public safety.

Preferred Alternative: Alternative 2 is preferred because it designates appropriate trails for this use. The newly designated trails will be maintained for cross country skiing. Coordination with the Village of Nelsonville, Scenic Hudson, and City of Beacon will be required for the Nelsonville and Klara Sauer Trails.

Hudson Highlands - Snowshoeing

Background for Analysis: Snowshoeing is allowed on all designated trails throughout the park.

Preferred Alternative: Continue to allow snowshoeing on all designated trails throughout the park.

Little Stony Point – There is an existing network of undesignated trails on this popular peninsula with limited signage. The loop trail is considered part of the Hudson River Greenway Trail. The loop trail and the trails to the overlook and beach will be blazed and intersection signage will be installed to improve the visitor experience. This area will remain for hiking only.

Final Trails Plan

Trail Systems

Trails

Fahnestock SP

The Final Trails Plan recommends approximately 66 miles of existing and new trails that provide a variety of trail experiences for hikers, equestrians, bikers, cross country skiers, and snowshoers (see **Figures 19, 20 and 21**). Trails include singletrack trails, wider carriage and wood road trails, and groomed winter-use trails. Table 3 provides a comparison breakdown by mileage and use for the existing trail system and the Final Trails Plan for Fahnestock SP.

Table 3: Comparison of Mileage by trail use for designated trails for Fahnestock SP

Type of use	Existing Trail System (mileage)	Final Trails Plan (mileage)***
Hiking/Snowshoeing	51.7	65.8
Equestrian	15.7	23.7
Biking	15.7	28.8
Cross country skiing (groomed)*	10.7	12.3
Cross country skiing (ungroomed)	0	13.5
Snowshoeing (marked)	4.1	4.1
Total trail mileage**	**51.7**	**65.8**

* Fahnestock Winter Park ski trails are groomed and maintained for this use.
** Various trails accommodate multiple uses.
*** Mileage calculations include portions of conceptual trail alignments. Final mileage calculations may differ when trails are developed.

The table above does not include mileages for the Candlewood Hill or Roaring Brook areas. Future assessments will determine appropriate trail networks in these locations. The mileages also do not include the AT.

The Final Trails Plan will increase the total mileage of designated trails by 14 miles (includes new trails and designation of existing trails). There will be approximately 3.2 miles of new trail development (0.8 miles for hiking only and 2.4 miles for multi-use) and 10.8 miles of newly designated trails (3.1 miles for hiking only and 7.7 miles for multi-use). The mileage for newly designated trails includes 0.5 miles of connector trails near Pelton Pond, which are not included in the calculations for designated trails above. Approximately 3.2 miles of currently designated hiking-only trails will be upgraded to multi-use trails. The Trails Plan includes the closure of 5.7 miles of undesignated or rerouted trails.

Table 4 below provides an inventory of trails for the Final Trails Plan by trail name, trail uses, proposed tread width and mileage. Many trails located throughout the park are old carriage or wood roads maintained at a width of approximately 4-8 feet. In an effort to reduce the footprint of some trails, some existing trails will be allowed to "grow in" and reduce the tread width to 18-30 inches (considered singletrack for hiking, biking and equestrian use per OPRHP trail standards – see **Appendix 1**). Trail corridors will be maintained at 4-6 feet wide and 8-12 feet high depending on designated uses. Trails that are designated for cross country skiing, in higher use areas, maintained

for vehicle maintenance access, and/or have considerable infrastructure such as bridges or retaining walls will be maintained at a 4-10-foot tread width. Trail corridors will be maintained at 8-12 feet wide and 8-12 feet high depending on designated uses of the trail.

Table 4: Inventory of trails for the Final Trails Plan for Fahnestock SP

Trail Name	Designated Uses*	Proposed Tread Width	Mileage
Blueberry Scoot (BS)	H, CC	4-8’	0.85
Cabot (CA)	H, SS	18-30”	1.02
Candlewood Hill (CH)	H, SS	18-30”	2.17
Catfish Loop (CF)	H, SS	18-30”	3.95
Charcoal Burner (CB)	H, SS	18-30”	4.05
Chimney Top (CM)	H, B, E, SS	18-30”	0.53
Clear Lake Connector (CLC)	H, SS	18-30”	0.21
Clear Lake Scout Reservation (CL)	H, SS	18-30”/4-8’	4.66
Clove Creek (CC)	H, B, E, SS	18-30”	1.39
Dicktown Loop (DL)	H, B, XC, SS	4-8’	4.10
East Mountain (EM)	H, SS	18-30”	1.50
Fahnestock (FS)	H, (B), (E), SS	18-30”	6.88
Hubbard Loop (HL)	H, B, E, XC, SS	4-8’	0.91
Moneyhole Mountain (MM)	H, B, E, SS	18-30”	4.07
Moneyhole Mountain Access (MMA)	H, B, E, SS	18-30”	0.42
Old Mine Railroad (OM)	H, XC, SS	4-8’	1.65
Pasture Loop (PL)	H, B, E, CC	4-8’	1.08
Pelton Pond (PP)	H, SS	18-30”	0.87
Perkins (PK)	H, (B), (E), SS	18-30”	4.14
Perkins Access (PA)	H, SS	18-30”	0.67
Ridge Line (RL)	H, CC	4-8’	1.11
Roaring Brook (RB)	H, B, E, (CC), (SS)	18-30”/4-8’	7.53
Round Hill Bypass (RH)	H, SS	18-30”	1.17
School Mountain (SM)	H, B, E, XC, SS	4-8’	4.06
Stillwater Loop (SL)	H, B, E, CC	4-8’	1.59
Three Lakes (TL)	H, SS	18-30”	4.29
Trout Brook (TB)	H, SS	18-30”	0.83
Wiccopee (WI)	H, B, E, SS	18-30”	1.22

Designated Uses: H (Hiking), B (Biking), E (Equestrian), SS (Snowshoeing), CC (Cross country skiing – groomed), XC (Cross country skiing – ungroomed)
*Uses noted in ( ) indicate only a portion of that trail is open to the use.

Sunken Mine Road will also be open to cross country skiing during December through April when closed to vehicular traffic. The Fahnestock Winter Park provides a series of seasonally marked snowshoe trails and groomed cross country ski trails. Some of these trails are designated for winter use only and are not included in the table above.

The trails at the TOEC (**Figure 14**), not included in the table above, are hiking-only trails open for group programming and annual events. Designation and development of trails in the Candlewood and Roaring Brook areas are not included in the table above, due to the need for additional future assessments and coordination with adjacent land owners including the potential for additional acquisitions in the areas.

Additional review and assessment is required for a potential future trail in the northern Wiccopee area of the park in conjunction with a multi-use connection through the Canopus Lake area and for

the alignment of the Highlands Trail through the park. These trails are not included in the tables above or on the Final Trails Plan maps. Discussions in a coordinated and cooperative effort with the partners as listed in the Memorandum of Understanding (MOU) for the Appalachian Trail (AT) will take place for potential trails that are within or cross the AT corridor. The Highlands Trail alignment will be further reviewed with the NYNJTC and the AT management partners as the trail will necessarily cross the AT corridor. A connection of the Highlands Trail with Hudson Highlands SPP will be made in the future with additional acquisition and agreements in the vicinity of Hubbard Lodge.

Hudson Highlands SPP

The Final Trails Plan recommends approximately 67 miles of existing and new trails that provide a variety of trail experiences for hikers, equestrians, bikers, cross country skiers and snowshoers (**Figures 22 and 23 – North; Figures 24 and 25 - South**). Trails include singletrack trails and trails on old carriage, wood and maintenance access roads. Table 5 provides a comparison breakdown by mileage and use for the existing trail system and the Final Trails Plan.

Table 5: Comparison of Mileage by trail use for designated trails for Hudson Highlands SPP

Type of use	Existing Trail System (mileage)	Final Trails Plan (mileage)**
Hiking/snowshoeing	46.7	66.5
Equestrian	0.0	7.3
Biking	2.5	14.0
Cross country skiing (ungroomed)	0.0	5.5
Total trail mileage*	**46.7**	**66.5**

* Various trails accommodate multiple uses.

** Mileage calculations include portions of conceptual trail alignments. Final mileage calculations may differ when trails are developed.

The table above does not include mileage for the AT.

The Final Trails Plan will increase the total mileage of designated trails by 20 miles (includes new trails and designation of existing trails). There will be approximately 3.5 miles of new trail development (2.9 miles for hiking only and 0.6 miles for multi-use) and 16.3 miles of newly designated trails (4.7 miles for hiking only and 11.6 miles for multi-use). Approximately 6.3 miles of currently designated hiking only trails will be upgraded to multi-use trails. The Trails Plan includes the closure of 6.0 miles of undesignated or rerouted trails.

Table 6 provides an inventory of trails for the Final Trails Plan by trail name, trail uses, proposed tread width and mileage.

Table 6: Inventory of trails for the Final Trails Plan for Hudson Highlands SPP

Trail Name	Designated Uses*	Proposed Tread Width	Mileage
Arden Point (AP)	H, XC, SS	4-8’	1.51
Beacon Reservoir Road (RR)	H, B, SS	8-10’	1.83
Breakneck Bypass (BB)	H, SS	18-30”	0.76
Breakneck Ridge (BR)	H, SS	18-30”	4.40
Brook (BK)	H, SS	4-8’	1.48
Camp Smith (CS)	H, SS	18-30”	3.67
Carriage Connector (CC)	H, (E), SS	4-8’	0.93
Casino (CT)	H, (B), SS	18-30”/4-8’	2.00
Casino Connector (CC)	H, B, SS	18-30”	0.97
Cornish (CN)	H, SS	18-30”	1.41
Denning’s Point (DP)	H, B, SS	4-8’	1.23
Fishkill Ridge (FR)	H, SS	18-30”	4.99
Highlands Trail (HT)	H, SS	18-30”	0.99
Klara Sauer (KS)	H, B, XC, SS	4-8’	0.92
Lake Surprise Bypass (LB)	H, SS	18-30”	1.83
Little Stony Point (SP)	H, (XC), SS	18-30”/4-8’	1.15
Lonestar (LS)	H, SS	18-30”	0.99
Melzingah Trail (MT)	H, B, SS	18-30”/4-8’	2.92
Mountain Pass (MP)	H, E, SS	4-8’	0.55
N. Beacon Mtn. Bypass (NM)	H, B, SS	18-30”/4-8’	0.69
Nelsonville (NV)	H, XC, SS	4-8’	2.28
North Redoubt (NR)	H, SS	18-30”	0.65
Notch (NT)	H, (B), SS	18-30”	5.91
Notch Bypass (NB)	H, B, SS	18-30”	0.06
Osborn Loop (OB)	H, (E), SS	4-8’	2.06
S. Beacon Mtn. Bypass (SB)	H, B, SS	18-30”	1.18
S. Beacon Mtn. Outlook (SO)	H, B, SS	8-10’	0.18
Split Rock (SR)	H, SS	18-30”	0.26
Sugarloaf (SL)	H, (E), SS	4-8’	1.67
Sugarloaf Loop (SU)	H, E, SS	4-8’	1.73
Undercliff (UC)	H, SS	18-30”/4-8’	3.60
Washburn (WB)	H, SS	18-30”	2.26
White Rock (WR)	H, E, SS	4-8’	0.87
Wilkinson Memorial (WM)	H, SS	18-30”/4-8’	1.36
Woodle (WO)	H, B, SS	18-30”	0.92
Woodle Access (WA)	H, B, SS	18-30”	0.39

Designated Use: H (Hiking), B (Biking), E (Equestrian), XC (Cross country skiing - ungroomed), SS (Snowshoeing)
*Uses noted in ( ) indicate only a portion of that trail is open to the use.

Additional review and assessment is required for two trail alternatives discussed for the southern portion of the park: an alternate alignment (in addition to the existing alignment) for a section of the AT east of Anthony’s Nose and a multi-use loop trail south of South Mountain Pass Road. Both of these potential trails are located within the AT corridor and will be reviewed through a coordinated and cooperative effort with the partners as listed in the MOU for the AT. These trails are not included in the tables above or on the final trails plan maps.

The Highlands Trail will co-align with some existing, designated trails. A future connection with Fahnestock SP, in the area between the Lonestar Trail and Hubbard Lodge, is planned and will require additional acquisition and agreements.

Connections

External systems

The trail systems of both parks have connections to external trail systems. The Appalachian Trail (AT) traverses the southern portion of Hudson Highlands SPP and generally bisects Fahnestock SP from the southwest to the northeast. The Highlands Trail will traverse the northern portion of Hudson Highlands SPP, co-aligning with existing designated trails, and connecting to Fahnestock SP via the Hubbard Lodge area. A final alignment of the Highlands Trail through Fahnestock SP is yet to be determined.

A portion of the NYS Department of Transportation (DOT) Route 9 Bicycle Route runs between the northern portion of Hudson Highlands SPP and Fahnestock SP providing non-motorized access into Fahnestock's trail system at Hubbard Lodge. The bicycle route continues south on Route 301 and Route 9D, in close proximity to several points of access to both parks, and crosses the AT just north of the Bear Mountain Bridge.

The Osborn Preserve area is adjacent to the NYS Department of Environmental Conservation's (DEC) Castle Rock Unique Area which has existing trails and a parking area used by park patrons. Directly across Route 9D, the Glenclyffe parcel owned by the Open Space Institute (OSI), offers a loop trail system that connects to Arden Point along the Hudson River. To link the Osborn Preserve parcel to the northeastern North Redoubt and North Woods parcels through the Garrison School Forest property, future acquisitions and partnerships will be required.

The Westchester River Walk is a 46-mile long planned greenway trail to run the river's length in Westchester County. The Annsville Creek Paddlesport Center lies along this route and provides a southern entrance into the park. Additional acquisition in this area would provide an `all park' connection to the Harriman Toll House. The proposed greenway's route runs along the Camp Smith Trail to Anthony's Nose in the park near the northern boundary of Westchester County.

The Klara Sauer Trail currently links Beacon's Riverfront Park, the Metro North station, Scenic Hudson's Long Dock property, and the Denning's Point area of Hudson Highlands SPP. An extension to Madam Brett Park, owned by Scenic Hudson and maintained by the City of Beacon, would connect with existing trails at Fishkill Creek. Replacing a bridge across the creek would establish a link to the location of the proposed Hudson Highlands Visitor Center on Route 9D and provide access to the trail system in Hudson Highlands State Park and Scenic Hudson lands. OPRHP will work with partners to further these connections.

The Fishkill Creek Water Trail is a proposed water trail for canoes and kayaks to link Glenham to Hopewell Junction. The section between Glenham and the junction of Routes 52 and 82 is currently open. Parking and access points are located at Town of Fishkill parks at Route 52/82 in Brinckerhoff, east of Route 9 in Fishkill, and off Washington Avenue in Glenham. This section of Fishkill Creek runs through the Northeast Fishkill Ridge portion of the park.

The Hudson River Valley Greenway Trail System, which provides physical and visual access to the Hudson River, includes both land trails and a water trail. A number of the designated

trails located within Hudson Highlands SPP are noted as part of the Hudson River Greenway Trail. There are additionally four water trail sites in the park, located at Denning's Point, Little Stony Point, Arden Point and the Annsville Creek Paddlesport Center. These locations are available for hand-launching kayaks and canoes and as destinations for day-use. Denning's Point and Arden Point provide unimproved campsites for water trail visitors.

Mass Transportation

Many visitors to Hudson Highlands SPP come by Metro North train. There are multiple stops adjacent to or near to the park along the Hudson River. Metro North stops are located in the City of Beacon near Denning's Point (access via the Klara Sauer Trail), just north of the Wilkinson Memorial Trailhead (Breakneck Ridge Station), just south of Dockside in Cold Spring, and at Garrison next to the entrance of Arden Point. Further enhancement and promotion of these sites as entrance points into the park's trail system is a recommendation of this plan.

Interpretation and Education

Fahnestock and Hudson Highlands SPs have a vast array of significant cultural and natural resources. The majority of interpretive programming currently offered on trails is held at the Taconic Outdoor Education Center in Fahnestock SP. The facility provides year-round environmental education and outdoor recreation programs for groups that use the trail system. The *Mountain Laurel Outdoor Recreation Fest* in May and the *Winterfest* in January are two day-long outdoor events at TOEC that include nature walks highlighting the variety of flora and fauna found in the vicinity. The trailhead for the Pelton Pond Nature Interpretive Trail has interpretive kiosks and panels providing information about the wildlife in the area.

At Hudson Highlands SPP, National Audubon offers programming associated with Constitution Marsh. The Beacon Institute holds walking tours at Denning's Point that highlight the natural and historic aspects of the area. Many other organizations, including the Fresh Air Fund, Friends of Fahnestock/Hudson Highlands, Hudson Highlands Land Trust, Hudson Highlands Nature Museum, NYNJTC, Open Space Institute, Scenic Hudson and the Surprise Lake Camp among others, are partners who use the parks' trail systems for interpretation and education purposes. Programs and support include hiking/walking tours, producing and/or distributing maps and brochures, collecting data on park resources, and conducting research.

Many more interpretive opportunities are offered by the diversity of flora, fauna, topography, and historic and cultural resources of the parks. Future interpretation and education programming may include signage/kiosks, brochures and guided hikes highlighting resources in the parks. Resources include: Civilian Conservation Corps (CCC) structure remnants found in the Canopus Lake area; flora and fauna located throughout the parks but also specifically those in sensitive summit communities (as part of educating visitors as to the significance, sensitivity, and need for preservation of these ecological communities as described in the master plan); locations of events of the Revolutionary War (historic panels provided by the State Education Department are located along roads in Hudson Highlands); as well as scenic vistas located from mountain tops down to the peninsulas along the Hudson River. Existing and proposed interpretive trails with potential topics include:

- Pelton Pond Trail (update/enhance existing panels; mining; CCC)
- Canopus Lake area trails (CCC camp remains)
- N. Redoubt Trail (Revolutionary War events)
- Hubbard Loop Trail (flora/fauna including education about invasive species; agriculture; Old Post Road; schoolhouse)
- Arden Point (scenic vistas of Hudson River and western shore; iron mining; railroad construction; Native American use)
- Denning's Point (scenic vistas of Hudson River and eastern and western shores; brick-making; Revolutionary War; railroads)
- Little Stony Point (quarrying; Storm King controversy/environmental; aquatic resources)

Interpretive trails may have educational information provided either on-site or through the use of self-guiding brochures. The development of the proposed Hudson Highlands Visitor Center would provide a centralized location for environmental and cultural education/interpretation opportunities at Hudson Highlands SPP, while the TOEC and Hubbard Lodge provide central locations at Fahnestock SP.

Parking Facilities

Table 7 identifies the existing parking facilities and vehicle capacities that provide access to the parks' trail systems. The location of these facilities throughout the parks encourages the distribution of trail users which results in an enhanced trail experience. There are additional trailheads in both parks, not listed here, that provide space for 1-3 cars each.

Table 7: Parking Facilities

Fahnestock State Park	
Parking Lot	**Capacity**
Canopus Lake Beach	~300
Pelton Pond	~80
Canopus Lake Boat Rental	12
Hubbard Lodge	~80
TOEC	50
Appalachian Trail	12-north side; 20-southside
Park Office	10
Lakeside parking (peninsula)	8
Trout Brook (Wiccopee)	6
Stillwater (permit parking)	~40
Group Camp	~100
Sunken Mine & Dennytown Roads	15
Old DPW Lot (Route 301)	~12
Hudson Highlands State Park	
Parking Lot	**Capacity**
Breakneck Ridge/MTA Lot	6-south side; 40-north side
Little Stony Point	12-west side; 30-east side
Denning's Point	~20
Annsville Paddlesport Center	30
Harriman Toll House	12
Bear Mountain Overlook	14

A number of parking areas will be formalized and improved to provide a more organized parking layout. These areas will also be improved to grant safer access to and from roadways and trailheads. Formalization and improvement may include expansion, paving, designed

traffic flow, improved sight distance, installation of signage and/or striping. Parking areas at Fahnestock SP that will be improved include: Canopus Beach, Pelton Pond, Canopus Lake boat launch, the peninsula and the old DPW Lot/Route 301 trailhead (Round Hill Bypass/Perkins Access trails). A new park office location will provide approximately 10 spaces, and a new formal parking area to be developed at Hubbard Lodge will provide approximately 40 spaces. Signage will be installed at the trailheads for Moneyhole Mountain Access and Dicktown Loop Trails. At Hudson Highlands SPP, the parking area at Little Stony Point and the Breakneck/MTA lot will be improved. A parking lot will be developed at the new Visitor Center. The trailhead for the Lake Surprise Bypass trail will have signage installed. A small trailhead parking area (2-3 spaces) will be developed along Clove Road at Route 9 for the Northeast Fishkill Ridge trailhead. See the master plan for additional details on parking area improvements.

Horse trailer parking is currently available at Fahnestock SP at the campground area, Hubbard Lodge, and the terminus of Wiccopee Road adjacent to the Taconic State Parkway. The new formal parking area at Hubbard Lodge will include space for horse trailers. Signage will be installed to promote equestrian use of the parking lot at the terminus of Wiccopee Road. OPRHP will work with DEC for equestrian parking improvements at DEC's Castle Rock Unique Area for access to the Osborn Preserve area of Hudson Highlands SPP.

Additional parking access to the Candlewood Hill area and parking access to the Roaring Brook area through DEC's California Hill Multiple Use Area will be addressed at a future date.

Coordination

Operation and management of the trail systems of Fahnestock SP and Hudson Highlands SPP involves a wide variety of activities that include the need to:

- Oversee basic maintenance of trails, support facilities, and amenities
- Oversee operation and winter maintenance of the Fahnestock Winter Park
- Ensure that special events will be compatible with resources and environmentally sustainable uses of trails
- Ensure enforcement of rules and regulations along trails
- Establish and oversee regular trail patrols to monitor trail use, trail conditions, and educate and assist users
- Provide trail information to the public
- Assist with search and rescue operations
- Ensure that trail design, construction and maintenance is compatible with natural resources
- Limit the impact of invasive species due to trail use
- Ensure remediation of trails or sections of trail that are considered unsustainable
- Maintain contact with all staff involved with trail operations
- Act as liaison with public agencies and private organizations
- Provide outreach to additional organizations to assist with operation and maintenance of the trail system
- Develop a process to evaluate and modify the trail system
- Develop a training program for trail stewards
- Otherwise implement this plan

The park manager will continue to coordinate trail maintenance and management efforts in association with other park staff and volunteer groups, such as the NYNJTC, equestrian and mountain biking groups and the Friends of Fahnestock and Hudson Highlands State Parks. It is recommended that volunteer groups sign a written Memorandum of Agreement (MOA) with OPRHP for trail development and maintenance purposes (see **Appendix 2** – Sample Memorandum of Agreement). In addition, it is recommended that volunteer groups submit an "Annual Project Work Plan" form (see **Appendix 3**) to the park manager for approval of all trail work beyond standard maintenance practices. This plan also recommends the OPRHP Regional Natural Resource Steward be involved in trail development and maintenance work programs in the parks regarding work schedules and timing of projects.

Volunteer groups should meet periodically with park staff and help provide a coordinated approach to maintaining and improving the trail system. Continued coordination with and participation by a variety of organizations and user groups is recommended to assist park staff with the operation and maintenance of the trail systems. Any existing agreements should be maintained and new partnerships developed with trail organizations and user groups.

As funds are made available, trail improvements will be made by OPRHP. Trail groups may also provide funding or resources to make improvements to the trail systems. Prioritization of trail building activities will occur on an annual basis and be coordinated through the park manager.

Both parks have trails that extend beyond their boundaries and/or trailheads located on adjacent parcels. It is important to maintain continuity of trail standards across boundaries, securing rights for public access and enhancing coordination and cooperation with other entities.

Ownership and management of the adjacent parcels vary. Tables 8 and 9 provide listings of the ownership of adjacent lands with trails and/or trailheads and information regarding the status of cooperative agreements between the entities and OPRHP.

Table 8: Parcels/parking adjacent to Fahnestock SP with trails

Ownership	Designated Trails	Status
Catfish Pond Association	Moneyhole Mountain Trail	No existing agreement.
Clear Lake Boy Scouts	Clear Lake Scout Reservation Trails	Conservation Easement held by OPRHP.
Glynwood Center	Perkins Trail	OPRHP holds right for public access on trail corridor.
NYS DOT	Route 301 ROW – parking/trailhead for Round Hill Bypass and Perkins Access Trails	No existing agreement.
NYS DOT	Southern section of the Roaring Brook Trail (within old parkway ROW)	No agreement necessary.
OSI	Field Trail (proposed)	Conservation Easement held by OPRHP.

Table 9: Parcels/parking adjacent to Hudson Highlands SPP with trails

Ownership	Designated Trails	Status

City of Beacon	Klara Sauer Trail	Existing agreement between City of Beacon, Scenic Hudson and OPRHP
Federal Land and Appalachian Management Corridor	Osborn Loop Trail	No agreement necessary.
Lake Surprise	Lake Surprise Bypass	Conservation easement held by OPRHP includes development of one trail.
MTA/Metro North RR	Trailhead for Breakneck Ridge	No existing agreement.
Village of Nelsonville	Nelsonville and Undercliff Trails	No agreement necessary.
NYC Catskill Aqueduct/NYC Department of Water Supply	Nelsonville, Washburn, Undercliff, Cornish, Brook, Breakneck Ridge	No existing agreement.
NYS DEC (Castle Rock Unique Area)	Sugarloaf	No agreement necessary.
NYS DOT	Trailhead parking along Route 9D	No existing agreement.
NYS Military Reservation Camp Smith	Camp Smith	OPRHP holds a permanent trail easement for 50 feet on each side of the trail.
Scenic Hudson (Mount Beacon Park, Fishkill Ridge Conservation Area)	Casino, Fishkill Ridge, Wilkinson Memorial, Beacon Reservoir Road Trail, N. Beacon Mtn. Bypass	No agreement necessary.
Scenic Hudson	Klara Sauer Trail	Existing agreement between City of Beacon, Scenic Hudson and OPRHP
Private lands	Breakneck Ridge, Wilkinson Memorial, Notch, Fishkill Ridge	No existing agreement.

In some cases, where the owner is a state agency or a not-for-profit organization that allows public access to their property and trails, no agreement is necessary. As noted in the tables, where no existing agreement exists, an agreement will be sought by OPRHP with the land owner.

Future development of trails is planned in the Roaring Brook area of Fahnestock SP. This will require coordination with NYS DEC for access through the California State Forest. Also, consultation and cooperation will be required for equestrian parking improvements at DEC's Castle Rock Unique Area.

Park Rules

Fahnestock SP:

Visitors to the park are expected to follow general park rules. These rules are as follows:

- Park is open from sunrise to sunset. No overnight parking.
- Trails are restricted to day use only. Camping or making of fires is prohibited, except in designated campgrounds. Permit required.

- Remain on trails for your own safety and to minimize the impact on the forest environment.
- Carry out and take home everything you bring with you. Maintaining a quality trail experience requires keeping the trails free of litter and the environment undisturbed. Collection of plants and animals is prohibited.
- All motorized vehicles are not permitted on park trails.
- Dogs are permitted on park trails, on a leash of no more than 10 feet.
- Swimming is permitted only at Canopus Beach, when lifeguards are on duty.
- Some trails are designed for a variety of users. Please exercise caution and trail courtesy when approaching other users.

Hudson Highlands SPP:
Visitors to the park are expected to follow general park rules. These rules are as follows:

- Park is open from sunrise to sunset. No overnight parking.
- Trails are restricted to day use only. Camping or making of fires is strictly prohibited.
- Remain on trails for your own safety and to minimize the impact on the forest environment.
- Carry out and take home everything you bring with you. Maintaining a quality trail experience requires keeping the trails free of litter and the environment undisturbed. Collection of plants and animals is prohibited.
- All motorized vehicles are not permitted on park trails.
- Dogs are permitted on park trails, on a leash of no more than 10 feet.
- Swimming is prohibited.
- Some trails are designed for a variety of users. Please exercise caution and trail courtesy when approaching other users.

These rules will be posted on trailhead kiosk panels to promote appropriate use of park facilities.

Special Events and Permits

A permit is required for any organized event or outing within the park, including those that use park trails. This helps limit trail use to a level that is environmentally sustainable and ensures that event participants are aware of their responsibilities. For additional information or to obtain a permit application please call (845) 225-7207.

Enforcement

Trail users are expected to obey all New York State Parks Rules and Regulations and any park specific signage as posted. Problems or concerns regarding the trail system should be reported to the park office. Emergencies, such as injuries, hazardous situations or criminal activity, should be reported directly to the NYS State Park Police. Due to the extensive trail systems, the State Park Police rely on trail users to report all problems encountered while using the parks.

Implementation

Implementation of this plan will be guided by staff knowledge of trails, the trail assessment information collected in 2009, additional detailed assessments of trail conditions and the agency's standards and guidelines for trails which are located in **Appendix 1**.

Trail work proposals as submitted on the Annual Project Work Plan – Trails form (**Appendix 3**) will be reviewed by the Park Manager for consistency with this Trails Plan. All trail work beyond standard maintenance practices (blazing, clearing brush from treadway, tree pruning and maintaining erosion control structures) on existing designated trails must be approved prior to commencement of work. The Park Manager will meet with Trail Groups on an annual basis, at a minimum, to discuss proposed trail development and maintenance plans, and review the consistency of those plans with this Trails Plan.

If the proposal is not within the scope of this Trails Plan then additional review, including environmental review, may be required. In these circumstances, the Manager will consult with Regional and Albany office staff regarding next steps. See *Trail Project Approval Process for NYS Parks* at: **http://nysparks.com/recreation/trails/technical-assistance.aspx**.

Prior to trail construction, review of final trail layouts will be conducted in the field by appropriate agency staff (e.g. Park Manager, Regional Natural Resource Steward) to ensure consistency with trail standards and protection of sensitive resources.

The Park Manager will be responsible for periodic inspections of all trail projects to ensure that they are being carried out in accordance with approved plans.

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

Improvements and reroutes should generally be completed prior to expanding multiple use opportunities. Priority will be given to basic maintenance and rehabilitation of existing trails, as well as trail re-routes and closures to correct unsustainable conditions and/or to protect sensitive environmental areas. Priorities for new trails will be based on availability of funding and resources.

Existing undesignated identified for designation will be improved and used as much as possible in the implementation of this trails plan. New trails and rerouted trail sections will be designed to protect the natural resources of the parks. Sensitive ecological areas including locations of rare and endangered species will be considered during new trail alignments. Rerouted sections will be closed using appropriate closure techniques specified in the *OPRHP Guidelines for Closing Trails* (**http://nysparks.com/recreation/trails/technical-assistance.aspx**). Undesignated trails and wood roads that are not part of the proposed trail system will also be closed. Additional signage in the form of trailhead, trail intersection signs and kiosks will be developed to improve the overall trail signage system, visitor orientation and to encourage visitors to remain on trails. Signage will be developed in accordance with the *Trail Signage Guidelines for the NY State Park System* (**http://nysparks.com/recreation/trails/technical-assistance.aspx**).

New trails and altered trails connected to an accessible trail or designated trailhead should be designed to improve accessibility for persons with disabilities. The existing trail systems will be assessed to determine whether the trails meet accessibility guidelines. Also, actions needed to make the trails accessible, will be identified. Informational material will be provided at trailhead kiosks and in trail brochures identifying the characteristics (i.e. slope, terrain, etc.) of the trails.

In order to provide guidance on implementation of this, the following table provides a listing of all existing and proposed trails and specific actions that were identified during the planning process.

Table 10: Implementation Steps for Trails at Fahnestock SP

Trail Name	Mileage	Blazing	Type of Use*	Implementation Steps
Blueberry Scoot (BS)	0.85	TBD	H, CC	• Install trailhead and intersection signage. • Blaze trail.
Cabot (CA)	1.02	White	H, SS	• Implement water management measures as appropriate; consider rerouting if necessary; restore any rerouted sections. • Assess trail's proximity to Jordan Pond; consider upgrades or reroute if necessary.
Candlewood Hill (CH)	2.17	Red	H, SS	• Implement water management measures as appropriate; consider rerouting if necessary; restore any rerouted sections. • Consider relocation of the access from Bell Hollow Road upon development of trails in the Candlewood Hill area.
Catfish Loop (CF)	3.95	Red	H, SS	• Implement water management measures as appropriate; consider rerouting if necessary; restore any rerouted sections. • Remove fallen trees from trail corridor.
Charcoal Burners (CB)	4.05	Red	H, SS	• Implement water management measures as appropriate; consider rerouting if necessary; restore any rerouted sections. • Remove fallen trees from trail corridor. • Refresh blazing where necessary.
Chimney Top (CM)	0.53	TBD	H, B, E, SS	• Upgrade trail and blaze trail. • Remove fallen trees from trail corridor. • Install intersection signage. • Consider interpretive signage at summit.
Clear Lake Connector (CLC)	0.21	TBD	H, SS	• Implement water management measures as appropriate; consider rerouting if necessary; restore any rerouted sections. • Blaze trail. • Install intersection signage.
Clear Lake Scout Reservation (CL)	4.66	Various	H, SS	• Implement water management measures as appropriate; consider rerouting if necessary; restore any rerouted sections. • Remove fallen trees from trail corridor. • Assess alignment of trails in proximity to wetland area; consider reroute if necessary.
Clove Creek (CC)	1.39	TBD	H, B, E, SS	• Determine final trail alignment, upgrade trail and blaze trail. • Upgrade/replace bridge crossings as necessary. • Install intersection signage.
Dicktown Loop (DL)	4.10	TBD	H, B, XC, SS	• Determine final trail alignment, develop/upgrade trail and blaze trail.
East Mountain (EM)	1.50	Red	H, SS	• Implement water management measures as appropriate; consider rerouting if necessary; restore any rerouted sections. • Remove fallen trees from trail corridor.

Trail Name	Mileage	Blazing	Type of Use*	Implementation Steps
Fahnestock (FS)	6.88	Blue	H, (B), (E), SS	• Implement water management measures as appropriate; consider rerouting if necessary; restore any rerouted sections. • Remove fallen trees from trail corridor. • Upgrade portion of trail to meet multi-use standards prior to expanding uses. • Assess trail alignment near water resources; consider upgrades or reroutes if necessary. • Close undesignated trails between FS and WI and CB Trails. • Install *Do Not Enter* signage at intersection with undesignated trail to Glynwood Center and at park boundary.
Hubbard Loop (HL)	0.91	TBD	H, B, E, XC, SS	• Assess feasibility of developing accessible trail (include section of SM Trail from Hubbard Lodge to intersections). • Determine final trail alignment and develop at 6-8 ft. wide tread (will require clearing, tree removal and grading). • Blaze trail and sign intersections. • Consider interpretive components for trail (signage, brochure for self-guided tour).
Moneyhole Mountain (MM)	4.07	Yellow	H, B, E, SS	• Reroute short section of trail off private property east of Catfish Pond. • Implement water management measures as appropriate; consider rerouting if necessary; restore any rerouted sections. Article I. Remove fallen trees from trail corridor. Article II. Sign intersection with Three Lakes Trail. Article III. Assess trail alignment near water resources; consider trail upgrades where necessary.
Moneyhole Mountain Access (MMA)	0.42	TBD	H, B, E, SS	• Upgrade trail and blaze trail. • Remove fallen trees from trail corridor. • Install trailhead and intersection signage.
Old Mine Railroad (OM)	1.65	Yellow	H, XC, SS	Article IV. Remove fallen trees from trail corridor. Article V. Consider upgrades/reroute of alignment near Hidden Lake due to beaver activity.
Pasture Loop (PL)	1.08	TBD	H, B, E, CC	• Install trailhead and intersection signage. • Blaze trail. • Upgrade numerous bridges for multiple uses.
Pelton Pond (PP)	0.87	Yellow	H, SS	• Implement water management measures as appropriate; consider rerouting if necessary; restore any rerouted sections. Article VI. Remove fallen trees from trail corridor. • Assess trail's proximity to the pond; consider stabilization techniques along shoreline and/or reroutes if necessary. • Blaze and sign connector trails from the campground and campground road.

Trail Name	Mileage	Blazing	Type of Use*	Implementation Steps
Perkins (PK)	4.14	Yellow	H, (B), (E), SS	• Implement water management measures as appropriate; consider rerouting if necessary; restore any rerouted sections. • Remove fallen trees from trail corridor. • Cut back/remove vegetation as necessary. Article VII. Refresh blazing where necessary. • Upgrade portion of trail to meet multi-use standards prior to expanding uses.
Perkins Access (PA)	0.67	TBD	H, SS	• Upgrade trail and blaze trail. • Remove fallen trees from trail corridor. • Upgrade/replace bridge over Clove Creek to PK Trail as necessary. • Install intersection and trailhead signage. • Close undesignated section of trail along Clove Creek.
Ridge Line (RL)	1.11	TBD	H, CC	• Install trailhead and intersection signage. • Blaze trail.
Roaring Brook (RB)	7.53	White	H, B, E, (SS), (CC)	• Implement water management measures as appropriate; consider rerouting if necessary; restore any rerouted sections. • Remove fallen trees from trail corridor. Article VIII. Assess trail alignment near water resources; consider trail upgrades where necessary.
Round Hill Bypass (RH)	1.17	TBD	H, SS	• Determine final trail alignment; develop trail and blaze trail (use sustainable sections of existing trail as much as possible). • Construct bridge over Bull Creek. • Install trailhead and intersection signage.
School Mountain (SM)	4.06	White	H, B, E, XC, SS	• Implement water management measures as appropriate; consider rerouting if necessary; restore any rerouted sections. • Remove fallen trees from trail corridor. Article IX. Refresh blazing where necessary. Article X. Upgrade bridges at stream crossings as necessary. Article XI. Assess trail alignment near water resources; consider trail upgrades where necessary.
Stillwater Loop (SL)	1.59	TBD	H, B, E, CC	• Determine final trail alignment, develop trail and blaze. • Install intersection signage.
Three Lakes (TL)	4.29	Blue	H, SS	• Implement water management measures as appropriate; consider rerouting if necessary; restore any rerouted sections. • Remove fallen trees from trail corridor. Article XII. Sign intersection with Moneyhole Mountain Trail. • Consider upgrades/reroutes of alignment near breached dam at John Allen Pond and near Hidden Lake.
Trout Brook (TB)	0.83	Yellow	H, SS	• Upgrade trail/road over brook at parking area gate to accommodate park vehicles. • Assure length of trail meets multi-use standards prior to expanding uses.

Trail Name	Mileage	Blazing	Type of Use*	Implementation Steps
Wiccopee (WI)	1.22	Blue	H, B, E, SS	• Implement water management measures as appropriate; consider rerouting if necessary; restore any rerouted sections. • Upgrade portion of trail to meet multi-use standards prior to expanding uses.

Types of Use: H (Hiking), B (Biking), E (Equestrian), SS (Snowshoeing), CC (Cross country skiing - groomed), XC (Cross country skiing – ungroomed).
*Uses noted in ( ) indicate only a portion of that trail is open to the use.

The remaining groomed cross country ski trails and marked snowshoe trails of the Fahnestock Winter Park are not included in this table. These trails will be maintained and marked for seasonal use only. Maintenance includes clearing the treadway and corridor of vegetation.

Additional review and assessment is required for potential future trails including: a trail in the northern Wiccopee area, a multi-use connector trail through the Canopus Lake area, and the alignment of the Highlands Trail. These trails are not included in the table above or on the final trails plan maps. Discussions in a coordinated and cooperative effort with the partners as listed in the Memorandum of Understanding for the AT will take place for potential trails that are within or cross the AT corridor. The Highlands Trail alignment will be further reviewed with the NYNJTC and the AT management partners because the trail is proposed to cross the AT corridor. A connection of the Highlands Trail with Hudson Highlands SPP will be made in the future with additional acquisition and agreements in the vicinity of Hubbard Lodge.

A bridge will be constructed across Route 301 near the entrance to the Canopus Beach Recreation Area to accommodate trail users.

The trails for the TOEC will be maintained by program staff. Two trails will be closed as shown on **Figure 14**. Currently named but unmarked trails will be marked and trail intersections will be signed to improve visitor safety.

Candlewood Hill and Roaring Brook Areas require further assessment for designation and development of trails. Existing trail alignments will be used as much as possible but, some reroutes, closures and additional construction of trails or trail sections may be required to provide appropriate connections.

Table 11: Implementation Steps for Trails at Hudson Highlands SPP

Trail Name	Mileage	Blazing	Type of Use	Implementation Steps
Arden Point (AP)	1.51	Blue/ Red	H, XC, SS	• Implement water management measures as appropriate; consider rerouting if necessary; restore any rerouted sections. • Remove fallen trees from trail corridor. • Designate southern point as a Hudson River Greenway Water Trail site.
Beacon Reservoir Road (RR)	1.83	TBD	H, B, SS	• Work with Scenic Hudson regarding vehicular access along road; road remains access for residence and maintenance vehicles. • Blaze trail. • Install intersection signage.
Breakneck Bypass (BB)	0.76	Red	H, SS	• Routine trail maintenance.
Breakneck Ridge (BR)	4.40	White	H, SS	• Implement water management measures as appropriate; consider rerouting if necessary; restore any rerouted sections. • Refresh blazing as necessary.
Brook (BK)	1.48	Red	H, SS	• Implement water management measures as appropriate; consider rerouting if necessary; restore any rerouted sections. Article XIII. Remove fallen trees from trail corridor. Article XIV. Assess trail alignment along brook and at stream crossings; upgrade and/or reroute as necessary. Article XV. Remove markers from section of trail between the Notch Trail and the Lake Surprise Camp; to remain as a maintenance road only.
Camp Smith (CS)	3.67	Blue	H, SS	Article XVI. Remove fallen trees from trail corridor. Article XVII. Refresh blazing as necessary.
Carriage Connector (CC)	0.93	Yellow	H, (E), SS	• Implement water management measures as appropriate; consider rerouting if necessary; restore any rerouted sections. Article XVIII. Remove fallen trees from trail corridor. Article XIX. Upgrade portion of trail to meet multi-use standards prior to expanding uses.
Casino (CT)	2.00	Red	H, (B), SS	Section 19.01 Coordinate with Scenic Hudson. Section 19.02 Implement water management measures as appropriate; consider rerouting if necessary; restore any rerouted sections. Article XX. Upgrade portion of trail to meet multi-use standards prior to expanding uses.
Casino Connector (CC)	0.97	TBD	H, B, SS	• Determine final trail alignment, develop/upgrade trail and blaze trail. • Install intersection signage.
Cornish (CN)	1.41	Blue	H, SS	Article XXI. Implement water management measures as appropriate; consider rerouting if necessary; restore any rerouted sections.
Denning's Point (DP)	1.23	White	H, B, SS	Article XXII. Routine trail maintenance.

Trail Name	Mileage	Blazing	Type of Use	Implementation Steps
Fishkill Ridge (FR)	4.99	White	H, SS	Article XXIII. Coordinate with Scenic Hudson. Article XXIV. Implement water management measures as appropriate; consider rerouting if necessary; restore any rerouted sections. Article XXV. Assess trail alignment near stream between trailhead and first intersection; consider trail upgrades where necessary.
Highlands Trail (HT)	0.99	TBD	H, SS	• Determine final trail alignment, develop trail and blaze trail. • Install intersection signage.
Klara Sauer (KS)	0.92	None	H, B, XC, SS	Article XXVI. Coordinate with City of Beacon.
Lake Surprise Bypass (LB)	1.83	TBD	H, SS	• Determine final trail alignment, develop/upgrade trail and blaze trail. • Install trailhead and intersection signage.
Little Stony Point (SP)	1.15	TBD	H, XC, SS	• Blaze trail. • Install intersection signage.
Lonestar (LS)	0.99	Blue	H, SS	Article XXVII. Implement water management measures as appropriate; consider rerouting if necessary; restore any rerouted sections.
Melzingah (MT)	2.92	TBD	H, B, SS	• Coordinate with City of Beacon. • Implement water management measures as appropriate. • Blaze trail. • Install intersection signage.
Mountain Pass (MP)	0.55	TBD	H, E, SS	• Determine final trail alignment, develop/upgrade trail and blaze trail. • Install intersection signage.
N. Beacon Mtn. Bypass (NM)	0.69	TBD	H, B, SS	• Coordinate with Scenic Hudson. • Determine final trail alignment, develop/upgrade trail and blaze trail. • Install intersection signage.
Nelsonville (NV)	2.28	Green	H, XC, SS	• Implement water management measures as appropriate; consider rerouting if necessary; restore any rerouted sections. Article XXVIII. Remove fallen trees from trail corridor.
North Redoubt (NR)	0.65	Red	H, SS	Article XXIX. Routine trail maintenance.
Notch (NT)	5.91	Blue	H, (B), SS	• Implement water management measures as appropriate; consider rerouting if necessary; restore any rerouted sections. • Close beginning of trail off of Rte 9D; establish trailhead at parking area along existing wood road. • Re-align two sections off of private property and close these sections of trail (one will co-align with the Melzingah Trail and the other will require new trail construction). Article XXX. Remove fallen trees from trail corridor. Article XXXI. Upgrade portion of trail to meet multi-use standards prior to expanding uses.

Trail Name	Mileage	Blazing	Type of Use	Implementation Steps
Notch Bypass (NB)	0.06	TBD	H, B, SS	• Determine final trail alignment, develop/upgrade trail and blaze trail. • Construct small bridges as necessary. • Install trailhead and intersection signage.
Osborn Loop (OB)	2.06	Blue	H, (E), SS	Article XXXII. Remove fallen trees from trail corridor. Article XXXIII. Upgrade portion of trail to meet multi-use standards prior to expanding uses.
S. Beacon Mtn. Bypass (SB)	1.18	TBD	H, B, SS	• Determine final trail alignment, develop/upgrade trail and blaze trail. • Install intersection signage.
S. Beacon Mtn. Outlook (SO)	0.18	TBD	H, B, SS	• Determine final trail alignment, develop/upgrade trail and blaze trail. • Install intersection signage.
Split Rock (SR)	0.26	Red	H, SS	• Remove fallen trees from trail corridor.
Sugarloaf (SL)	1.67	Red	H, (E), SS	• Remove fallen trees from trail corridor. • Upgrade portion of trail to meet multi-use standards prior to expanding uses.
Sugarloaf Loop (SU)	1.73	TBD	H, E, SS	• Determine final trail alignment, develop/upgrade trail and blaze trail. • Install intersection signage.
Undercliff (UC)	3.60	Yellow	H, SS	• Remove fallen trees from trail corridor.
Washburn (WB)	2.26	White	H, SS	• Implement water management measures as appropriate; consider rerouting if necessary; restore any rerouted sections. • Remove fallen trees from trail corridor.
White Rock (WR)	0.87	TBD	H, E, SS	• Determine final trail alignment, develop/upgrade trail and blaze trail. • Install intersection signage.
Wilkinson Memorial (WM)	10.36	Yellow	H, SS	• Implement water management measures as appropriate; consider rerouting if necessary; restore any rerouted sections. • Remove fallen trees from trail corridor. • Coordinate with Scenic Hudson. • Determine final trail alignment for extension of trail through the Northeast Fishkill Ridge area, develop/upgrade trail and blaze trail. • Construct bridge over Clove Creek. • Develop trailhead parking. • Install trailhead and intersection signage. • Resign original eastern extension as “Hell Hollow Trail”.
Woodle (WO)	0.92	TBD	H, B, SS	• Determine final trail alignment, develop/upgrade trail and blaze trail. • Install intersection signage.
Woodle Access (WA)	0.39	TBD	H, B, SS	• Determine final trail alignment, develop/upgrade trail and blaze trail. • Install intersection signage.

Types of Use: H (Hiking), B (Biking), E (Equestrian), SS (Snowshoeing), XC (Cross country skiing – ungroomed).
*Uses noted in ( ) indicate only a portion of that trail is open to the use.

The trails that will have co-alignments, such as the Highlands Trail, will be consistently marked as their development progresses.

Water management measures may include de-berming, installing knicks, rolling grade dips, waterbars, or culverts to divert water off trails. Upgrading trails may involve bringing existing undesignated trails up to use standards and assuring they are sustainable or assuring that currently designated hiking trails meet multi-use standards.

Bike racks will be installed at various locations in both parks.

In addition to the trail-specific implementation steps noted above, this plan provides some additional general recommendations as follows:

1. Future assessment of steep trail sections .
A number of trails, especially in Hudson Highlands SPP, have sections located along steep sections of terrain. Although in some cases, this steep climb is considered a part of the trail experience (ex. Breakneck Ridge); there are some sections that are experiencing erosion of the trail tread and/or development of parallel trails by visitors to bypass the steep sections. This plan recommends future case by case assessments of these steep sections of trail. Consideration should be given for either re-aligning some sections of trails, or stabilizing existing routes through use of erosion control techniques, or trail hardening techniques. Future recommended actions should include consideration of the natural resources as well as the expected type of trail experience.

2. Future assessment of trail sections that are aligned near sensitive natural areas such as wetlands, streams, ponds and lakes, rare species populations (e.g. timber rattlesnakes), and ecological communities (summit communities).
A number of trails in both parks, but mostly in Fahnestock SP, are aligned near wetlands, streams, ponds, and lakes or cross through or near important natural habitats. Natural resources such as streams and lakes or summit vista points, can be destination points for trail users and, at a minimum, enhance the trail user's experience. When trails are properly designed, constructed, and maintained they should provide access to the resource without adversely affecting it. Some trail segments have been identified that need further assessment as their location or design is causing impacts such as erosion, bank destabilization, or vegetation trampling. These types of inadvertent use-related impacts can compromise wildlife habitat and water quality and increase the potential for invasive species. This plan recommends future case by case assessments of these trail sections . Consideration will be given to stabilizing these trail sections and stream/pond/lake banks, re-aligning these trail sections to provide an additional buffer between the trail and the sensitive resource, adding design features, and improving signage and education to keep people from going off trail. Some areas have been preliminarily identified and are listed in the implementation steps above. There may be others not identified in this plan, and further assessment on a case by case basis will be required.

The protection of summit areas should include the development of a Summit Stewardship Program/Volunteer Ambassador Program that will increase on-site education about the natural resources and help deter trampling of the vegetation.

Future assessments will be coordinated through the Park Manager or a designee in conjunction with regional staff and the parks' volunteer/user and Friends groups.

Monitoring and Future Development

The following guidelines will be used in the implementation of a monitoring system and the approval process for future modification of this plan.

Monitoring Program

A monitoring program will be developed 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. The monitoring program should include:

- Monitoring trail use to avoid user conflicts and ensure sustainability.
- Monitoring trail conditions, educating trail users, and using 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.

Future Trails Development

Proposals for modification of the Fahnestock and Hudson Highlands trail systems beyond what is specified in this plan will be evaluated by the Park Manager in consultation with the trails planning unit. All future proposals for trail development projects, including the relocation of existing trails, development of new trails, and new uses of existing trails may need to go through a formal review process. Routine trail maintenance does not need to be addressed within this process. The scope and associated impacts of the proposed project on natural and cultural resources will determine the extent of the review process. In most cases, park-level review is sufficient. In some cases, a more extensive environmental review will be required under the State Environmental Quality Review Act (SEQR).

Environmental Review

This Final Trails Plan, as an appendix to the Clarence Fahnestock Memorial State Park and Hudson Highlands State Park Preserve Final Master Plan/Final Environmental Impact Statement, is the subject of an environmental review process under the State Environmental Quality Review Act (SEQR). Environmental impacts are addressed in Chapter 7 of the Master Plan. For the purposes of SEQR compliance, the entire Final Master Plan/ Final Environmental Impact Statement satisfies the requirements for an environmental impact statement as specified in Part 617, the rules and regulations implementing SEQR.

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Appendix 1

Trail Standards and Guidelines

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.

1. 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 (**http://www.nysparks.state.ny.us/recreation/trails/technical-assistance.aspx**)*. 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.

A kiosk or similar structure providing information about the park and the trail system will be located at each trailhead. All trails will be named and marked with colored blazes located on trees or other structures at a height that will reduce the level of vandalism but that is still readily visible. Existing signs and kiosks at trailheads that are in disrepair or outdated will be updated and improved to enhance visitor orientation and safety.

2. 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
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
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

3. 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

4. Trail Maintenance

Maintenance of the trails is carried out by park staff in conjunction with volunteer groups. Trail maintenance standards use acceptable practices and methods in the maintenance of trails to the particular uses of the trails. Maintenance activities may include:

- Using established water management techniques, such as installation of knicks, rolling grade dips, or waterbars, to divert water off of a trail.
- Using established trail construction techniques to stabilize trail surfaces.
- Trimming trees and brush to maintain height and width clearances.
- Maintaining drainage structures, such as culverts.
- Maintaining bridges and other structures.
- Maintaining signage.

These activities will be coordinated with the park manager. Activities that go beyond normal maintenance will require the approval of the park manager (see *Appendix B*). 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, 7th 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**

5. 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. Remove all blazes along the 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* (**http://www.nysparks.state.ny.us/recreation/trails/technical-assistance.aspx**) provides the detailed process to be taken to close trails in state parks.

Appendix 2

Memorandum of Agreement

Between
Trails Organization #1
And
Trails Organization #2
And
Trails Organization #...
And
The New York State Office of Parks, Recreation and Historic Preservation

By this agreement, #1, #2, …. and the New York State Office of Parks, Recreation and Historic Preservation confirm and acknowledge the following:

1. The _____Trail, a linear trail located within _____ State Park, is under the jurisdiction of the New York State Office of Parks, Recreation and Historic Preservation (hereinafter referred to as "PARKS"), an agency of the Executive Department of New York State government.
2. The #1, #2, and …., nonprofit trail organizations have a joint interest in the _____ Trail and in coordinating their efforts as a single group, hereinafter known as the Friends of xxxx Trail (the "FRIENDS").
3. The FRIENDS and PARKS have mutual and complimentary interests in the development and maintenance of the trails and associated facilities and program within _____ State Park.
4. The FRIENDS acknowledge that the liaison for PARKS with the FRIENDS for all programmatic and business relations shall be the Regional Director or his/her designee (hereinafter referred to as the Park Manager), who shall be invited to attend all meetings of the FRIENDS, its Board of Directors and committees. The Park Manager may not serve as an ex-officio member of the Board of Directors of the FRIENDS. PARKS acknowledges that the representative of the FRIENDS for all official programmatic and business relations shall be the President of the FRIENDS or the President's designee.
5. The FRIENDS, in furtherance of its purpose to support and supplement development, maintenance, preservation and public education programs at the Park, shall keep PARKS fully informed as to its activities and plans and shall do so through the Park Manager either directly or as provided for in the By-Laws of the FRIENDS.
6. Development and maintenance activities proposed by the FRIENDS must be reviewed and approved by PARKS prior to implementation.
7. Prior to commencing any pre-approved work, each member of the FRIENDS shall sign a volunteer service form through the Park Manager, a sample of which is attached to this Agreement as Exhibit A. Such form shall be kept confidential. PARKS and the FRIENDS acknowledge that by filing a volunteer service form, the FRIENDS will receive New York State Worker's Compensation benefits for any injuries sustained during the course of volunteer work. Filing a volunteer service form also extends the protections offered pursuant to the Public Officers Law in the event they are sued with regard to their negligence during the course of their volunteer work.
8. In the event that there is an access fee to the Park, FRIENDS shall have access to the Park at no charge upon the authorization of the Park Manager, and only in connection with pre-approved volunteer work at the Park.

9. The term of this Memorandum of Understanding shall be five years. Either party may terminate this agreement at any time prior to the expiration of the five year term upon ninety (90) days' written notice to the other party. This agreement shall terminate automatically in the event of the dissolution of the FRIENDS or if the FRIENDS become incorporated within as a 501 (c) 3 organization at which time a new Agreement will be required.
10. This agreement may not be amended, modified or otherwise changed unless done so in writing and signed by both parties.

Appendix 3

Annual Project Work Plan - Trails

(Submit to Park Manager for review and approval prior to commencing work)

For ALL trail work beyond standard maintenance practices (blazing, clearing brush from treadway/tree pruning, maintenance of erosion control structures) on existing designated trails.

State Park Name: Year: 20__

Organization:
Contact Name:
Contact Address:
Contact Phone #:
Contact Email Address:

Trail Name:
Description of location of trail section to be worked on (if applicable):

GPS coordinates if available (Lat/Long):_____
(Format: Decimal Degrees; Datum (circle one): NAD27, 83 or WGS84 (preferred)

Type of work (check all that apply):
□ Re-alignment/relocation of trail section
□ New trail development (includes designating new trails)
□ Tread upgrades including installation of water management structures
□ Bridge construction/replacement
□ Trail Closure
□ Other: _____

Scope of work included in Trails Plan: □ Yes □ No (If no, requires additional review of proposal)

Description of work: (be specific including rock moving, tree cutting, trail work within 100 ft. of a water body/wetland, bridge work (*may require DEC permit*), construction of switchbacks or retaining walls, culvert and turnpike installation, etc.)

Work Schedule:

□ Attached map depicting area of work (required).
□ Digital photo (before) □ Digital photo (after)

_____
__

Submitted by (print name): Signature:
Date:

_____
__

Approved by Park Manager (print name): Signature:
Date:

Forward copy to Regional Natural Resource Steward and Capital Facilities Manager.

Appendix C - Ecological Communities

Clarence Fahnestock Memorial State Park

System	Subsystem	Community Type	Acres
Lacustrine	Natural Lakes and Ponds	Eutrophic pond	5
	Lacustrine Cultural	Reservoir/Artificial impoundment	285
Palustrine	Forested Mineral Soil Wetlands	Red maple-hardwood swamp	254
		Vernal Pool	2
	Open Mineral Soil Wetlands	Shallow emergent marsh	19
		Shrub swamp	41
	Open Peatlands	Highbush blueberry bog thicket	113
		Sedge meadow/Shallow emergent marsh	19
	Palustrine Cultural	Reedgrass/Purple loosestrife marsh	47
Riverine	Natural Streams	Intermittent stream	n/a
		Marsh headwater stream	n/a
		Rocky headwater stream	n/a
Terrestrial	Forested Uplands	***Appalachian oak-hickory forest***	***3213***
		Appalachian oak-pine	20
		Beech-maple mesic forest	81
		Chestnut oak forest	***7184***
		Hemlock-northern hardwood forest	***1220***
		Oak-tulip tree forest	***1199***
		Successional southern hardwoods	180
	Open Uplands	***Red cedar rocky summit***	***21***
		Successional old field	23
		Successional shrubland	20
	Terrestrial Cultural	Developed	136
		Conifer plantation	<1
Total Acres			14082

Source: Smith and Lundgren 2010b. Italicized and bolded Ecological Communities are considered to be of statewide significance by the New York Natural Heritage Program.

Hudson Highlands State Park

System	Subsystem	Community Type	Acres
Estuarine	Estuarine Intertidal	***Brackish intertidal mudflats***	***42***
		Brackish tidal marsh	***9***
		Brackish tidal marsh/Brackish intertidal mudflats	***123***
	Estuarine Subtidal	***Tidal river***	***270***
Lacustrine	Natural Lakes and Ponds	Eutrophic pond	2
	Lacustrine Cultural	Reservoir/artificial impoundment	25
Palustrine	Forested Mineral Soil Wetlands	***Floodplain forest***	31
		Red maple-hardwood swamp	37
		Hemlock-hardwood swamp	1
		Vernal pool	<1
	Open Peatlands	Highbush blueberry bog thicket	2
		Sedge meadow	<1
	Palustrine Cultural	Reedgrass/Purple loosestrife marsh	7
Riverine	Natural Streams	Unconfined river	5
Terrestrial	Barrens and Woodlands	***Acidic talus slope woodland***	***9***
		Pitch pine-oak-heath rocky summit	***233***
		Red cedar rocky summit	***60***
	Forested Uplands	***Appalachian oak-hickory forest***	***16584***
		Chestnut oak forest	***1650***
		Hemlock-northern hardwood forest	497
		Oak-tulip tree forest	***1845***
		Successional southern hardwoods	248
	Open Uplands	Cliff community	55
		Rocky summit grassland	***21***
		Successional old field	15
		Successional shrubland	14
	Terrestrial Cultural	Developed	55
		Gravel mine	13
		Mowed lawn	1
		Riprap/Artificial lake shore	5
		Unpaved road/path	7
Total Acres			6942

Source: Smith and Lundgren 2010a. Italicized and bolded Ecological Communities are considered to be of statewide significance by the New York Natural Heritage Program.

Appendix D – Documented or Expected Flora

Scientific Name	Common Name	Park[a]	NYS Listing[b]	Federal Listing[c]	Source[d]
	Trees				
Acer rubrum	Red Maple	B			5, 6
Acer saccharinum	Silver Maple	B			5, 7, E
Acer saccharum	Sugar Maple	B			5, 7, 9
Betula alleghaniensis	Yellow Birch	B			6, 9
Betula lenta	Black Birch	B			5, 6, 7
Betula nigra	River Birch	HH			7
Betula papyrifera	American White Birch	B			9, E
Betula populifolia	Gray Birch	B			5, E
Carya cordiformis	Bitternut Hickory	B			5, E
Carya glabra	Pignut Hickory	B			5, 6
Carya ovata	Shagbark Hickory	B			5, E
Carya tomentosa	Mockernut Hickory	B			E
Castanea dentate	American Chestnut	B			9
Fagus grandifolia	American Beech	B			6, 7
Fraxinus americana	White Ash	B			5, 6, 7
Fraxinus pennsylvanica	Green Ash	B			5, 6, 7
Juglans cinerea	Butternut	B			7, E
Juglans nigra	Black Walnut	B			7, E
Juniperus virginiana	Red Cedar	B			5, 6
Liriodendron tulipifera	Tulip Tree	B			5, 6, 7
Ostrya virginiana	Hop Hornbeam	B			5, 6, 7
Pinus rigida	Pitch Pine	HH			5
Pinus strobus	Eastern White Pine	B			9, E
Plantanus occidentalis	Sycamore	HH			7
Populus deltoides	Eastern Cottonwood	B			7, E
Populus grandidentata	Bigtooth Aspen	B			9, E
Populus tremuloides	Quaking Aspen	B			5, E
Prunus pensylvanica	Pin Cherry	B			5, E
Prunus serotina	Black Cherry	B			5, 6, 7
Prunus virginiana	Chokecherry	B			7, E
Quercus alba	White Oak	B			5, 6, 7
Quercus coccinea	Scarlet Oak	B			5, E
Quercus montana	Chestnut Oak	B			5, 6, 7
Quercus palustris	Pin Oak	B			5, 7, E
Quercus rubra	Red Oak	B			5, 6, 7
Quercus velutina	Black Oak	B			5, 7, E
Salix sp.	Willow	B			7, E
Sassafras albidum	Sassafras	B			7, 9
Tilia americana	American Basswood	B			5, 7, E
Tsuga canadensis	Eastern Hemlock	B			6, 7
Ulmus americana	American Elm	B			5, 7, E
	Shrubs and Vines				
Acer negundo	Box-elder	B			7, E
Acer pensylvanica	Striped Maple	B			5, 6
Amelanchier sp.	Shadbush	B			5, 7, E
Amelanchier arborea	Downy Serviceberry	B			6, E

Scientific Name	Common Name	Park[a]	NYS Listing[b]	Federal Listing[c]	Source[d]
Amelanchier canadensis	Canadian Serviceberry	B			E
Aronia arbutifolia	Red Chokeberry	B			E
Aronia melanocarpa	Black Chokeberry	B			5
Carpinus caroliniana	American Hornbeam	B			6, E
Celtis occidentalis	Hackberry	B			7, 9, E
Cephalanthus occidentalis	Common Buttonbush	B			5, 9
Comptonia peregrina	Sweet Fern	B			5, 9
Cornus amomum	Silky Dogwood	B			5, E
Cornus florida	Flowering Dogwood	B			5, 7, E
Corylus cornuta	Beaked Hazlenut	B			E
Crataegus monogyna	Common Hawthorn	B			7, E
Diervilla lonicera	Low Bush Honeysuckle	B			E
Dioscorea villosa	Wild Yam	B			7, E
Echinocystis lobata	Wild Cucumber	B			7, E
Gaultheria procumbens	Wintergreen	B			E
Gaylussacia baccata	Black Huckleberry	B			5, 6
Hamamelis virginiana	Witch-hazel	B			5, 6
Ilex verticillata	Common Winterberry	B			5, E
Kalmia latifolia	Mountain Laurel	B			5, 6
Lindera benzoin	Spicebush	B			5, 7, E
Myrica pensylvanica	Northern Bayberry	B			5, E
Parthenocissus quinquefolia	Virginia Creeper	B			6, 7
Prunus pensylvanica	Pin Cherry	B			E
Prunus virginiana	Chokecherry	B			E
Quercus ilicifolia	Scrub Oak	B			5, 6
Rhododendron periclymenoides	Pink Azalea	B			9, E
Rhus copallinum	Winged Sumac	B			E
Rhus typhina	Staghorn Sumac	B			5
Rosa palustris	Swamp Rose	B			E
Rosa carolina	Carolina Rose	B			5
Rubus allegheniensis	Alleghany Blackberry	B			E
Rubus flagellaris	Northern Dewberry	B			5, 7, E
Rubus occidentalis	Black Raspberry	B			7, E
Salix discolor	Pussy Willow	B			E
Sambucus racemosa	Red Elderberry	B			E
Smilax rotundifolia	Common Greenbriar	B			9
Spiraea latifolia	Broadleaf Meadowsweet	B			5, E
Staphyla trifolia	Hackberry	B			5, E
Symphoricarpos albus	Common Snowberry	B			E
Toxicodendron radicans	Poison Ivy	B			5, 7, 9
Vaccinium angustifolium	Lowbush Blueberry	B			5, 6
Vaccinium corymbosum	Highbush Blueberry	B			5, 6
Vaccinium pallidum	Blue Ridge Blueberry	B			5, 6
Vaccinium stamineum	Deerberry	B			5, 6
Viburnum acerifolium	Maple-leaf Viburnum	B			5, 6
Viburnum dentatum	Southern Arrowwood	B			5, E
Vibernum lantanoides	Hobblebush	B			E
Viburnum prunifolium	Blackhaw	HH			5, 7, E
Viburnum rafinesquianum	Downy Arrowwood	B			5, E

Scientific Name	Common Name	Park[a]	NYS Listing[b]	Federal Listing[c]	Source[d]
Vitis sp.	Grape	B			7, E
Vitis labrusca	Fox Grape	B			E
Vitis riparia	River-bank Grape	B			E
	Herbs				
Acorus calamus	Sweetflag	B			7, E
Actaea pachypoda	White Baneberry	B			E
Adiantum pedatum	Northern Maidenhair	B			5, E
Agrostis stolonifera	Creeping Bentgrass	B			E
Allium sp.	Onion	B			7, E
Amaranthus cannabinus	Tidalmarsh Amaranth	HH			E
Amorpha fruticosa	Desert False Indigo	HH			5
Amphicarpaea bracteata	American Hog-peanut	B			10
Andropogon gerardii	Big Bluestem	B			5, E
Andropogon virginicus	Broomsedge Bluestem	HH			5
Antennaria plantaginifolia	Plantain-leaf Pussytoes	B			E
Aquilegia canadensis	Wild Columbine	B			E
Apocynum androsaemifolium	Spreading Dogbane	B			E
Apocynum cannabinum	Clasping-leaved Dogbane	HH			5
Arabidopsis lyrata	Lyrate Rockcress	HH			7
Aralia nudicaulis	Wild Sarsaparilla	B			6, E
Arisaema triphyllum	Jack in the Pulpit	B			7, E
Asarum canadense	Wild Ginger	B			7, E
Acslepias syriaca	Common Milkweed	B			7, E
Asplenium platyneuron	Ebony Spleenwort	B			E
Aster sp.	Aster	B			5, E
Aster cordifolius	Heart-leaved Aster	B			E
Aster divaricatus	White Wood aster	B			6, 7
Aster linariifolius	Flaxleaf Whitetop Aster	B			6, E
Bidens bidentoides	**Delmarva Beggar-ticks**	**HH**	**Rare**		**4, 5**
Bidens cernua	Nodding Beggar-ticks	HH			E
Bidens laevis	**Smooth Bur-marigold**	**HH**	**T**		**2, 5**
Campanula rotundifolia	American Harebell	B			9, E
Cardamine longii	**Long's Bittercress**	**HH**	**T**		**4, 5**
Cardamine pensylvanica	Pennsylvania Bittercress	HH			5
Carex aestivalis	Summer Sedge	HH			7
Carex albicans	Bellow-beaked Sedge	HH			5, 7
Carex amphibola	**Narrow-leaved Sedge**	**F**	**E**		**3, 6**
Carex argyrantha	Hay Sedge	HH			5
Carex bicknellii	Bicknell's Sedge	HH			5
Carex blanda	Woodland Sedge	HH			7
Carex bushii	Bush's Sedge	HH			5
Carex communis	Fibrous-root Sedge	HH			7
Carex cumulata	**Clustered Sedge**	**HH**	**T**		**2, 5**
Carex davisii	**Davis' Sedge**	**HH**	**T**		**5, 7**
Carex grayii	Gray's Sedge	B			7, E
Carex laxiflora	Broad Looseflower Sedge	B			E
Carex pensylvanica	Pennsylvania Sedge	HH			5, 6, 7, 10
Carex platyphylla	Broad-leaved Sedge	HH			7
Carex radiata	Stellate Sedge	HH			7

Scientific Name	Common Name	Park[a]	NYS Listing[b]	Federal Listing[c]	Source[d]
Carex rosea	Rosy Sedge	B			10
Carex swanii	Swan Sedge	B			5, 6
Carex stricta	Tussock sedge	B			9
Cerastium sp.	Chickweed	HH			7
Chimaphila maculata	Spotted Wintergreen	B			E
Cimicifuga racemosa	Black Cohosh	B			E
Circaea lutetiana	Intermediate Enchanter's Nightshade	HH			7
Conopholis americana	Squaw-root	B			9
Corydalis sempervirens	Pink Corydalis	B			5, 6
Crassula aquatica	**Water Pygmyweed**	**HH**	**E**		**4, 5, E**
Cuscuta sp.	Dodder	B			7, E
Cypripedium acaule	Pink Lady's-slipper	B			E
Cystopteris fragilis	Fragile Fern	HH			7
Danthonia spicata	Poverty Oatgrass	B			5, 6
Dennstaedtia punctilobula	Eastern Hay-scented Fern	B			5, 6
Deschampsia flexuosa	Wavy Hair Grass	B			5, 6, 7
Desmodium spp.	Tick-trefoil	B			5, E
Dichanthelium sp.	Panic Grass	B			5, E
Dichanthelium acuminatum	Panic Grass	B			5, E
Dichanthelium clandestinum	Deer-tongue Witchgrass	B			5, E
Dichanthelium sabulorum var. *thinium*	Panic Grass	HH			5
Diervilla lonicera	Northern Bush-Honeysuckle	B			E
Dryopteris carthusiana	Spinulose Shield Fern	B			E
Dryopteris intermedia	Evergreen Woodfern	B			6, E
Dryopteris marginalis	Marginal Woodfern	B			6, 7
Echinochloa crus-galli	Barnyard-grass	HH			7
Elymus hystrix	Bottlebrush Grass	B			E
Epifagus virginiana	Beechdrops	B			E
Erigeron canadensis	Canadian Horseweed	HH			5
Eupatorium perfoliatum	Common Boneset	B			E
Eupatorium rugosum	White Snakeroot	HH			5
Euthamia graminifolia	Flat-top Fragrant Goldenrod	HH			5
Galium sp.	Bedstraw	B			7, 10
Gaultheria procumbens	Teaberry	B			10
Geranium bicknellii	Bicknell's Cranesbill	HH			7
Geranium robertianum	Robert's Geranium	B			E
Helenium autumnale	Common Sneezeweed	HH			7
Hieracium venosum	Rattlesnake Hawkweed	B			E
Hibiscus moscheutos	Crimsoneyed Rosemallow	HH			5
Hypoxis hirsuta	Eastern Yellow Stargrass	B			E
Impatiens capensis	Spotted Jewelweed	B			5, 7, E
Juncus sp.	Rush	B			10
Laportea canadensis	Wood Nettle	B			5, 7, E
Leersia oryzoides	Rice Cutgrass	B			E
Lespedeza sp.	Bush-clover	HH			5
Lobelia cardinalis	Cardinal Flower	B			9, E
Luzula mutiflora	Common Woodrush	B			10
Lycopodium annotinum	Common Bristly Clubmoss	B			E

Scientific Name	Common Name	Park[a]	NYS Listing[b]	Federal Listing[c]	Source[d]
Lycopodium digitatum	Fan Club-moss	B			E
Lycopodium obscurum	Ground Pine	B			E
Lysimachia quadrifolia	Whorled Loosestrife	HH			5
Maianthemum canadense	Canada May-flower	B			6, E
Maianthemum racemosum	False Solomon's Seal	B			10
Medeola virginiana	Indian Cucumber-root	B			10
Menispermum canadense	Canada Moonseed	HH			7
Mimulus alatus	Sharp-winged Monkey-flower	HH			7
Mimulus ringens	Square-stemmed Monkey-flower	HH			7
Mitchella repens	Partridgeberry	B			10
Monotropa uniflora	Indian-pipe	B			9
Nuphar luteum	Spatterdock	B			7, E
Onoclea sensibilis	Sensitive Fern	B			5, 7, E
Opuntia humifusa var. *humifusa*	Eastern Prickly Pear	HH			9
Osmunda cinnamomea	Cinnamon Fern	B			E
Osmunda claytoniana	Interrupted Fern	B			E
Oxalis stricta	Upright Yellow Wood-sorrel	B			10
Peltandra virginica	Green Arrow-arum	HH			5, 7
Persicarria hydropiper	Marshpepper Smartweed	HH			5
Persicarria punctata	Dotted Smartweed	HH			5
Persicarria virginiana	Jumpseed	B			7, 10
Phytolacca americana	Common Pokeweed	HH			7
Pilea fontana or *pumila*	Clearweed	HH			7
Pluchea odorata	Saltmarsh Fleabane	HH			E
Poaceae	Grasses	B			7, E
Poa compressa	Canada Bluegrass	HH			5
Polygonum sp.	Smartweed	B			7, 10
Polygonum cespitosum	Bristled Knotweed	HH			7
Polygonatum pubescens	Downy Solomon's Seal	B			7, E
Polypodium virginianum	Rock Polypody	B			10
Polystichum acrostichoides	Christmas Fern	B			5, 10
Pontederia cordata	Pickerelweed	HH			5
Potentilla simplex	Old-field Cinquefoil	B			10
Potentilla tridentata	Three-toothed Cinquefoil	HH			E
Prenanthes sp.	Rattlesnakeroot	B			10
Pteridium aquilinum	Bracken Fern	B			10
Ranunculus micranthus	**Small-flowered Crowfoot**	**HH**	**T**		**4**
Sagittaria montevidensis var. spongiosa	**Spongy Arrowhead**	**HH**	**T**		**2, 5**
Sagittaria graminea	Grassleaf Arrowhead	HH			5
Sagittaria latifolia	Broadleaf Arrowhead	HH			7
Sagittaria subulata	Strap-leaf arrowhead	HH			5
Schizachyrium scoparium	Little Bluestem	B			5, 6
Scirpus americanus	Three-square Bulrush	HH			5
Scirpus pungens	Three-square Bulrush	HH			7
Setaria sp.	Foxtail	B			7, E
Maianthemum racemosum	False Solomon's Seal	B			10
Solidago caesia	Bluestem Goldenrod	HH			7
Solidago canadensis	Canada Goldenrod	HH			7
Solidago nemoralis	Gray Goldenrod	HH			5
Solidago odora	Sweet Goldenrod	HH			5

Scientific Name	Common Name	Park[a]	NYS Listing[b]	Federal Listing[c]	Source[d]
Solidago puberula	Downy Goldenrod	HH			5
Sorghastrum nutans	Yellow Indiangrass	HH			5
Symphyotrichum subulatum var. subulatum	**Saltmarsh Aster**	**HH**	**T**		**2, 5**
Symplocarpus foetidus	Skunk Cabbage	B			7, 9
Thalictrum dioicum	Early Meadow-rue	B			10
Thelypteris noveboracensis	New York Fern	B			E
Thelypteris palustris	Marsh Fern	B			6, E
Trientalis borealis	Northern Starflower	B			10
Typha angustifolia	Narrow-leaved Cattail	B			5, E
Typha latifolia	Broad-leaf Cattail	B			5, E
Uvularia sessilifolia	Sessile-leaved Bellwort	B			10
Viola sp.	Violet	B			7, E
Xanthium strumarium	Rough Cocklebur	HH			7
Zizania aquatica	Eastern Wild Rice	HH			5
	Non-vascular				
Atrichum undulatum	Undulate Atrichum Moss	HH			5
Dicranum sp.	Wind-blown Mosses	HH			5
Polytrichum sp.	Haircap Moss	B			6, E
Polytrichum commune	Common Haircap Moss	HH			5
Lichens	Lichens	B			5, E
Leucobryum sp.	Leucobryum Moss	B			6, E
Leucobryum glaucum	Leucobryum Moss	HH			5

* This list should not be considered to be a comprehensive flora list for both parks;

Species documented in the parks that are shown in bold are listed as Endangered, Threatened, or otherwise considered rare in the state and are actively tracked by the New York Natural Heritage Program as species of conservation concern.

[a] F = Fahnestock, HH = Hudson Highlands, B = Both
[b] E = Endangered, T = Threatened, SC = Special Concern
[c] E = Endangered, T = Threatened, C = Candidate
[d] 1= Evans et al. 2001a (Fahnestock); 2 = Evans et al. 2001b (Hudson Highlands); 3 = NYNHP 2004a (Fahnestock); 4 = NYNHP 2004b (Hudson Highlands); 5 = Smith and Lundgren 2010a (Hudson Highlands); 6 = Smith and Lundgren 2010b (Fahnestock); 7 = Hartwig et al. 2009; 9 = Jesse Jaycox, personal communication 2010; 10 = Kimberly Smith, personal communication 2010; E = Expected based on habitat

Appendix E – Documented or Expected Fauna

Scientific Name	Common Name	Park[a]	NYS Listing[b]	Federal Listing[c]	Source[d]
	Mammals				
	Marsupials				
Didelphis virginiana	Virginia Opossum	B			11
	Shrews and Moles				
Blarina brevicauda	Northern Short-tailed Shrew	B			E
Scalopus aquaticus	Eastern Mole	HH			E
	Bats				
Myotis lucifugus	Little Brown Bat	B			1, E
Myotis leibii	**Eastern Small-footed Myotis**	**B**	**SC**		**1, 3, E**
Myotis septentrionalis	Northern Myotis	B			1, E
Perimyotis subflavus	Tri-colored Bat	B			1, E
Eptesicus fuscus	Big Brown Bat	B			1, E
Lasiurus borealis	Eastern Red Bat	B			E
Lasiurus cinereus	Hoary Bat	B			E
	Rabbits and Hares				
Sylvilagus floridanus	Eastern Cottontail	B			7, 11
Sylvilagus transitionalis	**New England Cottontail**	**B**	**SC**	**C**	**5, 6, 11**
	Rodents				
Tamias striatus	Eastern Chipmunk	B			11
Marmota monax	Woodchuck	B			7, 11
Sciurus carolinensis	Gray Squirrel	B			11
Tamiasciurus hudsonicus	Red Squirrel	B			11
Glaucomys volans	Southern Flying Squirrel	B			11, E
Castor canadensis	American Beaver	B			11
Peromyscus maniculatus	Deer Mouse	B			E
Peromyscus leucopus	White-footed Mouse	B			E
Clethrionomys gapperi	Southern Red-backed Vole	B			E
Microtus pennsylvanicus	Meadow Vole	B			E
Ondatra zibethicus	Common Muskrat	B			11
Zapus hudsonius	Meadow Jumping Mouse	B			E
Napaeozapus insignis	Woodland Jumping Mouse	B			E
Erethizon dorsatum	North American Porcupine	B			E
	Carnivores				
Canis latrans	Eastern Coyote	B			7, 11
Vulpes vulpes	Red Fox	B			11, E
Urocyon cinereoargenteus	Gray Fox	B			11, E
Ursus americanus	American Black Bear	B			11
Procyon lotor	Raccoon	B			11
Martes pennanti	Fisher	B			11
Mustela erminea	Ermine	B			E
Mustela frenata	Long-tailed Weasel	B			E
Neovison vison	American Mink	B			11, E
Mephitis mephitis	Striped Skunk	B			11
Lontra canadensis	North American River Otter	B			11
Lynx rufus	Bobcat	B			7, 11
	Even-toed Ungulates				

Scientific Name	Common Name	Park[a]	NYS Listing[b]	Federal Listing[c]	Source[d]
Odocoileus virginianus	White-tailed Deer	B			6, 7, 11
	Birds				
	Loons				
Gavia immer	Common Loon	F	SC		10
	Grebes				
Podilymbus podiceps	**Pied-billed Grebe**	**HH**	**T**		**5, 7, 8, 10**
Podiceps auritus	Horned Grebe	HH			7
	Pelicans and Cormorants				
Phalacrocorax auritus	Double-crested Cormorant	B			7, 8
	Herons, Ibises, and Storks				
Botaurus lentiginosus	American Bittern	B	SC		E
Ixobrychus exilis	**Least Bittern**	**HH**	**T**		**2, 4, 8, 11**
Ardea herodias	Great Blue Heron	B			7, 8, 10
Ardea alba	Great Egret	HH			7
Egretta thula	Snowy Egret	HH			E
Bubulcus ibis	Cattle Egret	HH			E
Butorides virescens	Green Heron	B			7, 8, 10, 11
Nycticorax nycticorax	Black-crowned Night-heron	HH			7, 8, 11
Nyctanassa violacea	Yellow-crowned Night-heron	HH			7
	Waterfowl				
Cygnus olor	Mute Swan	B	Exotic		7, 8, E
Branta bernicla	Brant	HH			7, 11
Branta canadensis	Canada Goose	B			8, 10, 11
Aix sponsa	Wood Duck	B			7, 8, 10, 11
Anas crecca	Green-winged Teal	B			10, 11
Anas rubripes	American Black Duck	B			7, 8, 10, 11
Anas platyrhynchos	Mallard	B			7, 8, 10, 11
Anas acuta	Northern Pintail	HH			7
Anas discors	Blue-winged Teal	HH			7
Anas strepera	Gadwall	HH			7
Aythya valisineria	Canvasback	HH			7
Aythya collaris	Ring-necked Duck	B			7, 10
Aythya marila	Greater Scaup	F			10
Bucephala clangula	Common Goldeneye	B			7, 10
Bucephala albeola	Bufflehead	B			7, 10
Lophodytes cucullatus	Hooded Merganser	B			10, E
Mergus merganser	Common Merganser	B			7, 8, 10, 11
	Raptors				
Coragyps atratus	Black Vulture	B			8, 11, E
Cathartes aura	Turkey Vulture	B			8, 10, 11
Pandion haliaetus*	**Osprey**	**B**	**SC**		**7, 8, 10**
Haliaeetus leucocephalus	**Bald Eagle**	**B**	**T**		**2, 4, 7, 8, 10**
Circus cyaneus*	**Northern Harrier**	**B**	**T**		**7, 10**
Accipiter striatus	Sharp-shinned Hawk	B	SC		7, 8, 10
Accipiter cooperii	Cooper's Hawk	B	SC		7, 8, 10
Accipiter gentilis	Northern Goshawk	B	SC		10, E
Buteo lineatus	Red-shouldered Hawk	B	SC		7, 8, 10
Buteo platypterus	Broad-winged Hawk	B			8, 10, 11
Buteo jamaicensis	Red-tailed Hawk	B			7, 8, 10, 11
Buteo lagopus	Rough-legged Hawk	F			10

Scientific Name	Common Name	Park[a]	NYS Listing[b]	Federal Listing[c]	Source[d]
Falco sparverius	American Kestrel	B			8, 10
Falco columbarius	Merlin	HH			7
Falco peregrinus	**Peregrine Falcon**	**HH**	**E**		**2, 4, 5, 7, 8**
	Fowls and Gallinaceous Birds				
Bonasa umbellus	Ruffed Grouse	B			8, 10, 11
Meleagris gallopavo	Wild Turkey	B			8, 10, 11
	Rails and Cranes				
Rallus limicola	Virginia Rail	HH			8
Porzana carolina	Sora	HH			8
Fulica americana	American Coot	F			10
	Gulls, Plovers, and Shorebirds				
Charadrius vociferus	Killdeer	B			7, 8, 10
Tringa solitaria	Solitary Sandpiper	B			7, 10
Actitis macularius	Spotted Sandpiper	B			7, 8, 10
Scolopax minor	American Woodcock	B			7, 8, 10
Larus delawarensis	Ring-billed Gull	B			7, 10
Larus argentatus	Herring Gull	B			7, 10
Larus marinus	Great Black-backed Gull	B			7, 8, 10
Sterna forsteri	Forster's Tern	HH			7
	Pigeons and Doves (Other Birds)				
Columba livia	Rock Pigeon	B	Exotic		8, 10, 11
Zenaida macroura	Mourning Dove	B			7, 8, 10
	Cuckoos (Other Birds)				
Coccyzus erythropthalmus	Black-billed Cuckoo	B			8, 10, E
Coccyzus americanus	Yellow-billed Cuckoo	B			7, 8, 10
	Owls				
Megascops asio	Eastern Screech-Owl	B			7, 8, 10
Bubo virginianus	Great Horned Owl	B			8, 10, E
Strix varia	Barred Owl	B			7, 8, 10
Aegolius acadicus	Northern Saw-whet Owl	F			10
	Nightbirds				
Chordeiles minor	Common Nighthawk	B	SC		10, 11
Caprimulgus vociferus	Whip-poor-will	B	SC		8, 10, 11
	Swifts (Other Birds)				
Chaetura pelagica	Chimney Swift	B			7, 8, 10
	Hummingbirds (Other Birds)				
Archilochus colubris	Ruby-throated Hummingbird	B			8, 10, 11
	Kingfishers (Other Birds)				
Megaceryle alcyon	Belted Kingfisher	B			7, 8, 10
	Woodpeckers				
Melanerpes carolinus	Red-bellied Woodpecker	B			7, 8, 10, 11
Sphyrapicus varius	Yellow-bellied Sapsucker	B			7, 8, 10, 11
Picoides pubescens	Downy Woodpecker	B			7, 8, 10, 11
Picoides villosus	Hairy Woodpecker	B			7, 8, 10
Colaptes auratus	Northern Flicker	B			7, 8, 10
Dryocopus pileatus	Pileated Woodpecker	B			7, 8, 10, 11
	Perching Birds				
Contopus cooperi	Olive-sided Flycatcher	F			10
Contopus virens	Eastern Wood-Pewee	B			8, 10, 11

Scientific Name	Common Name	Park[a]	NYS Listing[b]	Federal Listing[c]	Source[d]
Empidonax virescens	Acadian Flycatcher	B			8, 10, 11
Empidonax alnorum	Alder Flycatcher	HH			8
Empidonax traillii	Willow Flycatcher	B			8
Empidonax minimus	Least Flycatcher	B			8, 10
Sayornis phoebe	Eastern Phoebe	B			7, 8, 10, 11
Myiarchus crinitus	Great Crested Flycatcher	B			7, 8, 10
Tyrannus tyrannus	Eastern Kingbird	B			8, 10
Progne subis	Purple Martin	HH			8
Tachycineta bicolor	Tree Swallow	B			7, 8, 10
Stelgidopteryx serripennis	Northern Rough-winged Swallow	B			7, 8, 10
Riparia riparia	Bank Swallow	B			8, 10
Petrochelidon pyrrhonota	Cliff Swallow	B			8
Hirundo rustica	Barn Swallow	B			8, 10
Cyanocitta cristata	Blue Jay	B			7, 8, 10, 11
Corvus brachyrhynchos	American Crow	B			7, 8, 10, 11
Corvus ossifragus	Fish Crow	B			7, 8
Corvus corax	Common Raven	B			8, 10, 11
Poecile atricapillus	Black-capped Chickadee	B			7, 8, 10, 11
Baeolophus bicolor	Tufted Titmouse	B			7, 8, 10, 11
Sitta canadensis	Red-breasted Nuthatch	F			10
Sitta carolinensis	White-breasted Nuthatch	B			7, 8, 10
Certhia americana	Brown Creeper	B			8
Thryothorus ludovicianus	Carolina Wren	B			7, 8, 10, 11
Troglodytes aedon	House Wren	B			7, 8, 10
Troglodytes troglodytes hiemalis	Winter Wren	B			7, 8, 10
Cistothorus palustris	Marsh Wren	B			7, 8, 10
Regulus satrapa	Golden-crowned Kinglet	B			7, 10
Regulus calendula	Ruby-crowned Kinglet	B			7, 10
Polioptila caerulea	Blue-gray Gnatcatcher	B			7, 8, 10
Sialia sialis	Eastern Bluebird	B			7, 8, 10
Catharus fuscescens	Veery	B			7, 8, 10
Catharus minimus	Gray-cheeked Thrush	F			10
Catharus ustulatus	Swainson's Thrush	F			8, 10
Catharus guttatus	Hermit Thrush	B			7, 8, 10
Hylocichla mustelina	Wood Thrush	B			7, 8, 10, 11
Turdus migratorius	American Robin	B			7, 8, 10, 11
Dumetella carolinensis	Gray Catbird	B			7, 8, 10, 11
Mimus polyglottos	Northern Mockingbird	B			7, 8, 10
Toxostoma rufum	Brown Thrasher	B			7, 8, 10
Bombycilla cedrorum	Cedar Waxwing	B			7, 8, 10
Sturnus vulgaris	European Starling	B	Exotic		7, 8, 10
Vireo griseus	White-eyed Vireo	B			8, 10
Vireo solitarius	Blue-headed Vireo	B			7, 8, 10
Vireo flavifrons	Yellow-throated Vireo	B			8, 10, 11
Vireo gilvus	Warbling Vireo	B			7, 8, 10
Vireo philadelphicus	Philadelphia Vireo	F			10
Vireo olivaceus	Red-eyed Vireo	B			7, 8, 10, 11
Vermivora cyanoptera	Blue-winged Warbler	B			7, 8, 10, 11

Scientific Name	Common Name	Park[a]	NYS Listing[b]	Federal Listing[c]	Source[d]
Vermivora chrysoptera	Golden-winged Warbler	F	SC		10
Oreothlypis peregrina	Tennessee Warbler	F			10
Oreothlypis ruficapilla	Nashville Warbler	F			10
Parula americana	Northern Parula	B			7, 8, 10
Dendroica petechia	Yellow Warbler	B			7, 8, 10
Dendroica pensylvanica	Chestnut-sided Warbler	B			8, 10
Dendroica magnolia	Magnolia Warbler	F			10
Dendroica tigrina	Cape May Warbler	F			10
Dendroica caerulescens	Black-throated Blue Warbler	B			7, 8, 10
Dendroica coronata	Yellow-rumped Warbler	B			7, 10
Dendroica virens	Black-throated Green Warbler	B			8, 10
Dendroica fusca	Blackburnian Warbler	F			8, 10
Dendroica pinus	Pine Warbler	B			8, 10
Dendroica discolor	Prairie Warbler	B			8, 10, 11
Dendroica palmarum	Palm Warbler	B			7, 10
Dendroica castanea	Bay-breasted Warbler	F			10
Dendroica striata	Blackpoll Warbler	F			10
Dendroica cerulea	Cerulean Warbler	B	SC		8, 10, 11
Mniotilta varia	Black-and-white Warbler	B			7, 8, 10, 11
Setophaga ruticilla	American Redstart	B			7, 8, 10
Helmitheros vermivorum	Worm-eating Warbler	B			8, 10, 11
Seiurus aurocapilla	Ovenbird	B			8, 10, 11
Parkesia noveboracensis	Northern Waterthrush	B			8, 10
Parkesia motacilla	Louisiana Waterthrush	B			8, 10
Geothlypis trichas	Common Yellowthroat	B			7, 8, 10, 11
Wilsonia citrina	Hooded Warbler	B			8, 10, 11
Wilsonia pusilla	Wilson's Warbler	B			7, 10
Wilsonia canadensis	Canada Warbler	B			8, 10
Icteria virens	Yellow-breasted Chat	HH	SC		8
Piranga olivacea	Scarlet Tanager	B			8, 10, 11
Cardinalis cardinalis	Northern Cardinal	B			7, 8, 10, 11
Pheucticus ludovicianus	Rose-breasted Grosbeak	B			7, 8, 10, 11
Passerina cyanea	Indigo Bunting	B			7, 8, 10, 11
Pipilo erythrophthalmus	Eastern Towhee	B			7, 8, 10, 11
Spizella arborea	American Tree Sparrow	B			7, 10
Spizella passerina	Chipping Sparrow	B			8, 10, 11
Spizella pusilla	Field Sparrow	B			8, 10
Passerculus sandwichensis	Savannah Sparrow	HH			8
Passerella iliaca	Fox Sparrow	F			10
Melospiza melodia	Song Sparrow	B			7, 8, 10
Melospiza georgiana	Swamp Sparrow	B			8, 10
Zonotrichia albicollis	White-throated Sparrow	B			7, 8, 10
Junco hyemalis	Dark-eyed Junco	B			7, 8, 10
Plectrophenax nivalis	Snow Bunting	HH			7
Dolichonyx oryzivorus	Bobolink	B			8, 10
Agelaius phoeniceus	Red-winged Blackbird	B			7, 8, 10
Sturnella magna	Eastern Meadowlark	B			8, 10
Euphagus carolinus	Rusty Blackbird	F			10
Quiscalus quiscula	Common Grackle	B			7, 8, 10

Scientific Name	Common Name	Park[a]	NYS Listing[b]	Federal Listing[c]	Source[d]
Molothrus ater	Brown-headed Cowbird	B			7, 8, 10
Icterus spurius	Orchard Oriole	B			7, 8, 10
Icterus galbula	Baltimore Oriole	B			7, 8, 10, 11
Pinicola enucleator	Pine Grosbeak	F			10
Carpodacus purpureus	Purple Finch	F			8, 10
Carpodacus mexicanus	House Finch	B			8, 10
Loxia curvirostra	Red Crossbill	F			10
Loxia leucoptera	White-winged Crossbill	F			10
Acanthis flammea	Common Redpoll	F			10
Acanthis hornemanni	Hoary Redpoll	F			10
Spinus pinus	Pine Siskin	F			10
Spinus tristis	American Goldfinch	B			8, 10
Coccothraustes vespertinus	Evening Grosbeak	F			10
Passer domesticus	House Sparrow	B	Exotic		8, 10
	Reptiles				
	Lizards, Snakes and Amphisbaenians				
Sceloporus undulatus	**Fence Lizard**	**HH**	**T**		**2, 4, 5, 11**
Eumeces fasciatus	Five-lined Skink	HH			11
Carphophis amoenus	**Worm Snake**	**HH**	**SC**		**5, 11**
Coluber c. constrictor	Northern Black Racer	B			7, 11
Diadophis punctatus edwardsii	Northern Ringneck Snake	B			11
Elaphe o. obsoleta	Black Rat Snake	B			7, 11
Heterodon platirhinos	Eastern Hognose Snake	B	SC		11
Lampropeltis t. triangulum	Eastern Milk Snake	B			11
Nerodia s. sipedon	Northern Water Snake	B			11
Storeria d. dekayi	Northern Brown Snake	B			E
Storeria occipitomaculata	Redbelly Snake	B			E?
Thamnophis sauritus	Eastern Ribbon Snake	B			E
Thamnophis sirtalis	Common Garter Snake	B			7, 11
Liochlorophis vernalis	Smooth Green Snake	B			E
Agkistrodon contortrix mokasen	Northern Copperhead	B			11
Crotalus horridus	**Timber Rattlesnake**	**HH**	**T**		**2, 4, 5, 11**
	Turtles				
Chelydra s. serpentina	Common Snapping Turtle	B			7, 11
Chrysemys picta	Painted Turtle	B			7, 11
Clemmys gutata	Spotted Turtle	B	SC		11, E
Glyptemys insculpta	Wood Turtle	B	SC		11, E
Terrapene carolina	Eastern Box Turtle	B	SC		11
Trachemys scripta	Slider	B	Exotic		7, 11
Sternotherus odoratus	Common Musk Turtle	B			E
	Amphibians				
	Salamanders				
Ambystoma jeffersonianum	Jefferson Salamander	HH	SC		11
Ambystoma maculatum	Spotted Salamander	B			7, 11
Ambystoma opacum	Marbled Salamander	B	SC		11, E
Eurycea bislineata	Northern Two-lined Salamander	HH			11
Hemidactylium scutatum	Four-toed Salamander	F			11
Plethodon c. cinereus	Northern Redback Salamander	B			7, 11
Plethodon glutinosus	Northern Slimy Salamander	B			11

Scientific Name	Common Name	Park[a]	NYS Listing[b]	Federal Listing[c]	Source[d]
Notophthalmus viridescens	Red-spotted Newt	B			11
	Frogs and Toads				
Bufo americanus	Eastern American Toad	B			7, 11
Hyla versicolor	Gray Treefrog	B			11
Pseudacris crucifer	Northern Spring Peeper	B			11
Rana catesbeiana	Bull Frog	B			11
Rana clamitans melanota	Green Frog	B			7, 11
Rana palustris	Pickerel Frog	B			11
Rana sylvatica	Wood Frog	B			7, 11
	Fish				
	Lampreys				
Petromyzon marinus	Sea Lamprey	HH			12
	Paddlefishes, Spoonfishes, and Sturgeons				
Acipenser brevirostrum	**Shortnose Sturgeon**	**HH**	**E**	**E**	**5, 11, 12**
Acipenser oxyrinchus	**Atlantic Sturgeon**	**HH**	**Protected**	**C**	**5, 11, 12**
	Eels				
Anguilla rostrata	American Eel	B			11, 12
	Anchovies and Herrings				
Alosa aestivalis	Blueback Herring	HH			11, 12
Alosa mediocris	Hickory Shad	HH			12
Alosa pseudoharengus	Alewife	HH			11, 12
Alosa sapidissima	American Shad	HH			E
Brevoortia tyrannus	Atlantic Menhaden	HH			11, 12
Anchoa mitchelli	Bay Anchovy	HH			11, 12
	Salmon and Trout				
Oncorhynchus mykiss	Rainbow Trout	F			11
Salmo trutta	Brown Trout	B			11, 12
Salvelinus fontinalis	Brook Trout	B			E
Osmerus mordax	Rainbow Smelt	HH			11, 12
	Mudminnows and Pikes				
Umbra limi	Central Mudminnow	HH			12
Umbra pygmaea	Eastern Mudminnow	HH			12
Esox americanus	Redfin Pickerel	HH			11, 12
Esox niger	Chain Pickerel	HH			11, 12
	Minnows and Suckers				
Carassius auratus	Goldfish	HH			12
Cyprinus carpio	Common Carp	B			11, 12
Notemigonus crysoleucas	Golden Shiner	HH			11, 12
Notropis hudsonius	Spottail Shiner	HH			11, 12
Rhynichthys atratulus	Blacknose Dace	HH			11, 12
Rhynichthys cataractae	Longnose Dace	HH			12
Semotilus atromaculatus	Creek Chub	HH			11, 12
Catostomus commersonii	White Sucker	HH			11, 12
	Catfishes				
Ictalurus punctatus	Channel Catfish	HH			11, 12
Ameiurus catus	White Catfish	HH			11, 12
Ictalurus nebulosus	Brown Bullhead	HH			11, 12
	Cods				
Microgadus tomcod	Atlantic Tomcod	HH			11, 12
	Needlefishes				
Strongylura marina*	**Atlantic Needlefish**	**HH**	**Rare**		**11, 12**
	Killifishes				

Scientific Name	Common Name	Park[a]	NYS Listing[b]	Federal Listing[c]	Source[d]
Fundulus diaphanus	Banded Killifish	HH			11, 12
Fundulus heteroclitus	Mummichog	HH			11, 12
	Silversides				
Menidia menidia	Atlantic Silverside	HH			11, 12
	Pipefishes and Sticklebacks				
Apeltes quadricus	Fourespine Stickleback	HH			11, 12
Sygnathus fuscus	Northern Pipefish	HH			12
	Perch-like Fishes				
Morone americana	White Perch	HH			11, 12
Morone saxatilis	Striped Bass	HH			11, 12
Ambloplites rupestris	Rock Bass	HH			11, 12
Lepomis auritus	Redbreast Sunfish	HH			11, 12
Lepomis gibbosus	Pumpkinseed	HH			11, 12
Lepomis macrochirus	Bluegill	HH			11, 12
Micropterus dolomieui	Smallmouth Bass	HH			11, 12
Micropterus salmoides	Largemouth Bass	B			11, 12
Pomoxis negromaculatus	Black Crappie	F			11
Etheostoma olmstedi	Tessellated Darter	HH			11, 12
Perca flavescens	Yellow Perch	B			11, 12
Pomatomus saltatrix	Atlantic Bluefish	HH			11, 12
	Flatfishes, Flounders, and Soles				
Trinectes maculatus	Hogchoker	HH			11, 12
	Invertebrates				
	Crustaceans				
Crangon septemspinosa	Sand Shrimp	HH			12
Palaemonetes pugio	Grass Shrimp	HH			12
Callinectes sapidus	Blue Crab	HH			11, 12
Rhithropanopeus harrisii	White-tipped Mudcrab	HH			12
Uca minax	Red-jointed Fiddler Crab	HH			12
	Beetles, Weevils				
Cicindela limbalis	Common Claybank Tiger Beetle	HH			11
Cicindela sexguttata	Six-spotted Tiger Beetle	B			11
	Butterflies, Skippers, and Moths				
Papilio polyxenes	Black Swallowtail	HH			7
Papilio glaucus	Eastern Tiger Swallowtail	HH			7
Satyrium edwardsii	**Edward's Hairstreak**	**F**	**Rare**		**6**
Celastrina neglectamajor	**Appalachian Azure**	**F**	**Rare**		**3, 6**
Danaus plexippus	Monarch	B			7, 11
	Dragonflies and Damselflies				
Calopteryx aequabilis	River Jewelwing	B			E
Calopteryx amata	Superb Jewelwing	B			P
Calopteryx maculata	Ebony Jewelwing	B			11
Lestes inaequalis	Elegant Spreadwing	B			13, E
Lestes forcipatus	Sweetflag Spreadwing	B			E
Lestes congener	Spotted Spreadwing	B			E
Lestes disjunctus disjunctus	Common Spreadwing	B			E
Lestes disjunctus australis	Common Spreadwing	B			E
Lestes eurinus	Amber-winged Spreadwing	B			13, E
Lestes rectangularis	Slender Spreadwing	B			E
Lestes unguiculatus	Lyre-tipped Spreadwing	B			E
Lestes vigilax	Swamp Spreadwing	B			13, E
Argia apicalis	Blue-fronted Dancer	B			E

Scientific Name	Common Name	Park[a]	NYS Listing[b]	Federal Listing[c]	Source[d]
Argia fumipennis violacea	Variable Dancer	B			13, E
Argia moesta	Powdered Dancer	B			E
Argia translata	Dusky Dancer	B			E
Enallagma boreale	Boreal Bluet	F			P
Enallagma laterale	New England Bluet	F			P
Enallagma traviatum	Slender Bluet	B			E
Enallagma carunculatum	Tule Bluet	B			E
Enallagma aspersum	Azure Bluet	B			13, E
Enallagma basidens	Double-striped Bluet	B			P
Enallagma civile	Familiar Bluet	B			E
Enallagma annexum	Northern Bluet	B			E
Enallagma divagans	Turquoise Bluet	B			E
Enallagma durum	Big Bluet	HH			E
Enallagma ebrium	Marsh Bluet	B			13, E
Enallagma exsulans	Stream Bluet	B			E
Enallagma geminatum	Skimming Bluet	B			13, E
Enallagma hageni	Hagen's Bluet	B			E
Enallagma vesperum	Vesper Bluet	B			13, E
Ischnura kellicotti	Lilypad Forktail	B			E
Ischnura posita	Fragile Forktail	B			13, E
Ischnura verticalis	Eastern Forktail	B			E
Nehalennia irene	Sedge Sprite	B			E
Nehalennia gracilis	Sphagnum Sprite	B			E
Amphiagrion saucium	Eastern Red Damsel	B			E
Chromagrion conditum	Aurora Damsel	B			13, E
Tachopteryx thoreyi	Gray Petaltail	B	SC		P
Cordulegaster diastatops	Delta-spotted Spiketail	B			13, E
Cordulegaster erronea	Tiger Spiketail	B	Rare		E
Cordulegaster maculata	Twin-spotted Spiketail	B			E
Cordulegaster obliqua	**Arrowhead Spiketail**	**B**	**Rare**		**3, 5, 6, 11, 13**
Arigomphus furcifer	Lilypad Clubtail	B			E
Arigomphus villosipes	Unicorn Clubtail	B			13, E
Dromogomphus spinosus	Black-shouldered Spinyleg	B			E
Gomphus rogersi	Sable Clubtail	B	Rare		P
Gomphus exilis	Lancet Clubtail	B			E
Gomphus lividus	Ashy Clubtail	B			E
Gomphus spicatus	Dusky Clubtail	B			E
Hagenius brevistylus	Dragonhunter	B			13, E
Lanthus parvulus	Northern Pygmy Clubtail	B			E
Lanthus vernalis	Southern Pygmy Clubtail	B			E
Stylurus plagiatus	Russet-tipped Clubtail	HH			E
Stylurus scudderi	Zebra Clubtail	B			P
Stylurus spiniceps	Arrow Clubtail	HH			P
Stylogomphus albistylus	Least Clubtail	B			E
Ophiogomphus aspersus	Brook Snaketail	B			P
Ophiogomphus mainensis	Maine Snaketail	B			P
Aeshna canadensis	Canada Darner	B			E
Aeshna clepsydra	Mottled Darner	B			E
Aeshna constricta	Lance-tipped Darner	B			E
Rhionaeschna mutata	Spatterdock Darner	B	Rare		E
Aeshna tuberculifera	Black-tipped Darner	B			E

Scientific Name	Common Name	Park[a]	NYS Listing[b]	Federal Listing[c]	Source[d]
Aeshna umbrosa	Shadow Darner	B			13, E
Aeshna verticalis	Green-striped Darner	B			E
Anax junius	Common Green Darner	B			13, E
Anax longipes	Comet Darner	B	Rare		E
Basiaeschna janata	Springtime Darner	B			E
Boyeria grafiana	Ocellated Darner	B			E
Boyeria vinosa	Fawn Darner	B			E
Epiaeschna heros	Swamp Darner	B			E
Gomphaeschna furcillata	Harlequin Darner	B			13, E
Nasiaeschna pentacantha	Cyrano Darner	B			E
Didymops transversa	Stream Cruiser	B			E
Cordulia shurtleffi	American Emerald	B			E
Dorocordulia lepida	Petite Emerald	F			E
Dorocordulia libera	Racket-tailed Emerald	F			E
Epicordulia princeps	Prince Baskettail	B			13, E
Epitheca canis	Beaverpond Baskettail	B			E
Epitheca cynosura	Common Baskettail	B			13, E
Tetragoneuria spinigera	Spiny Baskettail	B			E
Helocordulia uhleri	Uhler's Sundragon	B			E
Neurocordulia obsoleta	Umber Shadowdragon	B			E
Somatochlora elongata	Ski-tailed Emerald	F			E
Somatochlora linearis	Mocha Emerald	B	Rare		P
Somatochlora tenebrosa	Clamp-tipped Emerald	B			E
Somatochlora walshii	Brush-tipped Emerald	B			E
Somatochlora williamsoni	Williamson's Emerald	B			E
Celithemis elisa	Calico Pennant	B			E
Celithemis eponina	Halloween Pennant	B			E
Erythemis simplicicollis	Eastern Pondhawk	B			11
Leucorrhinia frigida	Frosted Whiteface	F			E
Leucorrhinia proxima	Red-waisted Whiteface	F			E
Leucorrhinia intacta	Dot-tailed Whiteface	B			E
Libellula cyanea	Spangled Skimmer	B			E
Libellula incesta	Slaty Skimmer	B			E
Libellula luctuosa	Widow Skimmer	B			E
Libellula needhami	**Needham's Skimmer**	**HH**	**Rare**		**11, 13**
Libellula pulchella	Twelve-spotted Skimmer	B			13, E
Libellula quadrimaculata	Four-spotted Skimmer	B			E
Libellula semifasciata	Painted Skimmer	B			E
Libellula vibrans	Great Blue Skimmer	B			E
Libellula exusta	White Corporal	B			P
Plathemis lydia	Common Whitetail	B			11, 13
Ladona julia	Chalk-fronted Corporal	B			E
Pachydiplax longipennis	Blue Dasher	B			13, E
Pantala flavescens	Wandering Glider	B			E
Pantala hymenaea	Spot-winged Glider	B			E
Perithemis tenera	Eastern Amberwing	B			E
Sympetrum internum	Cherry-faced Meadowhawk	B			E
Sympetrum obtrusum	White-faced Meadowhawk	B			13, E
Sympetrum rubicundulum	Ruby Meadowhawk	B			E
Sympetrum semicinctum	Band-winged Meadowhawk	B			E
Sympetrum vicinum	Yellow-legged (Autumn) Meadowhawk	B			13, E

Scientific Name	Common Name	Park[a]	NYS Listing[b]	Federal Listing[c]	Source[d]
Tramea lacerata	Black Saddlebags	B			13, E

* This list should not be considered to be a comprehensive fauna list for both parks;

Endangered, Threatened, Special Concern, or Rare species that are actively tracked by the New York Natural Heritage Program as species of conservation concern and found in one or both parks are shown in bold. Bolded species that are marked with an asterisk are actively tracked by the New York Natural Heritage Program, but are not currently considered regular occurrences in the parks (i.e., these species occur infrequently and are not annual breeding populations, regularly occurring non-breeding populations, or species concentration areas). Additional data is needed on Atlantic Needlefish at Constitution Marsh to determine if this species is considered a Natural Heritage Program occurrence at this location.

[a] F = Fahnestock, HH = Hudson Highlands, B = Both
[b] E = Endangered, T = Threatened, SC = Special Concern
[c] E = Endangered, T = Threatened, C = Candidate
[d] 1= Evans et al. 2001a (Fahnestock); 2 = Evans et al. 2001b (Hudson Highlands); 3 = NYNHP 2004a (Fahnestock); 4 = NYNHP 2004b (Hudson Highlands); 5 = Smith and Lundgren 2010a (Hudson Highlands); 6 = Smith and Lundgren 2010b (Fahnestock); 7 = Hartwig et al. 2009 (Hudson Highlands); 8 = McGowan and Corwin 2008; 9 = NYS DEC 2008; 10 = Birds of Fahnestock State Park Checklist; 11 = Jesse Jaycox, personal communication 2010; 12 = Eric Lind, personal communication 2010; 13 = Erin White, personal communication 2010; E = Expected based on habitat; P = Possible based on region of the state.

Appendix F – Existing Buildings

Fahnestock

- Park Office
- Park Manager Residence
- Garage at Park Office Complex.
- Picnic Contact Station
- Pelton Pond Picnic Shelter
- Pelton Pond Comfort Station
- Pumphouse
- Campground Contact Station
- Comfort Station (campground)
- Water Treatment Building
- Water Tower
- Nature Center
- Sewage Treatment Building
- Beach Contact Station
- Beach Concession
- Beach Bathhouse
- Canopus Boat Rental Building
- Stillwater Boat House (existing)
- South Zone Police Building (vacant/storage)
- Old Ski Lodge (vacant/storage)
- Storage Shelter
- Repeater Building
- Pump House
- Group Camp Outhouse (Vacant)
- Group Camp Outhouse (Vacant)
- TOEC Hillside Cabin #1
- TOEC Hillside Cabin #2
- TOEC Hillside Cabin #3
- TOEC Hillside Cabin #4
- TOEC Hillside Cabin #5
- TOEC Lakeside Cabin #6
- TOEC Lakeside Cabin #7
- TOEC Lakeside Cabin #8
- TOEC Lakeside Cabin #9
- TOEC Hillside Staff Cabin
- TOEC Lakeside Staff Cabin
- TOEC Director’s Cabin
- TOEC Stowell (staff) Cabin
- TOEC Hillside Shower Building
- TOEC Lakeside Shower Building
- TOEC Pump house
- TOEC Steel Water Tower

- TOEC Boat Storage
- TOEC Sugar Shack
- TOEC Maintenance Garage Storage
- TOEC Lodge / Dining Hall / TOEC Office
- Cook's Garage
- Cook's Shed
- Cook's House
- Cook's Cottage
- Rock Cattle Barn
- Rock Smokehouse
- Trail Shelter
- Back Campground Comfort/Shower Building
- Gas Shed (Vacant)
- TOEC Cold Storage
- TOEC Wood Storage
- TOEC Recreational Equipment Shed
- TOEC Storage Shed ('Baby Barn')
- TOEC Maintenance Barn
- Wiccopee Barn
- Hubbard Lodge
- Hubbard House (staff residence)
- Conklin Cottage
- Hubbard Brick School House (Vacant)

Hudson Highlands

- Little Stony Point House
- Residence at Route 9D
- Browne House
- HarrimanToll House (Information Center)
- Arden Garage (ruin)
- Arden 3 story ruin
- Arden 2 story ruin
- Denning's Point Residence
- Denning's Point Residence Shed
- Denning's Point Paperclip Building (vacant – shell only)
- Denning's Point 4 Bay Garage (vacant – shell only)
- Denning's Point Storage Barn
- Woodle House (vacant)
- Annsville Creek Paddlesport Center Kayak Storage and Rental
- Annsville Creek Paddlesport Center Clivus Multrum Toilet
- Beacon Institute Building One – Center for Environmental Innovation and Education
- University Settlement Camp (administered by *City of Beacon*):
    - Residence
    - Pole Barn
    - 1 Story Building
    - Barn

- Theater
- Infirmary
- Lodge and Dining Hall
- Utility Storage
- Pool Pump Building
- Chapel
- Activities Building
- Dining Hall
- Two (2) Nature Centers
- Sixteen (16) Dormitory/Cabin
- Five (5) Misc. Buildings

Appendix G – Bird Conservation Area Management Guidance Summaries

New York State
Bird Conservation Area Program
Management Guidance Summary

Site Name: Fahnestock Bird Conservation Area

State Ownership and Managing Agency: Office of Parks, Recreation, and Historic Preservation (OPRHP)

Location: Putnam County, Towns of Carmel, Kent, Philipstown, and Putnam Valley.

Size of Area: 13,892 acres

DEC Region: 3

OPRHP Region: Taconic

General Site Information:
The Fahnestock BCA is located within Clarence Fahnestock Memorial State Park. The park is located in north central Putnam County roughly between the Taconic State Parkway and US Route 9. The park is largely forested, and offers numerous outdoor recreation opportunities, including hiking, swimming, camping, and groomed trails for cross-country skiing. The Fahnestock BCA is within Audubon New York's Fahnestock and Hudson Highlands Important Bird Area (Burger and Liner 2005). It was originally designated as a BCA in 2000. This update to the BCA Management Guidance Summary was completed in order to consider recent land acquisitions which have expanded the size of Clarence Fahnestock State Park. Review of these sites indicated that the majority of these parcels met the criteria for inclusion within the existing BCA.

Vision Statement: The Fahnestock BCA will provide for the continued conservation of forest-interior bird species. Recreational/interpretive opportunities and access will continue in a manner consistent with the conservation of the diverse bird species using the area. In cooperation with OPRHP's Taconic Outdoor Education Center and local bird clubs, the BCA will serve as a focal point for interpretation of bird communities of the lower Hudson Valley.

Key BCA Criteria: Migratory concentration site; diverse species concentration site; species at risk site (ECL §11-2001, 3. e., f. and h). Fahnestock BCA represents one of the largest areas of contiguous forest in the lower Hudson Valley, and thus provides significant stopover and breeding habitat for a diverse group of forest-dependent bird species. Characteristic bird species found during migratory and breeding periods include Broad-winged Hawk, Acadian Flycatcher, Blue-gray Gnatcatcher, Veery, Hermit Thrush, Yellow-throated Vireo, Worm-eating Warbler, and Scarlet Tanager. Species-at-risk at Fahnestock include the State Threatened Least Bittern and Special Concern Sharp-shinned, Cooper's and Red-shouldered. Hawks and Eastern Whip-poor-will.

Critical Habitat Types: The BCA is composed primarily of extensive areas of contiguous mature forest, primarily Chestnut Oak and Appalachian Oak-Hickory forests. These hardwood forests provide habitat for species dependent upon unfragmented forest. Additionally, wetland habitats, such as highbush blueberry bogs and red-maple hardwood swamps, are dispersed throughout the BCA, and provide important habitat for wetland-dependent birds.

Operation and Management Considerations:

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

Bird habitat in several areas of the BCA is being impacted or potentially impacted by the spread of non-native invasive species. For example, a non-native insect, the hemlock wooly adelgid (HWA), has resulted in widespread hemlock mortality in NYS and probable loss of habitat for hemlock-associated birds (Tingley et al. 2002). HWA is a very real threat to the conservation of these species. A variety of invasive plant species, such as Phragmites, black swallow-wort, and Japanese barberry, are present within the BCA and are displacing native vegetation. Given the potential for these species to reduce habitat quality (Schmidt and Whelan 1999, Borgmann and Rodewald 2004), invasive species management, including public education, is an important priority at this park.

Deer populations within the BCA also appear to be negatively impacting bird habitat quality. Deer browsing pressure in some areas is limiting regeneration of native vegetation and has reduced the density of shrub and understory vegetation, thus impacting habitat quality for birds that depend on dense understory vegetation (McShea and Rappole 2000). In addition, due to preferential browsing on native species, deer can favor the spread of non-native invasive vegetation (Rooney et al. 2004). OPRHP staff will examine options to limit the impacts of deer on the diversity and density of native vegetation.

Identify seasonal sensitivities; adjust routine operations accordingly.

There are currently no seasonal sensitivities within the BCA.

Identify state activities or operations which 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.

There are no current OPRHP activities which pose a threat to critical habitats.

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

Illegal uses within the BCA, in particular illegal All Terrain Vehicle (ATV) use, have disturbed habitat and in turn nesting of birds. Park staff will consider options to limit the potential for ATV access and improve enforcement activities regarding ATV use.

Education, Outreach, and Research Considerations:

Assess current access; recommend enhanced access, if feasible.

Current access is will be improved under the master plan. Parking will be increased somewhat, existing lots improved and additional trails are planned. Park grounds are open year-round.

Determine education and outreach needs; recommend strategies and materials.

Partner with Audubon and local bird clubs to develop interpretive displays, slide shows, programs and materials about needs of forest-dependent bird species.

The Taconic Outdoor Education Center, located within the BCA, hosts numerous interpretive programs for schools groups and the general public and will continue to develop curriculum and programs designed to further appreciation of the birds and bird habitats found within the BCA.

Update and distribute the OPRHP checklist "Birds of Fahnestock State Park."

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

Monitoring of bird populations is essential to understand management needs and interpret the impact of management actions. OPRHP will work with partners on long-term point counts and other surveys within important habitat types within the BCA.

Contacts:

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Bill Bauman, OPRHP, Clarence Fahnestock State Park, 845-225-7207

Sources:

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Date Designated: 9/2000

Date Amended: Final Published—12/15/2010

New York State
Bird Conservation Area Program
Management Guidance Summary

Site Name: Hudson Highlands BCA

State Ownership and Managing Agency: Office of Parks, Recreation, and Historic Preservation (OPRHP)

Location: Dutchess County, Town of Fishkill and the City of Beacon; Putnam County, Town of Philipstown and the Villages of Nelsonville and Cold Spring; Westchester County, Town of Cortlandt

Size of Area: 6,868 acres

DEC Region: 3 **OPRHP Region:** Taconic

General Site Information: The Hudson Highlands BCA is located within Hudson Highlands State Park which consists of a series of separate parcels along a 16 mile stretch of the east shore of the Hudson River extending from southern Dutchess County to northern Westchester County. The park extends eastward from the river up to 4 miles. In 2007, approximately 270 acres within Hudson Highlands State Park were designated as the Constitution Marsh BCA. The park is largely undeveloped, and offers numerous recreational activities, including fishing, hiking, and kayaking along the Hudson River. The Hudson Highlands BCA is within Audubon New York's Fahnestock and Hudson Highlands Important Bird Area (Burger and Liner 2005).

Vision Statement: The Hudson Highlands BCA will provide for the continued conservation of a diverse assemblage of bird species. Recreational/interpretive opportunities and access will continue in a manner consistent with the bird species using the area for breeding or during migration. The BCA will remain in a relatively natural condition.

Key BCA Criteria: Migratory concentration site; diverse species concentration site; species at risk site (ECL §11-2001, 3. e., f. and h.). During spring and fall migration, songbirds can be found in abundance along the forested banks of the Hudson River. Of 75 Neo-tropical migratory songbird species that breed in New York, 55 have been observed within the BCA. Cerulean Warblers (Special Concern) and Peregrine Falcons (Endangered) breed within the park, and substantial numbers of Bald Eagles (Threatened) congregate along the Hudson during the winter (Evans et al. 2001).

Critical Habitat Types: Hudson Highlands BCA contains relatively large tracts of interior forest habitat. These forested habitats, such as Chestnut Oak and Oak-Tulip Tree forests, provide important stopover and breeding sites for forest-breeding species such as American Redstart, Yellow-throated Vireo, and Acadian Flycatcher. Forests adjacent to the Hudson River are important for two species of conservation concern. Cerulean Warblers breed in the canopy of

mature forests near the Hudson, and Bald Eagles use forests along the Hudson during the wintering period. Cliff communities provide breeding sites for Peregrine Falcons. Rocky summit communities along Breakneck Ridge and Bull Hill provide unique habitat for many species generally associated with early-successional habitats, such as Prairie Warblers.

Operation and Management Considerations:

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

Several invasive plant species, in particular swallow-wort, have successfully established themselves within the BCA. Many of these invasive species impede growth and regeneration of forested habitats, and threaten to dominate the rare rocky summit communities. These non-native species inhibit growth of native vegetation and reduce habitat quality for birds. Management should focus on efforts to inhibit the establishment and spread of non-native, invasive vegetation, and encourage growth of native species in the BCA.

Abundant deer populations within the BCA also threaten bird populations at the site. Overbrowsing by deer can greatly reduce the diversity and density of shrub and understory vegetation. Bird species that rely upon these layers of the forest likely have greater difficulty finding nesting and foraging locations (McShea and Rappole 2000). Furthermore, heavy deer browsing favors establishment of non-native species, which generally provide lower-quality bird habitat (Schmidt and Whelan 1999, Borgmann and Rodewald 2004). OPRHP staff will explore options to limit deer impacts to forest health and regeneration.

Identify seasonal sensitivities; adjust routine operations accordingly.

Bald Eagles regularly use Denning's Point and nearby Hudson River shoreline sites as foraging and perching locations during the winter. In recent years, OPRHP has taken steps at Denning's Point during the winter to protect eagles. The agency will continue to work closely with NY DEC to manage this area in a manner that minimizes disturbance to eagles and provides for their continued use of these sites.

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.

There are currently no state activities that pose a threat to critical habitat types.

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

Some trails within the park, such as those along Breakneck Ridge and Bull Hill, receive high visitor use, and also contain sensitive rocky summit communities. These areas will be monitored to ensure that the communities and the flora and fauna they support are not being negatively

impacted. Efforts will be made to educate visitors about the uniqueness of the plant and animal communities at these sites and to provide trail access commensurate with continued recreation and protection of the diverse species inhabiting this area..

Illegal uses within the BCA, in particular illegal All Terrain Vehicle (ATV) use, have disturbed habitat and, in turn, nesting of birds. Park staff will consider options to limit the potential for ATV access and improve enforcement activities regarding ATV use.

Education, Outreach, and Research Considerations:

Assess current access; recommend enhanced access, if feasible.

Current access is will be improved under the master plan. Parking will be increased somewhat, existing lots improved and additional trails are planned. Park grounds are open year-round.

Determine education and outreach needs; recommend strategies and materials.

A BCA kiosk will be designed and installed in an appropriate location within the BCA, and will illustrate the birds and bird habitats found within Hudson Highlands.

A bird checklist for the BCA will be developed and be made publicly accessible.

OPRHP will use the Taconic Outdoor Education Center at Fahnestock State Park and partnerships with local bird conservation groups and environmental education centers to enhance appreciation and conservation of the unique bird community at the BCA.

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

Long-term monitoring of the bird community at this park is desirable as it will highlight management needs, and help evaluate the success of habitat improvement actions. OPRHP will continue to work with its partners in this effort.

Contacts:
Tom Lyons, OPRHP, Albany, phone: 518-474-0409
Ray Perry, OPRHP, Albany, phone: 518-474-0409
Bill Bauman, OPRHP, Hudson Highlands State Park, 845-225-7207

Sources:

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Date Designated: Final Published 12/15/2010

Appendix H: Coastal Zone Management Program Consistency

NEW YORK STATE DEPARTMENT OF STATE
COASTAL MANAGEMENT PROGRAM

Consistency Assessment Form

A. INSTRUCTIONS (Please print or type all answers)

1. State agencies shall complete this CAF for proposed actions which are subject to Part 600 of Title 19 of the NYCRR. This assessment is intended to supplement other information used by a state agency in making a determination of significance pursuant to the State Environmental Quality Review Act (see 6 NYCRR, Part 617). If it is determined that a proposed action will not have a significant effect on the environment, this assessment is intended to assist a state agency in complying with the certification requirements of 19 NYCRR Section 600.4.

2. If any question in Section C on this form is answered "yes", then the proposed action may affect the achievement of the coastal policies contained in Article 42 of the Executive Law. Thus, the action should be analyzed in more detail and, if necessary, modified prior to either (a) making a certification of consistency pursuant to 19 NYCRR Part 600 or, (b) making the findings required under SEQR, 6 NYCRR, Section 617.11, if the action is one for which an environmental impact statement is being prepared. If an action cannot be certified as consistent with the coastal policies, it shall not be undertaken.

3. Before answering the questions in Section C, the preparer of this form should review the coastal policies contained in 19 NYCRR Section 600.5. A proposed action should be evaluated as to its significant beneficial and adverse effects upon the coastal area.

B. DESCRIPTION OF PROPOSED ACTION

1. Type of state agency action (check appropriate response):

   (a) Directly undertaken (e.g. capital construction, planning activity, agency regulation, land transaction) ☒
   (b) Financial assistance (e.g., grant, loan, subsidy) ☐
   (c) Permit, license, certification ☐

2. Describe the nature and extent of action: The action is the adoption of a master plan for Clarence Fahnestock Memorial and Hudson Highlands State Parks

3. Location of action:

Dutchess, Putnam and Westchester	* see below	See Master Plan for map of parks
County	City, Town or Village	Street or Site Description

4. If an application for the proposed action has been filed with the state agency, the following information shall be provided:
   (a) Name of applicant: _____
   (b) Mailing address: _____
   (c) Telephone Number: Area Code (___) _____
   (d) State agency application number:

5. Will the action be directly undertaken, require funding, or approval by a federal agency?

Yes ☐ No ☒ If yes, which federal agency? _____

C. COASTAL ASSESSMENT (Check either "YES" or "NO" for each of the following questions.)

1. Will the proposed activity be located in, or contiguous to, or have a significant effect upon any of the resource areas identified on the coastal area map:

		YES	NO
(a)	Significant fish or wildlife habitats?	☒	☐
(b)	Scenic resources of statewide significance:	☒	☐
(c)	Important agricultural lands?	☐	☒

* Fahnestock State Park is located in the Towns of Carmel, Kent, Philipstown and Putnam Valley. Hudson Highlands is located in the Towns of Fishkill, Philipstown and Cortlandt, the Villages of Cold Spring and Nelsonville and in the City of Beacon.

2. Will the proposed activity have a significant effect upon:

(a)	Commercial or recreational use of fish and wildlife resources?	☐	☒
(b)	Scenic quality of the coastal environment?	☒	☐
(c)	Development of future, or existing water dependent uses?	☐	☒
(d)	Operation of the State's major ports?	☐	☒
(e)	Land and water uses within the State's small harbors?	☐	☒
(f)	Existing or potential public recreation opportunities?	☒	☐
(g)	Structures, sites or districts of historic, archeological or cultural significance to the State or nation?	☐	☒

3. Will the proposed activity involve or result in any of the following:

(a)	Physical alteration of two (2) acres or more of land along the shoreline, land under water or coastal waters?	☐	☒
(b)	Physical alteration of five (5) acres or more of land located elsewhere in the coastal area?	☐	☒
(c)	Expansion of existing public services of infrastructure in undeveloped or low density areas of the coastal area?	☐	☒
(d)	Energy facility not subject to Article VII or VIII of the Public Service Law?	☐	☒
(e)	Mining, excavation, filling or dredging in coastal waters?	☐	☒
(f)	Reduction of existing or potential public access to or along the shore?	☐	☒
(g)	Sale or change in use of state-owned lands located on the shoreline or under water?	☐	☒
(h)	Development within a designated flood or erosion hazard area?	☐	☒
(i)	Development on a beach, dune, barrier island or other natural feature that provides protection against flooding or erosion?	☐	☒

4. Will the proposed action be located in or have a significant effect upon an area included in an approved Local Waterfront Revitalization Program? ☒ ☐

D. SUBMISSION REQUIREMENTS

If any question in Section C is answered "Yes", AND either of the following two conditions is met:

Section B.1(a) or B.1(b) is checked; or
Section B.1(c) is checked AND B.5 is answered "Yes",

THEN one copy of the Completed Coastal Assessment Form shall be submitted to:

New York State Department of State
Division of Coastal Resources
41 State Street, 8th Floor
Albany, New York 12231

If assistance or further information is needed to complete this form, please call the Department of State at (518) 474-6000.

E. REMARKS OR ADDITIONAL INFORMATION

The master plan includes a summary discussion of coastal consistency within Chapter 7 – Environmental Impacts and Mitigation. A full discussion of applicable policies is included in the following pages of this Appendix.

Preparer's Name: Edwina Belding
(Please print)

Title: Environmental Analyst 2

Agency: Office of Parks Recreation and Historic Preservation

Telephone Number: (518) 474 – 0409

Date: 8/15/2010

Coastal Assessment Form Addendum: Coastal Policy Discussion

New York State coastal policies are organized under major headings. Those policy areas and specific policies applicable to the master plan are listed. Following each applicable policy is a brief discussion on the extent of consistency of the master plan with the policy.

Refer to Chapter 7, Environmental Impacts and Mitigation under Relationship to Other Programs, for an explanation of general applicability of the coastal program to state agency actions, as well as OPRHP's certification of consistency with State coastal policies

Development Policies

POLICY 2 – FACILITATE THE SITING OF WATER-DEPENDENT USES AND FACILITES ON OR ADJACENT TO COASTAL WATERS

Hudson Highlands State Park provides both water-dependent and water-enhanced uses. The Master Plan will be consistent with this policy as all of these uses will continue under the proposed plan and will be enhanced in some areas. Parking improvements at Little Stony Point and along Route 9D, the new visitor's center and additional trail opportunities will improve access to the park. The visitor center will give the park a much needed contact point for park information and provide needed visitor amenities.

POLICY 5 – ENCOURAGE THE LOCATION OF DEVELOPMENT IN AREAS WHERE PUBLIC SERVICES AND FACILITES ESSENTIAL TO SUCH DEVELOPMENT ARE ADEQUATE

The Master Plan will be consistent with this policy as the new visitor center location will be adjacent to the Route 9D corridor which will allow it to be easily accessible to the City of Beacon's municipal water and sewer services and other utilities which run along this road as well.

Fish and Wildlife Policies

POLICY 7 - SIGNIFICANT COASTAL FISH AND WILDLIFE HABITATS WILL BE PROTECTED, PRESERVED, AND WHERE PRACTICAL, RESTORED SO AS TO MAINTAIN THEIR VIABILITY AS HABITATS.

Hudson Highlands State Park includes or borders for four significant coastal fish and wildlife habitats associated with the Hudson River: the Fishkill Creek, Hudson River Mile 44-56, Constitution Marsh and Iona Island Marsh. Copies of the habitat narratives are included in this Appendix. These narratives include information that was used in evaluating impacts of proposed master plan on the characteristics of the habitat and the plan's consistency with this policy.

The master plan is consistent with this policy as it calls for increased natural resource protection of the park. The park provides important watershed protection for habitats within the Fishkill Creek and the Hudson River. The actions proposed under the Plan will have no impact or have beneficial impacts on these ecosystems and the fish and wildlife

species that they support. The designation of the park as a Park Preserve, a Natural Heritage Area and a Bird Conservation Area will promote protection and recognition of the significant fish and wildlife resources within the park and the adjacent river habitats. The Plan calls for monitoring of watersheds, streams and wetlands within the park that are critical to the protection of the river's water quality. The Plan also calls for continuing winter closure of the trail on Denning's Point to minimize impacts to wintering bald eagles. It also calls for continued monitoring of public use at Constitution Marsh to ensure it is compatible with the resource. Invasive species management, increased attention to mitigation of recreational overuse impacts and increased stewardship of species at risk will contribute to the protection of the biodiversity of the park and these significant habitats as well.

Flooding and Erosion Hazards Policies

POLICY 12 - ACTIVITIES OR DEVELOPMENT IN THE COASTAL AREA WILL BE UNDERTAKEN SO AS TO MINIMIZE DAMAGE TO NATURAL RESOURCES AND PROPERTY FROM FLOODING AND EROSION BY PROTECTING NATURAL PROTECTIVE FEATURES INCLUDING BEACHES, DUNES, BARRIER ISLANDS AND BLUFFS

The master plan does not propose any new actions within flood zones or coastal hazard areas.

Public Access Policies

POLICY 19 - PROTECT, MAINTAIN, AND INCREASE THE LEVEL AND TYPES OF ACCESS TO PUBLIC WATER-RELATED RECREATION RESOURCES AND FACILITIES.

Hudson Highlands State Park provides significant public access to over nine miles of Hudson River Shoreline. The master plan is consistent with this policy because existing public shoreline access will be maintained. Improvements to existing parking facilities and the construction of a new visitor's center will enhance the park visitors experience at the park.

Recreation Policies

POLICY 21 - WATER-DEPENDENT AND WATER-ENHANCED RECREATION WILL BE ENCOURAGED AND FACILITATED, AND WILL BE GIVEN PRIORITY OVER NON-WATER-RELATED USED ALONG THE COAST.

Hudson Highlands State Park provides water-enhanced activities on the Hudson River. Trails, picnic areas, shoreline fishing and scenic views of the river are all activities that can be enjoyed at the park and will be continued under the proposed master plan.

Historic and Scenic Resources Policies

POLICY 23 - PROTECT, ENHANCE AND RESTORE STRUCTURES, DISTRICTS, AREAS OR SITES THAT ARE OF SIGNIFICANCE IN THE HISTORY, ARCHITECTURE, ARCHAEOLOGY OR CULTURE OF THE STATE, ITS COMMUNITIES, OR THE NATION.

The Master Plan will be consistent with this policy in several ways. Additional review under State Historic Preservation Act will be completed prior to any proposed actions requiring ground disturbance or to any Register eligible structures to insure that potential historic and cultural resources are protected. In addition, the Master Plan will provide added protection for and recognition of the park's significant historic resources through the designation of the park as a Park Preserve. Also, historic resources will be protected through the improved management of significant historic areas such as the North Redoubt and the Connecticut Camp area and through the development of interpretive materials and signage for trails and programming in both parks.

POLICY 24 – PREVENT IMPAIRMENT OF SCENIC RESOURCES OF STATEWIDE SIGNFICANCE.

Hudson Highlands State Park is located within the Hudson Highlands Scenic Area of Statewide Significance. This designated area consists of several subunits and two entire subunits, Hudson Highlands State Park and Constitution Marsh are devoted exclusively to park properties. A description of the Hudson Highlands subunit within the document "Scenic Areas of Statewide Significance" (NYS Department of State, 1993) is essentially a description of the park and thus the contributions of the extensive open space resources of this park to this designated area cannot be overstated. The protection of the high scenic quality of this park is a major goal of the Master Plan and will not be impaired in the implementation of any of the actions proposed under the plan.

The proposed visitor center is the only new facility being proposed in Hudson Highlands State Park and its proposed location along 9D will provide views of the Hudson River as well as points south and west. The exact location and scope of this facility is not known at this time and additional review under SEQR will be conducted when preliminary plans are available and will include the preparation of a visual assessment. Conceptually however the siting and design of this facility is not expected to adversely affect the scenic quality of the SASS. The building and associated parking will have a low profile and will be designed and landscaped to blend in with surrounding parkland as much as possible. Also, the guidelines within the SASS document will be used in developing the design of the facility to insure that the center will have minimal impact on the views towards the park.

The Plan also calls for maintenance of existing scenic vistas such as the Bear Mountain Overlook and viewpoints throughout the trail system which will continue to afford park visitors with views of this highly scenic area. OPRHP will continue to monitor proposed actions in surrounding communities the park that may have an effect on the park's scenic character.

Air and Water Resources Policies

POLICY 33 - BEST MANAGEMENT PRACTICES WILL BE USED TO ENSURE THE CONTROL OF STORMWATER RUNOFF AND COMBINED SEWER OVERFLOWS DRAINING INTO COASTAL WATERS.

POLICY 37 - BEST MANAGEMENT PRACTICES WILL BE UTILIZED TO MINIMIZE THE NON-POINT DISCHARGE OF EXCESS NUTRIENTS, ORGANICS AND ERODED SOILS INTO COASTAL WATERS.

The Master Plan will be consistent with both of these policies. Best management practices will be used in park development and rehabilitation and would include soil erosion control practices and surface drainage control techniques. Proposed parking areas will use pervious pavement and will incorporate sustainable storm water drainage techniques such as vegetated drainage swales or vegetated buffer areas. Areas where erosion may be occurring either due to trail design or illegal ATV activity will be restored. Increased enforcement of ATV activity will assist in reducing future erosion impacts.

Wetlands Policies

POLICY 44 - PRESERVE AND PROTECT TIDAL AND FRESHWATER WETLANDS AND PRESERVE THE BENEFITS DERIVED FROM THESE AREAS.

The Master Plan includes strong provisions to protect the tidal and freshwater wetlands of the park and adjacent waters and therefore will be consistent with this policy. No new development is proposed within or near state or federal wetlands within the park. Existing trails that are located adjacent to wetland areas will be surveyed to insure that habitat and water quality are not being impacted from recreational use or invasive species.

OPRHP will continue to work closely with National Audubon to continue to protect Constitution Marsh as one of the premier wetlands within the entire Hudson Valley. This will include continuing to support Audubon in control of phragmites in the marsh, and to increase public knowledge about the natural resources of the marsh as well as its recreational carrying capacity.