NEW YORK STATE OF OPPORTUNITY. | Department of Environmental Conservation

SHANDAKEN WILD FOREST

Draft Unit Management Plan

NYSDEC, REGION 3, DIVISION OF LANDS AND FORESTS

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Preface

The draft revision to the 2005 Shandaken Wild Forest Unit Management Plan has been developed pursuant to, and is consistent with, relevant provisions of the New York State Constitution, the Environmental Conservation Law (ECL), the Executive Law, the Catskill State Park State Land Master Plan (CPSLMP), New York State Department of Environmental Conservation ("Department") rules and regulations, Department policies and procedures and the State Environmental Quality Review Act.

The State lands that are the subject of this draft Unit Management Plan (UMP) are Forest Preserve lands protected by Article XIV, Section1 of the New York State Constitution. This Constitutional provision, which became effective on January 1,1885 provides in relevant part:

> *"The lands of the state, now owned or hereafter acquired, constituting the Forest Preserve as now fixed by law, shall be forever kept as wild forest lands. They shall not be leased, sold or exchanged, or be taken by any corporation, public or private, nor shall the timber thereon be sold, removed or destroyed."*

ECL§3-030 (1)(d) and 9-0105(1) provides the Department with jurisdiction to manage Forest Preserve lands. The Catskill Park State Land Master Plan (Master Plan) places State land within the Catskill State Park into the following classifications: Wilderness, Wild Forest, Primitive Bicycle Corridor, Intensive Use and State Administrative and sets forth management guidelines for the lands falling within each major classification. The Master Plan sets forth guidelines for such matters as: structures and improvements; the use of motorized equipment and aircraft; roads, state truck trails; flora and fauna; recreation use and overuse; boundary structures and improvements and boundary markings. Executive law §816(1) requires the Department to develop individual UMP's for each unit of land under the Department's jurisdiction which is classified in one of the five classifications set forth in the Master Plan.

General Guidelines and Objectives for Management of the Unit

A two-tier system for management planning exists for Department administered lands in the Park. The Catskill Park State Land Master Plan provides the policy, classifications and guidelines. Unit Management Plans (UMP) are mechanisms that refine and apply the criteria in the master plan to specific conditions on the ground at a level of detail appropriate to administration and management. A UMP identifies a specific land unit and provides direction for the management and use of the unit within the constraints of Article XIV of the State Constitution, the Environmental Conservation Law, New York

Codes, Department of Environmental Conservation Rules and Regulations (NYCRR) and the Catskill Park State Land Master Plan.

All land covered by this draft UMP is Forest Preserve and as such, must be managed in a manner consistent with Article XIV, section 1 of the New York State Constitution. The UMP, and the management recommendations found within, have also been developed pursuant to and consistent with relevant provisions of the following:

- Catskill Park State Land Master Plan (CPSLMP)
- Environmental Conservation Law (ECL);
- Executive Law;
- Department rules, regulations, policies and guidelines;
- State Environmental Quality Review Act (SEQRA)
- Each sub-section of this Amendment contains objectives related to specific uses and/ or subjects. The following objectives will apply to the implementation of this Amendment as a whole. Prepare a work plan for each construction project;
- Comply with all applicable laws, regulations, and guidelines;
- Develop long-term partnerships with communities and other stakeholders for the stewardship of the unit;
- Monitor impacts to natural resources within the unit, and where needed, develop appropriate measures to address those impacts.

This draft UMP will provide the guidance necessary for the Department staff to manage the area in a manner that protects the environment while at the same time providing suitable outdoor recreation opportunities for the public. Without the development and implementation of a UMP, sensitive environmental resources of the unit could be impacted negatively, resulting in a decrease in the public's enjoyment of such resources. Management of the unit pursuant to this document will allow the Department to improve public use and enjoyment of the area, avoid user conflicts and place limitations on the degradation of the resource.

Need for a Plan

Without a UMP, the management of the public lands that comprise the Shandaken Wild Forest area can easily become a series of uncoordinated reactions to immediate problems. The UMP provides a proactive and unified strategy for protecting the natural resources of the unit while allowing for public recreation. Since no facility construction, designation or major rehabilitation can be undertaken until a UMP is completed and approved, management is limited to routine maintenance and emergency actions. A written plan stabilizes management, despite changes in personnel and integrates related legislation, legal codes, rules and regulations, policies and area specific information into a single reference document. Other benefits of the planning process

that are valuable to the public include the development of area maps, and a greater awareness of recreational opportunities and needs within specific areas of Catskill State Park. In view of tight budgets and competition for monetary resources, plans that clearly identify area needs have greater potential for securing funding, legislative support and public acceptance.

This document provides a comprehensive inventory of natural resources, existing facilities and uses, while identifying the special values that justify the protection of this area in perpetuity for future generations. The planning process involved gathering and analysis of existing uses and conditions or administrative needs. Completion of the various Action Steps within the UMP will be dependent upon adequate labor and funding. Where possible, the Department will work with volunteer groups, local communities, and town and county governments to accomplish some of the proposed projects or maintenance.

What the UMP Does Not Do

The proposed Action Steps identified in this UMP are confined to the Shandaken Wild Forest. Activities on private property or nearby State lands such as the Belleayre Intensive Use area, managed by the Olympic Regional Development Authority that are not in the Shandaken Wild Forest are beyond the scope of this document and will generally be discussed only as they relate to uses of, and impacts to, the Shandaken Wild Forest unit.

In addition, this draft UMP cannot suggest changes to Article XIV, Section 1 of the New York State Constitution or conflict with statutory mandates or DEC policies. All proposals must conform to the guidelines and criteria set forth in the CPSLMP and cannot amend the CPSLMP itself.

No Action Alternative

From a legal perspective, the “No Action” alternative of not writing a UMP is not an option. The Department is required to prepare a management plan for the Shandaken Wild Forest pursuant to the Master Plan and Executive Law §816. In addition, a UMP serves as a mechanism for the Department to study and identify potential areas for providing access to the Shandaken Wild Forest for persons with disabilities in accordance with the Americans with Disabilities Act (1990). The UMP also serves as an administrative vehicle for identification and removal of nonconforming structures as identified by the Master Plan.

From an administrative perspective, the “No Action” alternative is not an option. The Department has the statutory responsibility under Environmental Conservation Law (ECL) §§3-0301 (1) (d) and 9-0105(1), to provide for the care, custody and control of these public lands. The UMP will provide the guidance necessary for the staff to

manage the area in a manner that protects the environment while at the same time providing suitable outdoor opportunities to the public.

Organization of the Plan

This draft revision to the 2005 Shandaken Wild Forest UMP is intended to be a working document, used by both State personnel and the public. The content of each section is briefly summarized below.This unit is located within the New York City Watershed. Activities proposed within this unit management plan are subject to the 1997 “New York City Watershed Memorandum of Agreement” and New York City’s regulations for the watershed (15RNYC 18-11et.seq.)

I. Introduction

Section I introduces the planning area and provides a general description with information on size, location and topography of the lands within this unit and descriptions of lands that have been acquired since the 2005 UMP. A brief chronology of the history of the area which includes past and present human influences within the unit is provided. Access points to the unit are defined and descriptions of existing easements and right of ways are included.

II. Inventory, Use and Capacity to Withstand Use

Section II provides an inventory of the natural, cultural, and scenic resources as well an inventory of man-made facilities. An assessment of the local economic impacts, levels of public use and carrying capacity of the unit is described. Adjacent land uses, and impacts are also discussed. Policies and procedures that guide the public use of state lands for events as well as partnership opportunities and volunteer policies are included at the end of section II.

III. Management and Policy Overview

Section III provides an overview of administrative responsibilities of the various divisions within the Department as they relate to the implementation of this unit management plan. This section also includes descriptions of the relevant master plans, legal constraints and issues affecting the planning area, Department policies, past management activities and Americans with Disabilities Act of 1990 (ADA) requirements. The application of the limits of acceptable change process and its impact on the management of existing and future facilities within this unit is provided at the end of Section III.

IV. Recreational Resources and Human Uses

Section IV provides present condition assessments and descriptions of existing infrastructure and assets found throughout the unit. Objectives and specific Action

Steps as they relate to natural resources, uses, or facilities are outlined for Shandaken Wild Forest. Objectives include general descriptions of management direction reflecting legal mandates and general conditions sought to be achieved or maintained in this unit. The objectives for the management of the Shandaken Wild Forest will shape Action Steps, which are statements of more specific conditions whose achievement will be necessary to assure progress toward the attainment of established goals.

All proposed actions in Section IV are consistent with the management guidelines and principles in the CPSLMP and are based on information gathered during the inventory process, through public input and in consultation with the planning team. Section IV also identifies specific management proposals as they relate to natural resources, uses, and facilities on the six geographically distinct Forest Preserve parcels discussed in Shandaken Wild Forest

VII. Phases of Implementation

When the facilities and improvements proposed in this plan will be built is subject to a variety of factors. This plan includes adaptive management strategies that are premised on carrying capacity concepts and limits of acceptable change principles. Numerous proposed actions involve adaptive management strategies that can be adjusted through regular monitoring. Monitoring indicators will be identified and serve as criteria for deciding what Action Steps are needed. The most logical prioritization of facility and improvement construction is directly tied to access. As parking areas and trails become open to the public, the priority facility(s) or improvements(s) for construction will be those served by the open access. Opportunities to both open access and construct or close facilities in a consolidated project will be and implemented subject to the availability of resources. Potential partnerships that may assist in the completion and upkeep of these projects will be fully explored. Section VII. describes the project implementation phases.

VIII. Appendices and Bibliography

At the end of the text, there is a bibliography and various technical appendices. This section also contains a glossary of terms, wildlife information, soil series descriptions, water classification information, photographs of the condition of existing structures, additional management guidelines and public comment information.

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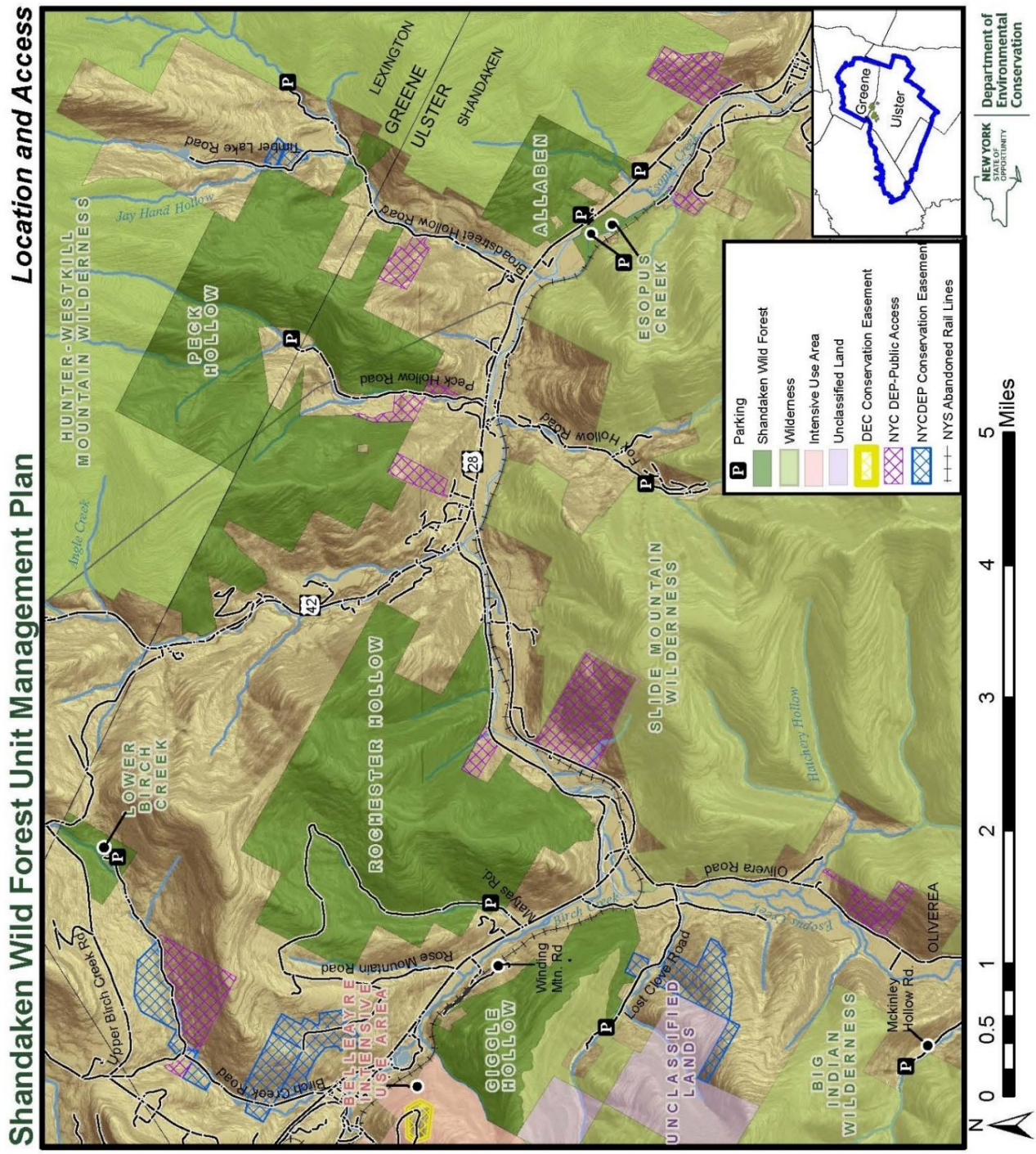
Contents

Location and Access Map



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I. Introduction

A. Past Management

Forest Preserve Land Management

Forest Preserve management began with the Forestry Act of May 15, 1885 which authorized appointment of a Forest Commission. This law established the first comprehensive forest administration in the United States. The Forest Commission, with a staff of twenty salaried employees in 1885, had responsibility for the care and custody of the Forest Preserve. At that time, the Forest Preserve was approximately 800,000 acres in size. Since January 1, 1895, management of Forest Preserve land has been guided by a constitutional provision, now found at Article XIV, section 1, which mandates that the Forest Preserve be kept as wild forest land, prohibits the sale, removal or destruction of timber situated thereon, and prohibits the land from being leased, sold or exchanged. Therefore, habitat management through the use of timber harvesting, prescribed burning, or other means of modifying the vegetation to alter wildlife habitat is not permissible in the unit. Additionally, NYCRR §194.2 (b) prohibits prescribed fires to be set on forest preserve lands. Options for management in the Forest Preserve include the setting of hunting and trapping seasons, setting harvest limits, defining manner of taking, restoring or augmenting populations of native species, preventing the introduction of non-native species and removing non-native species.

New York states initial management activities were focused on protecting the Forest Preserve from wild-fire or trespass. In most areas state boundary lines were nonexistent or poorly marked. Illegal occupancy of the Forest Preserve, as well as timber theft, were both chronic problems. Forest fires, in some cases intentionally set, were also a constant threat to Forest Preserve. Consequently, the Forest Commission focused most of its attention and meager resources on these two issues for the first three decades of its existence.

In 1975, the Temporary Commission to Study the Catskills recommended the Forest Preserve lands in the Catskills be classified into management units. In 1985 DEC completed the Catskill Park State Land Master Plan (CPSLMP) which implemented the recommendations of the Temporary Study Commission. The master plan further directed DEC to complete individual management plans which include specific management objectives for each unit. The current version of the CPSLMP was adopted in August of 2008 and consists of a revision to the original plan of 1985. The revision was necessary to incorporate Forest Preserve lands purchased since 1985 as well as provide an update in land classifications and department policies that evolved during this time period. Management activities implemented on the Shandaken Wild Forest have generally been related to recreation, fire prevention and fish and wildlife

management. The guidelines for wild forest areas can be found in Appendix E of this plan.

Recreational use of the Forest Preserve was relatively limited at first. The few public roads that could provide access to State land were unpaved. Initially recreational use was mostly for hunting and fishing. With the development of better and more numerous roads and the mass production of automobiles in the early 20th century, recreational use of the Forest Preserve increased dramatically. Consequently, the Division of Lands and Forests (a direct descendant of the Forest Commission) initiated a more comprehensive recreation program that started around 1915. This included the installation of trail signs, trail maintenance work, permits to allow construction of lean-tos on state land, and a camping permit system for those at one location for more than 3 nights. Over the years, the Department has constructed parking areas, trails, roadside campsites, boat launches and lean-tos in an effort to facilitate public recreation. Most management activities involved maintenance of Shandaken Wild Forest trails and includes annual blowdown removal and periodic drainage work. Other land management activities include maintenance of existing bridges and removal of non-conforming uses.

In 1985, the Department completed a Master Plan which provided additional management guidelines as well as classifying Catskill forest preserve lands into four basic categories: Wilderness, Wild Forest, Intensive Use, and Administrative. The Master Plan further provides guidelines for the management of each classification Past management of the Shandaken Wild Forest prior to State ownership occurred at different levels depending on the particular parcel. The Allaben parcel had been logged and subdivided for development purposes. The Peck Hollow parcel has also been logged, with portions utilized for farming purposes.

After State acquisition and prior to the writing of this unit management plan, the Shandaken Wild Forest was managed and utilized as described below:

Rochester Hollow Parcel

The Rochester Hollow acquisition included several buildings, including a house near the end of the road on State lands. At one time, the house and outbuildings were used by the Department’s trail crew as a headquarters. The road was improved to accommodate heavy equipment such as dump trucks and equipment trailers and was utilized until the mid-1970. The trail crew subsequently removed all their equipment and relocated to a shack on the Allaben parcel along Route 28 next to the Allaben Cemetery. In the winter of 1984, the house and outbuildings were razed with the exception of the spring house. A parking area was created at the end of Matyas Road for public access and a gate was installed in the back of a parking lot to prohibit motor vehicle access to the road leading through Rochester Hollow.

Allaben Parcel

The majority of the Allaben parcel was purchased in 1975 with an additional acquisition in 1986. This acquisition consisted of a defunct housing development which only produced one utilized house lot. This house is the exception to the State-owned parcel and is privately held with an easement over State lands for access. The State-owned parcel has predominately been utilized as a primitive camping area with nine designated campsites. In addition, the trail crew utilized the shack and immediate surrounding area for storage of trail supplies and as an informal field headquarters. Due to its deteriorating condition, the building was removed in the spring of 2000 and most trail supplies moved to the Region 3 office in New Paltz.

Esopus Creek Parcel

The Esopus Creek parcel lies on the south side of Route 28 across from the Allaben parcel. This parcel contains a parking area and offers easy access to fishing and recreating opportunities along Esopus Creek.

Peck Hollow Parcel

The Peck Hollow parcel has not received as much use as the others due to limited access to the west side of Peck Hollow Road. A parking area was installed in 1998 to help facilitate access to the east of Peck Hollow Road. A brush barricade has been placed at the beginning of an old wood's road starting from the back of the parking area as a deterrent to motor vehicle access.

Lower Birch Creek Parcel

The Lower Birch Creek Road parcel has had a significant amount of usage. The parcel contains an old farmhouse, barn and several outbuildings that were utilized for a period of time as a headquarters for a contracted trail crew during the summer work seasons. The barn and fields were also used by DEC personnel supervising inmate work crews. The crews were responsible for the upkeep of the grounds utilized the fields to prefabricate several Adirondack style log lean-tos to be used in the interior of the forest preserve. Since that time, the remainder of this parcel received no active management other than protection as forest preserve.

Giggle Hollow Parcel

The Giggle Hollow parcel, formerly known as Giggleus Hollow had a medium sized tannery that was operation in that area in the nineteenth century. [1] Augustus A. Guigou built the Empire tannery in 1831 above the Ulster & Delaware railroad bridge. The

[1] Kudish, Michael. The Catskill Forest: A History". Purple Martin Press 2000. Pg. 60

Empire tannery burned to the ground in 1858.[2] The parcel was never developed, and past management included periodic timber harvesting as well as hunting by past owners and their guests. The Department acquired this piece of land in December of 2011 as part of the land transaction that became known as the Big Indian acquisition. Giggle Hollow is contiguous with the Belleayre Intensive Use Area, the Big Indian Wilderness and two unclassified parcels of forest preserve land of land in the Town of Shandaken. The parcel adjoins the inactive Ulster & Delaware Railroad bed on the north side, portions of Woodchuck Hollow Road on the west side, Lasher Road on the east side and portions of Lost Clove Road on the south side. There are a number of recreational proposals for this parcel contained in Section IV of this plan.

Wildlife Management

Recent wildlife management activities have been focused on managing and monitoring wildlife harvests and improving knowledge of vertebrate species distributions across large scales (e.g, BBA projects, Amphibian and Reptile Project Atlas). Lastly NYNHP surveys have focused on endangered, threatened, and special concern species and significant and high-quality ecological communities.

Wildlife management on Forest Preserve lands is generally passive in nature with the exception of hunting and trapping. Article XIV, Section 1 of the New York State Constitution precludes wildlife habitat management or manipulation of vegetation, specifically the cutting of timber.

Article XIV, Section 1 of the New York State Constitution has direct implications on the management of wildlife. Cutting or burning of trees or other vegetation to modify habitat is not permissible within Forest Preserve under the “Forever Wild” constraints of Article XIV, Section 1 of the New York State Constitution. Natural succession is allowed to progress toward ecological climax on Forest Preserve lands. The Forest Preserve concept provides a strategy of land management that does not favor any particular species, but rather places on the protection of natural processes.

Wildlife management in this unit has generally been limited to regulations, controlling season, species, method of taking and bag limits. These regulations pertain to the state in general and to specific Wildlife Management Units. There are no special wildlife management regulations specific to the Shandaken Wild Forest.

Fisheries Management

Fishing in the unit, as in the rest of the State is regulated by open seasons, size and catch limits and manner of take as specified in 6 NYCRR Part 10, as authorized by Sections 11-1303 and 11-1305 of the Environmental Conservation Law. The

[2] Id. . Pg. 159

Departments fisheries management goal within the area is to preserve, enhance, and where necessary to restore, fisheries habitats and populations to achieve and perpetuate the historic quality of the fisheries resource. Aquatic resource management will emphasize the quality of the angling experience over quantity of use. All waters within this unit are subject to statewide general fishing regulations with no special harvest regulations imposed. A population census was conducted in the spring of 2001 for the two ponds on the Lower Birch Creek Road parcel. Population census will continue to be performed periodically by the Department.

B. Management Guidelines

ECL §3-0301 (1)(d) and 9-0105(1) provides the Department with the jurisdiction over Forest Preserve lands.

The CPSLMP places State land within the Catskill Park into the following 5 classifications: Wilderness, Wild Forest, Intensive Use, State Administrative and Primitive Bicycle Corridor and sets forth management guidelines for the lands falling within each major classification. Guidelines are set forth for such matters as: structures and improvements; the use of motor vehicles, motorized equipment and aircraft; roads, jeep trails and State truck trails; flora and fauna; recreation use and overuse and boundary markings. Actions by the State on lands covered by the CPSLMP must be consistent with the provisions of the plan.

The CPSLMP requires DEC to develop individual UMPs for each unit of land under the agency's jurisdiction. Each unit of land must be classified in one of the 5 classifications set forth in the Master Plan and must conform to the guidelines and criteria set forth in the Master Plan. The role of the UMP is to implement and apply the Master Plan's general guidelines as well as provide more specific management goals and objectives for particular units of land within the Catskill Park. The Catskill Park State Land Master Plan is available at: http://www.dec.ny.gov/docs/lands_forests_pdf/cpslmp.pdf.

The following policies and guidance documents are currently in effect and relevant to the management of Shandaken Wild Forest. These policies will be adhered to when making any decisions regarding the use and management of these lands. Additional discussion regarding the management proposals that conform to CPSLMP guidelines for Shandaken is provided in Section IV.

Environmental Conservation Law

Article 9: Lands and Forests
Article 11: Fish and Wildlife
Article 15: Water Resources
Article 23: Mineral Resources
Article 24 Wetlands
Article 33: Pesticides

Article 71: Enforcement

New York Code of Rules and Regulations (NYCRR) - Title 6:

Chapter I: Fish and Wildlife
Chapter II: Lands and Forests
Chapter III: Air Resources
Chapter IV: Quality Services
Chapter V: Resource Management Services
Chapter X: Division of Water Resources

Department Policies

- Motor Vehicle Access to State Lands Under the Jurisdiction of DEC for people with Disabilities (CP-3);
- Standards and Procedures for Boundary Line Maintenance (NR-91-2; NR-95-1);
- Division Regulatory Policy (LF-90-2);
- Land Acquisition, Timber Cutting Reservations (NR-86-1);
- Volunteer Stewardship Agreements (CP-58)1
- Policies and Procedures Manual Title 8400-Public Land Management;
- State Land Facility Naming (NR-90-2)
- Trail Construction and Maintenance Manual
- Administrative Use of Motor Vehicles and Aircraft on Forest Preserve (CP-17) The Administration of Conservation Easements (NR-90-1);
- Acquisition of Conservation Easements (NR-86-3);
- Fish Species Management
- Temporary Revocable Permits
- Public Use

Division of Lands and Forest Policies

- Fireplaces and Fire Rings
- Foot Bridges
- Foot Trails
- Primitive Camping Sites
- Road Barriers
- Sanitary Facilities
- Trailheads

Application of Guidelines and Standards

All trail construction and relocation projects will be developed in accordance with the CPSLMP and the use of Best Management Practices, including but not limited to such consideration as:

- Wherever possible, lay out trails on existing old roads or partially cleared areas;
- Locating trails to minimize necessary cut and fill;
- Locating trails away from wetlands, streams, and unstable slopes wherever possible;
- Use of proper drainage devices such as water bars and broad-based dips;
- Locating trails to minimize grade;
- Using stream bank stabilization structures made of natural materials such as rock or wooden timbers;
- Avoiding areas where habitats of threatened and endangered species are known to exist;
- Using natural materials to blend the structure into the natural surroundings.

All bridge construction and relocation projects will incorporate the use of Best Management Practices including but not limited to such considerations as:

- Minimizing channel changes and the amount of cut or fill needed;
- Limiting construction activities in the water to periods of low or normal flow; Minimizing the use of equipment in the stream;
- Installing bridges at right angles to the stream channel;
- Constructing bridges to blend into the natural surroundings;
- Using stream bank stabilizing structures made of natural materials such as rock or wooden timbers;
- Stabilizing bridge approaches with aggregate or other suitable material;
- Using soil stabilization practices on exposed soil around bridges immediately after construction;
- Designing, constructing and maintaining bridges to avoid disrupting the migration or movement of fish and other aquatic life;

All lean-to construction and relocation projects will incorporate the use of Best Management Practices including but not limited to such considerations as:

- Locating lean-tos to minimize necessary cut and fill;
- Locating lean-tos to minimize tree cutting;
- Locating lean-tos away from streams, wetlands, and unstable slopes; Using drainage structures on trails leading to lean-to sites to prevent water from flowing into the
  sites;
- Locating lean-tos on flat, stable, well-drained sites;
- Limiting construction to periods of low or normal rainfall.

All parking lot construction and relocation projects will incorporate the use of Best Management Practices, including but not limited to such considerations as:

- Locating parking lots to minimize necessary cut and fill;
- Locating parking lots away from streams, wetlands, and unstable slopes wherever possible;
- Locating parking lots on flat, stable, well-drained sites using gravel for surfacing or other
  appropriate material to avoid stormwater runoff and erosion;
- Locating parking lots in areas that require a minimum amount of tree cutting;
- Limiting construction to periods of low or normal rainfall;
- Wherever possible, using wooded buffers to screen parking lots from roads;
- Limiting the size of the parking lot to the minimum necessary to address the intended use.

C. Planning Area Overview

The majority of Shandaken Wild Forest is located in the Town of Shandaken in Ulster County, with the remainder lying in the southern Greene County town of Lexington. The unit is comprised of six non-contiguous parcels of land. The unit management plan area is bordered to the north and the east by the Hunter West-Kill Wilderness, to the west by the Belleayre Intensive Use area and to the south by the Big Indian and Slide Mountain wilderness areas.

New Acquisitions

There has been one significant land acquisition since the adoption of the 2005 Shandaken Unit Management Plan. The parcel now known as Giggle Hollow was classified as Shandaken Wild Forest lands through an amendment to the Catskill Park State Land Master Plan in 2014.

New Classifications

The Esopus Creek parcel totaling 46.3 acres will be formally classified as Shandaken Wild Forest through the adoption of the Final Shandaken Wild Forest UMP, and in accordance with the criteria set forth in the Catskill Park State Land Master Plan.

General Location

The Shandaken Wild Forest is centrally located in the Catskills along the Route 28 corridor. The Peck Hollow and Allaben parcels directly adjoin the Hunter West Kill Wilderness Area and provide additional access to this wilderness area. Several other

forests preserve units are nearby and compliment the Shandaken Wild Forest including Slide Mountain Wilderness, Phoenicia-Mount Tobias Wild Forest, Halcott Mountain Wild Forest, and the Belleayre Mountain Ski Center. These nearby units provide a variety of additional recreational opportunities ranging from the solitude of wilderness to the more developed offerings at the ski center.

The unit consists of six separate parcels of land. The largest of the parcels contains Rochester, Seneca and Millbrook Hollows. The second largest parcel consists of lands in Peck Hollow adjacent to the Hunter Westkill Mountain Wilderness Area. The third parcel contains lands surrounding the Allaben Cemetery and is bordered by Broadstreet Hollow on the west, Route 28 to the south, and the Hunter Westkill Wilderness to the north and to the east. Across from the Allaben parcel on the southern side of Rt 28 is the Esopus Creek parcel which provides fishing access to the Esopus Creek. The Lower Birch Creek parcel is located in Pine Hill and borders Upper Birch Creek to the north. The Giggle hollow parcel was latest addition to this unit and lies east of the Belleayre Intensive use area, south of the abandoned Ulster- Delaware Railroad, west of Lasher Rd and north of Lost Clove Road.

Acreage

This unit contains approximately 6,032.3 acres. The acreage can be furthered defined as follows:

1. Rochester Hollow Parcel - 2,475 acres
2. Peck Hollow Parcel - 2,384 acres
3. Allaben Parcel - 414 acres
4. Lower Birch Creek Road - 102.6 acres
5. Giggle Hollow Parcel - 610.4 acres
6. Esopus Creek Parcel - 46.3 acres

D. General Access

Several roads provide access to the unit to the automobile traveling public. Many but not all of the above are town and county roads. A detailed description of these roads will not be included here as they are more easily located on the accompanying map on the Shandaken Wild Forest Location and Access map provided page 13 of this plan.

For additional information, the DECinfo Locator provides free information on the recreational opportunities throughout the state of New York including numerous opportunities in the Catskills. For more information visit http://www.dec.ny.gov/pubs/109457.html. In addition, U.S. Geological Survey

topographic maps and several excellent Catskill guides are available from most local sporting goods stores or hiking clubs.

E. Existing Easements/ Deeded Rights

Over the years, the Department has secured a number of types of easements to facilitate safe access to, and administration of the lands contained within this unit. Conservation easements are a viable option for use by the state to acquire interests in real property. They are used when a fee purchase is not desired, not feasible or not negotiable. Each easement is negotiated between the landowner and the State and subsequently each one is different in its own right. The Department utilizes conservation easements to conserve natural resources, limit use and development, limit sub-division and fragmentation, ensure sustainable forestry and provide opportunities for public recreational use. The Department will pursue conservation or public recreational easements from willing sellers as alternatives to land acquisition when and where it is appropriate.

Descriptions of privately and publicly held easements that impact the access and administration of this unit are detailed below. Further research and legal review will be required to resolve access issues and clarify and resolve public access through easements or old town roads.

In the inter-rim, the Department will clearly mark all known and established public right-of- ways and easements through private lands with signs informing the public to stay within the roads which will reduce or eliminate public trespass on adjacent private lands and unwanted or illegal parking along roads.

Private Easements over Public lands

1) **Lost Clove Road**- Subject to a spring located North 66°59’42” West 797± feet from the northwesterly corner of Lot 1 as shown on a certain map entitled: “Minor Subdivision plat of Lands of Dean Gitter”, recorded at the U.C.C.O. on October 23, 2007 as Map No. 07-335 and as reserved in conveyance dated November 1, 2004 between Dean L. Gitter and Cheryl Lynn Gutter, grantor, and William T. Wright, grantee, recorded on December 2, 2004 in the U.C.C.O. in L-3996 P-147.

2) **Winding Mountain Road**- The 50’ wide Right-Of-Way shown on U.C.C.O. Map # 6947 (Recorded at U.C.C.O. on 06/19/1987). The R.O.W. is also shown on Map # 8329 (Recorded at U.C.C.O. on 10/30/1989) and Map # 7734 (Recorded at U.C.C.O. on 10/05/1988).

Public Easements over Private land and Other Access Points

Below is a list of access locations and brief descriptions of any known unresolved access and right of way issues associated with this unit. The information presented for these locations is a starting point. Some of the research is detailed while some is still in progress. New information from adjacent and affected landowners and town records is always welcome. The Department will work with affected landowners to arrive at a clear position on the status of each access location. The information is invaluable for consistent and meaningful planning on public lands.

In the cases discussed below, and any that may come up in the future, DEC will not and constitutionally cannot supersede private property rights without the existence of a legal right-of-way, easement or title. DEC will seek a legal determination to clarify rights and reservations on private lands surrounding the unit when necessary. The lands of the Shandaken Wild Forest are subject to the following easements:

1. In 1948 the State of New York acquired an easement over lands then owned by Walter V. Najarian of Pine Hill (Ulster County) for the purposes of passage by the public through or across his property on foot, skis, snowshoes or horseback over a trail having a width of not exceeding twenty (20) feet. The lands owned by Najarian subject to the easement are described as being in the Hardenburgh Patent, Great Lot 8, Lausette Tract, Parts of Lots 87 and 88 and more specifically described as “following the course of the present trail extending from the Village of Pine Hill to the fire observation tower on Belleayre Mountain. The easement was recorded in the Ulster County Clerk’s Office in Liber 735, page 581.

2. Various spring and stream rights as recited in Deeds; Liber 559 page 71 (Rochester Hollow); Liber 1524 page 333 (Broadstreet Hollow); Liber 1674 page 77. (Bushnellsville).

3. A Perpetual Easement of the City of New York pursuant to Chapter 724 of the Laws of 1905 as amended (New York City Aqueduct).

4. A 33’ wide Permanent Easement to the “Lean-To” parcel (private inholding within state land) over an existing mountain road described in Deed Liber 1433 page 209 (Peck Hollow).

5. A 10’ wide drainage easement and a 75’ wide Right-of-Way for access to lot 4 a private inholding within state land), as shown on Filed Map #2812, described in Deed Liber 1345 page 314 (Allaben).

6. A New York State Electric and Gas Easement described in Deed Liber 1419 page 988; and a N.Y.S. Department of Transportation and Permanent Easement (for Route 28) described in Deed Liber 1632 page 18. (See Appendix E.)

7. A 33' wide Permanent Easement over an existing mountain road (the same road as #3 above) from Peck Hollow Road through private lands as described in Deed Liber 1433 page 209 (Peck Hollow).

8. A 25' wide Right-Of-Way described in conveyance by Joseph Larocca and Jane Larocca to Paul Edward Herdman and Lillian May Herdman by deed dated 03/06/1959 and recorded at the U.C.C.O. on 05/06/1959 in Deed Liber 1057 at Page 110 and also shown upon a certain map entitled: "Map of Survey of Division of Land of Thomas A. Burt and Karen R. Burt" filed at the U.C.C.O. on 02/18/1988 as Map Number 7363.

9. An Easement for official highway purposes for ingress and egress over the existing road from the southerly line of lot 51 to the northeasterly end of the town road connecting with the State Highway Route 28 East of Pine Hill (L. 807 P. 373; Map # R-115).

From the original 2005 UMP:

1) Rochester Hollow- Subject to: Spring and stream rights, and maintenance thereof. (L. 559 Cp. 71; Map #1896).

2) Broadstreet Hollow- Subject to: "… "…Existing spring and connecting water pipeline rights within about 200 feet of the rear line of…Carol Schlegel… abutting the northeasterly area of the above described premises."… (L. 1524 Cp. 333; Map #10,370)

3) Westkill Parcel- Excepting and Reserving: "… A spring high up on the mountain, together with a pipeline connecting it to the parcel being retained by the Grantor, together with another existing spring located approximately 60 feet northeasterly of the division line of lands being retained with the right to improve and maintain…"(L. 1674 Cp. 77; Map # 10,547).

4) Westkill Parcel- Together with: "…The Right of Way… across land now or formerly…Charles Van Valekenburgh… reserved in -deed dated October 5, 1881… L.232 Cp.86." (L. 503 Cp. 450; Map # 3956).

5) Westkill Parcel- Also: Permanent easement (granted to state) over an existing mountain road from Peck Hollow Road to described lands (33 feet wide, centerline described). (L. 1433 Cp. 209; Map 9493-B). Excepting: 2.75 acres, "…with a lean-to". (L. 1433 Cp. 209; Map 9493-B). Reserving: A Permanent Easement to "Lean-To" parcel by Grantors along existing mountain road (33 feet wide, centerline described). (L.1433 Cp. 209; Map 9493-B). Subject to: Perpetual Easement of the city of New York, Pursuant to Chapter 724 of laws 1905, as amended (Filed in the U.C.C.O. in Map Case 561 on January 26, 1917 and entitled "Board of Water Supply of the City of New York, Reservoir Department, Schoharie Section No. 1, Map No. 4").

6) Westkill Parcel- Subject to: N.Y.C Perpetual Easement (see #5 above). Subject to: N.Y.S.E.G. Easement dated 1-17-1956 in L. 966 Cp. 299 (L.1419 Cp. 988; Map #9493-1-A).

7) Cemetery Parcel- Excepting: Lots 4 & 15 (U.C.C.O. filed map #2812). **Note:** Lot 15 was later acquired by S.N.Y., see #11 below). Lots 4 and 15 subjects to: 10' wide draining easement along bounds of lots 15 and 16 (U.C.C.O filed map #2812). Lots 4 & 15 Excepting: R.O. W for access to above described lots 75 feet wide. Lots 4 & 15 Reserving: to owners of Lot 15 an undivided interest in common to, "the so called "Parkland Area" (2.289 acres) as shown on U.C.C.O. filed map #2812). Excepting and Reserving: Cemetery enclosed by a fence, described. Other rights of way and exceptions in deed do not apply to Shandaken Wild Forest. (L.1345 Cp. 314; Map #9459).

8) Cemetery Parcel- Permanent easement (D.O.T). highway map Ulster-Delaware, part 2, State Highway No. 117, Ulster County, Map 124, Parcel 198 (L. 1632 Cp.18; Map #10,497)

9) Cemetery Parcel- Lot 15 U.C.C.O. filed map #2812) Subject to: 10' wide drainage easement along bounds of lots 15 & 16 (U.C.C.O. filed map #2812). Lot 15 Reserving: R.O.W. for access 75 feet wide (no longer necessary). Lot 15 Reserving: to owners of Lot 15 an undivided interest in common to, "the so called "Parkland Area" (2.289 Acres-as shown on U.C.C.O. filed map #2812). (L. 2004 Cp. 98. Map # 9459) Note-see 7 above.

Utility Line Easements

Utility lines along roadways are an issue in several parts of this unit. In general, State highway law says roads can be 3 rods (49.5 feet wide), but an easement or right-of-way in fee must be granted by adjacent landowners. Since the New York State Constitution does not authorize DEC to grant such easements on Forest Preserve lands, new facilities cannot be located on Forest Preserve. The Department is responsible for ensuring conformance to the terms of existing utility easement terms. The Department is responsible for ensuring conformance to the terms of existing utility easement terms. Monitoring and enforcement of utility easements is done via routine inspections by the Department.

Existing utility lines found on Forest Preserve in which the utility company does not own an easement or right-of-way may not be upgraded and alternative locations must be found within the road rights-of-way or on adjacent private land for this purpose. In addition, as in the case of Denman Mountain Road, where a permit was granted for installation of electric poles within the bounds of the highway (road) in 1947 but the line was actually installed off the road and 50 feet into Forest Preserve lands contrary to the permit, a line relocation must occur such that the line falls within the narrow right-of-way

of this seasonal road. Otherwise, alternate routes over private land must be sought. Existing utility line easements include:

1) Liber 1231 cp52-Les Montagnards Inc.-to- NYS E&G Corp (d.05/21/1969)

Easement for…" the right to …a pole line…guy wires…other fixtures…for the transmission and/or distribution of electric current and/or for telephone or telegraph communication for public or private use… The easement and right of way…granted…is **30 feet** in width throughout its extent… situate… Center Line of this easement begins at a pole now situated in the center line of an existing easement which point is 83 feet more or less northeasterly from the center line of Route #28 and it proceeds thence southwesterly across said Route #28 a distance of 200 feet more or less to a terminal point with the right to trim, cut, and remove trees and brush to the extent necessary to clear said wires and pole line by **10 feet."**

2) Liber 1130 cp 344- Utera-to-NYS E&G Corp (d. 04/12/1962).

Easement for… "the right to … a pole line…guy wires…other fixtures… for the transmission and/or distribution of electric current and/or for telephone or telegraph communication for public or private use… The easement and right of way…situate…**the said line is to be located adjacent to the northerly side of the highway running through Grantor's land with service extensions to Grantor's residence on the south side of the highway**…with the right to trim, cut and remove trees and brush to the extent necessary to clear said wires and pole line by at least **15 feet."**

3) Liber 867 cp 447- de la Fuente-to- NYS E&G Corp (d.04/13/1953).

Easement for…"the right to…a pole line…guy wires…other fixtures…for the transmission and/or distribution of electric current and/or for telephone or telegraph communication for public or private use…The easement and right of way…situate… line enters Grantors northerly property line at a point app. 100 ft. east of westerly property line and continues in a southwesterly direction to Grantors westerly property line with anchor guy near fence line… with the right to trim, cut, and remove trees and brush to the extent necessary to clear said wires and pole line by at least **(15) fifteen feet."**

4. Liber 521 cp 129- Illuzzi-to-NYS E&G Corp (d.11/20/1926).

Easement for…"the right to…a pole line…guy wires…other fixtures…for the transmission and/or distribution of electric current for public or private use**…**The easement and right of way …situate…**along the property which I own or have an interest…in State Highway north of the Shandaken Cemetery…**with right to trim, cut and remove trees or brush to the width of **(10) ten feet on both side of the line as from time to time maintained…on State Highway north of the**

Shandaken Cemetery… with the right to trim, cut and remove trees or brush to the **width of the (10) feet on both sides of the line as from time to time maintained…"**

Liber 392 cp 534-Whitney-to-Hudson River Telephone Company (d.10/03/1903).

Easement for…" the right to…a pole line…guy wires…over and upon…**my premises in the Town of Shandaken…** with the right to trim trees sufficient to keep the wire clear at least **twenty four inches (24) inches…Project: Ulster 51 (Formerly Porizo)**

Lands acquire don December 11, 1975 (See Deed Liber 1348 page 853)

Deed Subject to:

1. "… Excepting and reserving therefrom that portion heretofore granted for Electric and Telephone Utility Transmission Lines…"

Title Certification indicates the following:

1. Easement of: Hudson River Telephone Company (Yr 1903), See Deed Liber 392 page 533.

2. Easement of: Simpson (Yr 1919), See Deed Liber 472 page 327.

3. Easement of: New York State Electric & Gas (Yr 1962), See Deed Liber 1130 page 310.

F. Historic and Cultural Resources

History of the Unit

The Lower Birch Creek Road consisted of the estate of Dr. and Mrs. Otto Reisser and appears to have been a typical Catskill mountain region farmstead. The property was conveyed to Dr. Otto H. Reisser from Mary E. Price dated October 3, 1942. Dr. Reisser, a German dentist, and his wife Elisabeth bought the "farm" as a summer retreat from the heat of New York City where they resided. The Reisser's utilized this property to entertain guests from all over the world. Register boxes were found in the house amongst German dental books and references indicating that the Reisser's entertained a significant number of guests over their fifty-five years of ownership. After retirement the Reisser's moved permanently to Pine Hill. Dr. Reisser died on January 24, 1996 and his wide Elisabeth, passed on April 15th, 1997. In her will, Elisabeth left the estate to the caretaker with the stipulation that he remain on the property. If he declined the offer, the property was to become State land and be "forever wild forest lands". Since the caretaker already owned his own house, the offer was declined and the property became State land as deeded March 26, 1999.

The second parcel consists of lands adjacent to the Allaben Cemetery. This parcel consists of approximately 414 acres which, prior to state acquisition was slated to become a housing development. A road system was developed which created two cul-de-sacs along with the construction of one residence. No further development occurred, and the state purchased the property through several acquisitions between 1975 and 1986 with the one house lot remaining as an exception. This parcel created additional access to the adjacent Westkill Wilderness Area from Route 28 to the south. This parcel is currently utilized as a primitive camping area with nine designated tent sites along the access roads. The third parcel consists of lands located in Peck Hollow that fall outside of the Hunter WestKill Wilderness Area boundary. These lands were not included in the Hunter WestKill Wilderness unit due to private inholdings and a private road bisecting the parcel. The majority of these lands were acquired in 1975, 1979 and 1980 with other parcels dating back as early as 1870, up to and including an acquisition in 1985. The lands purchased contained several easements, including one for New York City for the purpose of creating an underground aqueduct to transport drinking water from the Schoharie Reservoir to the Esopus Creek via the portal along Route 28 in Shandaken. The water then flows down the Esopus to the Ashokan Reservoir, a major water source for New York City residents as well as several towns along the way. This aqueduct was completed in 1923 and is still in use today.

The largest parcel in the unit consists of Rochester, Seneca and Millbrook Hollows. Of these, Rochester Hollow contains a bit of interesting history. The hollow was named after William Rochester, a retired colonel who moved to the area and began to purchase small family farms in an attempt to create a large estate. This estate contained a private through road from Matyas Road to Rose Mountain Road. This is the Rochester Hollow Road, which is closed to public motor vehicle use. However, this road has been designated as a CP-3 route and is open by permit, to people with qualifying disabilities. Stone pillars still exist at various locations along the road that follows the edges of the ravine containing Rochester Hollow Creek. These pillars are the remnants of the gated entrances to the Rochester Estate.

The 610.4-acre Giggle Hollow parcel was acquired in December of 2011 as part of the 1,200-acre Big Indian acquisition. The Giggle Hollow parcel adjoins the abandoned Ulster& Delaware railroad bed to the north, Lasher Road to the east, portions of lost clove road to the south and Belleayre Mountain to the West. The property was never developed, and past management included periodic timber harvesting and hunting. This parcel is accessed to the North through the Pine Hill Day Use Area and to the south on the trailhead on Lost Clove Road.

Cultural Resources

The term cultural resources encompass several categories of human-created resources including structures, archaeological sites and related resources. The Department is required by the New York State Historic Preservation Act (SHPA) (PRHPL Article 14),

the State Environmental Quality Review Act (SEQRA)(ECL Article 8), Environmental Conservation Law Article 9, Education Law §233, and the regulations of the Department of Environmental Conservation 6 NYCRR §190.8 (g) to include a analysis of such resources in the range of environmental values that are managed on public lands. Numerous visitors to the unit take advantage of the environment to enhance their knowledge and experience in the fields of camping, hiking, photography, snowshoeing, hunting, fishing, trapping, botany, geology, ornithology and zoology. Various groups ranging from schools and religious organizations to scouts and outing clubs utilize the Forest Preserve for various recreational activities. Many are looking for the challenges of self-reliance, while others simply wish to have a quiet setting for study or to simply get back in touch with the natural environment. While others visit to examine the subtle reminders of past history of what is now forest preserve.

The John Burroughs Memorial Forest is one of the more noted historical resources in the area. This forest consists of white and norway spruce plantations established on the abandoned farm site in Rochester Hollow from elevation 2,160 to 2,350 feet. A concrete marker dedicating the forest to Burroughs is located at the lower elevation near the hairpin turn on the Rochester Hollow access road. The plantations were established by the Raymond Riordon School as described on the marker.

A second historic resource found partially on the Shandaken Wild Forest is the Shandaken Tunnel. This tunnel was constructed to allow the New York City Board of Water Supply to connect the Schoharie watershed to the Ashokan watershed. The tunnel excavation was completed February 13, 1923. The completed tunnel is 18.2 miles long and attains a maximum depth of 2200 feet below the surface with an average depth of 750 feet. The finished tunnel measures 10 feet 3 inches wide by 11 feet 6 inches high. According to “The Shandaken Tunnel” a report issued in May 1923 by Ulen & Company, the company contracted to build the tunnel, the tunnel is capable of transporting 600 million gallons of water a day. To excavate through the rock, 2.5 million pounds of dynamite was placed in 570 miles of drilled holes. Approximately 220 thousand yards of concrete was used as partial replacement of the 584 thousand cubic yards of rock removed.

This tunnel remains a man-made marvel even by today’s standards. Many remnants of farms, tanneries, sawmills and bluestone mining can be found throughout the forest preserve including the lands which make up the Shandaken Wild Forest. Many foundations and remnants of old roads still exist throughout the unit and attract visitors interested in the history of the area. This is especially true of the visitors to Rochester Hollow, an area with significant remnants of past use.

Historic and Archaeological Site Protection

The historic and archaeological sites located within the unit, as well as additional unrecorded sites that may exist on the property, are protected by provisions of the New York State Historic Preservation Act (SHPA-Article 14 PRHPL), the State Environmental

Quality Review Act (SEQRA)(ECL Article 8), Environmental Conservation Law Article 9, Education Law §233, and the regulations of the Department of Environmental Conservation 6 NYCRR §190.8 (g) . No actions that would impact these known resources are proposed in this Unit Management Plan. Should any such actions be proposed in the future they will be reviewed in accordance with the requirements of the SHPA. Unauthorized excavation and removal of materials from any of these sites is prohibited by Article 9 of Environmental Conservation Law and Education Law §233. In some cases, additional protection may be afforded to these resources by the federal Archaeological Resources Protection Act (ARPA).

G. Relationship Between Public and Private Land

The lands within this unit border both private lands and other Forest Preserve units. The private lands are a mixture of undeveloped forest parcels and residential lots. Together, these areas provide a broad range of recreational opportunities for visitors of varying tastes and abilities while providing critical connectivity in the landscape for many wildlife species. The Shandaken Wild Forest enhances the wild character of the surrounding lands and represent a significant portion of the view shed of surrounding towns. Having views of the mountains or forests within this unit can increase property values as can having property adjacent to State land or near trailheads.

The developed private lands adjacent to the unit have various impacts on Shandaken Wild Forest. The more developed this private land is, the greater the impact on the unit. There can be impacts to the wildlife, plant communities, and recreation of the area. Adjacent developed private property also impacts the administration of the area; one example is increasing the importance of boundary line maintenance to discourage encroachments.

H. Local Economic Impacts

Besides its many intrinsic values, the lands within this unit are an important economic asset for the region. Both indirectly, as a powerful attraction to tourists and a positive influence on private land values and directly in terms of property tax payments to local governments, State Lands make a substantial contribution to the local economy. While some visitors to Shanadaken Wild Forest are serious hikers, hunters and anglers who spend all of their time on State land, most are day users who consider a hike on the lands within the unit as just one of the many reasons to take a trip to the Catskills. They combine a walk on a trail with visits to local shops and restaurants and an overnight stay at an inn or motel. Others are drawn to the area simply to enjoy the impressive mountain scenery. Though these visitors may never set foot on a trail, the contribution that they make to the local economy considerable.

The pursuit of wildlife provides substantial economic income to the State and local communities throughout New York. The expenditures of sportsmen who hunt or trap are

important to New York's economy. Research specific to Shandaken Wild Forest has not been conducted. However, expenditures by those who hunt and trap within the unit for licenses, equipment, firearms, ammunition, gasoline, lodging, meals and a variety of other purposes infuse money into the local economy. The value of the meat or hides obtained further adds to the value. Besides the value for hunting and trapping, wildlife attracts people for a variety of other uses, such as hiking, bird watching and photography. People pursuing these activities infuse considerably more money into the State and local economy.

Local economic benefits directly conferred on the region occur through the payment of property taxes. Property taxes which the State pays on Forest Preserve and State Forest lands to local jurisdictions are an important revenue source to most communities (refer to Table 8). The undeveloped Forest Preserve and State Forest lands place little demand on many of the services local government provide, especially education, increasing the value of the taxes paid. Under Section §532 (a) of the Real Property Tax Law, all wild or forest lands owned by the State within the Forest Preserve are taxable for all purposes and under Section §534 of the Real Property Tax Law lands acquired by the State for reforestation purposes pursuant to section §9-0501 of the environmental conservation law shall be subject to taxation for all purposes except county purposes. Thus, the State pays property taxes on all the lands making up the Shandaken Wild Forest.

The State government pays the same rate of taxes on undeveloped forest lands as private landowners pay on their undeveloped forest lands. State government land holdings are assessed by local government assessors. The tax rate that is established by each local government jurisdiction is applied to the assessment and determines the tax liabilities on the affected parcels. This procedure is the same for private landowners. The property tax on State lands must be comparable to rates on similar private lands.

Visitors are attracted to this area for a variety of recreational and cultural uses and have a positive impact on hotels, motels, campgrounds, groceries, service stations, restaurants and sporting goods stores. The many Catskill Region resorts utilize the mountain background as a passive setting for their recreational pursuits. Private campgrounds and resorts adjacent to public lands also directly utilize the facilities provided by these public lands.

While it is clear that the indirect effects on tourism and private land values in the Catskill region that result from the existence and use of the Forest Preserve are substantial, they are understood only in general terms. On the other hand, the economic benefits directly conferred on the region by the payment of property taxes can be quantified.

State government pays the same rate of taxes on undeveloped forest lands as private landowners pay on their undeveloped forest lands. State government land holdings are assessed by local government assessors. The tax rate that is established by each local

government jurisdiction is applied to the assessment and determines that taxes on the parcel. The procedure is the same for private landowners and the property tax must be comparable to rates on similar private lands.

The following table provides an estimate of the real property taxes that were paid by New York State based on the 2014 Assessment Roll for the towns of Lexington and Shandaken. These values were calculated by the Office of Real Property Services using approved assessments and tax rates. (*Note- these values are for all Forest Preserve lands in the towns listed; this includes Forest Preserve units other than the SWF).

2014 Property Taxes on State land paid per Town			
Town	***Acres 2014 (approximate)***	***Total Taxes 2014***	***Average Taxes/acre 2014***
Lexington	*26,646*	*$740,502*	*$27.79*
Shandaken	*55,702*	*$3,094,453*	*$55.55*
Total	***82,348***	***$3,834,955***	***$41.67***

Economic Impact on Adjacent Private Land

Private lands adjacent to State lands are usually very desirable. Landowners seeking privacy and solitude feel protected from development. The State lands provide a "backyard", affording the adjacent owner access to a vast outdoor experience at no expense. Real estate prices have escalated in recent history, causing towns to re-assess property values which generally cause an increase in tax liabilities, making private land bordering State lands even more desirable.

It is clear that the indirect effects on tourism and private land values in the Catskill region that result from the existence and use of the Forest Preserve and State Forest lands are substantial. In fact, a recent study entitled “ECONOMIC IMPACT AND OPPORTUNITIES FROM OUTDOOR RECREATIONAL ACTIVITIES FOR THE PUBLIC LANDS OF THE CENTRAL CATSKILLS”, (2012) commissioned by the Catskill Center for Conservation and Development (CCCD), Catskill Mountain Keeper (CMK), and Catskill Heritage Alliance (CHA) estimated visitor totals and the economic impact for surrounding communities generated by outdoor recreational activities in the Central Catskills. Prior to this study, there has never been a comprehensive analysis conducted to determine the number of annual outdoor recreational visitors to the Catskills. The findings of the study concluded that outdoor recreational activities that rely on public and protected lands attracted a total of 1,717,927 visitors. These visitors had an estimated economic impact on the region’s economy of $46,207,000. Well-designed

trails and access points on State lands that are linked to local villages and communities can have a very beneficial economic impact. Trails tied to towns and major tourist travel corridors may contribute to reduce impacts on the Forest Preserve by allowing people to use the existing facilities of a town such as stores, lodging facilities, campgrounds and parking.

Economic Impact of Adjacent Private Lands on State Lands

Private holdings generally have little economic impact on adjacent State lands. To prevent timber trespass, the encroachment of structures and motor vehicle trespass, boundary lines must be marked and maintained. Nearby homes and housing developments often increase the danger of fire, while compounding its consequences. As a result, stricter fire suppression, prevention and monitoring are necessary. Sometimes, costly steps to block off wood's roads and parking lots with boulders or gates, and the posting of additional signs and increased patrols become necessary to discourage illegal use of the State lands.

Access to private inholdings, of which there are several in this unit, requires clear delineation of right-of-way corridors and use limitations to avoid confusion between State managers and landowners and to maintain the integrity of the State lands. Sometimes, Temporary Revocable Permits (TRPs) are necessary to clarify/define the private landowner's use of State land. Many TRP applications include requests for the use of a road traversing State land which may be the only access to the private land holding. In many of these cases, a TRP may be issued for 2 weeks per year to allow a private landowner motorized access across State land for purposes of restocking his/her camp with provisions for the year. Many times, TRP requests are denied because of legal interpretations. Occasionally, such interpretations lead to litigation which can pose a significant cost to the State in expenditure of resources and staff time, limiting the amount of time available for completing other management objectives.

I. Partnerships and Agreements

Conservation and stewardship partnerships are increasingly important, especially for public land management agencies. Given the fact that resources will always be limited, collaboration across political, social, professional boundaries is necessary for long term success and sustainability. Forest Preserve and State Forest lands are owned by the people of NYS and entrusted to the Department. The Department will in turn, encourage public involvement and citizen participation in management of the land. In addition, user groups, such as equestrian or mountain bike clubs will have the opportunity to support Department regulations, help plan for appropriate use and assist in maintenance of trails and other facilities. Public comment is encouraged throughout the management planning process and public input on land management proposals are an integral component of the unit management planning process. This ensures that with

Department oversight, the lands within this unit will meet the needs of the people most actively engaged in the use of this land.

Temporary Revocable Permits

The Department issues Temporary Revocable Permits (TRP) in its sole discretion for the temporary use of State lands and conservation easement lands for activities that have negligible or no permanent impact on the environment. Historically, TRP's have been issued for lean-to construction, cross country races, forest insect research, wildlife research, town road maintenance and utility line right-of-way work among many other purposes. Through the TRP review process, DEC
avoids conflicting uses of State land and situations that could threaten health, public safety, or integrity of natural resources. TRP authorization does not provide exemption to any existing State laws and regulations. To hold any event, a sponsoring organization must request permission in writing at least 30 days in advance of the date of the proposed activity. The TRP applicant or sponsoring organization must provide proof of liability insurance. TRPs often have specific stipulations pertinent to the activity in question and TRPs are authorized by DEC policy.

II. Natural Resources

A. Geology

A general understanding of the geology of the Catskill Mountains, and the specific forces which shaped them, is important in understanding the unique nature of this unit.

About 350 million years ago, southeastern New York and New England were dominated by relatively high mountains. To the southwest loomed a shallow sea. The Catskills were nothing more than a large, slowly sinking delta upon which the rivers from the mountains to the east were spreading gravel, sand and mud. This sediment accumulated to a depth of several thousand feet before deposition slowed as the mountains were worn low. Then, some 200 million years ago, the delta as well as the surrounding sea-bottom of sedimentary rock began to rise to a level higher than the region of New England from which its constituents were derived. What followed was a period of erosion which is responsible for the present shape of the Catskills.

The sea bottom rock (sandstone and shale), derived from much finer sediments than that of the delta, were less resistant to erosion and gradually eroded away. The delta, being composed of cemented gravel or conglomerate, especially in the upper beds, was very resistant to erosion. Thus, the Catskills, especially the eastern Catskills where the gravel from the ancient river delta was deposited, were able to withstand the forces of erosion and maintain their elevation. To the west, as the sediments from the ancient ocean become finer and finer, the resulting plateau was more susceptible to the forces of erosion, and consequently the mountains were worn down.

The Catskill Region is a plateau of sedimentary rock. These rocks were originally sediments laid down in a shallow sea some 395 million years ago in the Paleozoic Era of geologic history.

This region is generally underlain by interbedded Devonian sandstone, siltstone and shale formations that have very gentle inclinations towards the west and northwest. This Catskill Mountain region is essentially an uplifted, dissected plateau with elevations that range from lows around 1400 feet to 4180 feet at the top of Slide Mountain, located in the Southern part in the Town of Shandaken. This area, including Ulster and Greene Counties, was completely covered by a continental glacier which withdrew from the region about 14,000 years ago. This period of glaciation significantly altered the pre-glacial landforms and produced much of what is found today. The Catskills of present are characterized by benched slopes, deep ravines, steep escarpments and huge boulders.

B. Soils

Soils provide the foundation, both figuratively and literally, of all forested ecosystems. They support an immense number of microorganisms, fungi, mosses, insects herpto-fauna and small mammals which form the base of the food chain. They filter and store water and also provide and recycle nutrients essential for all plant life. In general, the Catskill Mountain region consists of the Arnot-Oquaga- Lackawanna soils that formed in glacial till deposits of various thickness over bedrock and mountainsides that have a slight stair step appearance because of the underlying rock. Many areas are very bouldery with slopes predominately 35 to 45 percent with ranges from 8 to 90 percent. The soils of the Shandaken Wild Forest vary somewhat between the six distinct parcels that make up this forest.

The Lower Birch Creek Road parcel consists predominately of the Lackawanna (LaC) flaggy silt loam soils in the low-lying fields with the hillside predominately consisting of the Lackawanna and Swartswood (LCD) soils.

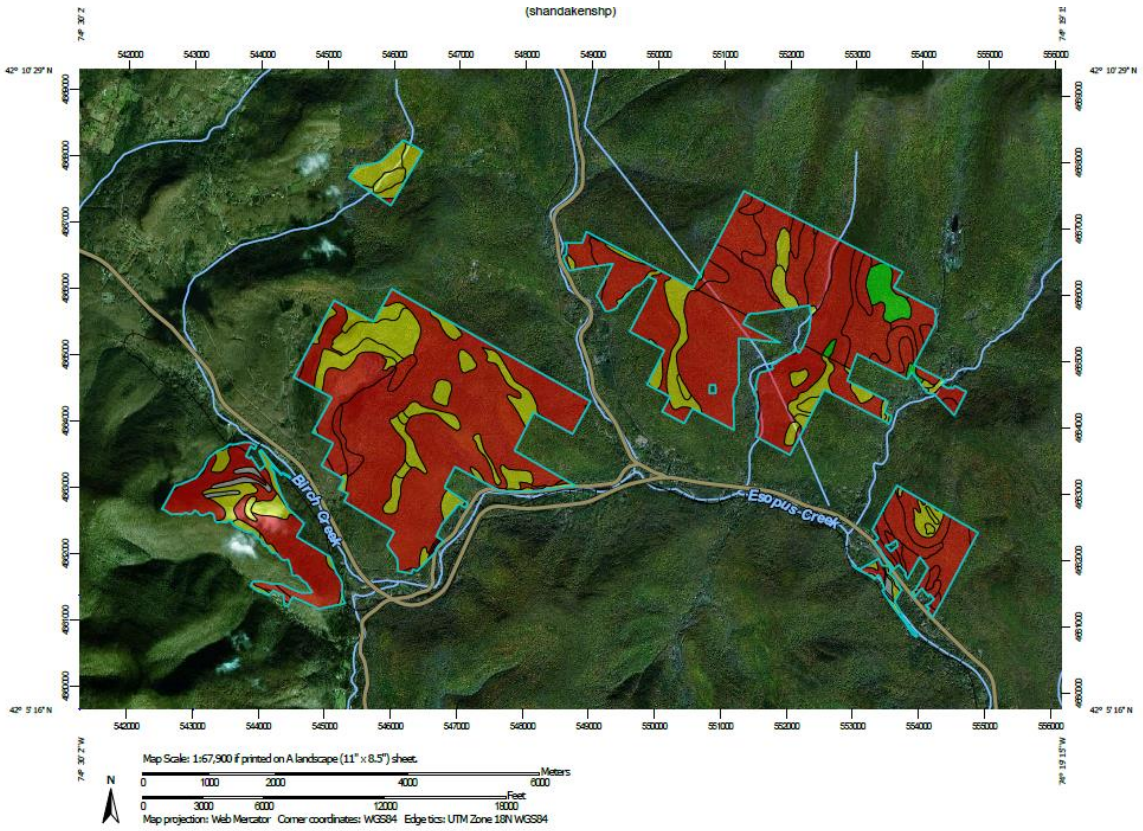
The area consisting of the Rochester, Seneca and Millbrook Hollows contains predominately the Arnot-Oquaga-Rock outcrop complex (ARF). A narrow strip of Lackawanna and Swartswood (LCF) very boulder and steep can be found along the Route 28 corridor. The Seneca Hollow area contains the Lackawanna and Swartswood (LCD) very boulder and moderately steep soils. A very small area of Oquaga-Arnot-Rock outcrop complex can be found in the interior portion of this parcel.

The parcel containing the Peck Hollow area consists predominately of the Arnot-Oquaga-Rock outcrop complex (ORC). A small area contains the Oquaga-Arnot-Rock outcrop complex (ORC). The final soil in this area is found on a long finger ridge between Peck Hollow and Jay Hand Hollow and consists of the Oquaga-Arnot-Rock outcrop complex (ORD) moderately steep.

The parcel which encompasses the access roads in allaben consists of four different soil types. The area North of the road complex is predominately the Lackawanna and Swartswood very steep and very boulder (LCF) soils. The area South of the access roads consist of the Schoharie silt loam complex. The road itself lies within the Odessa silt loam complex (OdB) and the area on the East side of the parcel is made up predominately of the Lackawanna and Swartwood extremely boulder soils (LEE).

The giggle hollow parcel is composed entirely of the Vly-Oquaga-Lackawanna soil.

The soils found within the Shandaken Wild Forest typically host mountain forests throughout the Catskill region. The steep slopes and well-drained nature of the soils create a moderate potential for erosion, especially when the vegetation is removed, and are susceptible to drought. The soils have good potential for recreational uses such as hiking and camping, provided developed areas are carefully designed and protected from erosion.



Area of Interest (AOI)
- Area of Interest (AOI)

Soils

Soil Rating Polygons
- Very limited
- Somewhat limited
- Not limited
- Not rated or not available

Soil Rating Lines
- Very limited
- Somewhat limited
- Not limited
- Not rated or not available

Soil Rating Points
- Very limited
- Somewhat limited
- Not limited
- Not rated or not available

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

The soil surveys that comprise your AOI were mapped at 1:24,000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Greene County, New York
Survey Area Data: Version 16, Oct 8, 2017

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jul 30, 2012—Feb 26, 2017

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Suitability and Limitations for Paths and Trails

Not Limited: indicates that the soil has features that are very favorable for paths and trails. Good performance and very low maintenance can be expected.

Somewhat Limited: indicates that the soils have features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design or installation.

Very Limited: indicates that the soil has one or more features that are unfavorable for paths or trails. These limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Source: *USDA NRCS Custom Soil Report for Shandaken Wild Forest

A complete description of the characteristics of the soils within the Shandaken Wild Forest can be found in Appendix H. Whether there are existing trails or new trails are proposed, best management practices (BMPs) will be utilized to ensure that the impact to the area is minimized. Public use of wetlands, wooded swamps, poorly drained areas, and steep slopes is discouraged. Where possible, trails and facilities will be routed to avoid such areas. In areas where that is not possible, trails and facilities will be designed to reduce erosion and minimize impact to the surrounding area.

Existing Conditions

Determinations of various soil types within the unit are general. Little information has been compiled on soil loss and/or degradation within the unit, except that there are a few sites where some minor soil disturbances on trails that may require rehabilitative actions in the future. However, guidelines that limit the development and type of recreation that can occur within the unit have generally served well in overall protection of the unit's soil resources.

Proposed Management

Objectives

- To minimize the amount of soil compaction from human activity on undeveloped areas where natural plant communities exist.
- New or improved facilities will be sited in sustainable locations and consistent with Best Management Practices.
- To keep soil erosion and compaction caused by the recreational use within acceptable limits that closely approximate the natural erosion process.

Action Steps

- Monitor for impacts to soil conditions caused by recreational use. Through field observation, inventory and monitor soil conditions within the unit affected by recreational use.
- The land manager, in accordance with existing guidelines will close, rehabilitate or restrict use of unit facilities as appropriate, to reduce negative impacts to soil resources caused by recreational use.
- Identify and address areas prone to erosion and overuse as Department resources permit.
- Design, locate and construct all new structures and improvements in ways that will minimize the potential for soil erosion.
- Correct undesirable conditions by rehabilitating the areas and/ or relocating use to more durable sites.
- Continue to target trail maintenance to heavily eroded trails; develop a priority list based on resource need rather than user convenience.

C. Topography/Terrain

This unit contains no formal peaks and is less remote than surrounding units. This unit also contains many ravines or hollows which range from the well-known Peck, Broadstreet and Rochester Hollows to the lesser known Seneca and Millbrook Hollows. Portions of these hollows contain very steep sides and significant elevation gains. Some of these hollows see little public use except for hunting seasons. Relatively open farm fields are also found within this unit at the Lower Birch Creek Road parcel.

Scenic view shed on the Giggle Hollow parcel. Photo P. Roehrs

The terrain ranges from relatively flat, open fields to very steep forested slopes. Elevation ranges from a low of 900 feet along Route 28 in the Allaben parcel to a high of 2,900 feet on a spur on Rose Mountain. This unit can be described as having a less remote character than either of the two adjacent Wilderness Areas. This unit serves as a watershed for the New York City Water Supply since all of this unit lies within the Ashokan Reservoir Basin and contains many tributaries to the Esopus Creek, the main feeder stream for the Ashokan Reservoir.

The gentle terrain on the giggle hollow parcel is found along the ridgeline which tops out at 2,200 feet in elevation. The remainder of the parcel is moderately to steeply sloped. The steepest terrain is typically along the side of the hollows and adjacent to the streams and on the eastern edge of the ridgeline. There are typical Catskill ledge systems which preclude any trail construction in those areas.

D. Water Resources

There are several streams and small ponds found throughout this unit. Many of the streams flow into New York City Department of Environmental Protection (NYCDEP) water supply reservoirs. These reservoirs supply New York City, as well as many towns along the way with a tremendous volume of fresh water from the Catskill Mountain Region. State lands, including those found within this unit, are managed to maintain and, when possible, improve the water quality of the watersheds.

There are numerous seasonal and year-round streams whose flow, which is predominately in a north-south orientation feed the Esopus Creek. Many of these free-flowing mountain streams are spring fed. There are eight named watercourses within the unit's boundary: Birch Creek, Peck Hollow, Jay Hand Hollow, Esopus Creek, Broadstreet Hollow, Millbrook Hollow, Seneca Hollow, Rochester Hollow

Five of these watercourses are classified and are protected under Article 15 of the New York State Environmental Conservation Law. These protected watercourses are: Peck Hollow, Rochester Hollow, Broadstreet Hollow, Birch Creek, Esopus Creek.

There are four ponded water bodies found within the Shandaken Wild Forest. Two small trout ponds are located adjacent to the old farmhouse within the Lower Birch Creek Road parcel. A third small pond is located south of the right fork of the access road in the Allaben parcel. The fourth pond is a very small impoundment near the Rochester Hollow house site.

Existing Conditions

There are many undeveloped naturally occurring springs that are found throughout the unit.

Proposed Management

Objectives

- To maintain and/ or enhance the water quality of the streams and wetlands within the unit through careful planning of proposed facilities and the repair and maintenance of existing facilities under the guidance of recognized water quality Best Management practices.

- To maintain, protect and/or improve the quality of the area's water resources and developed springs.
- To gain detailed knowledge on the public's use of the area's waters, and how that use may be negatively impacting water resources

Action Steps

- To support and encourage research to determine the effects of recreational use on water quality.
- To periodically inspect and maintain developed springs within this unit.

Wetlands

Freshwater wetlands possess ecological, aesthetic, recreational and educational value. Wetlands protect water resources by stabilizing water flow and minimizing erosion and sedimentation. Wetlands receive, store and slowly release rainwater and meltwater, protecting water resources by stabilizing water flow and minimizing erosion and sedimentation. Wetlands are inventoried, mapped and protected under the 1975 NYS Freshwater Wetlands Act by the Department**.**

Other important ecological functions of wetlands include water quality improvement, storm-water attenuation, nutrient cycling, and habitat for threatened and endangered species. In their capacity to receive, store and slowly release rainwater and meltwater, wetlands protect water resources by stabilizing flow rates and minimizing erosion and sedimentation. Many natural and man-made pollutants are removed from water entering wetland areas. Wetlands may contain a number of rare, threatened and endangered plants. The wetland communities found within this unit require special attention for protection against overuse/ degradation and all Action Steps will reflect this objective.

There are no state regulated wetlands (greater than 12 acres in size) located within the unit. However, there are some very small, and widely scattered vernal pools at high elevations. These pools serve as an important seasonal source of water for numerous wildlife species.

Existing Conditions

The wetlands found within the unit provide great ecological, aesthetic, and educational value in their capacity to receive, store and slowly release rainwater and snow melt. In general, they are one of the most productive habitats for fish and wildlife, and afford opportunities for fishing, hunting, wildlife observation, and photography. Through natural processes there are changes in the location and composition of wetlands over time thus, resulting in changes to mapping information. There are a few vernal pools scattered throughout the unit. Vernal pools are small wetlands that occupy shallow depressions flooded in the spring or after a heavy rainfall but are usually dry by mid-

summer. Many vernal pools refill in the fall. These tiny wetlands support a diverse group of invertebrates that include species of frogs, salamanders, newts and toads.

Proposed Management

Objectives

- To minimize the impacts of construction and maintenance activities on wetlands.
- To preserve and protect wetland community vegetation and associated plant species.
- To minimize the amount of wetland disturbances and impacts caused by the construction, maintenance and use of structures and improvements and human recreational use.
- To allow natural processes to operate freely to ensure that that the succession of native plant communities is not altered by human use.

Action Steps

- Install bridges and other erosion control devices as appropriate to protect wetland areas.
- To promote the development of GIS information to assist managers in accessing inventoried wetland data.
- To minimize the impacts of construction and maintenance activities on wetlands.
  To preserve and protect wetland community vegetation and associated plant species.
  To correct any undesirable wet conditions and relocate any trails or facilities when necessary to reduce the impacts on wetlands or associated vegetation.

Aquatic Invasive Species

Existing Conditions

Aquatic Invasive Species (AIS) can cause harm to the environment, human health, and the economy of a region and can arrive via many pathways, including intentional introduction (aquaria dumping), cargo transport, and shipping ballast. Once established, AIS can spread rapidly through connecting waterways or by “hitchhiking” not only on the propellers, trailers, rudders, motors, etc. pf the vessels of recreational boaters and anglers but also on equipment (trailers, waders) and non-motorized watercraft (kayaks, canoes and paddleboards).

Efforts will be made to restore and protect the native ecological communities in the Shandaken Wild Forest through early detection and rapid response efforts to eradicate or control existing or newly identified invasive species populations. Site specific work

planning processes gives the Department the basic tools needed to preserve, protect and restore the natural native ecosystems of the Forest Preserve.

Proposed Management

Objectives

- To prevent to the extent possible, the introduction and spread of AIS into and within the Catskill region.
- To protect native aquatic species and their habitats.
- To protect water-based recreational resources and economy.
- To protect New York citizens' investment in publicly owned waters.

Action Steps

- Take aquatic invasive species spread prevention actions across the unit. These measures will vary based on location within the following spectrum.
    - Post signs about the dangers of spreading AIS where appropriate.
- Partner with those organizations involved in fighting invasive species on Forest Preserve lands.
- Train Department staff to identify and document the location of aquatic invasive species. When Department staff or partner organizations are engaged in on-site outreach and education, ensure that they have proper training for the prevention of AIS.
- Work towards a complete comprehensive inventory of the presence and extent of aquatic invasive species on the unit.

E. Vegetation

The Shandaken Wild Forest hosts a wide variety of plant species and communities. The current species composition of the vegetative cover has been shaped by many factors including local variations in: soil, temperature, moisture, elevation, species interactions, and past disturbance events such as fire, wind, ice and water. This unit, which contains forests, fields, re-vegetating farm fields, spruce and pine plantations, second growth northern hardwoods (NYS DEC 1990) or slope forests (Kudish, 1971), is similar to other parts of the Catskills. Although often delineated by elevation, it is believed that till quantity (i.e., soil depth), volume of stoniness and water availability are important factors in the distribution of tree species in the Catskill Region. Botanist Michael Kudish PhD., presented this in his book The Catskill Forest: A History (2000) pp.2-4.

Portions of this Wild Forest are dominated by sugar-maple-beech-yellow birch (northern hardwoods) forest type. White ash, black cherry, northern red oak, red maple, basswood, hop hornbeam, aspen, hemlock, white pine, and scattered red spruce are

species associated with northern hardwoods and many are present and locally abundant in the Shandaken Wild Forest. Much of the Allaben and some of the Rochester Hollow parcel contains this forest type. In addition, red oak is locally abundant on the ridges associated with Seneca, Millbrook and Peck Hollows with some occurrences of hickories mixed in. This forest type is considered southern hardwoods and is likely present due to forest disturbances that may have occurred including fire, timber harvesting and farming/ pasturage. Once the forest canopy has been removed, the southern hardwoods are able to compete with, and sometimes outcompete, the native northern hardwood species. In addition to these forest types, several small White and Norway spruce plantations exist in Rochester Hollow above the hairpin turn.

Existing Conditions

This unit hosts a variety of plant species and cover types. These vegetative communities have been influenced by a suite of number of natural and human disturbances. Some of the disturbances include wind, fire, ice, insects, disease, logging and recreational use. These disturbances create opportunities for different species to grow and help increase the diversity of the vegetation. Impacts to the vegetation of natural communities come from a variety of sources; however, currently most are related to visitor activities in the unit. Impacts directly attributed to recreational use do exist in areas where high use is concentrated. Concentrated human activity in areas such as trail corridors, riparian areas and mountain summits are likely to be the main source of impacts to vegetation, both presently and for the future.

Proposed Management

Objectives

- To protect known occurrences of endangered plants, wildlife and natural ecological communities using the Natural Heritage Database and conservation guides along with assistance from DEC experts in the Division of Lands and Forests and the Division of Fish, Wildlife and Marine Resources.
- To continue to expand programs that identify and map ecological communities and sensitive, rare, threatened, and endangered plant species or communities.
- To continue to allow natural processes to function in the succession of plant communities.
- To protect species and ecological communities identified as rare, threatened or endangered.
- To support research efforts that monitor and map forest health and changing forest conditions.

Action Steps

- Enforce existing policies and regulations that protect the unit's vegetation.
- Use minimum impact techniques to restore sites where natural vegetation has been destroyed by human causes.
- Relocate existing facilities or locate and construct new facilities where they will not impact rare, threatened or endangered plant species or communities.
- Assist the New York Natural Heritage Program in monitoring the presence of rare, threatened and endangered plants and significant plant communities where within the unit.
- Eliminate any identified populations of invasive plant species that are discovered in the unit. These actions may be carried out by DEC personnel or by other volunteers under supervision of DEC through an approved Volunteer Stewardship Agreement
- Monitor vegetation in high-use areas to determine overuse and the need for restricting use in such areas.
- Enforce the Lands and Forests general rules and regulations regarding tree cutting on Forest Preserve land in SWF. 6NYCRR §190.8(g) provides that "No person shall deface, remove, destroy, or otherwise injure in any manner whatsoever any tree, flower, shrub, fern, moss or other plant, rock, fossil or mineral found or growing on State land. " 6 NYCRR §190.1 further provides that "No wood, except from dead and down trees or from supplies furnished by the DEC, shall be used for fuel."

Rare, Threatened and Endangered Communities and Endangered Plants

New York has classified species at risk into three categories, endangered, threatened, and species of special concern (6 NYCRR Section 182). The following sections indicates the protective status of some vertebrates that may be in the unit:

Endangered: Any species that is either native and in imminent dangers of extirpation or extinction in New York: or is listed as endangered by the US Department of the Interior.

Threatened: Any species that is either native or likely to become endangered within the foreseeable future in New York; or is listed as threatened by the US Department of the Interior.

Special Concern: Native species not yet recognized as endangered or threatened but for which documentation concern exists for their continued welfare in New York. Unlike the first two categories, they receive no additional legal protection under the Environmental Conservation Law; but they could become endangered or threatened in the future and should be closely monitored.

Ecological/ Natural Communities

Existing Conditions

The presence of at-risk species and communities in the unit has been investigated to inform appropriate Action Steps and protections. This investigation was conducted in development of this UMP and the associated inventory Forest Preserve resources. A more comprehensive and focused assessment will be undertaken before undertaking specific management activities in sensitive locations.

Proposed Management

Objectives

- To protect known occurrences of endangered plants, wildlife and natural and ecological communities using the Natural Heritage Database and conservation guides along with assistance from DEC experts in the Division of Lands and Forests and the Division of Fish, Wildlife and Marine Resources.
- Consider other “at-risk” species whose population levels may presently be adequate but are at risk of becoming imperiled due to new incidents of disease or other stressors.

Action Steps

- Conduct up-to date training for forestry staff on the identification and protection of at-risk-species and communities.
- Maintain and contribute additional data to the existing Master Habitat Database on ArcGIS which identifies all known occurrences of rare, threatened, and endangered species and important natural communities in conjunction with the New York Natural Heritage Program.

Threatened and Endangered Plants

Existing Conditions

Natural Heritage Programs biological inventory work identified one threatened plant species on lands contiguous to the unit and on portions of Shandaken Wild Forest Lands. A population of Blunt-Lobed Grape Fern (*Botrychium oneidense)* has been identified. There are no records of endangered plants on the unit.

Before any major work is initiated the proposed site will be surveyed and inventoried for environmental assessment purposes to ensure that no such species or natural plant

communities will be destroyed. Locations of endangered or threatened species will not be disclosed to protect those species from collectors and the general public.

Proposed Management

Objective

- To protect locations of sensitive, threatened and endangered species.

Action Steps

- Assist the New York Natural Heritage Program in monitoring the presence of rare, threatened or endangered plants and significant plant communities where they occur in the unit.
- Ecological inventories and maps will be correlated with project plans to prevent unintended and undesirable impacts to sensitive, threatened and endangered species Assist the New York Natural Heritage Program in monitoring the presence of rare, threatened and endangered plants and significant plant communities where they occur within the unit.

Terrestrial Invasive Species

Existing Conditions

The negative impacts of invasive species on natural forests, terrestrial and aquatic communities are well documented. Colonization and unrestrained growth of invasive species cause the loss of biodiversity, interruption of normal hydrology, suppression of native vegetation, and significant aesthetic, human safety and economic impacts. Both terrestrial and aquatic species have been identified at increasing rates of colonization along roadsides and campgrounds, and in water bodies of the Forest Preserve. Some of these species have the potential to colonize backcountry lands, lakes and ponds and degrade natural resources of the Forest Preserve

Non-native, invasive species directly threaten biological diversity and high-quality natural areas. The unit's key conservation targets and supporting ecological processes are at risk from invasive species, as the number of communities threatened and the number of invasive species that threaten them is expected to increase over time. Invasive plant species can alter native plant assemblages, often forming monospecific stands of very low-quality forage for native wildlife, and drastically impact the ecological functions and services of natural systems. Invasive plants are likely to spread, undermining the ecological, recreational, and economic value of the unit's natural resources.

There are very few measures currently in place in the Shandaken Wild Forest to control the spread of exotic and invasive species. Many, if not all, invasive plant infestations

within a respective unit will have multiple transport and distribution vectors and will threaten sensitive communities. All “easy to contain – low abundance” terrestrial and aquatic invasive plant infestations within the unit are immediate targets for containment and/or eradication controls. Minimizing the spread of newly documented and immature infestations before they have the chance to become established is a priority management action.

At this time, the Department partners with the Catskill Regional Invasive Plant Program (CRISP) to coordinate invasive species management functions including coordinating partner efforts, recruiting and training citizen volunteers, identifying and delivery education and outreach, establishing early detection monitoring networks and implementing direct eradication and control efforts in the Adirondack and Catskill Forest Preserves.

Facilities and activities within the unit may influence invasive plant species introduction, establishment, and distribution throughout and beyond the unit boundaries. These facilities and activities are likely to serve as “hosts” for invasive plant establishment. Perpetual Early Detection/Rapid Response protocols will be implemented within the unit at probable locations of invasive plant introductions, such as parking/trailhead areas.

Educating natural resource managers, elected officials, and the public is essential to increase awareness about the threat of invasive species and ways to prevent their introduction and transport into or out of the unit. Invasive species education will be incorporated in staff training and citizen licensing programs for hunting, fishing, and boating; through signage, brochures, and identification materials; and included in information centers, campgrounds, community workshops, and press releases.

Infestations located within and in proximity to the Shandaken Wild Forest may expand and spread to uninfected areas and threaten natural resources within this unit; therefore, it is critical to identify infestations located both within and in proximity to the unit and then assess high risk areas and prioritize Early Detection Rapid Response (ED/RR) and management efforts. A list of confirmed present terrestrial invasives that have been identified in Shandaken Wild Forest are listed below.

The invasive insects of most concern in New York State are: the Spotted Lantern Fly, Emerald Ash Borer, Asian Longhorned Beetle, Hemlock Woolly Adelgid, Gypsy Moth, and the Sirex Woodwasp. If allowed to spread to the Forest Preserve, these species could bring devastating effects.

The following invasive species have been detected on the unit according to iMap Invasive records:

Confirmed Invasive Species	
True-Forget Me Not	*Myosotis scorpiodes*
Japanese Knotweed	*Fallopia japonica*
Reed Canarygrass	*Phalaris arundinacea*
Mugwort	*Artemisia vulgaris*
Oriental Bittersweet	*Celastrus louiseae*
Black Swallowwort	*Cynanchum louiseae*
Purple Loosestrife	*Lythrum salicaria*
Dame's Rocket	*Hesperis matronalis*
Black Locust	*Robinia pseudoacacia*
Wild Chervil	*Anthriscus sylvestris*
Didymo, Rock snot	*Didymosphenia geminata*
Creeping Buttercup	*Ranunculus repens*
Multiflora Rose, Rambler Rose	*Rosa multiflora*
Great Mullein, Common mullein	*Verbascum thapsus*
Wild Carrot, Queen Anne's Lace	*Daucus carota*
Reed Canarygrass	*Phalaris arundinacea*
Birdfoot Deervetch	*Lotus coniculatus*

The CPSLMP allows for the use of motor vehicles, motorized equipment, and aircraft “to preserve and enhance the fish and wildlife or other natural resources of the area”. This equipment could be used for purposes of control or eradication of exotic or invasive species in the Shandaken Wild Forest. Motorized control measures of exotic and invasive species which threaten other resources are also authorized under CPSLMP guidelines if the threat constitutes an emergency involving the protection or preservation of intrinsic resource value.

Hemlock Wooly Adelgid (*Adelges tsugae*) caused decline and mortality of Eastern Hemlock (Tsuga canadensis) on trees along a stream drainage in Rochester Hollow

roughly .66 miles from the parking area at approximately 1,580 feet in elevation. A few invasive plant species are present including Japanese's Barberry (*Berberis thunbergii*) which formed a continuous hedge row along portions of the John Burroughs Memorial Trail. The barberry has the potential to form dense stands in the understory of the neighboring forest and could be considered for control soon, before dense stands form.

Another invasive, Coltsfoot (*Tussilago farara*) is present locally and has gained a strong foothold in the parking area. It is unlikely to colonize or compete in well vegetated areas or under canopy cover. Its greatest likelihood of spread would be in mesic to wet-mesic areas along trails or stream drainages.

Proposed Management

Objectives

- To adhere to the procedure for the Rapid Response Process outlined in the DLF-16-1 Rapid Response for Invasive Species: Framework for Response Process outlined in the DLF-16-1 Rapid Response for Invasive Species: Framework for Response (available online at http://www.dec.ny.gov/docs/lands_forests_pdf/isrrprogrampolic.pdf)
- To monitor the overall health of stands located in Shandaken Wild Forest.
- To prevent the establishment of non-native invasive vegetation to the greatest extent possible.
- To reduce or eliminate terrestrial invasive plant species found within the unit and protect the area from the introduction, establishment and spread of invasive species.
- To prevent the establishment of non-native invasive vegetation. To reduce or eliminate terrestrial invasive plant species found within the unit and protect the area from the introduction, establishment and spread of invasive species.
- To educate the public on invasive species

Action Steps

- Continually update the inventory of Shandaken Wild Forest to determine the presence and extent of invasive species. All management recommendations are based on the knowledge of non-native invasive species present in the unit and their location, species, abundance and density. Inventory should be based on existing inventories formal or informal inventories during routine operations by NYSDEC personnel and by soliciting help from volunteers under DEC supervision through and Volunteer Stewardship Agreement to report on invasive species presence, location and condition.
- Early Detection and Reporting procedures will be implemented. Deliberate detections through planned surveillance by trained employees and volunteers in

specific designated areas will be conducted. Sites of ground disturbance, human altered habitats and areas of high human traffic are most likely places for invasive species to be transported and become established. High priority sites for monitoring will be identified, designated and deliberately monitored.

- Irrespective of a completed inventory and analysis, the Department will take necessary actions to control invasive species where there is potential for significant degradation to the native ecosystem. These actions can include mechanical control, biological control, and the use of pesticides, and will require compliance with applicable laws including the State Environmental Quality Review Act notice in the Environmental Notice Bulletin (ENB) and approval by the Director of the Division of Lands and Forests.
- Provide educational materials.
- Partner with those organizations involved in fighting invasive species on Forest Preserve lands.
- Educate natural resource managers, elected officials and the public about the threat of invasive species and ways to prevent their introduction and transport into and out of the unit.

F. Forest Health

Existing Conditions

A combination of many factors can influence the health of a plant community. Physical factors tend to be weather related with notable examples being lightning fires, ice damage, severe winds, and flooding. Biological factors are variable and include the effects of disease and insects on the forest environment. Insects and diseases that affect trees are constant natural forces that shape the forest. While many insect and diseases have negligible or beneficial impacts to forest health, some, especially those involving invasive species, can be especially damaging. Several insects and diseases have impacted forest communities within the region and/or New York State in recent years and continue to pose a threat to the health of forests within the unit.

Spotted Lantern Fly- is an invasive pest from Asia that feeds on the tree of heaven (*Ailanthus altissima*) but can also feed on a wide variety of plants such as grapevine, hops, maple, walnut, fruit trees and others. This flying insect has the potential to impact New York Forests such as Shandaken Wild Forest. In 2018, these insects were reported in Albany, Monroe, Yates and Suffolk Counties in NYS. Following the reports DEC and the Department of Agriculture and Markets staff immediately began extensive surveys throughout the area. At this time, there are no known occurrences of this insect in Shandaken Wild Forest.

Beech Bark Disease- Beech bark disease is an important insect-fungus complex that has caused extensive mortality of American beech throughout portions of the Catskills. The primary vector, a scale insect, *Cryptococcus fagi*, attacks the tree creating entry sites for the fungus, *Nectria coccinea var. faginata.* Changes in the percent of beech in the cover type can stimulate shifts in animal populations that utilize beech mast extensively as a food source. On the other hand, dead and/or dying beech trees may benefit other wildlife species by providing abundant nesting, feeding, and potential den locations.

Emerald Ash Borer *(Agrilus planipennis)*- This exotic, introduced beetle bores into and kills otherwise healthy ash trees. White ash trees are a minor component although their value to wildlife and scenic quality should be evaluated to improve interpretations of value loss following EAB infestations.

Hemlock Woolly adelgid *(Adelges tsugae)*- This aphid-like insect attacks North American hemlocks and can be easily identified by white woolly masses they form on the underside of the branches at the base of the needles. Juvenile hemlock woolly adelgid feed on the tree's stored starches and remain in the same spot for the rest of their lives, continually feeding and developing into adults. Their feeding severely damages the canopy of the host tree by disrupting the flow of nutrients to its twigs and needles. Tree health declines, and mortality usually occurs within 4-10 years.

Native to Asia, Hemlock woolly adelgid was introduced to the western United States in the 1920's. It was first observed in the eastern US in 1951 near Richmond, Virginia after an accidental introduction from Japan. Hemlock woolly adelgid has since spread along the East Coast from Georgia to Maine and now occupies nearly half of the eastern range of native hemlocks. Hemlock woolly adelgid has continued to spread north to the Capitol Region and west, through the Catskill Mountains and the Finger Lakes Region, into western NY.

Forest Tent Caterpillar (*Malacosoma disstria*)- The forest tent caterpillar, a native insect, may be found wherever hardwoods grow. Outbreaks have occurred at 10 to 15-year intervals with the last widespread outbreak in the late 1970's.

Gypsy moth (*Lymantria dispar*)- This introduced invasive insect forest defoliator has been a resident of the region for over a century. The insect periodically causes extreme defoliation in red oaks and has caused scattered mortality. Heavy infestations of caterpillars can be a severe nuisance to forest users and the hairs on the caterpillars can be a serious human health risk due to allergic reactions.

Oakwilt (Ceratocystis fagacearum)- This fungus develops in the xylem, the water carrying cells of trees. All oaks are susceptible to the fungus, but the red oak group

(with pointed leaf tips) often die much faster than white oaks (rounded leaf tips). Red oaks can take from a few weeks to six months to die and they spread disease quickly. White oaks can take years to die and have a lower risk of spreading the disease.

White Pine Decline- This disease is caused by several agents of which the most notable are white pine blister rust (WPBR). Caliciopsis canker, Armillaria root disease and several needle casts and blights. White pine decline has recently been listed as a northeastern forest decline priority as several mature and maturing pine stands are suffering significant levels of decline on a variety of sites from Maine to Pennsylvania. Transition forests around wetlands seem particularly vulnerable to white pine decline agents as these stands seem to suffer more from seasonal droughts.

Spruce decline- There are several insects and diseases that can contribute to severe decline symptoms in spruce stands following drought, competition, extreme weather or other related stressors. These agents rarely directly cause severe decline or mortality although IPS bark beetles can be found in local outbreaks that may expand to a few acres of tree mortality.

Proposed Management

Objectives

- To allow natural processes to freely operate to ensure that the succession of native plant communities is not altered by human use.
- To follow and implement the procedures outlines in the DLF-16-1 Rapid Response for Invasive Species: Framework for Response (available online at http://www.dec.ny.gov/docs/lands_forests_pdf/isrrprogrampolicy.pdf)
- To prevent the establishment of non-native invasive vegetation.
  To educate natural resource managers, elected officials and the public about the threat of invasive species and ways to prevent their introduction and transport into the unit.

Action Steps

- Advance protection and early detection through deliberate monitoring through planned surveillance by trained employees and volunteers in specific designated areas. Sites of ground disturbance, human altered habitats and areas of high human traffic will be high priority areas for periodic monitoring for invasive species. Early detection efforts would include visual inspections of host trees, identification of areas at higher risk of introduction with regularly scheduled inspections of those areas and possibly targeted insect trapping where deemed appropriate

- Rapidly and accurately identify any reports of new invasive species. Any samples will be verified by a recognized expert or accredited laboratory before any action is taken.
- Relevant resource managers will be notified once the reported invasion has been verified.
- Once the resource managers have been notified and the reported invasion has been verified the location and relevant information will be submitted to the NYS Invasive Species Database, iMap Invasives. The Department will conduct a rapid assessment to determine the threat(s) posed by the invasion and potential for an effective natural response. The rapid assessment will ultimately determine whether responsible agencies should attempt spread prevention (containment), eradication, control or no action.
- Once the rapid assessment has been completed a targeted planning effort will address roles and responsibilities, coordination, internal and external controls, spread prevention, decision-making and implementation.
- The type of response and the actions taken will depend on the scale of the infestation and the priority level of the species. For large scale detection, eradication may not be possible, so control, containment and management are the only options. Once a response effort has been completed the resource manager may determine that the disturbed area should be restored using native species to help restore ecosystem resiliency and guard against future re-infestations.
- Irrespective of a completed inventory and analysis, the Department will take necessary actions to control invasive species where there is potential for significant degradation to the native ecosystem. These actions can include mechanical control, biological control, and will require compliance with applicable laws.
- Partner with those organizations involved in fighting invasive species in the Catskill Park to increase invasive species education and outreach.

G. Wildlife

Existing Conditions

The distribution and abundance of wildlife species on the unit is determined by physical (e.g., elevation, topography, climate), biological (e.g., forest composition, structure, and disturbance regimes, available habitat, population dynamics, species' habitat requirements), and social factors (e.g., land use). It is important to note that wildlife populations occurring on the unit do not exist in isolation from other forest preserve units, state forests or private lands. The physical, biological, and social factors that exist

on these other lands can and do influence the abundance and distribution of wildlife species on the Shandaken Wild Forest.

Statewide wildlife survey efforts conducted by the NYSDEC have included two Breeding Bird Atlas projects (1980-1985 and 2000-2005) and the New York State Amphibian and Reptile Atlas Project (1990-1999). The Bureau of Wildlife collects harvest data on a number of game species (those that are hunted or trapped). Intensive statewide surveys of boreal songbirds have taken place from 2007-2009 by the Wildlife Conservation Society. Additionally, the Bureau of Wildlife collects harvest data on a number of game species (those that are hunted or trapped). Harvest data is not collected specific to Forest Preserve units, but rather on a town, county, and wildlife management unit (WMU) basis. Harvest data can provide some indication of wildlife distribution and abundance and is sometimes the only source of data on mammals.

The wildlife species in this wild forest unit are similar to those found in other areas of southeastern New York State. This unit consists primarily of northern hardwoods which favor forest species of wildlife such as black bear, snowshoe hare, wild turkey, gray squirrel and porcupine. Other species such as the white-tailed deer, cottontail rabbit, beaver and ruffed grouse who favor early successional habitats occur at lower population levels. Mammal species information is provided in Appendix D.

The physical structure of the unit's forests has a significant effect on the occurrence and abundance of wildlife species. While some species prefer mature forests, many others occur in lower densities on Forest Preserve and State Forest lands than they do on private lands characterized by a greater variety of habitat types. Natural forest disturbances including windstorms, ice storms, tree disease and insect outbreaks, fire, and beaver activity influence forest structure and wildlife habitats by creating patches of earlier successional stages within a larger matrix of mature forest. Private lands adjacent to public lands may provide some habitat for species that prefer early successional habitats, depending on land use and the silvicultural practices conducted.

The wildlife species found within this unit are like those found in other areas of mature northern hardwood forest in southeastern New York State. The northern hardwood forest favors late successional species such as black bear, porcupine, gray squirrel and wild turkey. Species that use earlier successional stages, such as white-tailed deer, cottontail rabbit and ruffed grouse occur at lower populations in the higher elevation northern hardwood forests.

The NYS Constitution calls for limitations in the types of Action Steps that can occur on Forest Preserve lands that fall within the Catskill Park. All such lands are considered forever wild, and habitat management options are severely limited. Silvicultural and prescribed fires are prohibited on Forest Preserve lands. Without these options the land

will eventually revert to old growth forest, with limited areas of early successional habitat. Natural forces (windstorms, ice storms, etc.) along with beaver activity and insect outbreaks will help shape the forest structure also. Private lands adjacent to public lands may provide some habitat for species that prefer early successional habitats if silvicultural practices are properly conducted.

Birds

The avian community varies seasonally. Some species remain within the areas all year, but most species utilize the area during the breeding season and for migration. The Breeding Bird Atlas 2000 Project (2000-2005) documented 97 species in atlas blocks within, or partially within the Shandaken Wild Forest. It is important to note that atlas blocks overlap and extend beyond the land boundary of Shandaken Wild Forest. Therefore, these data do not necessarily reflect what is found on the unit, but on the atlas blocks. It is probable that some species determined to be present by BBA surveys were found only on private lands adjacent to state lands. However, the BBA data should provide a good indication of the species found throughout the unit and adjacent region. A table of the bird species associated with this unit can be found in the Appendix B.

Reptiles and Amphibians

The New York State Amphibian and Reptile Atlas Project (1990-1999) confirmed the presence of 42 species of reptiles and amphibians in USGS Quadrangles within or partially within Shandaken Wild Forest. It is important to note that quadrangles (the survey sample unit) overlap and extend beyond the land boundary of the unit. Therefore, recorded species do not necessarily reflect what was found on the unit, but on the quadrangles. However, these data should be a good indication of the species found throughout the Shandaken Wild Forest. These included 7 species of turtles, 13 species of snakes, 9 species of frogs and toads and 13 species of salamanders. A table of the reptile species found is provided in Appendix B.

Existing Conditions

While all the objectives and Action Steps outlined below are important, a management priority should be placed on increasing our understanding of the occurrence and distribution of many wildlife species and their habitats within the unit. This priority is reflected under the list of potential management action projects outlined below. Active management of wildlife populations will be accomplished primarily through hunting and trapping regulations developed by the DEC’s Bureau of Wildlife for individual or aggregate Wildlife Management Units. Where appropriate, continued input from Citizen Advisory Committees will be considered in determining desirable levels of wildlife within this unit.

Wildlife Management Guidelines

The legal foundation for wildlife and fisheries management in New York State is embodied in Article 11 of the Environmental Conservation Law (ECL). Article 11 authorizes DEC to ensure the perpetuation of fish and wildlife species and their habitats and to regulate hunting and trapping through the issuance of licenses, the establishment of hunting and trapping seasons and manner of taking, and the setting of harvest limits. Game species will continue to be managed by appropriate regional or statewide hunting or trapping seasons. While all the objectives and Action Steps outlined below are important, a priority should be placed on increasing our understanding of the occurrence and distribution of several wildlife species and critical habitats within these tracts. This priority is reflected under the list of potential Action Steps outlined below.

Proposed Management

Objectives

- To monitor and afford extra protection, where warranted, to species which are endangered, threatened, or are of special concern that use lands within the unit.
- To maintain and perpetuate annual hunting seasons as legitimate uses of the wildlife resources compatible with wild forest recreation.
- To keep the number of human wildlife conflicts to a minimum.
- To meet the public's desire for information about wildlife and its conservation, use and enjoyment.
- Assure that the wildlife populations are of appropriate size and adequately protected to meet the demands placed on them including consumptive and non-consumptive uses.
- To minimize wildlife damage and nuisance problems
- To increase our understanding of the occurrence, distribution and ecology of game and non-game species.

Action Steps

- Support traditional use of the tract's wildlife resources, particularly activities designed to perpetuate hunting and trapping programs and trapping efforts.
- Manage and protect wildlife through enforcement of the Environmental Conservation Law and applicable Rules and Regulations.
- Active management of wildlife populations will be accompanied through hunting and trapping regulations developed by the DEC Bureau of Wildlife for individual or aggregate Wildlife Management Units.
- Monitor critical habitats for potential human disturbance. Human disturbance

impacts to critical habitats will be mitigated through appropriate measures. Regulations will be based on data collected from hunters/ trapper's wildlife surveys and research, as well as input from our constituents.

- Support future statewide and regional survey efforts that increase our understanding of the occurrence and distribution of flora, fauna, and significant ecological communities (e.g. Mammal Atlas, Breeding Bird Atlas, New York Natural Heritage Program surveys).
- Provide information, advice and/or direct assistance to requests for relief from, or solutions to reduce or alleviate problems with nuisance wildlife.
- Provide information to user groups on avoiding problems with black bears. Encourage the voluntary use of bear-resistant food canisters in other areas. Black bear conflicts are typically caused from improper food storage and garbage burning at campsites.
- Assess problems associated with beaver-flooded trails and roads. Work with area trappers and encourage trapping at nuisance sites during the open beaver trapping season. The Department will entertain re-routing sections of trail when beavers make a new impoundment if the land surrounding the impoundment has viable re-route alternatives.
- Provide information, advice, and assistance to individuals, groups, organizations, and agencies interested in wildlife resources and whose actions may affect those resources.
- Continue to monitor and inventory wildlife populations and their habitats, particularly species classified as endangered, threatened, special concern, rare or game.

H. Fisheries

DEC angling regulations are designed to conserve fish populations in individual waters by preventing overexploitation. The issuance of fishing licenses allows DEC to regulate fishing efforts and season/harvest limits for the perpetuation of fisheries. DEC monitors the effectiveness of angling regulations, stocking policies, and impacts of other management activities by conducting periodic biological and chemical surveys. Based on analysis of biological survey results, angling regulations may be changed as necessary to protect the fish populations of the management area. Statewide angling and special angling regulations provide the protection necessary to sustain or enhance natural reproduction where it occurs.

The waters in this unit consist of both free-flowing streams generally less than 20 feet wide and a few small ponds. Good numbers of native brook trout (Salvelinus fontinalis) are present in most streams with brown trout (*Salmo trutta*), rainbow trout (*Oncorhynchus mykiss*) and sculpin (*Cottus spp*.) present in some. Suckers (*Catostomus commersoni*), minnows, (*Notropis spp*.) and dace (*Rhinichthys spp*.) may

be present in some of the lower elevation streams. The small size, steep gradient, seasonal fluctuation of water levels and general low fertility limit the density and growth rate of trout populations. Consequently, this unit's other streams do not lend themselves to stocking or other forms of active management and cannot support an intensive fishery.

The ponded waters consist of two spring fed ponds near the farmhouse on the Lower Birch Creek Road parcel, one small impoundment at the "T" intersection in the Allaben parcel and a very small pond at the Rochester Hollow house site. The two ponds near the farmhouse contain native brook trout and may be capable of catch and release or put and take management. These ponds are spring fed year 'round and seem to produce enough cold water and oxygen for continual support of trout.

The pond in Allaben is a man-made impoundment not conducive to stocking with trout. This pond lacks the cold water and oxygen necessary for trout habitat. It will likely remain a warm water fishery for bass and other less demanding species.

The pond at the Rochester Hollow house site is too shallow and small to support a traditional fishery.

Additionally, there are public fishing rights on nearby private land. A pamphlet is available with maps of state lands and public fishing rights that depicts the Public Access for Fishing the Esopus Creek, Woodland Valley Creek, and Stony Clove Creek (PDF 919 KB).

Existing Conditions

The DEC Bureau of Fisheries routinely conducts biological surveys to assess and monitor fish populations in area waters.

Fishing in the unit, as in the rest of the State is regulated by open seasons, size and catch limits and manner of take as specified in 6 NYCRR Part 10, as authorized by Sections 11-1303 and 11-1305 of the Environmental Conservation Law. The Departments fisheries management goal within the area is to preserve, enhance, and where needed, restore, fisheries habitats and populations to achieve and perpetuate the historic quality of the fisheries resource. Aquatic resource management will emphasize the quality of the angling experience over quantity of use.

Fishery management efforts in the wild forest will focus on maintaining, protecting and restoring self-sustaining communities of indigenous species. Actions to provide for natural propagation and maintenance of desirable species will be conducted within ecological limits and in accordance with sound management practices.

Proposed Management

Objectives

- To preserve, enhance, and restore where needed, fisheries habitats to achieve and perpetuate the historic quality of the fish communities found in all streams occurring within the unit.
- To maintain the diversity of fish populations in the unit.
- To encourage and promote angler use of the waters in the unit through routine fish management practices through contact with the public by Department staff.
- To enhance the angling experience for both the young and persons with disabilities the ponded waters within the unit.
- To identify future management objectives resulting from information gained from ongoing fisheries studies surrounding the unit.
- To maintain and improve access to the fishery resources of the unit and maintain fishery quality. Consideration must first be given to the sensitive nature and carrying capacity of riparian lands.
- To perpetuate and enhance a diverse, quality fishing experience in accordance with sound biological management practices.
- Restore and protect native fish communities with emphasis on native species that may have declined due to man's influences.

Action Steps

- Brook trout are generally considered to be easily caught and increased pressure could result in a decrease in the average size and number of fishes caught. If this kind of pressure is experienced, then special harvest restrictions would be the management action of choice as opposed to stocking. The second consideration is that the experience of a fishing trip to this area would be compromised if the level of use on the area increases significantly. In all cases the Departments goal is to manage the fisheries of the area for a quality fishing experience. The present level of use is considered to be consistent with the current goals for this area and a significant increase in fishing use is not likely to occur in the near future.
- Fishing access is very limited in some areas of the unit. Land acquisition priorities have been identified and that several properties, if acquired by the Department have the potential to enhance fishing access. Details on these potential acquisition or desirable easement properties are provided in the following section.
- In instances when indigenous fish communities cannot in any way be protected, maintained or restored due to human caused disturbances a water body specific stocking plan may be implemented. Species historically associated with the

Catskill Region such as brook trout, brown trout, rainbow trout, landlocked Atlantic salmon, and some warm water species could be incorporated in stocking plans.

I. Critical Habitat

Existing Conditions

Critical habitat contains or contributes to the preservation of species listed as rare, threatened or endangered by the Department in 6NYCRR Part 193. Although no critical species have been observed within the unit, one has been noted nearby. The Blunt-Lobed Grape Fern (*Botrychium oneidense*) a vascular plant listed as exploit ably vulnerable, has been noted in the vicinity of this unit. All management activities for this Wild Forest unit will consider the probability that this species may be present in or utilize portions of this unit. A 2018 survey of lands within this unit identified the presence of the *Cincindela anacocisonensis* otherwise known as the Appalachian Tiger Beetle which has a State Conservation Status Rank of S2 and a Global Conservation Status Rank of G3.In recent years the prevalence of cairn building on cobble shores can threaten the critical habitat of this species.

Proposed Management

Objective

- Maintenance of natural flooding regime and streamside riparian vegetation is desirable in watersheds where this species occurs.

Action Steps

- Protect cobble bar habitats by minimizing opportunities for off-road vehicle use to prevent the loss of occupied habitats or areas that otherwise may be suitable for occupation.

J. Fire

Existing Conditions

DEC is charged with protecting the Shandaken Wild Forest from fire under the provisions of Article 9 of the Environmental Conservation Law. The Towns of Shandaken and Lexington are Fire Towns. Permits are required from the Department when an individual plan to burn brush in a town which is totally or partially located within the boundaries of the Catskill Park. For more information please see regulations at http://www.dec.ny.gov/chemical/58519.html .Fire prevention, detection and suppression is the responsibility of the Forest Rangers assigned to these towns.

The validity of controlling fires started by natural causes in a wild forest is questionable. Natural fires, though rare, are a part of the natural ecosystem. The difficulty arises in identifying naturally caused fires from set fires. Any changes to current fire management techniques will depend upon the finalizing and implementing of a fire management policy and the challenging task of amending the State constitution.

Proposed Management

Objective

- To adequately protect the unit from fire as required by Constitutional and legal mandates (Article 9 ECL).

Action Steps

- Department policy includes reviewing policy at intervals to consider the importance of fire or measures imitating fires in special circumstances where endangered or threatened plant species or communities are identified and would be destroyed by in-action. A candidate for special consideration is the fire dependent High Point Mountain region of the Town of Olive. The elimination of all fire in this area could cause significant changes in the native woodland composition.
- Use restrictions may be imposed on lands within the unit during periods of high fire danger.

III. Recreational Resources and Human Uses

This Unit Management Plan proposes the development of wildland recreational facilities in the Shandaken Wild Forest. Each section below builds on the planning process as well as the recreational experience of the user. In addition to official documents, which inform the UMP process, the Planning Team applied principles and strategies that are currently considered the norms in the field of Wildland Recreation Management.

There are 6 best management practices that are identified as essential in successful wildland management. Essentials for Wildlands Management include:

1. Planning- Includes the UMP Process (with public participation), Work Planning, development of guidelines and other supportive materials, and process and building partnerships with stakeholders.

2. Education and Outreach- Includes providing effective education and outreach for visitors, local government, and communities and partners utilizing all mediums available and covering topics from preparedness to stewardship.

3. Front country infrastructure- Includes roadside access points, human waste facilities, visitor information and other support facilities.

4. Backcountry infrastructure- Includes trails, campsites and support facilities appropriate to educate and protect the natural resource.

5. Limits on use when all else fails- When education and outreach along with appropriate infrastructure improvements cannot support the carrying capacity, different methods of limits on use permits or fees should be utilized.

6. Resources both personnel and funding- Includes staff to facilitate management, maintenance and safety concerns and appropriate funds to maintain such lands and educate and expand opportunities for partnerships.

As part of the comprehensive process of managing the Shandaken Wild Forest, many of the proposals in this plan will follow a process of conditional implementation which is done through a data-based phasing process. Where these conditional Action Steps are listed, the Department will evaluate current conditions as part of considering the implementation of these proposals. While authorization for these conditional proposals is being sought at this time, some may never move forward if the natural resource

conditions or human use patterns don't support their implementation. The Department will adhere to the 6 Wildlands Management BMP's and successfully build and manage recreation facilities that do not negatively impact the resources or wild experience of the user.

A. Existing Facilities

Facilities within this unit are of a primitive nature. The various facilities, such as trails, campsites, boat launches, lean-tos, fishing access sites, pit privies, bridges, and parking areas are designed for the safety of the public and to protect the resources of the area. The condition of these facilities varies considerably, which is to be expected given the mix in ages and levels of use of the facilities. A summary of the facilities in the unit:

- Access Roads:
    a. State Route 28
    b. Ulster County Route 47
    c. Lower Birch Creek Road
    d. Matyas Road
    e. Peck Hollow Road
    f. Broadstreet Hollow Road
    g. Lasher Rd.
    h. Lost Clove Rd.
- Tent Sites: 11
    a. Allaben access- 9 sites total, 2 of which are accessible sites
    b. Rochester Hollow- 2 sites
- Lean-Tos: 1, Rochester Hollow
- Barriers (gates and rocks): 3
    a. Matyas Road – Two gates prohibit motor vehicle access to Forest Preserve lands in Rochester Hollow. One at the south end and one on the north end.
    b. Peck Hollow Road- A wood debris barricade prohibits motor vehicle access beyond the parking area on the east of Peck Hollow Road.
- Trailheads: 2, Rochester Hollow, Lost Clove
- Trail Register: 1 Rochester Hollow
- Information Kiosks: 5, Rochester Hollow, Sawmill Lot, Allaben, Lower Birch Creek, Lost Clove
- Buildings:
    a. Lower Birch Creek Road parcel- two story wood frame house, large post and beam barn, small cottage, wood house, workshop, sugar shack, spring house, fenced gardens and outdoor fireplace.
    b. Rochester Hollow- large spring house and foundation remains of a garage.

c. Several improved springs/ water lines (see easements), some of which are still in active use.

- Dams: 1 (pond Lower Birch Creel parcel)
- Foot Trails: 10.3 existing miles, Rochester Hollow, Lost Clove
- Fishing Access: 1 site at Esopus Creek parcel
- Parking Lots
    a. Lower Birch Creek Road- 5 cars
    b. Matyas Road- 5 cars
    c. Peck Hollow Road- 2 cars
    d. Allaben -12 cars
    e. Sawmill Lot- 5 cars
    f. Esopus Creek Fishing Access- 6 cars
    g. Lost Clove-10 cars * provides access to Shandaken Wild Forest but the physical location of the parking area is in the Big Indian Wilderness

The following public roads about the Shandaken Wild Forest at various locations, providing access to the unit:

Forest Roads (which include 20+ culverts)

a. Rochester Hollow- approximately 2.77 miles

b. Allaben Access- approximately 1 mile

B. Carrying Capacity

The management of this unit is designed to allow for public access and recreation so long as the public does not impair or otherwise significantly alter the resource.

The lands within this unit cannot withstand ever increasing, unlimited use without suffering the eventual loss of its natural character. This much is intuitive. What is not intuitive, though, is how much use and what type the whole area- or any particular site within it – can withstand before the impacts that cause serious degradation of the very resource being sought after. The management objectives proposed in this UMP will serve to ensure the carrying capacity of the unit is not exceeded while concurrently providing for visitor use and benefit.

The term “carrying capacity” has its roots in range and wildlife sciences. As defined in the range sciences, carrying capacity means “the maximum number of animals that can be grazed on a land unit for a specific period of time without inducing damage to the vegetation and related resources” (Arthur Carhartt National Wilderness Training Center, 1994). This concept, in decades past, was modified to address recreational uses as well; although in its application to recreational use it has shown to be significantly flawed when the outcome sought has been the “maximum number” of people who should visit

and recreate in an area such as the unit. Much research has shown that the derivation of such a number is not useful. Essentially, this is because the relationship between the amount of use and the resultant amount of impact is not linear (Krumpe and Stokes, 1993). For many types of activities, for instance, most of the impact occurs with only low levels of use. In the case of trail erosion, once soil starts to wash away, additional foot travel does not cause the impact upon the trail to increase proportionally. It has been discovered that visitor behavior, site resistance/ resiliency, type of use, etc. may actually be more important in determining the amount of impact than the amount of use, although the total amount of use is certainly and obviously still a factor. (Hammit and Cole, 1987).

This makes the manager's job much more involved than simply counting, redirecting, and (perhaps) restricting the number of visitors in an area. Influencing visitor behavior can require a well-planned, multifaceted educational program. Determining the resistance/ resiliency always requires research (often including much time, legwork and experimentation). Shaping the types of use impacting an area can not only call for education and research and development of facilities, but also the formulation and enforcement of a set of regulations that some users are likely to regard as objectionable.

Nevertheless, the shortcomings of a simple carrying capacity approach have become so apparent that the basic question has changed from the old one, "How many is too many?" to the new, more realistic one; "how much change is acceptable?" The Department embraces this change in approach while recognizing the tasks it calls for in developing the best foundation for Action Steps. Professionally informed judgments must be made such that carrying capacity is given definition in terms of resource and social conditions. These conditions must be compared to real life situations, projections must be made, and management policies and actions must be drafted and enacted to maintain or restore the desired conditions. Shaping the type of use impacting an area can call not only for education, research and development of facilities, but also the formulation and enforcement of a set of regulations which some users are likely to regard as objectionable.

This shift in managers' central focus- away from trying to determine how many visitors an area can accommodate, to trying to determine what changes are occurring in the area and whether or not they are acceptable, is as critical in Wild Forests and State Forests as it is in Wilderness. A central objective of this plan is to achieve and appropriate balance between resource protection and public use of the lands in this unit.

Management and Planning Concepts

The long-term approach for managing the Shandaken Wild Forest uses a combination of three generally accepted planning and monitoring methods: 1) the goal-achievement process; 2) the Limits of Acceptable Change (LAC) model employed by the U.S. Forest

Service; and 3) the Visitor Experience and Resource Protection (VERP) model employed by the National Park Service. Given the distinctly different, yet important purposes of these methods (particularly between the first method and the second two), there are clear benefits offered by employing a blend of these approaches here.

Goal Achievement Process

The goal achievement process provides a framework for proposed management by means of the careful, stepwise development of key objectives and actions that serve to prescribe environmental conditions outlined by the CPSLMP guidelines. The Department is mandated by law to implement actions designed to realize the intent the guidelines included in the CPSLMP. The goal-achievement framework will be used to organize this management plan to direct the process of determining appropriate Action Steps through the careful development of goals and objectives.

The goal- achievement framework provides and organized approach to planning that is effective in addressing the full range of issues affecting the lands within this unit. However, the objectives developed in this approach usually do not identify specific thresholds of unacceptable impact on particular resources or give managers or the public clear guidance as to whether a restrictive management action is warranted in a particular situation. For significant management issues that require the resolution of conflicting goals, that involve activities that have the potential to lead to unacceptable change and lend themselves to the development of measurable and attainable standards, the Limits of Acceptable Change process will be used.

Limits of Acceptable Change (LAC) Process

These methods both employ carrying capacity concepts, not as prescriptions of the total number of people who can visit an area, but as prescriptions of the desired resource and social conditions that should be maintained to minimum standards regardless of use.

Establishing and maintaining acceptable conditions depends on explicit management objectives which draw on managerial experience, research, inventory data, assessments, projections and public input. When devised in this manner, objectives founded in the LAC and VERP models essentially dictate how much change will be allowed (or encouraged) to occur and where, as well as how to respond to change. Indicators- (measurable variables that reflect conditions), are chosen, and standards (representing the bounds of acceptable conditions) are set, so that all management efforts can be effective in addressing unacceptable change.

A particular standard may be chosen to act as a simple trigger for management action (as in VERP) or it may be chosen to act as a boundary which-given certain assessments- allows for management action before conditions deteriorate to the point of no longer meeting the standard (as in LAC).

Even well-conceived and executed efforts can prove ineffective, but when this is the case, management responses must be adjusted. **Monitoring of resource and social conditions is absolutely critical.** Both the LAC and VERP models rely on monitoring to provide systematic and periodic feedback to managers concerning specific conditions. However, since the VERP model was developed to apply only to impacts from visitor use, some management issues in the Shandaken Wild Forest may call for an approach that is properly in the LAC vein. Since differences between LAC and VERP are not significant, choices are left up to managers. The Department's approach applies four factors in identifying potential Action Steps for an area:

- The identification of acceptable conditions as defined by measurable indicators;
- An analysis of the relationship between existing conditions and those desired;
- Determinations of the necessary Action Steps needed to achieve desired conditions;
- A monitoring program to see if objectives are being met;

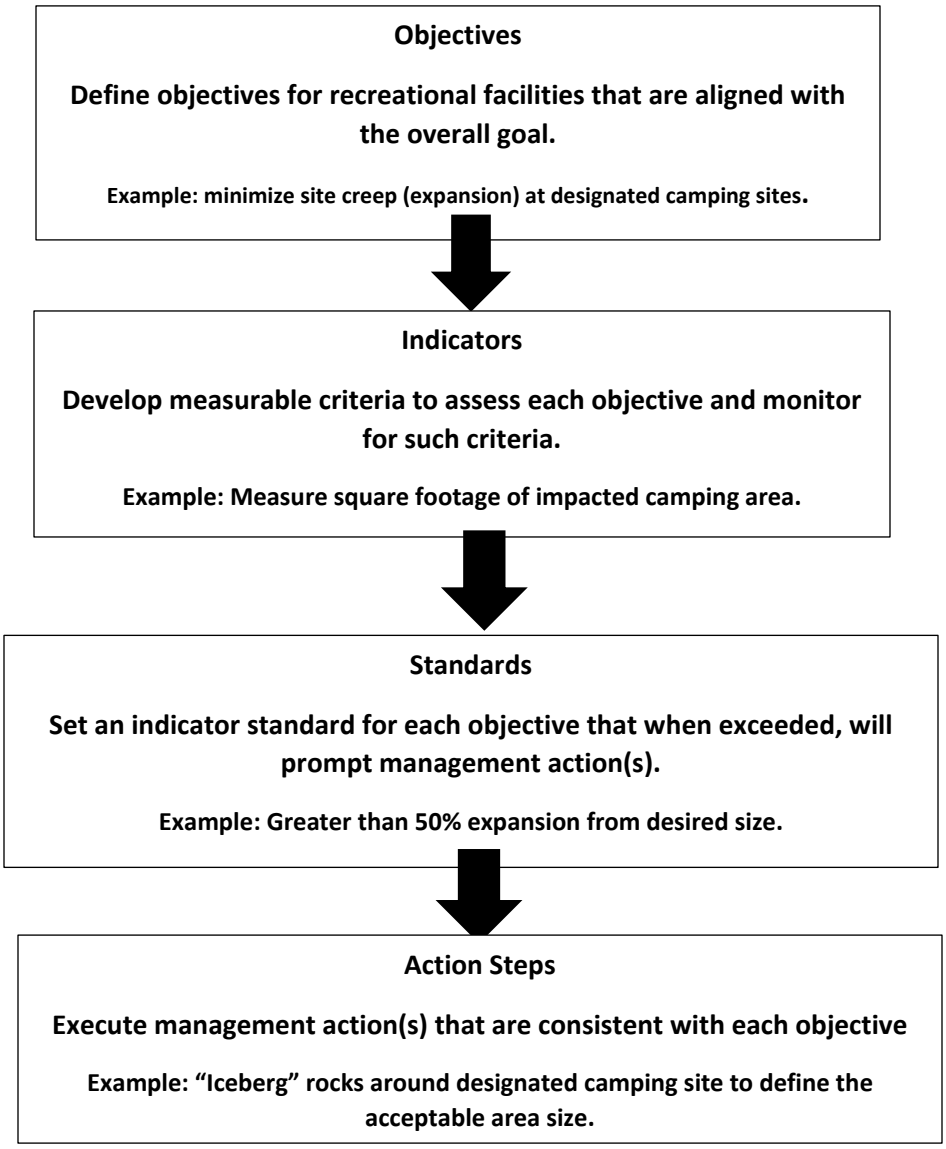
Defining the amount and type of use that an area can withstand before negative impacts to the resource or user experience occur is a significant challenge. Relative differences in ecosystem sensitivities to disturbances need to be considered in recreational planning. Avoiding sensitive sites or taking precautions in the layout and design of any facility can drastically reduce negative impacts associated with use. Individual locations that can withstand more usage should be considered to help balance the overall carrying capacity of the unit.

Empirical data is required to achieve the goal(s); therefore, observable indicators and standards will be developed to monitor natural resource conditions and limit impacts. Natural resource condition indicators (either directly or indirectly) indicate when conditions become inconsistent with the defined goal(s). This means that there is some level of compromise of natural resources built into the design framework, to accommodate recreation. For example, a measurable indicator may be a certain amount of bedrock exposure from soil erosion along a trail corridor. By setting this bedrock exposure as an indicator of soil erosion (natural resource damage), the framework is acknowledging that there may be harm to natural resources (soil erosion) before a management decision related to recreational objectives is prompted (by bedrock exposure). Social indicators will also be developed to monitor social conditions and guide future Action Steps.

Use Levels, Impacts, and Environmental Conditions

The built-in indirect management method that can mitigate user impacts is to locate desirable recreational facilities on durable, sustainable sites. Environmental conditions such as: erosion/ slope, depth to bedrock, soil type, vegetation, and moisture all have significant effects on how much use will cause negative natural resource impacts. For

example, a campsite located in an area with shallow depth to bedrock with sensitive vegetation will exhibit far greater natural resource impacts from low amounts of use than a campsite located on a level, durable surface that receives a high level of use. Outreach and public education are critical, since many negative social and natural resource impacts are borne from uninformed/ unintentional behaviors. Leave No Trace principles are central messages in Forest Preserve public outreach efforts and will be one aspect of Shandaken Wild Forest management.



Monitoring and Indicators

A consistent, defined monitoring effort is critical to effective implementation of this framework. The monitoring criteria will be based on the objectives' indicators, according to natural resource or social conditions. The monitoring will be consistent and

reproducible over time and will inform the success or failure of management, guided by the diagram above.

The first effort will be to determine existing natural resource and social conditions across the unit at the time of the UMP adoption. Some condition standards are likely to already be exceeded at some of the existing facilities. Monitoring is an iterative process and will be repeated at defined intervals of time. As new recreational facilities (as proposed in this UMP) are constructed, they will be incorporated into the monitoring program. New or improved facilities will be sited in sustainable locations and consistent with current best management practices.

A proposed list of management and planning concepts, for which measurable indicators and monitoring tools can be developed, may be used by the Department for measuring acceptable change on the Shandaken Wild Forest as follows:

- Condition of vegetation in camping areas and riparian areas near lakes and streams;
- Extent of soil erosion on trails and at campsites;
- Noncompliant visitor behavior;
- Noise on trails and in adjacent campsites;
- Conflicts between different user groups;
- Diversity and distribution of plant and animal species;
- Air and water quality.

The adoption of Indicators and Standards for measuring impacts helps create a consistent and reliable methodology in monitoring impacts. While LAC will be the main methodology to guide management decisions and actions, it is important to note the overall goal is to preserve wild land conditions.

Indicators are tools used to assess the resource or social conditions of a given area and are not always a direct measure of the actual conditions of a facility. The indicators set standards which act as thresholds to determine if and what management action will be taken. It is accepted and assumed that sustainable and purpose-built facilities will experience minimal soil compaction and vegetation loss outside the developed tread or area and will readily shed water without holding it or causing erosion. These assumptions need to be re-assessed over time. If the facilities are maintaining their intended condition then they can either be maintained as is, or the land manager can proceed to the next phase of the plan. If the condition of the facility is failing and our assumptions are not being met then corrective adjustments need to be made, which could involve anything from hardening and re-routes, to taking a step back to a previous phase of the plan.

Based on the LAC framework outlined above, the Department chose four categories of indicators as significant identifiers of resource concerns. Those indicators fall into the categories of biophysical, social, aesthetic, and ecosystem process. Each is described

below, along with a short excerpt from the Wilderness Definition from the SLMP that served as the primary (though not entire) focus in determining the scope of that individual indicator. See the table below for a summary of these indicators.

Biophysical Indicators

These are measures of the effects of human activity on the biological health and quality of the environment. They are typically large-scale and are often influenced most significantly by actions and events outside wild lands. These indicators are categorized distinctly from others because the primary concern is for the health and quality of ecosystems and ecosystem components such as watersheds, air quality, wildlife and vegetative populations, rather than for the quality of the human experience. Indicators may include air quality, water quality, threatened and endangered species, invasive species, and indicator species. Though invasive species and indicator species concerns are often part of ecosystem processes (and are listed as such here), they will be treated in this plan as biophysical issues.

Though in many cases the effects and actions available to manage and administer wild lands in terms of these indicators are site-specific and within control of managers, they are sometimes beyond the manager's administrative scope (e.g., air quality issues). Standards are set, and methods to measure and ensure that these standards are met involve other federal or state laws, other federal and state agencies, and other disciplines.

Social Indicators

These measures are immediate and local, involving direct contact among wild land users and between wild land users and agency personnel. These indicators are distinct from others because they are strictly a measure of how people affect other people, and the primary concern is for the human experience in terms of type, quality, and frequency of interaction with others. For example, do users change their route or destination as a result of other users on a trail, or do users not use a facility like a lean-to or tent site because it's overuse is resulting in degradation? These experiences may have a direct link to the quality of the ecosystem or the appearance of the surrounding landscape.

Social indicators may include number of contacts per given segment of trail per survey, number of contacts per given destination point per survey period, assessments of visitor experience, and perception of crowding at determined destination points (see Table below).

Standards are based on use trends as monitored at the same locations and the same times from year to year. A range of survey locations will be determined across the unit. Management actions triggered by exceeding standards will include a focused examination of policies, and general recreation trends that may underlie the specific issue. The level of tolerance and restriction represented by management action may differ by zone. There are tools available to manage and administer wild lands in terms of

these indicators, however they are sometimes judged to be ineffective. Because of their often seemingly arbitrary nature, numerical standards in these cases are extremely difficult to set and even more challenging to justify; visitors in some areas have indicated a greater acceptance of higher use levels than increased managerial regulation. Nevertheless, management actions may involve implementation of use restrictions or limitations.

Aesthetic Indicators

These are measures of how direct human effects on the immediate landscape affect the human experience of the area as wild land. They typically are local in scope, are constrained to an immediate area, and result primarily from recreational use.
These indicators are distinct because the primary concern is for the human experience derived from the immediate, local landscape. These are measures of both human-caused impacts to a biophysical resource and the resulting effects of those impacts on the wild land experience. However, these types of impacts are unlikely to have lasting, significant effects on the larger-scale health of ecosystem components. The driving force to mitigate them stems from the human experience, which often results in these corrective measures being easily achievable through public will.

Indicators include campsite density, campsite size, and frequency of litter and exposed human waste. Standards are set for each indicator and often vary by area.
Management Actions activated by an excess of standards will often involve direct manipulation of campsites, an increase in managerial presence in the affected area, and in extreme situations may involve the implementation of use restrictions or use limitations.

We have many tools to manage and administer wild lands in terms of these indicators. Furthermore, clear standards may be set based on the values used to determine current and desired resource conditions. Management actions to mitigate impacts in these areas are usually justifiable and commonly acceptable to visitors.

Ecosystem Process Indicators

These measures of process and change on the land occur separately from the direct influence of human action. They are usually broad scale and large in scope. These indicators are distinct from others because in many cases there is no direct human involvement in the process affecting change on the land. However, in recognizing the need for baseline data to inform management decisions, these processes should be monitored closely to understand natural change in the area. Indicators may include ecological indicator species, natural fire, natural disturbance, and invasive species
Upon approval of the UMP Amendments, land managers for the Shandaken Wild Forest will take the concepts discussed to create a Wildland Monitoring Plan that will be used in conjunction with the Work Planning process to implement proposals. Tools to monitor

wild lands in terms of these indicators are largely based in the natural sciences. These processes must be carefully monitored to increase understanding of wild land conditions

Phasing

New recreational facilities proposed in this UMP have been placed into a phased hierarchy and will be implemented accordingly over the life of this plan. The phases are not iterative, in that not all projects/activities in phase one need to be completed prior to completing something in one of the later phases. Action Steps that are indeed dependent or conditional upon one another are described as such and accounted for in the phasing plan.

The phased approach acknowledges that completion of a facility and subsequent use will determine the future of that facility and the future of any other associated or dependent facility. If use level, user experience, or natural resource conditions are not optimized, then facilities may be relocated or closed or rehabilitated. The intent of this approach is to provide a variety of access to the property and to new purpose-built recreational facilities in a way that allows the Department to keep track of use numbers and physical changes on the ground. After data is collected and ground conditions are observed, the recreational carrying capacity can be better measured through several indicators. Sustainable purpose-built facilities are a key factor in this process, not only to have a strong foundation for recreational use, but also so the Department can evaluate the known indicators. Once the condition of facilities is measured and evaluated through the LAC framework the next steps can be determined in accordance with the phases set forth below.

The use of this phased approach to develop facilities allows the Department to provide realistic timelines for the development of sustainable and enjoyable facilities. It also helps to minimize low-quality facilities that are underused in favor of creating locations that will help realize and balance all levels of carrying capacity. In order to further illustrate the succession of the phased approach a schedule of implementation was developed. The schedule is initially based on providing access to the tracts, followed by the construction of basic recreational facilities tailored to specific types of recreation. Once constructed, each facility will be photo documented to show its original condition, then periodically photo documented to illustrate changes over time. These photos coupled with use data collected from register sheets will be evaluated through the LAC process to illustrate the recreational carrying capacity of specific facilities. From there the data collected on these individual facilities will be looked at on a larger scale that considers the entire network of facilities and access points regardless of land classification. The phased approach and schedule of implementation integrates and considers the complex nature of the area, which will allow for a more balanced and systematic approach to address the carrying capacity of the area as a whole.

Phase 1 in the schedule provides the strategy to construct the foundation of facilities. The evaluation of these facilities will guide the phases of this plan, only after the condition is evaluated, can a determination be made to proceed with, maintain current, or retract the phases of the schedule. There are various environmental criteria that can activate the phases of the plan. These may be site specific or at larger scales and can include things such as campsite compaction and sprawl, vegetation damage, trail erosion, etc. Social criteria like frequent or high levels of tent site or trail use without environmental degradation can also prompt the next phases of the plan. Regardless of the criteria, the main objective is to appropriately provide sustainable and desirable facilities without exceeding the carrying capacity of the land on which they are located.

Clearly, a delicate balancing act is called for, and yet, just as clearly, the Department's management focus must remain on protecting the resource. A central objective of this plan is to lay out a strategy for achieving such a balance within the Shandaken Wild Forest and the adjacent wilderness area. This strategy reflects important guidelines and principles, and it along with the guidelines and principles has directed the development of the management proposals detailed below and in the following sections of this plan.

Current conditions

In the case of Shandaken Wild Forest, public recreation is not a new land use. Pre-existing data in the form of facility conditions and use numbers exist, so a baseline for which to work from has been established. A common way to directly manage the numbers of users in the area, although varied in success, is through specifically sized parking areas or local enforcement of roadside parking. This often works well when the parking area services only one trail, or one hand carry launch etc. The complexity of the issue increases as multiple facilities are managed through one trailhead.

Recreational Research Findings and Management Implications

Impacts from hiking and camping typically follow a natural progression. Initial and very light use may only damage particularly fragile soils and vegetation. However, even at low levels of use, the ground cover and surface organic litter are damaged and damage to fine feeder tree roots can be significant. With moderate use, all but the most resistant plant species are lost, and mineral soils may be exposed. High use exposes mineral soils to compaction and erosion, which in turn expose the roots of trees. The only way to eliminate adverse impacts of hiking and camping in this unit would be to close the area to all public use. However, a more realistic approach is to minimize impact by managing other factors to help mitigate adverse environmental impacts.

Use- Related Factors

Many impacts are the result of uninformed or careless behavior. Managers can educate and regulate visitors to reduce high impact behavior (e.g., building fires, chopping trees, cutting switchbacks) and encourage low impact behavior such as the “leave no trace” program. Large groups have a greater potential to damage resources than the same number of individuals in smaller groups. Limits on group sizes can be encouraged or required to minimize resource impacts.

Environmental Factors

Managers can encourage recreational use in impact resistant locations. For example, trails can be relocated to avoid wet or steep areas or steep slopes. Campsites can be located on flat, well drained areas. Knowledge of the relative resiliency (ability to recover) of different vegetation and soil types can be used to select areas which will recover quickly following recreational trampling. Sites with high resiliency are also desirable because they usually support dense vegetation which helps confine use to campsites and trails.

Managerial Factors

Managers of some protected areas have sought to minimize impacts by encouraging visitor dispersal. However, due to the use/impact relationship and several behavioral factors, this impact-minimization strategy has only been successful in areas that receive low use. Therefore, this strategy would not be effective in certain locations within this unit that receive moderate to high levels of use.

Other Considerations

Most visitors prefer hiking on established trails and camping at existing campsites. Many visitors enjoy camping close to trails and other groups for social reasons, while others fear getting lost when away from trails. Areas with rugged terrain and/ or dense vegetation may limit the ability of visitors to hike off-trail or the number of suitable camping locations necessary to support a dispersed camping policy. Pre-existing trails and campsites are also more convenient, comfortable, and require less work to use and maintain. Finally, water and other scenic attractions in the front country and backcountry will always attract larger numbers of visitors than less interesting areas. In general, management efforts to alter these natural tendencies will be unsuccessful without substantial and expensive educational and law enforcement programs (Marion, 1998).

Recreation research shows that visitor containment, or concentration in the Forest Preserve offers a promising strategy for minimizing recreation impacts. Trails, which concentrate use on their treads represent one form of containment. Similarly, mandating use of designated campsites also contains visitors to sites that have already been impacted. Campsite rotation programs have also been considered in the past. However,

recovery rates on campsites and trails are considerably lower than initial impact rates, which mean that a rest-rotation strategy will generally be ineffective (Marion, 1998).

Examples of Cause

The most heavily used areas will usually show the most effects from use. However, there are several factors which can mitigate heavy use or amplify the effects of lighter use. One factor is the condition of a facility at the time the use occurs. For example, a few people walking a trail when the trail is wet and soft will cause more damage than many people using the same trail when it is dry. Another factor to consider is the skill level and the behavior of the users. A large group may not leave any evidence that they used an area, while a small group or even an individual can, through willful neglect or ignorance, leave an area permanently altered.

Importance

Developing this specific LAC framework and implementing it across the Shandaken Wild Forest is a significant, long term commitment. However, it is an important aspect of land stewardship and effective management. After adoption of this UMP, a monitoring program will be developed to understand social and natural resource conditions and to guide stewardship of the unit. This will include the definition of objectives, development of diverse indicators, standards, and correlated Action Steps.

Many land resource problems tend to expand with time if they are not addressed. For example, muddy sections of trails result in an expansion of the muddy area and loss of vegetation as people, trying to stay dry and walk around the wet areas. Another example is people who visit a tent site which already has a litter problem are more likely to leave their own trash behind. For this reason, it is important to take action when a problem arises.

Water Resources

Waterbodies in the Shandaken Wild Forest experience impacts from recreational use. These impacts come from the use that occurs on the water itself and on the adjacent lands. Primitive tent sites, trails and parking areas are examples of facilities on land that could impact an adjacent waterbody. Different impacts are associated with different recreational uses.

The Department is currently working on developing carrying capacity guidance for waterbodies. Upon adoption of waterbody capacity guidance, those standards will be adopted and applied in the unit. In the interim this plan calls for monitoring all the recreational land-based uses and actions will be taken to minimize impacts.

These management concepts form the basis of the proposed Action Steps presented in this UMP. This approach will require flexibility, determination and patience. It will be important to show progress in achieving CPSLMP goals and initial managerial

experience and knowledge in applying this strategy to some carrying capacity questions and issues. Knowledge gained as a result of the implementation of this UMP will be useful to:1) revising and refining Action Steps if evaluation shows that desired conditions are not being attained or sustained and 2) creating a foundation upon which this strategy can eventually be built into a fully developed, science-based approach to protecting and managing the resources of the Shandaken Wild Forest.

Though LAC will not be fully implemented during the ten-year scope of this plan, the plan is organized according to the goal-achievement framework. It provides substantial resource inventory information, sets goals founded on law, policy and characteristics of the area, identifies management issues and lays out an extensive system of proposed objectives and actions designed to meet management goals. Once it is fully implemented, LAC will provide more detailed guidance to managers and the public in the management of important issues. Ultimately, a monitoring system will be put in place and Action Steps will be revised and refined over time in response to the results of periodic evaluation to assure that desired conditions will into the management of the unit as a fully developed, science based approach to protecting and managing the area's physical, biological and social resources

Land Resources

The condition of the land resource can be used as an indicator of the level of use that an area is receiving. The most heavily used areas will usually show the most effects from use. However, there are several factors which can mitigate heavy use or amplify the effects of lighter use. One factor is the conditions at the time that the use occurs. Another factor to consider is the design and location of the improvement that is being used. A properly designed and located facility will allow for heavy use without having a negative impact on the resource. Poor facility design or location can lead to quick deterioration of the resource.

The heavily used areas of the Shandaken Wild Forest are clearly being negatively affected by the levels of use they receive. The main problems resulting from use of the lands and facilities within the unit are erosion, mud, soil compaction, decreased vegetation, litter, improper human waste disposal, and removal of dead wood. It is fairly obvious why most of these impacts are considered to be problems; however, some people may not understand why removal of dead wood is considered to be a problem. It is seen as a problem by land managers because dead wood provides important habitat for a variety of wildlife, slows erosion, and allows nutrients to be recycled back into the soil. In heavily used areas, dead wood is collected and burned at a faster rate than it is created, this results in an ever-widening area of damage from people gathering wood. Secondary effects of wood gathering include damage to living vegetation and removal of standing dead trees, which is illegal in Forest Preserve areas such as Shandaken Wild Forest

Many land resource problems tend to expand with time, if they are not addressed. An example is that muddy sections of trails result in an expansion of the muddy area and loss of vegetation as people, trying to stay dry, walk around the wet areas. Another example is that people who visit a campsite which already has a litter problem are more likely to leave their own trash behind. For this reason, it is important to take action when a problem becomes known. Section IV will address courses of action to reduce the problems from visitor use.

Soil characteristics play a major role in an area's ability to withstand use. Soils in this unit can vary significantly, depending on location and elevation. Erosion can be a problem on steeper terrain if proper water diversion devices are not utilized in the construction of trails. Water bars, drainage dips, ditches and other devices will be utilized along with vegetation to help stabilize trails. In valley bottoms, ravines, upland benches and other areas with little relief, drainage can be poor, resulting in ponding, vernal pools, wetlands and seasonally muddy areas. These areas are poorly suited to many types of recreation unless significant drainage and/or trail hardening occur. Trails will be routed to avoid such areas when possible, otherwise the wet areas must be drained, hardened, or bridged to prevent erosion, causing compaction or other adverse impacts to the area.

In valley bottoms, ravines, upland benches and other areas with little relief, drainage is poor resulting in ponding, vernal pools, wetlands and seasonally muddy areas. These areas are poorly suited to many types of recreation unless significant drainage and/or trail hardening occurs. Trails will be routed to avoid such areas when possible, otherwise the wet areas must be drained, hardened or bridged to prevent erosion, compaction or other adverse impacts to the area.

The ability of this unit to withstand hiking and similar uses in most areas is moderate to high. Areas such as the Rochester Hollow road provide a hardened and stable Treadway designed originally for vehicle use and should have no trouble withstanding significant public use as an CP-3 access trail. The Allaben parcel has several designated campsites that have been hardened through use and are able to withstand continued use. Baseline data should be collected for existing campsites to aid in monitoring their condition and changes in condition. The Limits of Acceptable Change developed by the USDA Forest Service should be utilized to determine if or when sites need to be added, removed or relocated as need arises in order to preserve the character of the area. In addition, the ability of this unit to accommodate the public's demand for primitive camping in other than designated sites is dependent upon their compliance with the Departments regulations which prohibit camping within 150 feet from any trail, road or water throughout the year except at areas designated by the Department. Without strict compliance, soil compaction, erosion, degradation of vegetation, water pollution and deterioration of the character of the area could result.

Wildlife Resources

A variety of wildlife recreation uses occur on the unit, including: hunting, trapping, bird watching, and wildlife photography. Many mammals and birds may be hunted or trapped during seasons set annually by the Department. The Department has the authority to set hunting and trapping season dates and bag limits by regulation for all game species. Whitetail deer and black bear may be taken during archery, muzzle-loading, and regular seasons. In the recent past WMU 3A has not issued any Deer Management Permits (DMP) for this area. However, this is not necessarily a permanent condition and could be changed at any time if deemed necessary. Antlerless deer harvest is prohibited during the regular firearm season but may be permitted during the archery season. In addition, there is an early season for black bear. There are no known animal species within this unit that cannot tolerate the occasional presence of humans. Therefore, the ability of this unit to withstand non-consumptive use is high.

White-tailed deer are the most commonly harvested species in this unit. Although the actual deer harvest from this unit is not known, the following table gives a breakdown of deer harvested in the 5 towns in which this unit falls.

Two types of visitor use are directly associated with wildlife. The first is wildlife photography and observation, a non-consumptive use and the second is hunting and trapping. There are no known animal species within this unit that cannot tolerate the occasional presence of humans. Therefore, the ability of this unit to withstand non-consumptive use is high.

2017 Deer Take in the Towns of Lexington and Shandaken

	Adult Buck Take (1.5 + years old)	Total Take
Shandaken	74	87
Lexington	95	122
Total deer take within the unit in 2017		209

Black bear are also hunted within this unit. The following table gives the breakdown of black bear harvested by town.

2017 Bear Take in the Towns of Lexington and Shandaken

	Early	Bowhunting	Muzzleloader	Regular	Youth	Total
Shandaken	5	2	0	18	0	25
Lexington	3	0	0	5	0	8
Total bear take within the unit in 2017						33

Although wildlife populations are much lower in the Catskills than in many other places in the State, the current consumptive use of wildlife by hunters and trappers in this unit is too low to have any detrimental effect on their populations. While the impacts on "non-game' species is not well understood at this time, studies are being conducted to

assess what effect if any, the present use levels have on the wildlife species found within this unit.

2017 Pelt Sealed Furbearers in the Towns of Lexington and Shandaken		
	Bobcat	Fisher
Shandaken	1	0
Lexington	0	6
Total Furbearer take within the unit in 2017		7

Turkeys are probably the most hunted small game species in the unit. The average annual turkey harvest by town is shown in the following table.

2018 Turkey Take by County		
	Spring (2018)	Fall (2017)
Ulster	330	6
Greene	281	23
Total by county	611	29
Total turkey take in the Unit		640

Fisheries Resources

In evaluating the capacity of the fisheries resource to withstand use, two aspects of must be considered. Brook trout are the major species of fish found within this unit. Brook trout are generally considered to be easily caught. An increase in pressure could result in a decrease in the quantity of fish caught. This may also apply to other species of fish found within this unit. Secondly, if the level of usage increases significantly, the overall experience of the angler may be compromised by crowding. Presently the fishing pressure in this unit is believed to be low. Fishing pressure is much greater outside of this unit in areas where there are more fishable waters, such as the Esopus Creek along Route 28. Given the current statewide regulations and the low level of public use in this unit, there is little chance that the fish populations are being adversely affected by anglers in the Shandaken Wild Forest.

However, waters within this unit as well as most of the Catskill Forest Preserve have been identified as being sensitive to acid deposition, especially during snow melt, due to the very low buffering capacity of the geology of the region. The buffering capacity of a water will determine how much acidity that water can withstand before experiencing a drop in Ph. Increased acidity (lower ph) can lower the reproductive potential and/or be lethal to fish. Over time, decreasing Ph can change abundance and distribution of fish and aquatic organisms. This situation is being monitored by several organizations including the Department. If acid precipitation creates acidic conditions which threaten fish populations within the unit, a liming policy may be implemented to neutralize acidic waters. Any such program will be consistent with the Departments' Revised Liming Policy (June 1991). The Policy has established a series of qualifying criteria, all of which

must be met prior to any liming treatment. Additional information on the Departments Liming Program in NYS can be found at :https://www.dec.ny.gov/docs/wildlife_pdf/limingeis3.pdf

Application of LAC Monitoring

Objectives

- Utilize a phased approach to facility implementation that is informed by the LAC Framework.
- Proposals in this document that are intended as subsequent phases are referred to as conditional actions.
- Collect baseline data related to recreational use and the physical condition of the newly acquired lands.
- Establish and implement a regularly occurring Monitoring Program based on LAC and other available methods to help track changes to the unit over time.
- Use the latest best management practices (BMPs) available in the siting and construction of all facilities.
- Provide consistent messaging with partners to help educate users.
- The Department is committed to implementing the Carrying Capacity based phased approach through this UMP. Quality data derived through this process will lead the Department in making the best decisions available to protect the resource and the user experience

Action Steps

- Collect and tally trail register information on an annual basis.
- Monitor facilities like parking areas, tent sites, and high use trail areas on a periodic basis for comparison over time. These monitoring efforts will involve data collection through photo documentation, visual observations, use number data etc.
- Data that may be sampled
    - Erosion and compaction;
    - Occurrences of litter and human waste;
    - Expansion of use beyond the designated area;
    - Need for enforcement actions, etc.
- Use a phased approach when constructing new facilities. This allows the Department to evaluate and ensure the social and environmental carrying capacities are not being exceeded and ensure there is a public desire for additional facilities before they are constructed. If monitoring efforts show that the limits of acceptable change are being exceeded then management adjustments will be made, and the next phases of the plan will not be considered until

corrective measures are successfully completed. This could hold or bring the management back to a previous phase.

- Site facilities in locations that provide long-term sustainability, keep overall maintenance to a minimum, and enhance the user experience.
- Monitor the site conditions at all facilities. If unacceptable change occurs, provide restoration to secure the disturbed areas in a manner that prevents erosion.
- Close, relocate, or restrict use of unit facilities, as appropriate, to reduce negative impacts to resources caused by recreational use.
- Provide educational materials the public can find through on signage on site and on the Departments website before their visit.
- Provide outreach through on the ground interactions with Department representatives like staff, Assistant Forest Rangers, SCA Backcountry Stewards, Interns and volunteers.

C. Public Use

Existing Conditions

Public use is permitted to the extent that it does not degrade the physical, biological, and social characteristics of an area. The “minimum tool” concept is used to manage public use and achieve management objectives, using indirect methods when possible (i.e. limited parking) and direct methods when necessary (promulgating regulations). One example of where such direct methods are considered necessary is the use of the unit by large groups.

Many visitors consider large groups inappropriate and undesirable in areas within Forest Preserve. Aside from the behavioral factors, the potential to cause impact varies with the party-size and type of user. Although large party use in the unit represents a small proportion of total user’s they contribute a disproportionate amount of impact when compared to smaller parties. Large groups commonly create congestion problems at trailhead facilities, on trails, and mountain summits. It is very difficult to control and confine large groups in vulnerable locations such as mountain summits or riparian areas. The rate of unacceptable change on a particular resource can be accelerated by large group occupancy of a site over a short period of time. Higher noise levels and sound issues are associated with large groups.

Many of the resource impacts that result from recreational use can be mitigated through an active visitor education and information program. Most visitors lack a basic understanding of DEC rules and regulations and are unaware of the effects that their activities have on a resource. Visitors need to be informed of the proper use of state land and all special regulations before they enter a unit. A well-developed visitor

education and information program can help reduce user impacts while improving the visitor experience. Additional access to the unit would facilitate public use.

A wide variety of activities are allowed on the unit. The public use the Shandaken Wild Forest for a variety of primitive recreational programs which include hiking, hunting, fishing, backpacking, camping, snowshoeing, cross-country skiing, mountain biking and historical enquiry. Public Use within this unit is heavily concentrated in a small number of areas and dispersed evenly throughout the remainder of the unit as observed by Forest Rangers and Department personnel.

Average yearly trail use is one of the best indicators available to compare overall visitor pressure on Catskill Forest Preserve. Overall visitor pressure is a good indicator for potential impacts that may occur on areas susceptible to overuse.

The public visits the Shandaken Wild Forest for a variety of primitive recreational programs which include hiking, hunting, fishing, backpacking, camping, snowshoeing, cross-country skiing, mountain biking and historical inquiry. Use is estimated to be substantial as observed by the Forest Rangers and Department personnel as well as from public comments received.

Rochester Hollow is a favored location for the cross-country skiing and mountain biking community due to existence of a gravel road leading to Rochester Estate ruins. Hunters also frequent the area due to moderate game levels and ease of pedestrian access via the road.

The Allaben parcel is utilized predominately as a primitive campsite that receives significant use during the peak camping season and offers an alternative to State and primitive campgrounds where a fee is charged.

The Lower Birch Creek Road parcel is becoming a destination for families and local residents wishing to enjoy the various features typically found surrounding a Nineteenth Century Catskill farmstead. Ponds entice one’s interest in fishing while the fields, apple orchards and surrounding woodlands make a picturesque setting for a variety of family activities. Photographers can also be tempted by the view of Belleayre Mountain which at times is spectacular.

Giggle Hollow contains a network of old skid roads which may be used by hunters and the occasional hiker or mountain biker. Facility development and improvement of this parcel is proposed in the following section of this plan. The Department anticipates that the use of this parcel will increase significantly once there is a formal trail network on the parcel and plans to monitor use accordingly.

Proposed Management

Objectives

- To enforce existing laws, rules, regulations and policies and control adverse and illegal uses through enforcement of the Environmental Conservation Law and DEC Rules and Regulations.
- To permit and encourage recreational use levels consistent with the protection of the unit's natural resources and character and consistent with the guidelines provided by the CPSLMP.
- To monitor changes in use over time.
- To minimize user conflicts by providing appropriate information to visitors.
- To provide clearly marked access points and parking facilities with clearly set limits, reducing or eliminating trespass onto State and private lands and unwanted or illegal parking along roads.

Action Steps

- Monitor the intensity of public use by utilizing the principles described in the Limits of Acceptable Change process. Take appropriate steps to prevent misuse/ overuse of an area that could lead to site degradation.
- Employ the "minimum tool" necessary to regulate public use, using indirect methods whenever possible (such as limited parking) and direct methods such as regulations when necessary.
- Promote "Leave-no-Trace" ethics with all users particularly hikers.
- Use the temporary revocable permit process for organized events where appropriate. In limited circumstances as deemed appropriate by the Department, depending on the character of the area in question and the nature of the proposed activity, the temporary revocable permit process will be used to handle organized events in the unit.

D. Levels of Use

Trail registers provide an estimate of the number of people using an area for future planning and management purposes; however, because use of trail registers is voluntary, a correction factor is necessary to determine actual use. The data collected despite many variables and limitations can indicate trends in use and prompt land managers to take the appropriate corrective action.

Management activities used to mitigate undesirable impacts may include: providing sanitary facilities; implementation of trail improvements such as tread hardening, installation of water-bars and bridges; vegetation management for erosion control; and possibly limiting public access into the affected area by direct actions such as instituting a permit system or by indirect actions such as limiting the amount of parking for an area.

Overall, about half of the recorded Forest Preserve visits in the Catskills are in Sullivan and Ulster Counties. Throughout the Shandaken Wild Forest, camping is most popular in July and August and on major holidays from Memorial Day to Columbus Day. Day use occurs year-round and is the predominant use during the winter months.

In general, most people visit the Catskill Forest Preserve on weekends and holidays. In DEC's Region 3 part of the Catskills, which consists of both Ulster and Sullivan Counties, 51,330 people signed trail registers in 2012, 75,992 people signed trail registers in 2016. This figure is the **actual** number of sign-ins at the trail registers. It is estimated that perhaps at least twice as many recreationists use the Forest Preserve in region 3 each year.

The following table compares the actual trail register tallies for recent years in this unit . Currently there are two trail registers within Shandaken Wild Forest: one is located at the Lost Clove Trailhead and the other is located at Rochester Hollow.

Register Box Sign-in Information for Shandaken Wild Forest

	2015	2016	2017	2018
Rochester Hollow	1,622	1,414	1,870	1,648

The above table only shows visitors who have signed registers at the Rochester Hollow Trailhead. These numbers can be misleading because many visitors do not register and many more use parts of the Forest Preserve where there are no trails or trailheads. Units which contain more trails and trailheads where registers are present may show a higher visitor rate than a unit with fewer trails; therefore, registers may not be an accurate indication of rate of use per trail.

Use within this unit at any particular time can be quite variable dependent upon time of day, day of week, or season of the year. Hunters and trappers utilize the area in the late fall and early winter coinciding with respective seasons. Trout fishing typically peaks in intensity in May, June, and July. Weather can have a dramatic effect on the use during a particular day or weekend. In the past, the majority of recreational activity occurred in the spring or summer and has tended to be heaviest on the weekends and holidays.

E. Application of the Americans with Disabilities Act

Application of the Americans with Disabilities Act (ADA) 42 U.S.C. §12101 et sec. (2008)

The Americans with Disabilities Act (ADA), along with the Architectural Barriers Act of 1968 (ABA) and the Rehabilitation Act of 1973; Title V, Section 504, have had a profound effect on the manner by which individuals with disabilities are afforded equality in their recreational pursuits. The ADA is a comprehensive law prohibiting

discrimination against individuals with disabilities in employment practices, use of public transportation, use of telecommunication facilities and use of public accommodations.

Consistent with the ADA, the Department incorporates accessibility for individuals with disabilities into the siting, planning, construction, and alteration of recreational facilities and assets that support such facilities. In addition, Title II of the ADA requires in part, that reasonable modifications must be made to the services, programs and activities of the Department, so that when those services and programs are viewed in their entirety, they are readily accessible to and usable by individuals with disabilities. The Department is not required to take any action that would result in a fundamental alteration to the nature of the service, program or activity or would present an undue financial or administrative burden. When accommodating access to a program, the Department is not necessarily required to make each existing facility and asset accessible, as long as the program is accessible by the other means or at a different facility.

This plan incorporates an inventory of all the recreational facilities and assets on the unit or area, and an assessment of the programs, services and facilities provided to determine the level of accessibility. In conducting this assessment, DEC employs guidelines that ensure that programs are accessible include buildings, facilities, and vehicles, in terms of architecture and design, transportation and communication to individuals with disabilities.

For outdoor recreational facilities not covered under the current ADA standards, the Department will use standards provided under the Architectural Barriers Act, to lend credibility to the assessment result and to offer protection to the natural resource.

All new facilities, or parts of facilities that are constructed for public use, are to be accessible to people with disabilities. Full compliance is not required where DEC can demonstrate that it is structurally impracticable to meet the requirements. *(See Text of 28 CRF § 35.151 (a)(b) below)*. Compliance is still required for parts of the facility that can be made accessible to the extent that it is not structurally impracticable, and for people with various types of disabilities.

A record of accessibility determination is kept with the work planning record. Any new facilities, assets, and accessibility improvements to existing facilities or assets proposed in this plan are identified in the section containing proposed management actions.

28_CFR_§35 151(a)(b)_ _

(a) Design and Construction.

(1) Each facility or part of a facility constructed by, on behalf of, or for the use of a public entity shall be designed and constructed in such a manner that the facility or part of facility is readily accessible to and usable by individuals with disabilities, if the construction was commenced after January 26, 1992.

(2) There are exceptions for structural impracticability:

"(i) Full compliance with the requirements of this section is not required where a public entity can demonstrate that it is structurally impracticable only in those rare circumstances when the unique characteristics of terrain prevent the incorporation of accessible features.

(ii) If full compliance with this section would be structurally impracticable, compliance with this section is required to the extent that it is not structurally impracticable. In that case, any portion of the facility that can be made accessible shall be made accessible to the extent that it is not structurally impracticable.

(iii) If providing accessibility in conformance with this section to individuals with certain disabilities (e.g., those who use wheelchairs) would be structurally impracticable, accessibility shall nonetheless be ensured to persons with other types of disabilities, (e.g., those who use crutches or who have sight, hearing, or mental impairments) in accordance with this section."

(b) Alterations.

(1) Each facility or part of facility altered by, on behalf of, or for the use of a public entity in a manner that affects or could affect the usability of the facility or part of the facility shall. To the maximum extent feasible, be altered in such manner that the altered portion of the facility is readily accessible to and usable by individuals with disabilities, if the alteration was commenced after January 26, 1992.

For further information contact the ADA Coordinator at accessibility@dec.ny.gov

Access for People with Disabilities

Existing Conditions

There were six accessibility projects contained in the 2005 Shandaken Unit Management Plan that have been implemented since the plan was finalized and adopted:

- Two accessible primitive campsites were constructed on the Allaben parcel, one site was located at the end of the right-side cul-de-sac, the second site was located by the pond. Accessible paths were constructed, and accessible picnic tables were installed, one for each accessible site.
- An accessible Port-a-John was made available at the Allaben parcel for 8 months out of the year during peak season and is accessible for individuals with disabilities.
- Rochester Hollow Road was designated for all terrain vehicle access for individuals with disabilities by permit issued by the Department pursuant to

Commissioner Policy CP-3. Individuals with disabilities seeking motorized access for the purpose of recreating are eligible for a CP-3 permit which enables them to operate an all-terrain vehicle on Rochester Hollow Road between May 1st and December 15th unless snow covered, at which time motor vehicle access will be prohibited to allow for cross country skiing. This permit strictly allows access to programs such as primitive camping, hunting, bird watching, and similar pursuits but does not allow for the riding of all-terrain vehicles for the sole purpose in and of itself as recreation. The gate entrance to Rochester Hollow road will continue to remain closed to prevent illegal motor vehicle use. Recipients of a CP-3 permit wishing to utilize the road will be allowed access through the gate via a key or a combination to the lock.

- An accessible lean-to was constructed on the Rochester Hollow CP-3 Route.
- An accessible fishing platform was installed at the Lower Birch Creek Pond and a .5-mile accessible trail that leads to an accessible picnic table on the ponds edge was constructed.

Universal Trail Assessment Process

The Universal Trail Assessment Process (UTAP) is an objective method of measuring site conditions such as average and maximum grade, minimal trail width, cross slope, trail length and surface type. These variables can then be presented at the trailhead and on our website to allow users to make an informed decision about the level of accessibility for facilities.

Roadside Primitive Tent Sites

Accessible camping opportunities are available at two locations on the Allaben parcel. Camping at these sites will be managed according to general State land backcountry camping regulations. The location of the accessible roadside tent site will be carefully chosen to provide an attractive facility in an area that can withstand use. These locations will have a stable surface and include parking or equestrian access, a hardened tent location, and an accessible privy with a hardened access route.

For further information contact the ADA accessibility coordinator at accessibility@dec.ny.gov

Desired Conditions for Accessible Facility Monitoring

Emphasis is given throughout the plan on well-designed and constructed facilities that promote resource protection and will maximize long term sustainability. Accessible facilities are a great example of the importance of well-built sustainable facilities beyond the obvious environmental benefits. These facilities need to remain in proper working order to be fully accessible by individuals with disabilities. The desired conditions for accessible facilities are also necessary conditions for the facility to remain compliant with accessibility standards. ADA trails require the most maintenance of any trail even when built to sustainable design standards. These trails must be evaluated on a regular basis to ensure their conditions continue to meet accessibility

standards. Further descriptions of specific facilities (i.e. accessible trails or tent sites) are included in each respective section. Like the rest of the facilities in this plan, it is important to construct these facilities in a manner that blends well with the natural surroundings and maximizes user enjoyment while protecting the natural resource. Facilities built to accessible standards will be monitored for the variables described in their respective sections of the plan and will additionally be monitored for compliance with their designed accessibility standards.

Proposed Management

Objectives

- To comply with the ADA by improving access and creating recreational opportunities for individuals with disabilities.
- To inform users of the location and condition of facilities in the unit, focusing on such variables as length of trails, average grade, steepest grade, minimum width, etc. Such information is intended to allow individuals to make informed decisions regarding use of a facility.
- To provide outdoor recreational opportunities to people of all abilities.
- Increase access opportunities for individuals with disabilities where such development does not alter the fundamental nature of existing programs, is compliant with Department regulation and policy, and conforms to the guidelines of the CPSLMP.

Action Steps

- Monitoring each location for the desired conditions for a sustainable accessible facility will help measure and determine impacts to better inform carrying capacity development and long-term planning.
- Desired conditions for accessible facilities will vary between the type of facility. These details are outlined within each specific facility throughout the plan. Additionally, accessible facilities will remain accessible in accordance to their design standard. Like all facilities described throughout this plan, it is important that accessible facilities remain functional and provide an enjoyable user experience.
- Construct new facilities to the most accessible degree possible given site constraints, with the understanding that while many may not fully meet ADA accessibility standards, the intent is to maximize the degree of accessibility to the widest range of abilities.
- Monitoring may include photo point locations, control measuring points, surveys of visual occurrences of trash, user surveys, and evaluation of their accessibility compliance.

F. Education and Signage

Education

The Department and Partner Organizations have tried various methods to provide signage and educational efforts to help visitors understand a variety of topics including rules, preparedness, and interpretation. Outreach and education methods that have been used by the Department have included signs, maps, and, posters. Assistant Forest Rangers, SCA Backcountry Stewards, and Forest Rangers also provide information to hikers and recreationists. Basic permissive signage has been put up and some boundary signage to help the public navigate these lands has been installed.

Signage

Signs are provided to mark trails, minimize impacts and provide safety information. Signage is kept to a minimum to avoid interfering with Wild Forest and State Forest values and guidelines. Currently, Lands and Forests, Operations and Fish and Wildlife all use signs in the unit. Trailhead signing is limited to small signs on standards. Interior signing is limited to trail junctions and special information and regulatory signs. Sign theft and vandalism is an occasional problem. Signs will be established and maintained at each of the major parking areas. Some directional signs may be necessary at the intersection of Matyas Road and Route 28, Peck Hollow Road and Route 28 and Birch Creek Road and Route 28.

Existing regulatory signs will be maintained, and additional ones installed as necessary.

There is a monument at the edge of the John Burroughs memorial forest which was where 16,000 trees were planted by the Raymond Riordon schoolboys of Highland, NY in April of 1921. The program of reforestation or as it was called then, “reforesting the waste lands of preserve” began in 1901. The monument at the edge of the forest memorializes the significance of John Burroughs and reads as follows:

“JOHN BURROUGHS FOREST”

“MEMORIAL TO THE BELOVED NATURALIST, AUTHOR, AMERICAN OF SLABSIDES AND THE WORLD. REFORESTED BY HIS NEIGHBORS THE BOYS OF THE RAYMOND RIORDON SCHOOL, AND TO BE GIVEN THEIR PERPETUAL, JOYOUS CARE UNDER THE DIRECTION OF NEW YORK STATE CONSERVATION COMMISSION. “April 18th, 1921”

There is one roadside “Forest Preserve Access” sign at the intersection of the Allaben access road and Route 28. A parking area sign is located in the Peck Hollow parking area and various Department rules and regulation signage can be found within this unit. Additionally, there is a forest preserve facility identification sign that is located on Rt. 28 at the Sawmill Parking lot.

Proposed Management

Objectives

- To provide users with appropriate information at the start of their hikes covering natural resource protection, personal preparedness, and directional assistance, as well as rules to follow.
- To improve the opportunity for on the ground, in person education and information.
- To provide consistent messaging with partners to help educate users.
- To utilize communication technologies to protect natural resources and to educate people on wild forest values.

Action Steps

- Integrate Leave-No-Trace (LNT) Principles and wildlands ethics into all messages.
- Provide consistent trailhead signage across all trailheads to help reinforce key educational and informational messages.
- Install trailhead registers or kiosks at parking areas where appropriate.
- Provide appropriate Trail Directional Signage along trails.
- Campsite signage that provides educational and regulatory information. Provide appropriate staffing levels so that the Department can provide education and outreach messages to users at popular trailheads in the backcountry.
  DEC will take the lead and work with partners in local government, the tourism and recreation industry, advocacy groups, schools, and other interested parties to effectively spread outreach and education to focus on improving the public understanding of topics such as:
    - Forest Preserve classifications;
    - Leave No Trace Principles;
    - Rules and Regulations pertaining to the Colgate Lake Wild Forest and other Forest Preserve lands;
    - User preparedness and backcountry safety.

G. Structures

Existing Conditions

Numerous old foundations and stone walls are found throughout the unit. There are 5 existing structures on the 5.75-acre administrative use area on Lower Birch Creek. This administrative use area includes the house, a large barn, a sugar shack and a small cottage.

Proposed Management

Objective

- To protect the area's natural resources while accommodating appropriate public use and Departments administrative needs.

Action Step

- Surplus any buildings or structures located on Forest Preserve that present a public safety hazard in their current condition and would be cost prohibitive for the Department to restore. (See Appendix G or images of current building conditions).

H. Roads

The Department uses administrative roads for various administrative purposes such as for fisheries management, maintenance of facilities, law enforcement and access for firefighting, Several of the Departments roads are open for public use of vehicles in order to address recreational facilities in the unit. All motor vehicle use in the Shandaken Wild Forest is restricted to the access road in the Allaben parcel, the Rochester Hollow Road (for individuals with disabilities under permit) and designated parking areas. Barriers and appropriate signage will prohibit all other public motorized vehicle use.

Administrative use of motor vehicles must comply with Commissioner's Policy 17 (CP-17). This policy requires reporting of administrative use of motor vehicles, motorized vehicles and aircraft. One of the intentions of the policy is to "[m]inimize the administrative use of motor vehicles on roads closed to public motor vehicle use and aircraft on Forest Preserve lands."

Desired Conditions for Forest Preserve Road Monitoring

Road monitoring variables will be evaluating evidence of erosion, rutting, deteriorated drainage devices like ditches and culverts, and occurrences of invasive species. The objective will be to maintain a relatively undisturbed road surfaces that have properly working drainage devices that allow for safe and enjoyable travel. Taking photos at

preselected locations will be a useful tool to help illustrate changes over time. Any roads that are kept open for use will be maintained to a standard which protects environmental quality by resisting erosion and rutting and will also allow for safe and unimpeded access by users. It is understood that normal wear and tear will occur, but these roads will be kept to a form and stable standard that resists wear from natural and man-made actions. It is also important when maintenance is done on these roads that it is done in a manner which blends the road to its natural surroundings. The wild experience can be preserved as much as possible through being minimally invasive and blending work activities in order to maximize the publics enjoyment of their route.

Desired conditions for roads will be ones that are firm, stable and well-drained, with minimal erosion, free of invasive species, have minimal expansion from the designed footprint of the built facility, do not negatively impact trailside vegetation, are free occurrences of litter, and provide an enjoyable user experience. Monitoring could include photo and control point locations, surveys of erosion, invasive species, occurrences of trash, and user surveys.

Proposed Management

Objectives

- To continue to provide public motorized use of designated roads in the unit to accommodate access for recreational opportunities consistent with CPSLMP requirements.
- To reduce negative impacts to the resource by ensuring motor vehicle use is restricted to designated and maintained roads.
- To maintain a relatively undisturbed road surfaces that have properly working drainage devices that allow for safe and enjoyable travel.
- To continue to develop partnerships with local municipalities to help maintain public roads and administrative areas.
- To prevent illegal motorized vehicle use.

Action Steps

- Periodically maintain roads using proper materials, tools and techniques in a manner consistent with CPSLMP.
- All roads will be mapped and inventoried during Action Steps as to their suitability to accommodate motor vehicle traffic for management and special use.
- Roads will be re-routed and repaired when a management activity requires such an action
- All actions pertaining to the re-route of existing roads or the building of new ones will be done so under the guidance and supervision of the land manager in charge of the unit.

I. Parking Areas

Existing Conditions

The Department provides two types of parking facilities: parking areas and pull-offs. Parking areas are designed and designated for parking with signs and established perimeters. The perimeter can be guard rails, boulders or natural features. Pull-offs are areas where the public can safely pull off the road to park, stand or allow other traffic to pass. These areas are wide spots on the road or just off the road shoulder. Pull-offs are not formally designated or signed and are generally only suitable for one to a few vehicles. The current parking situation throughout this unit is adequate to accommodate current use levels. However, improvements to existing parking areas can be made which will ensure the protection of the resource and the quality of the visitor experience. The development of new facilities or improvements to existing facilities for persons with disabilities will require the need for additional parking. There are several locations at which roadside parking currently occurs and numerous campsites which are utilized for parking by day users. In locations where roadside parking occurs, parking facilities should be provided to alleviate safety concerns.

There are a number of existing parking areas on the unit:

- Peck Hollow Road-2 cars
- Matyas Road-5 cars
- Lost Clove Road-10 cars
- Lower Birch Creek-5 cars
- Allaben – 12 cars
- Sawmill Lot- 5 cars

There are two sizable parking areas on adjacent management units which serve this unit:

- Pine Hill Day Use Area, Town of Pine Hill, Belleayre Intensive Use Area
- Discovery and Overlook Lodge Parking Areas, Belleayre Intensive Use Area

All parking lot construction and relocation projects will incorporate the use of Best Management Practices, including but not limited to such considerations as:

- Locating parking lots to minimize necessary cut and fill;
- Locating parking lots to reduce the length of road walking for recreationists and create more direct routes to popular destinations;
- Locating parking lots away from streams, wetlands, and unstable slopes wherever possible;

- Locating parking lots on flat, stable, well-drained sites using gravel for surfacing or other appropriate material to avoid storm water runoff and erosion;
- Locating parking lots in areas that require a minimum amount of tree cutting;
- Limiting construction to periods of low or normal rainfall;
- Wherever possible, using wooded buffers to screen parking lots from roads;
- Limiting the size of the parking lot to the minimum necessary to address the intended use.

Desired Conditions for Parking Facility Monitoring

Properly designed and managed parking areas will maintain their firm and stable surface with minimal maintenance and allow unencumbered parking for the designed number of vehicles. This not only maximizes environmental protection but user safety, function, and enjoyment. Appurtenances to the parking areas like privies and gates should also be maintained in a clean and functional working condition. Like roads and other facilities described, parking areas can add to a user's positive experience if it blends well with the natural area and is kept free of trash and human waste. The variables to be monitored in parking areas will be the presence of a firm and stable surface that is smooth and easily accessible to the public, along with clean sanitary conditions including properly maintained privies and an absence of trash. Photo points will be a useful tool to help illustrate potential changes over time.

Proposed Management

Objectives

- Provide and manage adequate trailhead facilities to both protect resources values and accommodate passenger vehicles and visitor needs.
- Use parking areas to manage interior use by balancing parking lot capacities with resource and recreational carrying capacities.
- Design and locate parking areas so that emergency vehicles will have safe, unimpeded access to Camp Harriman.

Action Steps

- Monitoring for the desired conditions of parking areas will help measure and determine impacts to better inform carrying capacity development and long-term planning. Monitoring could include photo point locations, control measuring points, surveys of visual occurrences of trash, and user surveys.
- Include improved signage at parking areas and trailhead facilities that will include maps at trail registers.
- Designate accessible parking spots and unloading zones at all significant parking areas.

- Monitor all access points for illegal motorized use and resource damage. Where it is occurring, create or install appropriate barrier structures to stop this illegal use of the Forest Preserve. Desired conditions for parking areas will be a firm and stable surface that has minimal expansion from the designed footprint, well maintained privies and gates, is free of occurrences of litter and human waste, and adds to the overall user experience.

J. Lean-Tos

Existing Conditions

Lean-tos are a traditional and quintessential feature of Catskill Park. Prior to the advent of lightweight backpacking tents, lean-tos were constructed in many areas to provide shelter from inclement weather. These lean-tos were often built immediately adjacent to trails and close to water sources. They were sometimes clustered in scenic areas to accommodate increased visitor demand and to facilitate maintenance.

At present there is one accessible lean-to within this unit in Rochester Hollow.

Proposed Management

Objectives

Maintain the Rochester Hollow lean-to to assure a quality Catskill camping experience for all users of the Shandaken Wild Forest unit.

- Maintain the Rochester Hollow lean-to to assure a quality Catskill camping experience for all users of the Shandaken Wild Forest unit.
- To utilize volunteers and VSA's for maintenance assistance in lean-to construction.

Action Step

- To help ensure a wild forest experience, control camping and enforce regulations to ensure the maximum capacity of any lean-to shall not exceed eight persons.

K. Boundary Lines

Existing Conditions

There are approximately 45.24 miles of boundary lines encompassing the six distinct parcels that comprise Shandaken Wild Forest. There are # miles of boundary that need maintenance or have yet to be marked within this unit.

Boundary Lines in Shandaken Wild Forest		Miles in need of Maintenance
Lower Birch Creek	2.2 miles	2.2 miles
Giggle Hollow	7.27 miles	7.27 miles
Rochester Hollow	11.0 miles	11.0 miles
Peck Hollow	18.0 miles	18.0 miles
Esopus Creek	2.29 miles	2.29 miles
Allaben	4.48 miles	4.48 miles
Total Miles of Boundary Lines	**45.24 miles**	**45.24 miles**

This unit consists of land boundaries and associated monuments, wire fencing, stone walls, etc. that follow public roads, water courses, lakes and individual property lines. Property lines, where surveyed, are blazed and painted yellow. NYS lands are also identified by the posting of “Forest Preserve” or more specific, “Wild Forest” and “State Land Boundary” signs. In cases where there is a lack of legal evidence as to the location of the boundary between State and private land a common boundary line can be established under 9-0105 (13) of the ECL.

A better method of keeping track of the condition of areas boundary lines is being implemented. As time permits, records indicating years painted, condition, survey needs, and other important information will be developed in a GIS compatible format to better enable the prioritizing of boundary line maintenance throughout the Region 3 working circle. Increased funding and staff commitment will be required to enable the maintenance of boundary lines on a seven-year cycle.

Proposed Management

Objectives

- To maintain unit boundaries on a scheduled basis.
- To adequately identify state land ownership to prevent trespass.

Action Steps

- Brush, paint and sign all boundary lines on a seven-year cycle. Provide resources to accomplish this task in accordance with DEC Boundary Line Maintenance Policy NR- 95—1.
- Monitor boundaries for unauthorized activities, such as illegal motor vehicle use and trespass.
- Clearly mark all public right of ways and easements through private lands with signs informing the public to stay within the roads, which will reduce or eliminate public trespass on private lands.
- Boundary lines including easements, will be surveyed, marked and painted as necessary, on a 7-year cycle.

L. Barriers: Gates and Rocks

Existing Conditions

A number of former roads entering the unit from various points around its periphery have been blocked to prevent the passage of motor vehicles. Other roads have not been blocked. Though illegal motor vehicle use is not a major issue in this unit, instances occasionally have been observed by staff and reported by member of the public. On non-conforming roads or trails not presently blocked, barriers will be placed when required. A barrier on a trail may consist of a line of boulders or locked gate to deter illegal motor vehicle use or piles of brush, tree plantings or appropriate structures to prevent passage of trail users. Locations of existing gates and rock barriers within the unit are included below.

Proposed Management

Objectives

- Install and maintain barriers at the boundary of all non-conforming roads and trails to prevent motor vehicle use in this unit in areas where motor vehicle use is prohibited.
- Construct barriers of natural boulders large enough to prevent unauthorized removal. In each barrier associated with a marked trail, leave a space 36 inches wide in the center to allow passage of wheelchairs while preventing the passage of motor vehicles. In situating boulders, leave room for parking where appropriate.

Action Steps

- Monitor all existing barriers and repair them as soon as damage is detected.
- Gates that are part of the snowmobile trail season will be opened at the onset of winter and closed for mud season.
- Maintain gates, barriers and associated signage that prevent motor vehicle trespass onto adjacent private lands or unauthorized areas.

Gates

Gates exist at the following locations to prohibit unauthorized motor vehicle access to Forest Preserve lands by the public while allowing for the occasional need of DEC to access these areas for administrative purposes:

- Rochester Hollow Road approximately a quarter mile from its junction with Rose Mountain Road.

Rock Barriers

Rock barriers have been placed at several locations throughout the unit to prevent motor vehicle access to unit lands at the following locations:

- **Matyas Road**- Two gates prohibit motor vehicle access to Forest Preserve lands in Rochester Hollow. One at the south end, the other on the north end.

- **Peck Hollow Road**- A wood debris barricade prohibits motor vehicle access beyond the parking area on the east side of Peck Hollow Road.

M. Bridges, Culverts and Dams

Existing Conditions

Dams

There is one dam on the unit located on the Lower Birch Creek Pond.

Bridges

There is currently one, approximately 16' multi-use bridge located on the Rochester Hollow trail on this unit. Bridges do generally provide a safer means of crossing waterways, particularly during high water times or during the winter months with ice buildup. Bridges also help lessen trampling of soil and vegetation along the banks. Bridges will be constructed to the minimum size needs to serve trail users and designed to as unobtrusive as possible.

Culverts

There are numerous culverts located on Rochester Hollow Road. These culverts are critical to maintaining the Rochester Hollow Road and should be maintained as frequently as Department resources permit.

Proposed Management

Objectives

- Monitor and continue to maintain the Lower Birch Creek dam and develop a schedule for routine inspection and maintenance.
- To ensure that all bridges and culverts are properly maintained and safe for travel.
- Construct new bridges as new trails are constructed, or as the need arises on existing trails. Bridges will be built in sustainable locations to accommodate natural hydrology and their designed recreational use(s).

- Construct and maintain bridges that protect riparian and aquatic integrity, while facilitating public recreational uses.
- The use of pressure treated lumber on bridges and dry tread will be preferred over untreated lumber in recognition of treated lumber's capacity to remain sound for more than 30 years in service.

Action Steps

- Conduct annual inspections of all trails using a combination of Department staff and volunteers. These reports will document current problems and enable area managers to develop a prioritized maintenance schedule. All bridges that are no longer safe will be addressed as soon as possible.
- Perform annual routine maintenance to ensure that bridges, culverts, water-bars and ditches are functioning properly
- Assess replacement needs in coordination with all DEC program units and volunteer organizations.
- Incorporate the use of Department Best Management Practices (BMPs) in all new bridge construction projects and maintenance work.
- Remove or replace as necessary illegal pallets and user constructed bridges that do not comply with DEC standards and specifications.
- Maintain the culverts and the multi-use bridge on Rochester Hollow Road to ensure that the trail remains open for use by CP-3 permit holders.
- Construct a bridge on the giggle hollow parcel near the Lost Clove trailhead parking area to traverse a stream. Further field investigation is required.

N. Trail Recreation

Existing Conditions

Trail management involves not just the trail itself, but also the corridor it occupies. Trails are not self-sustaining. Once developed, all trails must receive a degree of maintenance; otherwise; non-maintained trails will deteriorate and cause resource problems.

Recreational trail opportunities will be provided by the Department to the extent that they do not infringe upon the wild forest character and State forest character of the unit. The level and intensity of public use will be monitored and steps to prevent degradation and overuse of the area will be taken when necessary. Existing trails will be monitored and maintained where appropriate. When necessary, trails will be rebuilt or rerouted to more appropriate locations to protect the environment.

All trail construction and relocation projects will be developed in accordance with the CPSLMP and will incorporate the use of Best Management Practices, including but not limited to such consideration as:

- Locating trails to minimize necessary cut and fill;
- Wherever suitable, lay out trails on existing old roads or partially cleared areas;
- Locating trails away from wetlands, streams, and unstable slopes wherever possible;
- Use of proper drainage devices such as water bars and broad-based dips;
- Locating trails to minimize grade;
- Using stream bank stabilization structures made of natural materials such as rock or wooden timbers;
- Avoiding areas where habitats of threatened and endangered species are known to exist;
- Using natural materials to blend the structure into the natural surroundings.

Desired Conditions for Trail Monitoring

Properly designed and constructed hiking trails will maintain their firm and stable surface for their intended use, and within minimal maintenance. A sustainable trail ensures environmental protection, user safety, function and enjoyment. Building a well-designed, sustainable trail that blends well with its natural surroundings enhances the users experience and decreases user conflict. Like other facilities, the variables for hiking trails will include monitoring efforts to collect data on the presence of eroded areas, the expansion of the tread through vegetation loss, and the occurrence of trash and human waste.

Proposed Management

Objectives

- To identify suitable locations and create improved access to the unit and access to the unit for people with disabilities.
- To provide visitors with a trail system that offers a range of recreational opportunities in a manner that keeps the natural resource impacts and maintenance needs to a minimum.
- To eliminate incompatible uses which detract from the character of the unit.
- To educate and work with local user groups to self-police and educate their members and visitors to discourage the use of unauthorized trails.
- Provide visitors with a trail system that offers a range of recreational opportunities in a manner that keeps physical and visual trail and resource impacts to a minimum and complies with CPSLMP guidance.

- Construct and maintain trails in a manner which preserves their classification (see trail classification chart in Appendix E for additional information) and prevents impacts such as sedimentation and erosion.
- Identify need for trail relocations and/or need for new trails.
- Provide a unified system of trail signage and markers on the Shandaken Wild Forest. Trail marker colors will describe general direction of trails. Blue markers will be used on trails that primarily run north-south, and yellow markers will be used on spur trails, connecting trails and loop trails. Red will be used for east-west trails. Provide appropriate staffing levels so the Department can build or maintain a sustainable purpose trail network.

Action Steps

- Construct and maintain all trails in the units in accordance with their classifications under the official trails classification and standards system. Trail maintenance will include removal of trees, tree pruning, clearing of brush, ditching, water bar construction and cleaning, the construction of bridges where needed, bridge repairs and reconstruction. All maintenance and construction will conform to the best management practices and will be conducted in project work schedule subject to the availability of funds and labor.
- On existing marked trails or existing unmarked trails to be marked, address major wetland, spring, or stream crossings, beaver flooding or soil erosion on slopes through trail relocation where feasible.
- Address major wet areas and erosion problems that cannot be avoided through trail relocation, as well as minor wet areas and erosion problems, through the installation of bridges or appropriate water management structures but only where necessary to protect natural resources.
- Identify trail sections that are vulnerable to excessive damage because of steep slopes, erodible soil types or high-water tables and close them during wet seasons. Announce trail closures through posting of signs at trailheads and through media. Seek volunteer compliance first, regulation and enforcement only when and where lack of voluntary compliance poses a serious threat to natural resources.
- Prohibit by regulation the marking or maintenance of trails, including trails that serve as exclusive access from adjacent private lands, without Department approval.
- Develop LAC indicators and standards for marked and unmarked trails in the unit.
- Conduct a detailed inventory of chosen LAC indicators for all of the marked trails in the unit. Begin an inventory of major unmarked trails after the inventory of marked trails has been completed.

- Take appropriate action when and where necessary to keep LAC standards from being exceeded. New facilities such as trails (snowmobile, equestrian, bicycle and hiking), bridges, parking areas, information kiosks, etc. will be constructed to enhance public recreational opportunities. The Department will ensure that all facilities are in conformance with DEC specifications and policies.
- Provide additional foot, mountain bike, snowmobile and horse trails in areas which can sustain such uses over the long term. Monitor all trail areas and reassess impacts when this plan is updated. Control use or eliminate trails if erosion, vandalism, water quality, rare species or the natural character of the forest lands is imperiled by continued use.
- Design and locate trail markers and trail signs in accordance with the unified system developed for all state lands.

O. Trail Heads/ Entry Points

Existing Conditions

A trailhead is defined as the starting or termination point of one or more designated trails at a point of entrance to state land which may contain some or all of the following: vehicle parking, trail signs, and peripheral registration structures. Information kiosks with maps, signs and other pertinent interpretive information at key locations such as trailheads and parking areas will be provided where appropriate. Trailheads are located in the following areas within the unit:

- Rochester Hollow at Matyas Road
- Lower Birch Creek at Lower Birch Creek Road
- Lost Clove at Lost Clove Road
- Sawmill Parking Lot- entry to trail-less area

Trail registers are located at the Lost Clove and Rochester Hollow trailheads. Trail registers are used by the Department to gather public use information for the unit.

DEC informational kiosks are used to provide a wide variety of educational information at one location. Standard kiosks include a plexiglass covered display board. Educational information includes water supply, human waste, fire, litter, tree and vegetation cutting, and camping restrictions. The kiosks in the unit presently contain: DEC general rules and regulations, maps and education and emergency contact information. There is one informational kiosk located at Rochester Hollow. There is one informational kiosk at the Sawmill Lot.

Proposed Management

Objectives

- To provide adequate access to the unit.
- To provide and manage adequate trailhead facilities (including trail registers and informational kiosks) that accommodates visitor needs and protects resource values.
- To provide adequate parking and mitigate any parking related problems.
- Provide educational information, DEC rules and regulations and emergency contact information to users.
- To reduce the amount of litter and vandalism occurring at trailheads.

Action Steps

- Encourage partnerships with local governments and outside volunteers to maintain and snowplow trailhead parking facilities**.**
- Monitor trailhead condition and schedule regular maintenance of parking area surfacing, barriers, signs and trail registers**.**
- For each trailhead, monitor interior use and parking levels throughout the year and periodically reassess parking needs in relation to interior capacity.
- Maintain all information kiosks and register boxes on the unit.

P. Snowshoeing

Existing Conditions

Snowshoeing is allowed “at-large” throughout the tracts, but purpose-built foot trails are currently limited to pre-existing Shandaken Wild Forest trails.

Desired Conditions for Hiking/ Snowshoe Trail Monitoring

Properly designed and constructed hiking trails will maintain their firm and stable surface for their intended use, and with minimal maintenance. A sustainable trail ensures environmental protection, user safety, function, and enjoyment. Building a well-designed, sustainable trail that blends well with natural surroundings enhances the user’s experience and decreases user conflict. Like other facilities, the variables for hiking trails will include monitoring efforts to collect data on the presence of eroded areas, the expansion of tread through vegetation loss, and the occurrence of trash and human waste. Photo points will be a useful tool to help illustrate potential changes over time.

Proposed Management

Objectives

- Design and locate all trails in accordance with DEC guidance and best management practices that minimize environmental impacts.
- Add and enhance hiking and show shoe trail opportunities as appropriate throughout the area.
- Establish photo point monitoring locations and systemic measuring methodologies to help monitor trail impacts on all newly constructed re-routed and rehabilitated trails. This data will help inform the decision-making process on future trail decisions.
- Provide an opportunity for shorter distance hikes with destinations
- Provide loop trail opportunities

Action Steps

- Allow hiking/ snowshoeing on all trails.
- Monitoring for the desired conditions of hiking trails will help measure and determine impacts to better inform carrying capacity development and long-term planning. Generally:
    - Desired conditions for Hiking Trails will be ones that have minimal erosion and expansion from the designed footprint of the built facility, does not negatively impact trailside vegetation, is free from occurrences of human waste or litter, and provides an enjoyable user experience.
- Monitoring could include photo point locations, control measuring points, occurrences of erosion and tread expansion, trash and user surveys.
- Reduce the potential for conflict between cross-country skiers and snowshoers by providing informational signage at the Rochester Hollow trailhead that provides information on proper trail etiquette for the two user groups.

Q. Cross-Country and Backcountry Skiing

Existing Conditions

Like hiking and snowshoeing, cross country skiing and skiing are allowed “at-large” throughout the unit. Winter use of the Shandaken Wild Forest is an important recreational activity. Cross country and back country skiing opportunities provide economic activity at a usually slow time of year for area businesses. The trails also provide an opportunity for the public to connect with nature.

The terrain of the unit provides great opportunities for cross country skiing and backcountry skiing. Most of these activities occur on trails, but there are areas that are also used for off-trail skiing. All of the trails in the unit are open for winter use.

Desired Conditions for Cross-Country and Backcountry Ski Trail Monitoring

Desirable conditions are typically easily achievable for cross country ski trails, as long as the weather cooperates. With adequate snowpack, conditions rarely become deteriorated, which shifts the typical tread concerns like erosion to other concerns like corridor expanding through a loss of vegetation. Desirable cross-country ski trails maintain safe lines of sight and corridors that are free from vegetative obstructions, among several other features. Cross country skiing is often a secondary use on hiking or mountain bike trails, so when this is the case, the monitoring variables for the trails in which they use will be the primary guide for monitoring variables. Photo points can be developed along routes to continually monitor impacts and to ensure corridor expansion through vegetation loss is not occurring.

Proposed Management

Objectives

- To provide winter recreational opportunities for various activities and user ability levels.
- Add and enhance skiing opportunities as appropriate throughout the area.

Action Steps

- Where practical, new trails, reroutes, and trail structures will be designed and constructed to accommodate and enhance ski use. This will be prioritized for trails which receive a significant amount of ski use. To better accommodate skiers, sections of trails that have steep slope may be cut wider in accordance with existing Department policy. At the base of steep slopes, the trail width will gradually taper down
- Work to establish partnerships that will provide the means to plow the parking areas and access roads so that more trails may be used in the winter.

R. Mountain Biking

New York's Forest Preserve is a destination for various road and trail-based cycling opportunities. Mountain biking opportunities on lands classified as Wild Forest have historically been offered on former woods roads and existing trails designed for other modes of travel. Former woods roads and multiple use trails will continue to be an important part of the Forest Preserve trail network open to bikes.

Double track trails are often former woods roads and allow for two users to travel side by side or to pass without one user having to yield the trail. A UMP is required to specify which trails are open for mountain bike use in wild forest areas. During the scoping session for this UMP the public expressed a desire for Shandaken Wild Forest to provide additional biking opportunities. Single track trails are characteristically so narrow that users must generally travel in a signal file.

Accommodating more than one recreational use on a trail can help accomplish resource protection goals by reducing trail development and environmental impacts. Some trails can be shared successfully under a certain threshold in the number of users is reached. Alternatively, some trails are almost impossible to share due are almost impossible to share due to the character of the trail, its location, and the type of use. The decision for a trail to be shared with cyclists (or not) should carefully balance land management goals, local community interests and resource protection.

Proposed Management

Objectives

- To provide recreation opportunities for mountain bike riders on suitable trails.
- To provide mountain bike trails in the Shandaken Wild Forest parcel that will have minimal environmental impacts.
- To educate recreational users about respectful multiple-use trail etiquette.
- To evaluate bicycling use and impacts.
- To maintain trails to an appropriate standard to minimize resource impacts and preserve recreational usability.

Action Steps

- Monitoring for the desired conditions of mountain bike trails will help measure and determine impacts to better inform carrying capacity development and long-term planning. Generally:
    - Desired conditions for mountain bike trails will be trails that have minimal expansion from the designed footprint of the built facility, minimal erosion, do not negatively impact trailside vegetation, are free from occurrences of human waste and litter, and provide an enjoyable user experience.
    - Monitoring include photo point locations, control measuring points, occurrences of trash, and user surveys.
- Install up-to-date trail maps at kiosks/ register boxes.
- Install multiple-use trail etiquette signage at all Area Parking/ Trail heads.
- Encourage and support partnerships that help to show and evaluate the use of the area

S. Fishing

Existing Conditions

Department angling regulations are designed to conserve fish populations in individual waters by preventing over-exploitation. Angling regulations effectively control impacts of angler use. The Department monitors the effectiveness of angling regulations, stocking policies, and other management activities by conducting periodic biological and chemical surveys. Based on the analysis of biological survey results, angling regulations may be changed as necessary provide the protection necessary to sustain or enhance natural reproduction where it occurs.

Proposed Management

Objective

- Maintain the diversity of cold water and warm water fish populations in the unit. Encourage and promote angler use of the waters in the unit through routine fish management practices including hotlines, correspondence, and contact with the public by Department staff.

Action Step

- Enforce current applicable Statewide and special fishing regulations in the waters of the Shandaken Wild Forest.

T. Camping/ Primitive Campsites

Existing Conditions

Existing camping regulations require camping to be either at designated sites or at undesignated locations that are at least 150 feet from road, trail, or water (6 NYCRR§ 190.3). A primitive tent site is one that is identified by a DEC sign or disk and defined as: consisting of a clearing that may contain a fireplace a picnic table, and an accommodation for parking of a motor vehicle. (CPSLMP, 2008, pg 79).

The regulatory provisions regarding group camping (6NYCRR Part 190.4) state" "no group of 10 or more individuals may camp on State lands at any one time except under permit" issued by the Department. In wild forest areas, groups of individuals numbering between ten and twenty can obtain a camping permit from a local forest ranger. Groups consisting of twenty or more individuals wishing to camp in wild forest areas must obtain a temporary revocable permit (TRP) issued by the Regional Supervising Forester in the Division of Lands and Forests working in the regional office. Designated campsites will be maintained and modified as necessary to accommodate public use and prevent site degradation. They are provided as a courtesy to the public as long as their use does not

result in a significant negative impact on the surrounding natural resources. Camping is permitted elsewhere throughout the unit, as long as it occurs more than 150 feet from trail water and below 3,500 feet in elevation, or at sites designated by the Department.

Desired Conditions for Tent Site Monitoring

Emphasis is given throughout the plan on well designed and constructed facilities that promote resource protection and will maximize long term sustainability. Tent sites are a great example of the importance of constructing a well-built, sustainable facility up front. Choosing a suitable location and constructing a tent site with a hardened tent pad ensures initial and long-term environmental protection. These facilities will exhibit a comfortable, well drained tent pad, usable fire pit, and sanitary privy. Beyond the obvious environmental benefits, these facilities add to the user's experience as much as desirable location does. The monitoring variables for tent sites will include efforts to collect data on the expansion of the designated area through vegetation loss, soil compaction, and the occurrence of trash and human waste. Photo points will be a useful tool to help illustrate potential changes over time. Monitoring for the desired conditions of tent sites will help measure and determine long term impacts to better inform carrying capacity development and long-term planning. Generally:

Desired conditions for tent sites will be sites that have minimal expansion from the designated footprint of the built facility, do not negatively impact adjacent vegetation, show minimal signs of compaction, are free from occurrences of human waste or litter and provide and enjoyable user experience. Monitoring could include photo point locations, control measuring points, occurrences of trash, vegetation loss and user surveys.

Proposed Management

Objectives

- To provide a small number of designated favorable tent sites in a manner which minimizes impact to the site while providing an enjoyable experience from the user.
- To allow "at-large" camping in accordance with 6NYCRR §190.3 (b) except at areas with specific regulations. Build and maintain high quality primitive tent sites with associated infrastructure (access trails, fire rings, privies, and cleared, level areas for tents).
- Provide primitive camping opportunities for people with disabilities.
- Keep designated tent sites properly spaced (out of sight and sound with each other) to maintain the solitude of the wild forest setting.
- Provide favorable designated tent sites in a manner which minimizes impact to the site while providing an enjoyable experience for the user.

Action Steps

- Restore all closed campsites to a natural condition. Remove fire rings and other evidence of past use. Sign closed sites with Department "No Camping" disks. Designate new tent sites at suitable locations where anticipated overnight camping use is significant enough to demand it and the area is capable of sustaining public use.
- Regulate camping within this unit through 6§NYCRR Part 190, protecting the water quality of streams and rivers.

Designated Camping Sites

- Rochester Hollow, Town of Shandaken- 2 sites
- Allaben parcel- Town of Shandaken- 9 sites

U. Scenic Vistas

Existing Conditions

Several locations within the unit provide naturally occurring and filtered scenic views, particularly during leaf-off. A 1935 opinion of the Attorney General provided that, "Article VII, section 7 (now Article XIV) of the New York State Constitution does not prevent the removal of an immaterial amount of tree growth for opening vistas or view about the building of trails in the Forest Preserve. Care should be taken such that such removal does not pass the point of immateriality as defined by the courts." The written opinion advises that tree removal within the Forest Preserve shall be done "whereas little cutting as possible is required."

Desired Conditions for Scenic Vista Monitoring

Choosing a suitable location and establishing a scenic vista enhances the recreationists' experience in wild forest area. These facilities will exhibit an unobstructed view of natural features. The cutting of brush will be staggered and very limited cutting of trees within the area will be required so that all trees and shrubs in the area will exhibit a natural variation of sizes and maintain a natural appearance. The monitoring variables for scenic vistas will include efforts to collect data on the expansion of the designated area through vegetation loss, illegal tree cutting, soil compaction, and the occurrence of trash and human waste. Photo points will be a useful tool to help illustrate potential changes in the scenic vistas over time.

Proposed Management

Objective

- To provide the public with scenic views of the surrounding landscape where appropriate.

Action Step

- Identify an area on the Giggle Hollow parcel that would be appropriate to develop a scenic vista. Establish a vista through selective tree cutting and take baseline measurements of the scenic vista to establish a baseline for monitoring.

V. Hunting/ Trapping

The tracts provide an opportunity for a variety of wildlife-related recreational pursuits. These include hunting, trapping, bird watching and wildlife photography. A number of mammals and birds may be hunted or trapped during seasons set annually by DEC. These species are identified in the Environmental Conservation Law (ECL), Sections 11-0903 and 11-0908. In addition, species, specific hunting and trapping regulations are printed annually in a guide provided to hunting and trapping license buyers. DEC has the authority to set hunting and trapping season dates and bag limits by regulation for all game species.

Wildlife-related usage has historically centered around big game hunting, primarily for deer, although bear hunting, small game hunting, and furbearer trapping are also prominent. Since the State took ownership of the area, white-tailed deer hunting during the regular big game season has been popular.

Proposed Management

Objectives

- Maintain up-to-date public information regarding hunting and trapping opportunities and any associated regulation changes.
- Continue to provide additional fall seasonal access to the area during big game hunting season.
- To provide easy access to the parcel for hunting/trapping.

Action Steps

- Support educational opportunities related to hunting and trapping and enforce hunting and trapping regulations.
- Evaluate the primitive tent sites along Forest Preserve roads.
- Maintain seasonal access routes, signage, gates, and parking to an appropriate and usable standard.

W. Sanitation

Existing Conditions:

Wild forest and State forest areas must be managed to preserve natural conditions and minimize human influence. Improper waste disposal by visitors can pollute soils and water, interfering with natural processes and affecting visitor health and safety. The appearance of food and drink containers, broken glass, food scraps and human waste can severely degrade the quality of the recreational experience for visitors.

In regularly visited places, such as trailheads, tent sites and mountain summits, proper refuse and human waste disposal is of critical importance. Popular tent sites are areas of major concern. Most overnight use is concentrated around lakes, ponds and streams. As use near water increases, so does the potential for impacts to soil and water quality. Soaps, shampoos, and other man-made substances can affect the delicate chemical and biological balance of soils and water. Visitors may contract diseases such as giardiasis by drinking water contaminated with human and animal wastes. The cleanup of broken glass and refuse is time-consuming and expensive, posing a safety risk to Department staff and volunteers.

In general, the problems of waste disposal on state lands have been substantially curtailed through public cooperation with the “carry it in, carry it out” campaign for litter removal. The Department should monitor areas of concentrated use and take actions to address problems as they arise. The Department installs pit privies and port-a-johns at locations where use levels are observed or expected to be high enough that the practice of burying waste in dispersed, individually selected locations would not succeed in protecting the environment. A standard privy is a totally enclosed wood structure with a roof and a door.

Existing sanitation facilities exist in the following locations within the unit:

- Lower Birch Creek- (1) ADA compliant port-a-john
- Rochester Hollow Lean-to - (1) ADA compliant port-a-john

Proposed Management

Objectives

- To minimize the adverse effects of the improper disposal of refuse and human waste on the natural environment within the unit.
- To prevent or minimize the adverse effects of improper disposal of refuse and human waste on the environment.
- To provide additional pit privies or port-a-johns at popular or sensitive sites
- To provide accessible facilities where possible to comply with ADA.

Action Steps

- Educate visitors about the principles of the Leave No Trace program, stressing the need for proper disposal of refuse and human waste and for the proper treatment of drinking water.
- Prohibit by regulation the use of glass containers, any soap or detergent, or the disposal of food scraps in any waters.
- Designate tent sites in locations conducive to proper human waste disposal, such as locations where soils are deep and well drained.
- Inspect privies on a regular basis to ensure that they are kept in a safe and sanitary condition. Move as needed.
- Install pit privies and port-a-johns at suitable locations where public use and monitoring indicates that they are needed**.**
- Provide accessible port-a-john facilities in proximity to accessible locations where appropriate.

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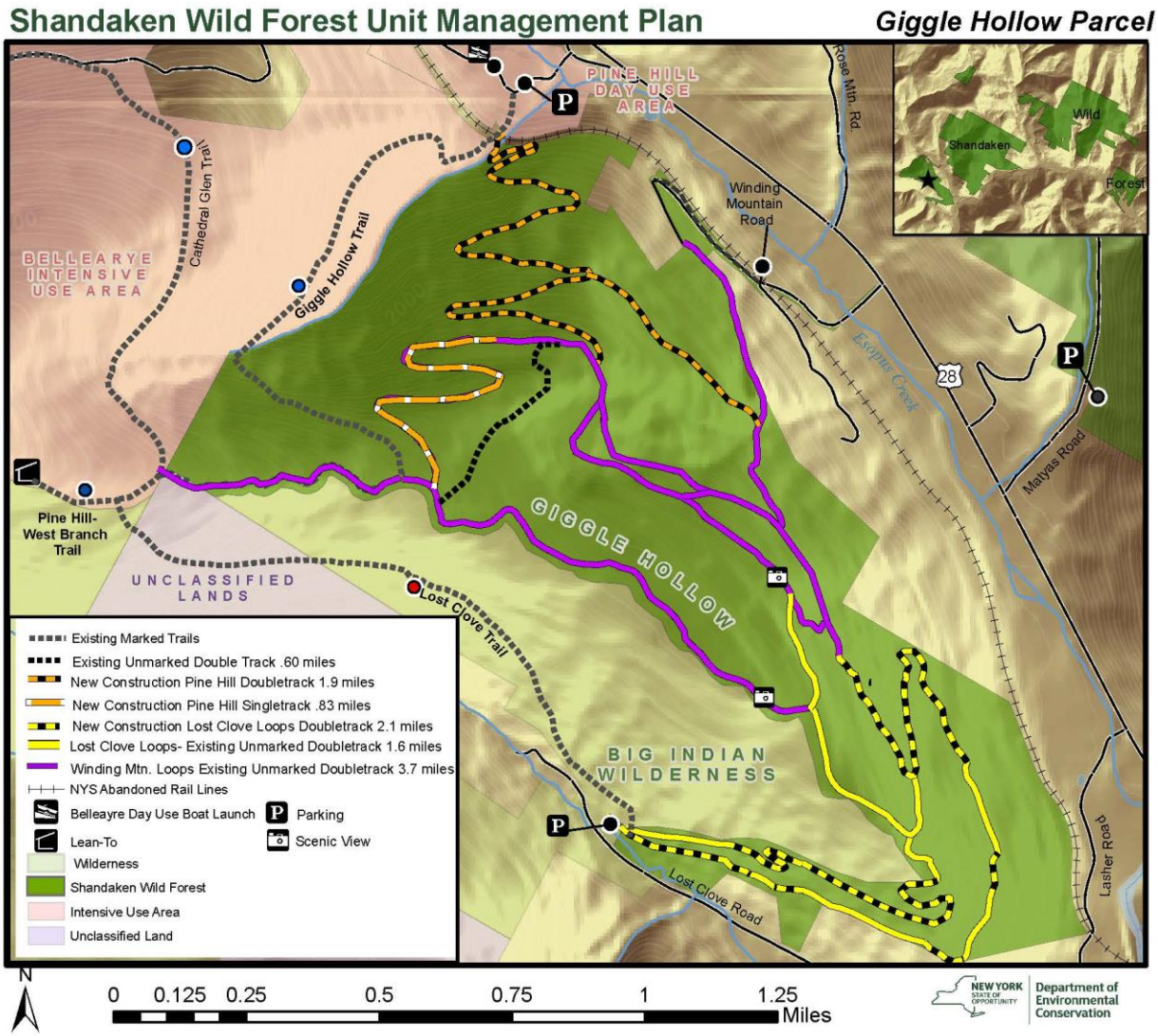
VI. Shandaken Wild Forest Projected Use and Management

Descriptions of the six geographic areas of Forest Preserve lands are included in this section. Information provided includes, maps, and proposed projects.

1. Giggle Hollow



Background

Since the completion of the 2005 Unit Management Plan, approximately 610.4 acres of the "Big Indian acquisition" on the eastern slopes of Belleayre Mountain were classified and added to the Shandaken Wild Forest unit. Several recreational facilities included in the original plan have been completed including a trail system and lean-to in Rochester Hollow and an accessible fishing pier at the Lower Birch Creek property.

In anticipation of the revision of the 2005 UMP, the Catskill Watershed Corporation and DEC contracted with Tahawus Trails, and Sinuosity LLC to evaluate opportunities to develop a mountain bike and cross-country ski-trail system on the newly acquired lands on the eastern slopes of Belleayre Mountain traversing both the Shandaken Wild Forest and the Belleayre Mountain Ski Center Intensive Use Area. The "Shandaken- Belleayre Mountain Bike and Cross-Country Ski Trail System Concept Plan" (available for download at: http://www.dec.ny.gov/docs/lands_forests_pdf/shantrlplan.pdf) was presented to the public at the Belleayre Ski Center) A public meeting was held on January 27th, 2018 at the Belleayre Discovery Center Ski Lodge where Tahawus Trails/ Sinuosity presented the conceptual plan and the Department accepted public comments. The Department also accepted written comments on the draft conceptual plan for 30 days for those people who could not attend.

The Tahawus Trails Concept Mountain Bike/Cross-Country Ski Trail Plan proposed an extensive network of trails that would utilize two different land classifications: the Belleayre Intensive Use Area which is managed by the Olympic Regional Development Authority (ORDA) and the Giggle Hollow parcel of the Shandaken Wild Forest (managed by the NYSDEC). The proposed trails that will be discussed in this UMP revision will be limited to the trail proposals on the Giggle Hollow parcel in Shandaken Wild Forest. The trail proposals on the Belleayre Intensive Use area are outside the scope of this unit management plan revision and will be addressed in the Belleayre Intensive Use Area Unit Management Plan by the Olympic Regional Development Authority.

The Department recognizes that there are a number of new connections that will have to be developed between the Belleayre Intensive Use Area and the Giggle Hollow parcel to complete the build out of the trail proposals contained in the Tahawus Trails Conceptual plan.

★ Note: Advanced downhill backcountry skiing opportunities were not included in the Tahawhus Conceptual plan since that style of skiing is generally not considered classic cross-country skiing.

Giggle Hollow Access Points

The primary access point for the Giggle Hollow parcel is the Lost Clove Trailhead. The Pine Hill Day Use area provides secondary, seasonal access to the parcel. The parcel

can also be accessed by Winding Mountain Road and Lasher Road. Winding Mountain Road has no opportunities for parking. However, users can access the parcel from Rochester Hollow by crossing Rt. 28. Additional connections may become possible if the Ulster & Delaware rail corridor is revitalized as a rail trail.

Lasher Rd has an undeveloped pull-off that provides access to the eastern portion of the giggle hollow parcel. Although this area could be developed into an additional parking lot and trailhead, it is an undesirable location due to steep terrain and poor drainage constraints that would be cost prohibitive to correct for recreationists to get to the ridgeline. The steepest terrain on the Giggle Hollow parcel can be found on the eastern edge of the ridgeline where Catskill ledge systems limit the amount of buildable terrain.

Existing Trails Adjacent to the Parcel

The Giggle Hollow trail extends from the Pine Hill Lake/ Belleayre Beach Day Use Area up to the ridgeline where it joins with the Pine Hill West Branch Trail. The uppermost section is suitable and in sustainable condition, but it deteriorates dramatically with its first integration with an adjacent stream. The rough texture of the tread, eroded surface, poor layout and steep alignment make it ill-suited for sustainable or high-quality mountain biking, hiking or cross-country skiing. The giggle hollow trail is part of the Belleayre Intensive Use Area

Pine Hill, West Branch Trail connects the ridgeline down to Woodchuck Hollow Rd. This trail offers a moderate ridge hike spanning five peaks that is long and somewhat strenuous. The northern trailhead is in the Town of Shandaken on Bonnie View Avenue in Pine Hill. The Pine Hill, West Branch Trail is part of the Big Indian Wilderness Unit.

Proposed Projects

- Install a register box at the Lost Clove trailhead
- Identify an area on the height of land on Giggle Hollow to establish and maintain a scenic vista.

The following project proposals do not represent trail alignments flagged in the field. They are conceptual only. The next phase of trail planning involves field locating precise trail alignments, developing construction plans, and then implementing those plans.

Construct the Lost Clove Multiple Use Trail Loops, (3.7 miles total, 1.6 existing, 2.1 new)

The Lost Clove Loops are on the north and south side of the ridge line at the far-eastern edge of the Shandaken Wild Forest parcel.

- The Lost Clove Loop trail starts with two trails (a high and a low trail) which climb steadily from the Lost Clove trailhead along the southern slopes of the Belleayre Ridge. They both integrate sections of existing logging roads suitable for bike and ski travel with sections of new trail to create various loops. The main

connection trails will be constructed as both bike and cross-country ski trails utilizing existing logging roads, where suitable new trail segments for connectivity and to increase suitability in areas. These main connection trails will be intermediate trails with advanced connections along steeper grades.

Trail width will be 4-6” and suitable for cross-country skiing and double track beginner mountain biking and intermediate to advanced cross country skiing.

Construct the Winding Mountain Multiple Use Trail Loops, (Intermediate, 3.7 miles existing)

These trails link the access on Winding Mountain Road to the central trails that traverse the ridgeline.

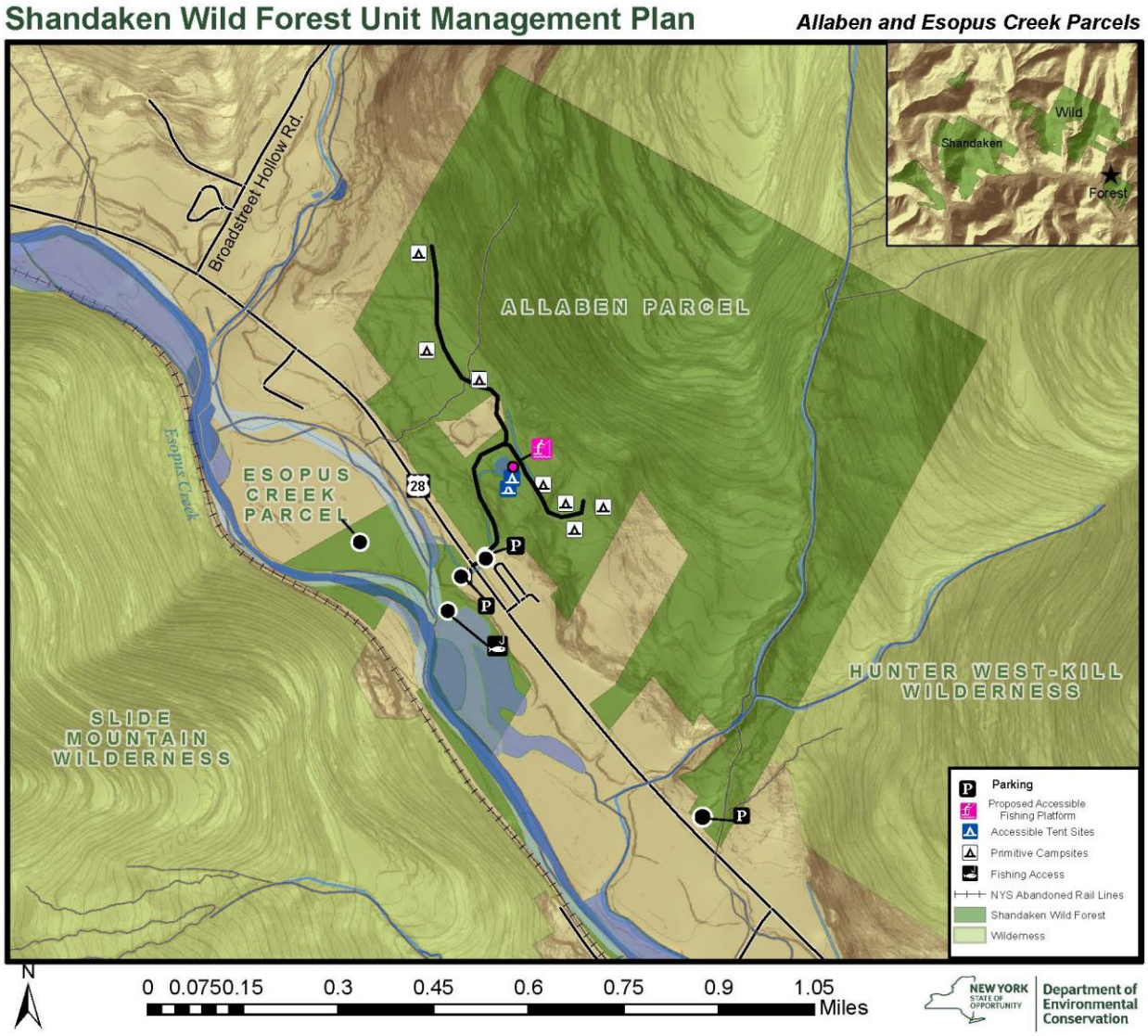
- The Winding Mountain Loop trails will be located on existing wide logging and developed truck trail roads that are suitable for mountain biking and in some areas can be narrowed down to create a single-track experience. With a few exceptions, these are well constructed and in maintainable status, though sections have sustained steeper grades that provide challenge in the uphill direction. Trails will be suitable for intermediate to advanced cross country skiing and mountain biking.

Construct the Pine Hill Multiple Use Connector Trail (2.7 miles total, 1.9 miles new construction double track, .83 miles new construction single track)

The Pine Hill Connector connects the Pine Hill Day Use Area to the Lost Clove Loops at the end of the southern end of the network.

- The Pine Hill Connector trail will be an intermediate trail climbing up from the Pine Hill Day Use Area to the south of Giggle Brook. It will traverse and switchback up the stead slope and be built as a dual direction trail for those interested in accessing the network with the support of the facilities located in this fee-based day use area. It connects with the Winding Mountain Trail Loop Section of the trail system in two places via a connector trail traversing to the east and directly via an uphill more southerly connection. The Pine Hill Connector will be suitable for Intermediate to advanced cross country skiers and mountain bikers.

2. Allaben



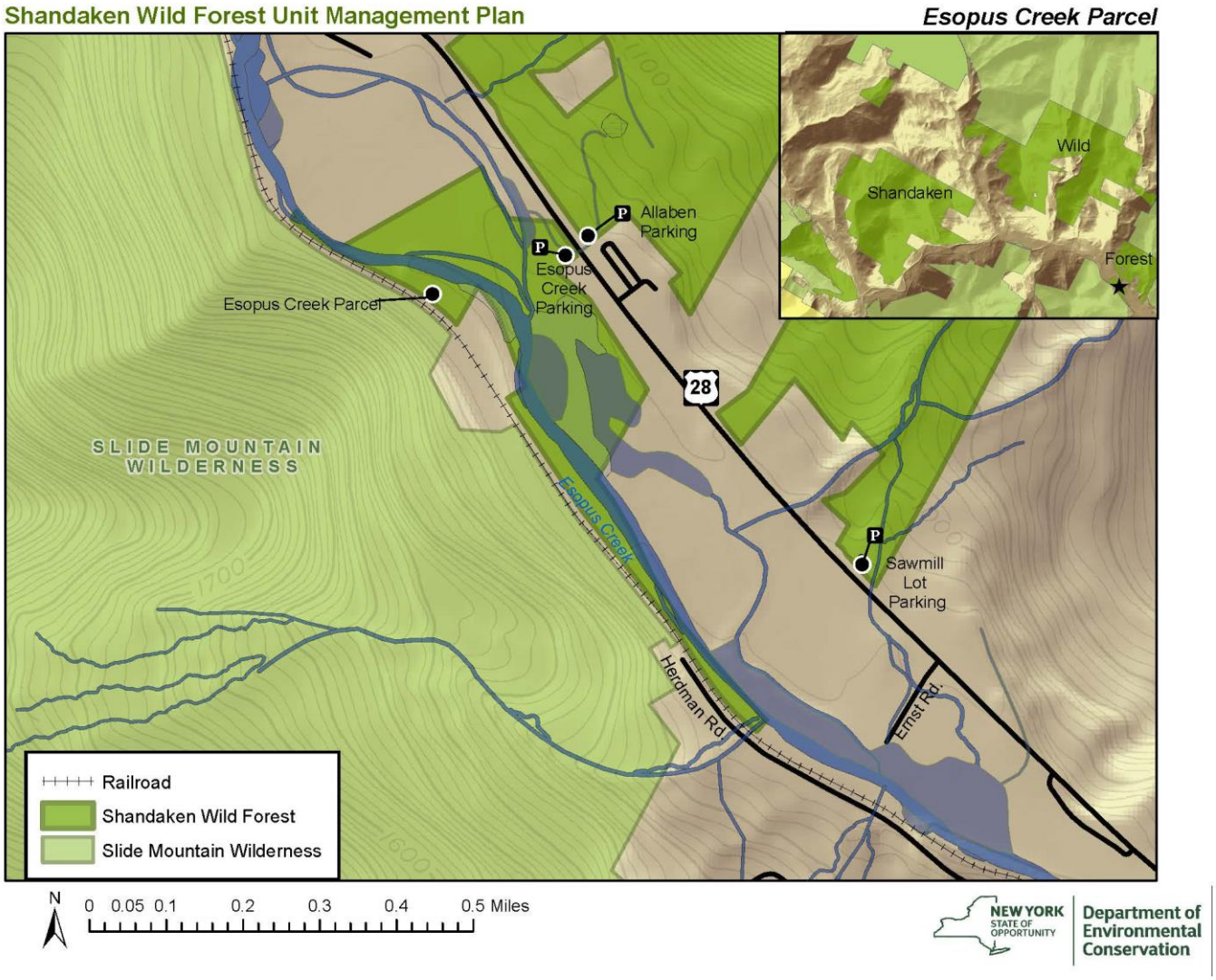
Description

Allaben parcel is a parcel along the north side of New York State Route 28 which also directly abuts the West Kill Mountain Wilderness. It encompasses an area whose previous owner had planned a modest housing development. A road accessing the area and a small pond were constructed before the state purchased most of the development. One lot remains in private ownership. The last parcel is located at the end of Lower Birch Creek Road in Pine Hill and borders Upper Birch Creek Road to the north

Proposed Projects

- Install an accessible fishing platform adjacent to the accessible primitive tent site near the pond on the Allaben parcel.
- Continue to maintain recreational facilities and accessible facilities to Department standards.

3. Esopus Creek



Description

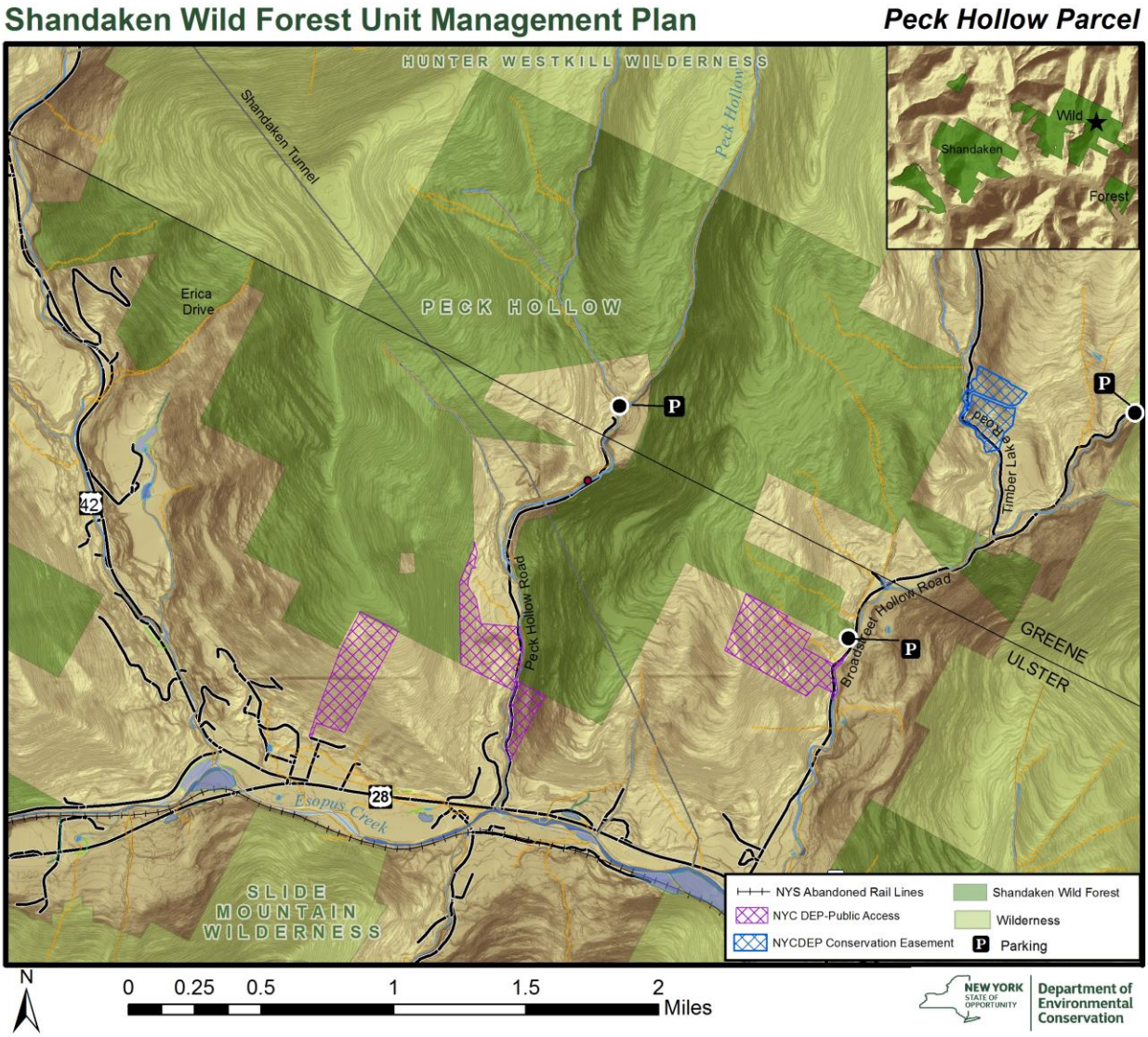
The Esopus Creek parcel is a 46.3 acres parcel located n the Town of Shandaken. This parcel provides fishing and angler opportunities along the Esopus creek. A parking area is located off State Route 28 which provides access to the river. There are no formalized trails on the parcel. A small foot path leads from the existing parking areas to the river.

Proposed projects

- This area is heavily impacted by Japanese knotweed. The current population will be monitored and managed with the goal of eradicating it at this location.

- Esopus creek parking area will be periodically maintained to Department standards.

4. Peck Hollow Parcel



Description

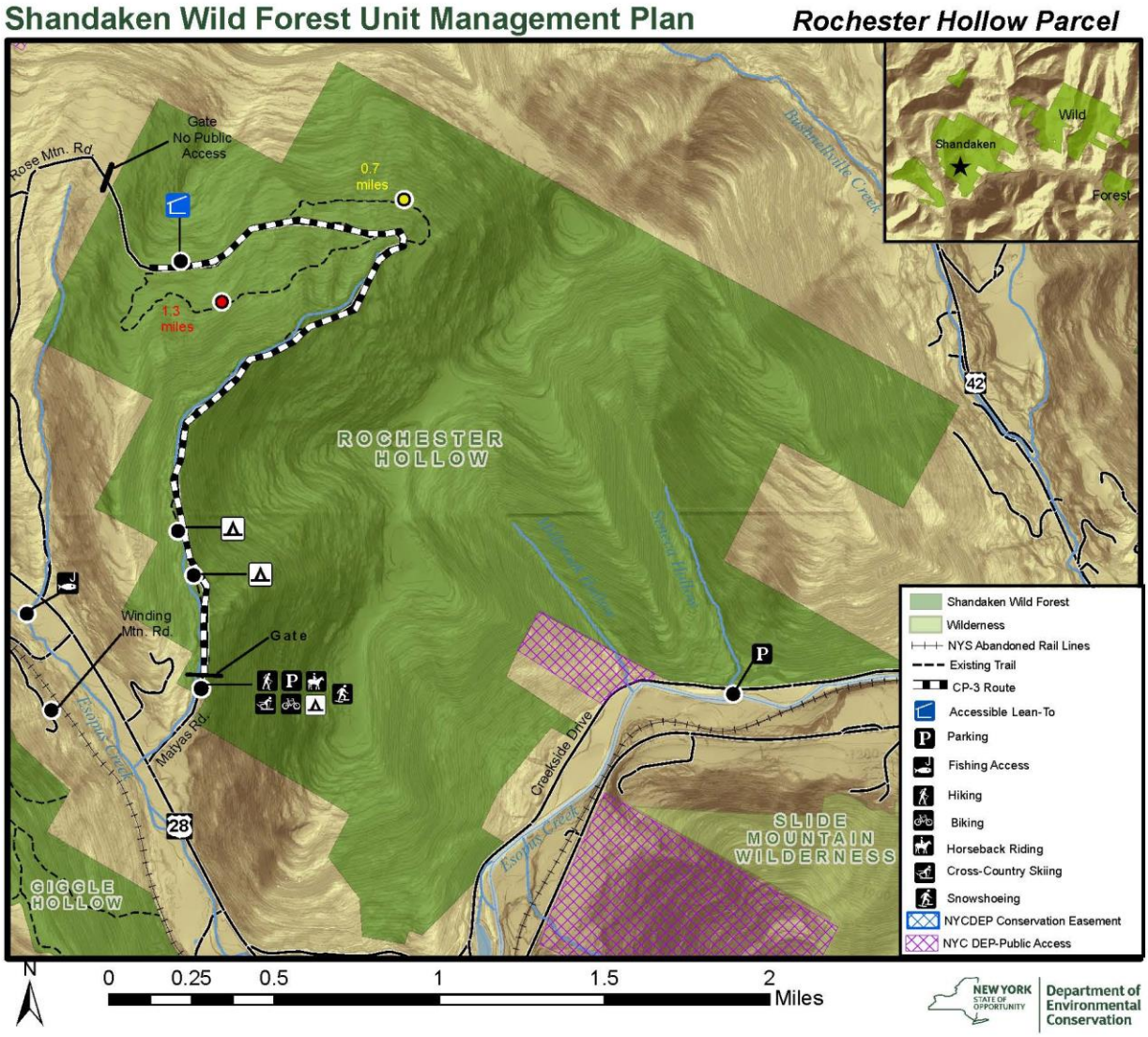
The Peck Hollow parcel includes all Forest Preserve lands east of New York State Route 42, north of New York State Route 28 and west of Broadstreet Hollow Road in Ulster County, as well as lands at the north end of Peck Hollow which provide access to a private inholding on the southern slopes of Mount Sherrill in Greene County. It directly abuts the Hunter West-Kill Mountain Wilderness to the north.

There is a two-three car pull-off/ parking area at the end of Peck Hollow Road that provides access to this parcel.

Proposed Projects

- The peck hollow parcel will be maintained as trail-less to provide opportunities for hunting and wildlife viewing.
- An invertebrate species that has been identified in this area that has unique vegetation requirements. Any populations of garlic mustard in the area pose a threat to this species as they are a suitable egg laying spot but an unsuitable food source for the invertebrate. When resources permit, garlic mustard control measures will be implemented.

5. Rochester Hollow



Description

The Rochester Hollow parcel encompasses Rochester Hollow, Seneca Hollow and the southern slopes of Rose Mountain. This parcel is traversed, in part, by a wood road. This road is a designated CP-3 Route and persons with disabilities. The Department maintains a parking lot at the southern end of this road, on Matyas Road in Big Indian.

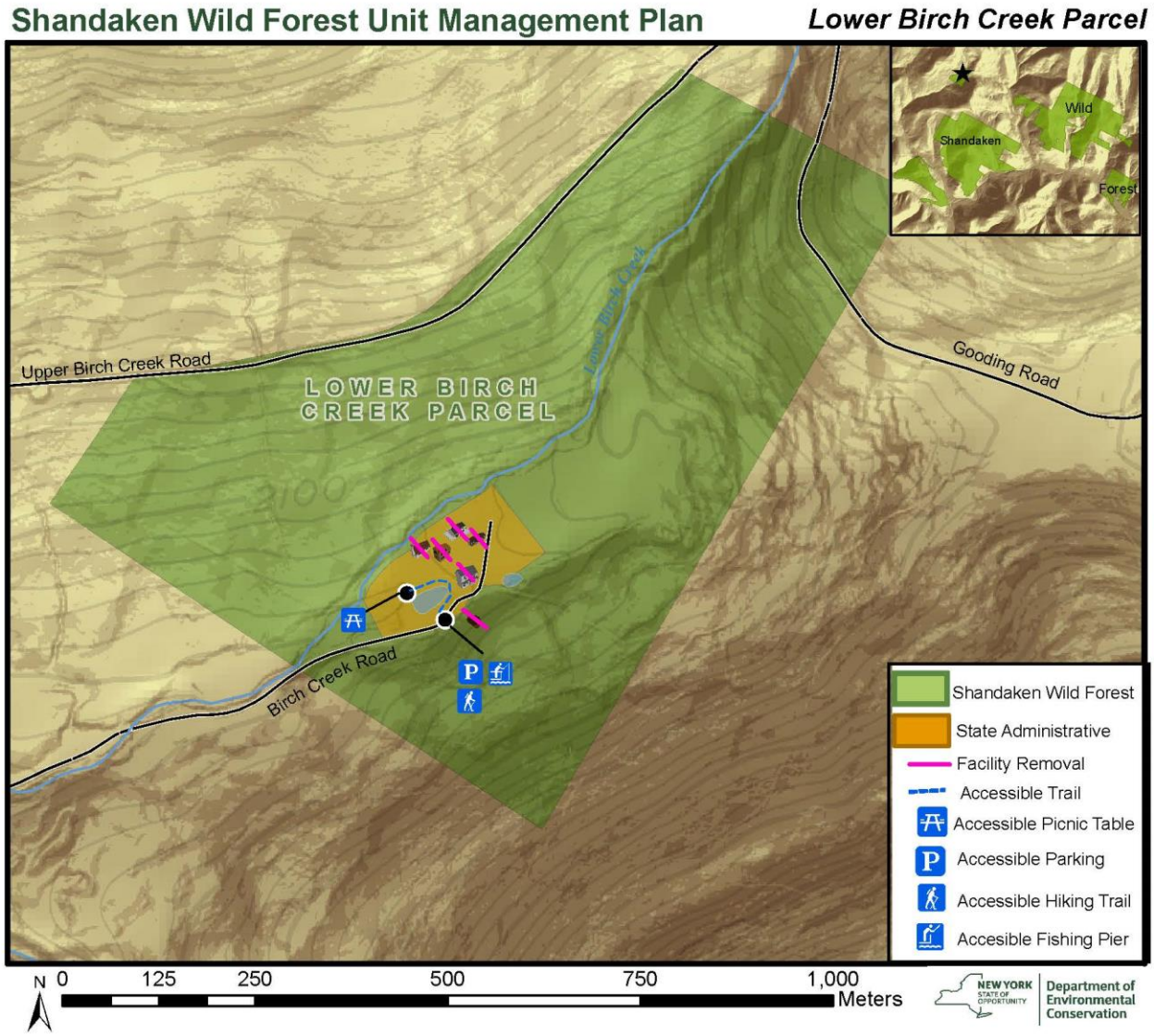
There is a small plantation located at the head of Rochester Hollow on the south slope of Rose Mountain. Here at 2,160 feet elevation is the John Burroughs memorial – a sign with the following inscription: “John Burroughs Forest. Memorial to the beloved Naturalist, Author American of Slabsides to the World. Reforested with his neighbors,

the boys of Raymond Gordon School and to be given their perpetual joyous care under the direction of the New York State Conservation Commission. April 18th, 1921. White and Norway Spruces were planted on an abandoned farm from 2,160 to 2,350 feet. Abandoned farmhouse foundations divide the plantation in to two portions. Many of the spruces were planted too close together and are now growing very slowly, some over-topped by native hardwoods.

Proposed Projects

- The historic Burroughs marker will be repaired. The sign was damaged by a porcupine several years ago. Stone steps will be located to provide clear entrance into and out of the marked area. The stone wall surrounding the marker will be maintained.
- The Rochester Hollow parcel will be maintained at a level allowing for motorized vehicle access for administrative purposes and for persons with disabilities under permit. The maintenance of this road will not be to passenger car standards. This road will be designated as a multi-use cross country ski/ mountain bike/ hiking trail. This trail will not be plowed during periods of snow cover.
- Address the access road issues at the Rochester Hollow parcel as Department resources permit by improving the road from the end of Matyas Road to the Rochester Hollow parking lot to make the road more sustainable and accessible to the public.
- Continually re-assess the need for a port-a-john at the Rochester Hollow trailhead parking area. Provide if necessary.
- Address the drainage problems on the Rochester Hollow trail and maintain and when necessary, replace culverts.
- Assess the need to provide pit privies at the designated campsites in close proximity to the water. Provide if necessary.
- The first campsite is relatively accessible to car/ casual campers, quite attractive to larger groups, immediately on the stream, highly compacted and quite visible to the trail. Consider rehabilitating the 1st stream site primitive tent site and create an additional primitive tent site that is in a more suitable location further from the stream.

6. Lower Birch Creek



Description

The Lower Birch Creek Parcel is located at the end of Lower Birch Creek Road in Pine Hill and borders Upper Birch Creek Road to the north. This parcel known as the estate of Dr. Otto Reisser, has an old farmhouse and barn, along with several buildings. At the time the 2005 UMP was written, the Lower Birch Creek Road building complex was used as a trail crew headquarters for workers performing back country trail maintenance under contract. The buildings were utilized by Department work crews prefabricating Adirondack style log lean-tos for future installation in remote forest preserve settings. Because of this site's suitability for these and other administrative tasks, At the time, the Department classified the Lower Birch Creek Road building as an Administrative Area.

The Bureau of Fisheries inventoried the ponds located on the Lower Birch Creek Road parcel utilizing electrofishing in May 2001 which yielded the following results:

The upper pond has an abundant brook trout population that appears to be self-sustaining. However, this pond is very small (0.14 acres) and only a few feet deep, limiting the potential of a trout population. Due to the small size and shallow depth of this pond, the trout population is susceptible to predation and fishing.

The lower pond is approximately 0.46 acres in size with depths reaching ten feet. Despite the likelihood that brook trout from the upper pond recruit to the lower pond, few were found during electrofishing. Discussions with anglers confirmed that some brown trout may also exist in the pond. It is likely that brook trout would do well in this pond, however, several factors may be limiting their success. Currently, brown trout may be immigrating to the lower pond via the same spillway, competing with the brook trout.

To improve the lower ponds' potential for retaining brook trout, the following will be installed:

- A fish barrier will be installed at the outlet of the pond to prevent the emigration of brook trout out of the pond. In addition, this barrier will also prevent the potential immigration of brown trout into the pond, limiting the competition between the brook trout and the brown trout.
- A small spawning box will be installed in the lower pond to increase spawning and improve the chances of egg survival of the book trout. The box will be located to provide an adequate environment for spawning while minimizing the potential for vandalism.
- Additional restrictions may be necessary for the ponds on the Lower Birch Creek Road parcel to accommodate the demands the public may have on the resource.

The current fishing regulations for trout calls for an open season from April 1- October 15 with a daily limit of five with no size limit. To encourage voluntary catch and release of trout from the ponds and streams located on the Lower Birch Creek Road parcel, signs may be posted at the kiosk (information board) and possibly near the time because current fishing pressure does not appear to warrant it. Such a regulation may bring unnecessary attention to such a small resource and prove counterproductive.

Proposed Projects

- The condition of the six buildings in the Lower Birch Creek State Administrative Area have considerably deteriorated since the adoption of the 2005 UMP (See Appendix F). The Department has determined that these structures are a public safety hazard and would be cost prohibitive to restore. The buildings will be incrementally removed as Department resources become available.
- The dam on the Lower Birch Creek pond will be improved and maintained to sustain the depth of the pond for the small trout population.

V. Status of Projects and Action Steps from 2005 UMP

Phase I. Projects & Approved Action Steps	PROJECT STATUS
1. Create an Administrative Use Area at Lower Birch Creek Rd.	DONE
2.Install gate on Lower Birch Creek Road parcel	DONE
3. Install accessible pit privy/port-a-john on Lower Birch Creek Road parcel for eight (8) months a year. (Installed in spring 2002 and is continuing on an annual basis in conformance with ADA settlement).	DONE
4. Erect an information board at the Lower Birch Creek.	DONE
5. Develop accessible fishing platform at the Lower Birch Creek Road parcel.	DONE
6. Construct and install two (2) accessible picnic tables on the Lower Birch Creek Road parcel	DONE
7. Construct a six (6) car parking area on the Lower Birch Creek Road parcel. Two parking spaces will be improved to meet accessibility guidelines and designated (Completed summer 2004)	DONE
8. Rehabilitate Allaben Access Road.	CONTINUED
9. Construct and install two (2) accessible campsites on the Allaben parcel including accessible paths to each site.	DONE
10.Construct and install two (2) accessible campsites on the Allaben parcel. One at each campsite. (Completed summer 2004).	DONE
11. Install accessible pit privy/port-a-john on the Allaben parcel for eight (8) months per year. (Installed in the Spring of 2002 and is continuing on an annual basis in conformance with the ADA settlement).	DONE
12. Construct an information board at the Allaben access road	DONE
13. Designate the Rochester Hollow Road for motor vehicle access by persons with disabilities who possess a valid permit from the DEC.	DONE
14. Designate and mark the Rochester Hollow Trail as a	DONE

cross country ski/mountain bike/ hiking trail.	
15. Erect and information board in Rochester Hollow (Matyas Road) parking area. (Installed 2002).	DONE
16.Rochester Hollow road maintenance.	DONE
17. Lower Birch Creek Road Administrative Use Area maintenance.	CONTINUED
18.Parking area maintenance including snow plowing.	CONTINUED
19.Boundary line maintenance- 5.5 miles/year @$300 per mile.	CONTINUED
20. Print Shandaken Wild Forest brochure	DONE?
21. Gather baseline campsite data.	NOT COMPLETE
22. Install, signs/ designate and sign group campsites/maintenance	DONE

Phase II. Projects & Approved Action Steps	PROJECT STATUS
1. Construct an accessible Adirondack style lean-to and pit privy in Rochester Hollow.	DONE
2. Establish a two (2) mile cross country ski/ mountain bike trail in Rochester Hollow.	DONE
3. Enlarge Matyas Road parking to 10 cars.	DONE
4. Replace/ repair Burroughs plaque in Rochester Hollow	DONE
5. Install accessible pit privy/ port a john on the Allaben parcel for eight (8) months per year.	DONE
6. Install accessible pit privy/ port-a-john on the Lower Birch Creek Road parcel for eight (8) months per year.	DONE
7. Allaben access road maintenance.	CONTINUED
8. Rochester Hollow road maintenance.	CONTINUED
9. Lower Birch Creek Road Administrative Use Area maintenance.	CONTINUED
10.Parking area maintenance including snow plowing.	DONE
11.Boundary line maintenance- 5.5 miles/ year @ $300 per mile.	CONTINUED
12. Print a Shandaken Wild Forest brochure.	NOT DONE

Phase III. Projects & Approved Action Steps	PROJECT STATUS
1. Define parking area east of Allaben cemetery- "Sawmill Lot". Brush back, gravel and define with boulders. Erect sign.	DONE
2. Install accessible pit privy/ port-a-john on the Allaben parcel for eight (8) months per year.	CONTINUED
3. Install accessible pit privy/ port-a-john on the Lower Birch Creek Road parcel for eight (8) months per year.	CONTINUED
4. Install gate at the back of Peck Hollow parking area.	DONE
5. Allaben access road maintenance.	CONTINUED
6. Rochester Hollow Road maintenance.	CONTINUED
7. Lower Birch Creek Road Administrative Use Are maintenance.	CONTINUED
8. Parking area maintenance including snow plowing.	CONTINUED
9. Boundary line maintenance 5.5 miles/year @$300/ mile	CONTINUED
10.Print a Shandaken Wild Forest brochure	DONE
11. Re-survey campsites for comparison with year 1 data.	NOT COMPLETE

Phase IV. Projects & Approved Action Steps	PROJECT STATUS
1. Install accessible pit privy/ port-a-john on the Lower Birch Creek Road parcel for eight (8) months per year.	CONTINUED
2. Install accessible pit privy/ port-a-john on the Allaben parcel for eight (8) months per year.	CONTINUED
3. Remove dump remains in Broad Street Hollow.	NOT DONE
4. Construct a two-car parking area at Broad Street Hollow.	NOT DONE
5. Erect an information board in Peck Hollow parking area.	CONTINUED
6. Allaben access and road maintenance.	CONTINUED
7. Rochester Hollow access and road maintenance.	CONTINUED
8. Lower Birch Creek Road Administrative Use Area maintenance.	CONTINUED
9. Parking area maintenance including snowplowing.	CONTINUED
10. Boundary line maintenance -5.5 miles/year@ $300/mile	CONTINUED
11. Print a Shandaken Wild Forest Brochure	NOT DONE

Phase V. Projects & Approved Action Steps	PROJECT STATUS
1. Install accessible pit privy/ port-a-john on the Lower Birch Creek Road parcel for eight (8) months per year.	CONTINUED
2. Allaben access and Road maintenance	CONTINUED
3. Rochester Hollow access road maintenance	CONTINUED
4. Lower Birch Creek Road Administrative Use Area maintenance	CONTINUED
5. Parking area maintenance including snow plowing	CONTINUED
6. Boundary line maintenance-5.5 miles/year @ $300/mile	CONTINUED
7. Print Shandaken Wild Forest brochure	CONTINUED
8. Re-survey campsites for comparison with year 1 data.	NOT DONE

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VI. Phased Implementation and Estimated Budget for 2020 Management Proposals

The following three phases of implementation appear in priority order. Phase One lists the projects/ activities likely to be undertaken first (given adequate allocation of time and resources). However, the phases are not iterative, in that not all projects/ activities in Phase 1 need to be completed prior to completing something in one of the later phases. Action Steps that are indeed dependent or conditional upon one another are described as such and accounted for in this phasing plan.

The phased approach acknowledges that completion of a facility and subsequent use will determine the future of that facility and the future of any other associated or dependent facility. If use level, user experience, or natural resource conditions are not optimized, then facilities may need to be closed or rehabilitated.

Annual Maintenance and Other Activities	Estimated	
	Person Days	Cost
Develop a monitoring plan including indicators and standards for natural resource and social conditions. Develop and implement (throughout all phases) action steps that may be triggered by exceedance of standards, as identified through the monitoring process.	30	
Inventory conditions of existing facilities throughout the unit. Implement action steps where necessary to protect natural resource integrity and desired social conditions.	12	
Conduct routine maintenance of all facilities	15	$3,000
Boundary Line Maintenance (About 6 Miles/year @ $500/ mile)	10	$500

Phase 1	Estimated	
	Person Days	Cost
Remove buildings and debris from the Lower Birch Creek parcel as Department resources become available. 6 buildings in total will be removed due to the public safety hazard that they present in their current condition. Allow the Lower Birch Creek area to revert to its natural state.	15	$250,000
Improve the existing Winding Mountain Multiple Use Loop trails on the Giggle Hollow parcel and mark with trail markers. The winding mtn loop trails will be multi-use trails open to hiking, biking and cross-country skiing.	17.5	$72,000
Monitor the Japanese knotweed population on the Esopus Creek parcel. If time and resources allow, control measures will be put in place.	5	$1,000
Install a register box at the Lost Clove parking area	1	$500

Phase 2	Estimated	
	Person Days	Cost
Assess the use of the Winding Mountain Multiple Loops trail network. Address any resource impacts that may develop as a result of recreational use in accordance with the monitoring plan.	5	$20,505
Construct new sections of trail on the Lost Clove Multi Use Loops network on the Giggle Hollow parcel. Mark and designate the loop system following trail construction and improvement. The Lost Clove loop network will consist of multi-use trails that can be used by hikers, bikers and cross country skiers.	17.5	$72,000
Identify a location to maintain a scenic vista on the ridge line of the Giggle Hollow parcel along a section of the Winding Mtn Loop trail network.	2	$250
Continue to monitor the Japanese knotweed population on the Esopus Creek parcel.	5	$1,000
Construct accessible fishing platform on the pond at Allaben to provide the public with additional accessible fishing opportunities in an area where accessible facilities already exist.	10	$20,000

Phase 3	Estimated	
	Person Days	Cost
Assess the use and condition of the Winding Mountain Multi Use loop trail network and the Lost Clove Multi Use loop trail network and rehabilitate areas in need of improvement.	5	$20,505
Construct Pine Hill Multi-Use Connector Trail Network	15.5	$52,000
Continue to monitor the Japanese Knotweed infestation on the Esopus Creek parcel.	5	$1,000
Assess the use of the trail network build-out to this point. Address any resource impacts that may develop as a result of recreational use in accordance with the monitoring plan.	5	$20,505

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VIII. Bibliography and References

Chambers, Robert. E., Integrating Timber and Wildlife Management, State University of New York College of Environmental Science and Forestry, Syracuse, New York, 1983.

Evers, Alf. The Catskills – From Wilderness to Woodstock, 1972.

Hendee, John C., George H. Stankey and Robert C. Lucas. Wilderness Management, 2nd edition, Fulcrum Publishing, Golden, CO, 1990.

New York State Department of Environmental Conservation. Unit Management Plans: Slide Mountain Wilderness Area (1998 Revision), Westkill Wilderness Area Draft (2000), Halcott Mountain Wild Forest (2001).

New York State Department of Environmental Conservation. Catskill Park State Land Master Plan, 2008.

New York State Department of Environmental Conservation. Catskill Forest Preserve Access Plan, 1999.

Ulen & Company. The Shandaken Tunnel, May, 1923.

U.S.D.A. Soil Survey of Greene County, New York, 1993.

U.S.D.A. Soil Survey of Ulster County, New York, 1979.

NYS Open Space Plan 2016… should be referenced

2015 State Wildlife Action plan…. Should be referenced at some point

The Second Atlas of Breeding Birds in New York State, edited by Kevin J. McGowan and Kimberley Corwin, was released in December 2008…

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APPENDICES

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Appendix A – Administration

The Shandaken Wild Forest has several management challenges which call for a cohesive effort on behalf of all Department staff to effectively manage these lands. Management of the area is dependent on adequate staffing and funding to be effective. Adequate staff is necessary not only for the Division of Lands and Forests who are directly responsible for the management of the resource, but also Forest Ranger staff for enforcement, Operations staff for completing the work projects and the Division of Fish, Wildlife and Marine Resources to and assist with wildlife related issues such as endangered species and game animal management.

Implementation of this plan will likely require an increase in present staffing. Because of the heavy use in popular areas, additional patrols by Forest Rangers are required. Current staffing is inadequate to handle the areas that are heavily trafficked without adversely affecting patrols in other areas. As a result of the various improvements proposed in this plan, public use of many areas is likely to increase. Controls such as barriers and signs help but are not a substitute for additional enforcement, maintenance and management.

The administration of Forest Preserve land and State Forest land is the responsibility of the Division of Lands and Forests within the Department. The responsibility for the enforcement of Department rules and regulations lies with the Office of Public Protection. The Division of Operations conducts interior construction, maintenance, rehabilitation projects. The Bureau of Recreation within the Division of Operations operates and manages the public campgrounds adjacent to the unit. The Division of Fish, Wildlife and Marine Resources manages the state's fish and wildlife resources.

Administration of Shandaken Wild Forest is shared by several programs within the Department. Within the context of these lands, Department programs fill the following functions:

The **Division of Lands and Forests** acquires and maintains land for public use, manages the Forest Preserve lands, promotes responsible use of public lands and provides educational information regarding the use of the Forest Preserve.

The **Division of Fish and Wildlife** protects and manages fish and wildlife species, provides for public use and enjoyment of natural resources, stocks freshwater fish, licenses fishing, hunting and trapping, protects and restores habitat, and provides public fishing, hunting and trapping access.

The **Natural Heritage Program** enables and enhances conservation of New York's rare animals, rare plants, and significant ecosystems. Field inventories, scientific analyses, expert interpretation, result in the most comprehensive database on New York's

distinctive biodiversity which provides quality information for natural resources planning, protection, and management.

The **Division of Water** protects water quality in lakes and rivers by monitoring waterbodies and controlling surface runoff.

The **Division of Air Resources** regulates, permits, and monitors sources of air pollution, forecasts ozone and stagnation events, educates the public about reducing air pollution and researches atmospheric dynamics, pollution and emission sources.

The **Division of Operations** designs, builds and maintains Department facilities and infrastructure, operates Department Campgrounds and day-use facilities and maintains trails and lean-tos.

The **Division of Public Affairs and Education** is the public communication wing of the Department. The Division communicates with the public, promotes citizen participation in the UMP process, produces, edits and designs Department publications.

The **Division of Law Enforcement** is responsible for enforcing of New York's Environmental Conservation Law throughout the State. A focus has been laws relating to hunting, fishing, trapping, license requirements, endangered species, possession, transportation and sale of fish and wildlife, trespass, and damage to property by hunters and fishermen.

The **Forest Ranger Division** is responsible for the preservation, protection, and enhancement of the State's forest resources, and the safety and well-being of the public using those resources. Forest Rangers are the stewards of the Forest Preserve and State Forest lands and are the primary public contact for the SWF and VKSF and responsible for fire control and search and rescue functions. Forest Rangers are police officers and are the primary law enforcement service for State Lands.

Appendix B – State Environmental Quality Review

The State Environmental Quality Review Act requires that all agencies determine whether the actions that they undertake may have a significant impact on the environment. The intent of the legislation is to avoid or minimize adverse impact on the resource. The guidelines established in the CPSLMP for developing unit management plans express these same concerns. Any development within the SWF presented in the plan must take into consideration environmental factors to ensure that such development does not degrade the environment. The overall intent of this UMP is to identify mitigating measures to avoid or minimize significant adverse environmental impacts to the natural resources of the State within the unit. Any reconstruction or development within the confines of this unit will take environmental factors into account to ensure that such development does not degrade the resource.

SEQRA requires the consideration of environmental factors early in the planning stages of any proposed action(s) that are undertaken, funded or approved by a local, regional or state agency. A Long Environmental Assessment Form (LEAF) is used to identify and analyze relevant areas of environmental concern based upon the Action Steps in the draft UMP.

As required by SEQRA, during the planning process a range of alternatives were formulated to evaluate possible management approaches for dealing with certain issues or problem locations. Department staff considered the no-action and other reasonable alternatives whenever possible. Potential environmental impacts, resource protection, visitor safety, visitor use and enjoyment of natural resources, user conflicts, interests of local communities and groups, as well as short and long term cost effectiveness were important considerations in the selection of proposed actions. Efforts were made to justify reasons for the proposals throughout the body of the UMP so that the public can clearly understand the issues and the rationale of decision-making.

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Appendix C – Glossary

As used in this plan, the following terms shall have the following meanings:

1. Aircraft - a device for transporting personnel or material that travels through the air and is propelled by a non-living power source contained on or within the device.
2. All Terrain Bicycle - a non-motorized bicycle designed or used for cross-country travel on unimproved roads or trails.
3. All-Terrain Vehicle - a motorized vehicle designed or used for cross-country travel on unimproved roads or trails. The term includes jeeps or other 4-wheel drive automobiles, dirt or trail bikes and all forms of "ATVs", "ATCs", and "ORVs", but excludes snowmobiles.
4. Campground - a concentrated, developed camping area with controlled access, which is designed to accommodate a significant number of overnight visitors and may incorporate associated day-use facilities, such as picnicking.
5. Campsite - a specific location where an individual tent, trailer or other vehicle suitable for overnight accommodation may be set up. Included are individual sites within a campground and sites found at various locations within Wilderness and Wild Forest areas. Within a campground, they are specifically designated; outside a campground they may or may not be designated.
6. Cross-Country Ski Trail - a marked and maintained path or way for cross country ski or snowshoe travel, which has the same dimensions and character and may also serve as a foot trail, designed to provide reasonable access in a manner causing the least effect on the surrounding environment and not constructed, maintained or groomed with the use of motor vehicles.
7. Fire Ring - a temporary cluster of rocks designed to contain and control campfires which may contain, in fire sensitive areas, a cement slab.
8. Fish Barrier Dam - a man-made device or structure used to prevent the upstream or downstream migration of fish for protecting a high-value fishery or population of fish indigenous to the protected body of water.
9. Foot Trail - a marked and maintained path or way for foot travel located and designed to provide for reasonable access in a manner causing the least effect on the surrounding environment.
10. Horse Barn - a rustic structure, open on at least 2 sides, designed to provide temporary shelter for a small number of horses.
11. Horse Trail - a path marked and maintained for travel by horses, located and designed to provide reasonable access in a manner causing the least effect on the local environment.
12. Improvement - any changes in or addition to land that materially affects the existing use, condition or appearance of the land or any vegetation on it. These include but are not limited to foot and horse trails, roads, jeep trails, State trucks trails, snowmobile trails, trail heads, picnic areas and campsites.

13. Lean-to - an open front shelter made of natural materials suitable for temporary or transient residence, constructed according to a standard Department of Environmental Conservation plan and located so as to provide shelter in a manner least intrusive on the surrounding environment.
14. Motor Vehicle - a device for transporting personnel, supplies or material that uses a motor or an engine of any type for propulsion and has wheels, tracks, skids, skis, air cushion or other contrivance for traveling on or adjacent to; air, land and water or through water. The term includes such vehicles as automobiles, trucks, jeeps, motorbikes, all-terrain vehicles, duffle carriers, snowcats, bulldozers and other earth moving equipment and motorboats, but does not include snowmobiles.
15. Motorboat - a device for transporting personnel or material that travels over, on or under the water and is propelled by a non-living power source on or within the device.
16. Motorized Equipment - machines not designed for transporting personnel, supplies or material, that use a motor, engine or other non-living power source to accomplish a task. The term includes such machines as chain saws, brush saws, rotary or other mowers, rock drills, cement mixers and generators.
17. Natural Materials - construction components drawn from the immediate project site or materials brought into the construction site that conform in size, shape and physical characteristics to those naturally present in the vicinity of the project site. Such materials include stone, logs and sawn and treated timber. Natural materials may be fastened or anchored by use of bolts, nails, spikes or similar means.
18. Non-conforming Use - any structure, improvement or human use that does not comply with the guidelines specified in the master plan for the land classification where it exists or would take place.
19. Primitive Tent Site - a designated tent site of an undeveloped character providing space for not more than 3 tents, which may have an associated pit privy and fire ring, designed to accommodate a maximum of 9 people on a temporary transient basis and located so as to accommodate the need for shelter in a manner least obtrusive on the surrounding environment.
20. Ranger Stations or Ranger Cabins - enclosed buildings built or maintained by the Department of Environmental Conservation suitable for human habitation or occupied seasonally or year-round by administrative personnel to help administer lands and public use under the jurisdiction of the department.
21. River - any section, portion, or tributary of a flowing body of water, including a river, stream, creek, run, kill, rill, branch or lake.
22. River Area - a river and its immediate surroundings, including river banks and the land on both sides of the river.
23. Road - an improved way designed for travel by motor vehicles and either maintained by a state agency or a local government and open to the general public; and either maintained by private persons or corporations primarily for private use but which may also be partly or completely open to the general public for all or a segment thereof; or maintained by the Department of Environmental

Conservation and open to the public on a discretionary basis; or maintained by the Department of Environmental Conservation for administrative use only.

24. Snowmobile - motorized vehicle designed primarily to travel on snow or ice by means of skis, skids, tracks or other devices. It is specifically excluded from the definition of "motor vehicles" in Title 6NYCRR and the Vehicle and Traffic Law
25. Snowmobile Trail - a marked trail designed by the Department of Environmental Conservation on which snowmobiles are allowed to travel when it is covered by snow or ice.
26. State Truck Trail - an improved way maintained by the Department of Environmental Conservation for the principal purpose of facilitating administration of State lands or to allow access for firefighting equipment and not normally open to the public for use by motorized vehicles.
27. Structure - any object constructed, installed or placed on land to facilitate its use, including but not limited to bridges, buildings, ranger stations or ranger cabins, sheds, lean-tos, pit privies, picnic tables, horse barns, horse hitching posts and rails, fire towers, observer cabins, telephone and electric light lines, mobile homes, campers, trailers, signs, docks, dams and stream improvement structures.
28. Trail Head - a point of entrance to state land which may contain some or all the following: vehicle parking, trail signs and peripheral visitor registration structure.

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Appendix D – Wildlife

New York State Breeding Bird Atlas

The enclosed data from the New York State Breeding Bird Atlas represents a cumulative effort from 200-2005. These data are the result of on-site surveys within each block conducted by numerous volunteers. The intensity level and effort vary throughout the State. Some blocks have been more thoroughly searched than others. For these reasons, we cannot provide a definitive statement concerning the absence of a breeding record for a species not listed in a block. We can only provide a listing of species known to be breeding or suspected of breeding in each block.

Atlas block boundaries can be identified by the New York Traverse Mercator (NYTM) grid, a modification of the Universal Traverse Meracator (UTM) grid. These coordinates correspond to tick marks found on United States Geological Survey (USGS) and New York State Department of Transportation (NYSDOT) 7.5' quadrangles. In New York west of 78 degrees longtitude and in extreme eastern Long Island, east of 72 degrees longtitude (Montauk Point and Mystic quadrangles) the NYTM grid differs from the UTM grid. In these areas tick marks are accurate on the NYS DOT quadrangles.

New York State Breeding Bird Atlas Species Status

Bird species associated with boreal forest as recorded by New York State Breeding Bird Atlas projects (1980-1985 and 2000-2005) occurring in atlas blocks within or partially within the SWF.

Common Name	Scientific Name	NY Legal Status
Osprey	*Pandion haliaetus*	Protected-Special Concern
Ring-necked Pheasant	*Phasianus colchicus*	Game Species
Canada Goose	*Branata Canadensis*	Game Species
Ruffed Grouse	*Bonasa umbellus*	Game Species
Common Merganser	*Mergus merganser*	Game Species
Wood Duck	*Aix sponse*	Game Species
Wild Turkey	*Meleagris gallopavo*	Game Species
Great Blue Heron	*Ardea herodias*	Protected
Turkey Vulture	*Cathartes aura*	Protected
Sharp-shinned Hawk	*Accipiter striatus*	Protected-Special Concern
Coopers Hawk	*Accipter cooperii*	Protected-Special Concern
Broad-winged Hawk	*Buteo platypterus*	Protected
Red-tailed Hawk	*Buteo jamaicensis*	Protected
Killdeer	*Charadrius vociferous*	Protected

Common Name	Scientific Name	NY Legal Status
American Woodcock	*Scolopax minor*	Game Species
Rock Pidgeon	*Columbia livia*	Unprotected
Mourning Dove	*Zenaida macroura*	Protected
Yellow billed Cuckoo	*Coccyzus ameicanus*	Protected
Black-billed Cuckoo	*Coccyzus erythrpthalmus*	Protected
Barred Owl	*Strix varia*	Protected
Chimney Swift	*Chaetura pelagica*	Protected
Ruby-throated Hummingbird	*Archilochus colubris*	Protected
Belted Kingfisher	*Megaceryle alcyon*	Protected
Yellow-bellied Sapsucker	*Sphyrapicus varius*	Protected
Pileated Woodpecker	*Dryocopus pileatus*	Protected
Downy Woodpecker	*Picoides pubescens*	Protected
Northern Flicker	*Colaptes auratus*	Protected
Eastern Wood- Pewee	*Contopus virens*	Protected
Least Flycatcher	*Empidonax minimus*	Protected
Acadian Flycatcher	*Empidonax virescens*	Protected
Alder Flycatcher	*Empidonax alnorum*	Protected
Great Crested Flycatcher	*Myiarchus crinitus*	Protected
Eastern Phoebe	*Sayornis phoebe*	Protected
Eastern Kingbird	*Tyrannus tyrannus*	Protected
Blue-headed Vireo	*Vireo solatarius*	Protected
Red-eyed Vireo	*Vireo olivaceus*	Protected
Yellow Throated Vireo	*Vireo flavifrons*	Protected
Warbling Vireo	*Vireo gilvus*	Protected
Blue Jay	*Cyanocitta cristata*	Protected
Common Raven	*Corvus coraz*	Protected
American Crow	*Corvus brchyrhynchos*	Game Species
Tree Swallow	*Tachycineta bicolor*	Protected
Barn Swallow	*Hirundo rustica*	Protected
Cliff Swallow	*Petrochelidon pyrrhonota*	Protected
Black Capped Chickadee	*Poecile atricapillus*	Protected
Tufted Titmouse	*Baeolophus bicolor*	Protected
White-breasted Nuthatch	*Sitta carolinensis*	Protected
House Wren	*Trogoldytes aedon*	Protected
Winter Wren	*Troglodytes troglodytes*	Protected
Brown Creeper	*Certhia Americana*	Protected
Blue-gray Gnatcatcher	*Polioptila caerulea*	Protected
Golden Crowned Kinglet	*Regulus satrapa*	Protected
Eastern Bluebird	*Sialia sialis*	Protected
Veery	*Catharus fuscenses*	Protected
Swainson's Thrush	*Catharus ustulatus*	Protected
Hermit Thrush	*Catharus guttatus*	Protected
Wood Thrush	*Hylocichla mustelina*	Protected
American Robin	*Turdus migratorius*	Protected
Gray Catbird	*Dumetella carolinensis*	Protected
Brown Thrasher	*Toxostoma rufum*	Protected
European Starling	*Sturnus vulgaris*	Protected

Common Name	Scientific Name	NY Legal Status
Cedar Waxwing	*Bombycilla cedrorum*	Protected
Nashville Warbler	*Vernicora ruficapilla*	Protected
Yellow Warbler	*Dendroica petechia*	Protected
Chestnut-sided Warbler	*Dendroica pensylvanica*	Protected
Magnolia Warbler	*Dendroica magnolia*	Protected
Black-throated Green Warbler	*Dendroica virens*	Protected
Black-throated Blue Warbler	*Dendroica caerulescens*	Protected
Blackburnian Warbler	*Dendroica fusca*	Protected
Black-and-white Warbler	*Mniotilta varia*	Protected
Yellow Rumped Warbler	*Dendroica coronate*	Protected
American Redstart	*Setophaga ruticilla*	Protected
Ovenbird	*Seiurus aurocapilla*	Protected
Louisiana Waterthrush	*Seirus motacilla*	Protected
Mourning Warbler	*Opornornis Philadelphia*	Protected
Canada Warbler	*Wilsonia Canadensis*	Protected
Common Yellowthroat	*Geothlypis trichas*	Protected
Eastern Towhee	*Piplio erythrophthalmus*	Protected
Chipping Sparrow	*Spizella passerine*	Protected
Field Sparrow	*Spizella pusilla*	Protected
Savannah Sparrow	*Passerculus sandwichensis*	Protected
White throated Sparrow	*Zonotrichia albicollis*	Protected
Song Sparrow	*Melospiza melodia*	Protected
Spotted Sandpiper	*Actitis macularius*	Protected
Dark-eyed Junco	*Junco hyemalis*	Protected
Scarlet Tanager	*Piranga olivacea*	Protected
Rose breasted Grosbeak	*Pheucticus ludovicianus*	Protected
Indigo Bunting	*Passerina cyanea*	Protected
Red-winged Blackbird	*Agelaius phoeniceus*	Protected
Common Grackle	*Quiscalus quiscula*	Protected
Brown Headed Cowbird	*Molothus ater*	Protected
Baltimore Oriole	*Icterus galbula*	Protected
House finch	*Carpodacus purpureus*	Protected
Purple Finch	*Carpodacus purpureus*	Protected
American Goldfinch	*Spinmus tristis*	Protected
House Sparrow	*Passer domesticus*	Protected

Comprehensive Wildlife Conservation Strategy for New York: Upper Hudson Basin [3]

Upper Hudson Species of Greatest Conservation Need currently occurring in the Upper Hudson River Basin. Species are sorted alphabetically by taxonomic group and species common name. The stability of this basin's population is also indicated for each species.

[3] NYS Comprehensive Wildlife Conservation Strategy of New York. New York State Division of Fish and Wildlife. September 2015.

Species of SCGN in the Upper Hudson Basin			
Taxa Group	Species	Species Group	Stability
Crustacea/ Meristomata	Blue crab	Blue crab	Unknown
Freshwater Fish	Blackchin shiner	Blackchin shiner	Unknown
Freshwater Fish	Brook trout, Heritage strains	Brook trout, Heritage strains	Stable
Freshwater Fish	Comely shiner	Comely shiner	Stable
Freshwater Fish	Round whitefish	Round whitefish	Decreasing
Herptofauna	Eastern box turtle	Box turtle	Decreasing
Herptofauna	Eastern spadefoot	Eastern spadefoot toad	Unknown
Herptofauna	Four-toed salamander	Freshwater Wetland Amphibians	Unknown
Herptofauna	Fowler's Toad	Freshwater Wetland Amphibian	Decreasing
Herptofauna	Northern cricket frog	Freshwater wetland amphibian	Decreasing
Herptofauna	Eastern ribbon snake	Lake/ river reptiles	Unknown
Herptofauna	Northern map turtle	Lake/ river reptiles	Unknown
Herptofauna	Spiny softshell	Lake/river reptiles	Unknown
Herptofauna	Wood turtle	Lake/river reptiles	Unknown
Herptofauna	Common five-lined skink	Lizards	Unknown
Herptofauna	Snapping turtle	Snapping turtle	Unknown
Herptofauna	Longtail salamander	Stream salamanders	Decreasing
Herptofauna	Northern red salamander	Stream salamanders	Unknown
Herptofauna	Blandings turtle	Uncommon turtles of wetlands	Decreasing
Herptofauna	Bog turtle	Uncommon turtles of wetlands	Decreasing
Herptofauna	Spotted turtle	Uncommon turtles of wetlands	Unknown
Herptofauna	Stinkpot	Uncommon turtles of wetlands	Unknown
Herptofauna	Blue spotted salamander	Vernal pool salamanders	Unknown
Herptofauna	Jefferson salamander	Vernal pool salamanders	Unknown
Herptofauna	Marbled salamander	Vernal pool salamanders	Decreasing
Herptofauna	Black ratsnake	Woodland/grassland	Decreasing

Species of SCGN in the Upper Hudson Basin			
		snakes	
Herptofauna	Eastern hognosed snake	Woodland/grassland snakes	Decreasing
Herptofauna	Northern Black racer	Woodland/grassland snakes	Decreasing
Herptofauna	Northern copperhead	Woodland/grassland snakes	Unknown
Herptofauna	Smooth green snake	Woodland/grassland snakes	Decreasing
Herptofauna	Timber rattlesnake	Woodland/grassland snakes	Decreasing
Herptofauna	Worm snake	Woodland/grassland snakes	Decreasing
Insect	Barrens buck moth	Barrens buck moth	Unknown
Insect	Karner blue	Karner blue butterfly	Decreasing
Insect	Black meadow hawk	Odonates of bogs/fens/ ponds	Unknown
Insect	Ebony boghaunter	Odonates of bogs/fens/ ponds	Unknown
Insect	Foricpate emerald	Odonates of bogs/fens/ ponds	Unknown
Insect	Incurvate emerald	Odonates of bogs/fens/ ponds	Unknown
Insect	Taper-tailed darner	Odonates of bogs/fens/ ponds	Unknown
Insect	Comet darner	Odonates of lakes/ ponds	Unknown
Insect	Lake emerald	Odonates of lakes/ ponds	Unknown
Insect	New England bluet	Odonates of lakes/ ponds	Unknown
Insect	Spatterdock darner	Odonates of lakes/ ponds	Unknown
Insect	American rubyspot	Odonates of rivers/streams	Unknown
Insect	Blue-tipped dancer	Odonates of rivers/streams	Unknown
Insect	Brook snaketail	Odonates of rivers/streams	Unknown
Insect	Common sanddragon	Odonates of rivers/streams	Unknown
Insect	Extra striped snaketail	Odonates of rivers/streams	Unknown
Insect	Midland clubtail	Odonates of	Unknown

Species of SCGN in the Upper Hudson Basin			
		rivers/streams	
Insect	Pygmy snaketail	Odonates of rivers/streams	Unknown
Insect	Rapids clubtail	Odonates of rivers/streams	Unknown
Insect	Russet-tipped clubtail	Odonates of rivers/streams	Unknown
Insect	Septima's clubtail	Odonates of rivers/streams	Unknown
Insect	Arrowhead spiketail	Odonates of seeps/rivulets	Unknown
Insect	Tiger spiketail	Odonates of seeps/rivulets	Unknown
Insect	Mocha emerald	Odonates of small forest streams	Unknown
Insect	Ocellated emerald	Odonates of small forest streams	Unknown
Insect	Brazilian skipper	Other butterflies	Unknown
Insect	Checkered white	Other butterflies	Decreasing
Insect	Frosted elfin	Other butterflies	Decreasing
Insect	Henry's elfin	Other butterflies	Unknown
Insect	Mottled duskywing	Other butterflies	Decreasing
Insect	Northern metalmark	Other butterflies	Decreasing
Insect	Persius duskywing	Other butterflies	Unknown
Insect	Regal fritilliary	Other butterflies	Unknown
Insect	Silvery blue	Other butterflies	Decreasing
Insect	Tawny crescent	Other butterflies	Decreasing
Insect	Semiothisa banksinanae	Other moths	Unknown
Insect	Apamea inordinata	Other moths	Unknown
Insect	Phoberia orthosiodes	Other moths	Unknown
Insect	Acadian swordgrass moth	Other moths	Unknown
Insect	Coastal barrens buckmoth	Other moths	Unknown
Insect	Golden aster flower moth	Other moths	Unknown
Insect	Pine barrens zanclognaths	Other moths	Unknown
Insect	Pine devil	Other moths	Unknown
Insect	Cincindela patruela	Pine barrens tiger beetles	Decreasing

Species of SCGN in the Upper Hudson Basin			
Insect	Cincindela ancocisconensis	Riparian tiger beetles	Unknown
Insect	Eurylophella bicoloroides	Stoneflies/ Mayflies of lotic waters	Unknown
Insect	Epeorus suffusus	Stoneflies/ Mayflies of lotic waters	Unknown
Insect	Haptagenia culacantha	Stoneflies/ Mayflies of lotic waters	Unknown
Insect	Brachycercus maculatus	Stoneflies/ Mayflies of lotic waters	Unknown
Insect	Tomah mayfly	Tomah mayfly	Unknown
Mammal	American martin	Furbearers	Unknown
Mammal	River otter	Furbearers	Stable
Mammal	New England cottontail	Game species of concern	Decreasing
Mammal	Indiana bat	Indiana bat	Increasing
Mammal	Eastern red bat	Tree bat	Unknown
Mammal	Hoary bat	Tree bat	Unknown
Mammal	Silver-haired bat	Tree bat	Unknown
Marine fish	American eel	American eel	Unknown
Marine fish	American shad	American shad	Decreasing
Marine fish	Atlantic sturgeon	Atlantic sturgeon	Unknown
Marine fish	Alewife	Alewife	Decreasing
Marine fish	Blueback herring	Blueback herring	Unknown
Marine fish	Common pipefish	Estuarine associates of SAV	Unknown
Marine fish	Threespine stickleback	Estuarine associates of SAV	Unknown
Marine fish	Fourspine stickleback	Estuarine associates of SAV	Unknown
Marine fish	Rainbow smelt	Rainbow smelt	Decreasing
Marine fish	Shortnose sturgeon	Shortnose sturgeon	Stable
Marine fish	Atlantic tomcod	Tomcod	Unknown
Mollusk	Alewife floater	Freshwater bivalves	Decreasing
Mollusk	Eastern pearlshell	Freshwater bivalves	Unknown
Mollusk	Eastern pondmussel	Freshwater bivalves	Unknown
Mollusk	Elktoe	Freshwater bivalves	Unknown
Mollusk	Yellow lamp mussell	Freshwater bivalves	Unknown

*5,245 acres of Shandaken Wild Forest lie within the Upper Hudson River Basin

Mammals

Species	Status
Masked Shrew	
Smokey Shrew	
Longtail Shrew	
Water Shrew	
Least Shrew	
Shorttail Shrew	
Starnose Mole	
Hairy-Tailed Mole	
Little Brown Bat	
Keen's Bat	
Small Footed Bat	
Silver- Haired Bat	
Eastern Pipistrelle	
Big Brown Bat	
Red Bat	
Hoary Bat	
Black Bear	Game Species
Raccoon	Game Species
Whitetailed Deer	Game Species
Fisher	Game Species
River Otter	Game Species
Striped Skunk	Game Species
Red Fox	Game Species
Bobcat	Game Species
Opossum	Game Species
Eastern Chipmunk	
Gray Squirrel	Game Species
Red Squirrel	
Southern Flying Squirrel	
Northern Flying Squirrel	
Beaver	Game Species
Deer Mouse	
White-Footed Mouse	
Southern Bog Lemming	
Meadow Vole	
Woodland Vole	
Muskrat	Game Species
Meadow Jumping Mouse	
Woodland Jumping Mouse	
Porcupine	
Snowshoe Hare	Game Species
Eastern Cottontail	Game Species
Mink	Game Species

Species	Status
Shorttail Weasel	Game Species
Longtail Weasel	Game Species
Coyote	Game Species
Gray Fox	Game Species
Woodchuck	Game Species

Common Species

Status and occurrence of New York amphibians in the Shandaken Wild Forest obtained from species distribution maps that represent the known range of the species in New York as reported to the Amphibian and Reptile Atlas Project from 1990-1999. For a few species additional reports collected up to 2007 have been include on the maps if they represent new locations not previously known.

Common Name	Scientific Name
Marbled Salamander	*Ambystoma opacum*
Jefferson Salamander	*Ambystoma jeffersonianum*
Blue Spotted Salamander	*Ambystoma laterale*
Spotted Salamander	*Ambystoma maculatum*
Red Spotted Newt	*Notophthalmus v. viridescens*
Northern Dusky Salamander	*Desmognathus fuscus*
Alleghany Dusky Salamander	*Desmognathus ochrophaeus*
Northern Red Back Salamander	*Plethodon c. cinererus*
Northern Slimy Salamander	*Plethodon glutinosus*
Four Toed Salamander	*Hemidactylium scutatuim*
Northern Spring Salamander	*Gyrinophilus p. porphyriticus*
Northern Red Salamander	*Psuedotriton r. ruber*
Northern Two-lined Salamander	*Eurycea bislineata*
Toads	
American Toad	*Bufo americanus*

Common Name	Scientific Name
Fowlers Toad	*Bufo fowelri*
Frogs	
Gray Treefrog	*Hyla versicolor*
Northern Spring Peeper	*Pseudacris crucifer*
Bullfrog	*Rana catesbeiana*
Green Frog	*Rana clamitans melanota*
Wood Frog	*Rana sylvatica*
Northern Leopard Frog	*Rana pipiens*
Pikerel Frog	*Rana palustris*
Turtles	
Common Snapping Turtle	*Chelydra s. serpentina*
Common Musk Turtle	*Sternotherus odoratus*
Spotted Turtle	*Clemmys guttata*
Wood Turtle	*Glyptemys insculpta*
Eastern Box Turtle	*Terrapene carolina*
Painted Turtle	*Chrysemys picta*
Blandings Turtle	*Emydoidea blandingii*
Snakes	
Northern Water Snake	*Nerodia sipedon*
Northern Brown Snake	*Storeria dekayi*
Northern Redbelly	*Storeria occiptomaculata*
Common Garter Snake	*Thamnophis sirtalis*
Eastern Ribbon Snake	*Thamnophis sauritus*
Eastern Hognose Snake	*Heterodon platirhinos*
Northern Ring Neck Snake	*Diadophis punctatus*
Northern Black Racer	*Coluber c. constrictor*
Smooth Green Snake	*Opheodrys vernalis*
Black Rat Snake	*Elaphe alleganiensis*
Eastern Milk Snake	*Lampropeltis triangulum*
Northern Copperhead	*Agkistrodon contortrix*
Timber Rattlesnake	*Crotalus horridus*

At-Risk Species*				
Species Name	NYNHP Rank	Habitat	Record Source	NYS Status
Marbled Salamander	S3	Seasonal Wetlands	Herp Atlas	Endangered, SGCN
Jefferson Salamander	S3	Seasonal Wetlands	Herp Atlas	Special Concern, SGCN
Blue Spotted Salamander	S3	Seasonal Wetlands	Herp Atlas	Special Concern, SGCN
Eastern Box Turtle	S3	Deciduous woodlands	Herp Atlas	Special Concern , SGCN
Wood Turtle	S3	Deciduous woodlands	Herp Atlas	Special Concern, SGCN
Sharp Shinned Hawk	S4	Interior woodlands	BBA	Special Concern, SGCN
Coopers Hawk	S4	Interior woodlands	BBA	Special Concern, SGCN
American Woodcock	S5	Shrublands, early successional habitats	BBA	SGCN
Small Footed Bat	S2	Woodlands	NYS SWAP	Special Concern, SWAP
Black throated Blue Warbler	NR	Deciduous woodlands understory	BBA	SGCN
Brown Thrasher	NR	Shrublands	BBA	SGCN
Canada Warbler	S5	Dense woodland understory	BBA	SGCN
Ruffed Grouse	NR	Early succesional Habitats	BBA	SGCN, Game Species
Scarlett Tanager	NR	Deciduous woodlands	BBA	SGCN
Black Rat Snake	NR	Shrublands,	Herp	SGCN

Common Name	Scientific Name			
		woodland openings	Atlas	
Eastern Hognose Snake	S3 S4	Sandy woodlands (often near wtare)	Herp Atlas	Special concern, SGCN
Eastern Ribbon Snake	S5	Aquatic woodland edges	Herp Atlas	SGCN
Northern Copperhead	NR	Rocky woodlands	Herp Atlas	SGCN
Northern Black Racer	NR	Shrublands, woodland openings	Herp Atlas	SGCN
Smooth Green Snake	NR	Woodland Openings	Herp Atlas	SGCN
Common Snapping Turtle	NR	Permanent wetlands	Herp Atlas	SGCN
Hoary Bat	S4B, SZN	Woodlands	NYS SWAP	SGCN
Silver Haired Bat	S4B, SZN	Woodlands	NYS SWAP	SGCN

*Defined as NYNHP rank S1, S2, S2-3, G1, G2 or G3 OR Identified as a SGCN

*S1- typically 5 or fewer occurrences

S2- typically 6-20 occurrences

S3-typically 21-100 occurrences

S4- apparently secure in NY

S5-demonstrably secure in NY

SA- accidental species

Status

E- Endangered Species

T- Threatened Species

PSC-Protected Special Concern Species

SGCN- Species of Greatest Conservation Need

Appendix E – Catskill Park State Land Master Plan Guidelines for Wild Forest

Definition

A wild forest is an area of Forest Preserve land whose character as a natural plant and animal community receives the same degree of protection under Article XIV of the Constitution as in areas classified as wilderness, but which differs from wilderness in that generally:

The physical characteristics of wild forest areas are capable of withstanding higher levels of recreational use;

Wild forest areas convey less of a sense of remoteness and provide fewer outstanding opportunities for solitude for visitors, and therefore;

Wild forest areas are managed to provide opportunities for a greater variety of recreational activities and a higher intensity of recreational use.

Basic Guidelines for Wild Forest Management and Use

In wild forest areas:

- No additions or expansion of existing nonconforming uses will be permitted, and
- Existing nonconforming uses will be phased out as rapidly as possible by the Department
- No new non-conforming uses will be removed.

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Appendix F – Classification of Waters

All waters of the state are provided a class and standard designation based on existing or expected best usage of each water or waterway segment.

- The classification AA or A is assigned to waters used as a source of drinking water. Classification B indicates a best usage for swimming and other recreation, but not for drinking water.

- Classification C is for waters supporting fisheries and suitable for non - contact activities.

- The lowest classification and standard is D.

Waters with classifications A, B, and C may also have a standard of (T), indicating that it may support a trout population, or (TS), indicating that it may support trout spawning (TS). Special requirements apply to sustain these waters that support these valuable and sensitive fisheries resources.

Small ponds and lakes with a surface area of 10 acres or less, located within the course of a stream, are part of a stream and are subject to regulation under the stream protection category of Protection of Waters. To determine the classification and standard of given watercourse, contact the Department of Environmental Conservation regional office responsible for the area in which the watercourse is located. Certain waters of the state are protected based on their classification. Streams and small water bodies located in the course of a stream that are designated as C(T) or higher (i.e., C(TS), B, or A) are collectively referred to as "protected streams," and are subject to the stream protection provisions of the Protection of Waters regulations.

The Environmental Resource Mapper (ERM), a web based interactive mapping application developed by DEC, can be used to identify protected streams based on their classification. ERM can also be used to create simple maps that can be submitted as part of the Protection of Waters Permit Application process

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Appendix G – Building Condition on Lower Birch Creek (2018)






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Appendix H – Soils

ARF- Arnot-Oquaga-Rock outcrop complex. Consists of shallow, somewhat excessively drained and moderately well drained very bouldery soils formed in glacial till over sandstone, siltstone and shale bedrock on hillsides, valleysides and mountains. Very steep slopes, rock outcrops, surface boulders and moderate to shallow depth to bedrock to prevent most uses other than woodland and wildlife habitat. Contains moderate erosion hazard which can be minimized by establishing trails cross slope utilizing good design to include drainage dips or water bars.

LaC- Lackawanna flaggy silt loam. 8-15 percent slopes with slight erosion hazard. Consist of deep, sloping, well drained soil formed in glacial till. It is found on valley sides or hill crests on glaciated uplands. Areas are usually long and narrow in shape and are suited to crops and pastures.

LCD- Lackawanna and Swartswood very bouldery soils, very steep, slight erosion hazard. Consist of deep, well drained soils on valley walls and ridgesides on glaciated uplands. Very boulder soils formed in glacial till with slope ranges from 15-25 percent. Most areas are long and narrow in shape. Soils generally have poor potential for farming. Some areas are used for permanent pasture or hay. Pasture is generally unimproved and brushy. These soils are more suited for woodland and wildlife habitat.

LCF- Lackawanna and Swartswood very boulder soils, very steep, moderate erosion hazard. Unit consists of deep, well drained soils on valley walls and V-shaped ravines in glaciated uplands. These very boulder soils formed in glacial till with slopes ranging from 35-70 percent. Most areas are long and narrow in shape and small in size. Water runoff is very rapid. Streams may undercut the very steep soils and cause sections to slump and cause escarpments. Typically used for woodland, recreation and wildlife habitat. Erosion hazard is high and soils needs to be protected when trails are built through proper use of water bars and trail cross slope design.

LEE- Lackawanna and Swartswood extremely bouldery soils, steep with slight erosion. Consists of deep, well drained soils that are mainly on valley walls or on the ridgesides below rock ledges in glaciated uplands. Soils are extremely bouldery and formed in glacial till with slope ranging from 25-35 percent. Soils have poor potential for farming and most are used for woodlands and wildlife habitat. Erosion potential is high when cleared of vegetation. Trails need to be well laid out and protected from erosion with drainage dips and water bars.

OdB- Odessa Silt Loam, 3-8 percent slopes, slight erosion hazard. A deep, somewhat poorly drained, gently sloping soil found in lake-laid deposits of clay and silt. Some areas are on gentle side slopes along waterways and are usually small and irregularly shaped. Undrained areas of this soils are suited to woodland and wildlife habitat.

ORC- Oquaga-Arnot-Rock outcrop complex, sloping, slight erosion hazard. This soil consists of a moderately deep, well drained and excessively drained Oquaga soil and a shallow, somewhat excessively drained Oquaga soil and a shallow, somewhat excessively drained and moderately well drained Arnot soil with small areas of exposed bedrock. These soils formed in reddish glacial till over sandstone, siltstone, and shale bedrock in the Catskill Mountains and their

foothills. Soils are found mainly on a series of small benches that have a stairstep appearance where the sandstone is dominant. Most areas have potential for paths and trails even though small stones and included rock outcrops interfere with this use. Drainage dips and waterbars along trails help protect soils from erosion.

ORD- Oquaga-Arnot-Rock outcrop complex, moderately steep. Soil consists of moderately deep, well drained or excessively drained Oquaga soil and a shallow, somewhat excessively drained and moderately drained Arnot soil and small areas of exposed bedrock. These soils are found mainly in a series of benches and at the base of slopes, having a stairstep appearance. Erosion hazards is high where vegetation is removed. Trails in recreational areas need to be protected from erosion and established across the slope where possible.

SaC- Schoharie silt loam, 8-15 percent slopes, moderate erosion hazard. A deep, moderately well drained and sloping soil formed in lake-laid deposits of clay and silt. This soil has limited potential for urban development but has some potential for woodland and some recreational uses such as paths and trails. Trails need to be protected from erosion and established across slope when possible.

Appendix I – Leave No Trace Principles

The Department partners with the Leave No Trace Center for Outdoor Ethics to promote responsible outdoor recreational behavior.

The Leave No Trace Seven Principles are the bedrock of the Leave No Trace program. They provide guidance to enjoy our natural world in a sustainable way that avoids human-created impacts. The principles have been adapted so they can be applied in your backyard or your backcountry.

Plan Ahead and Prepare

- Know the regulations and special concerns for the area you'll visit.
- Prepare for extreme weather, hazards and emergencies.
- Schedule your trip to avoid times of high use.
- Visit in small groups when possible. Consider splitting larger groups into smaller groups.
- Repackage food to minimize food waste.
- Use a map and compass to eliminate the use of marking paint, rock carins or flagging.

Travel or Camp on Durable Surfaces

- Durable surfaces include established trails and campsites, rock, gravel, dry grasses or snow.
- Protect riparian areas by camping at least 200 feet from lakes and streams.
- Good campsites are found, not made. Altering a site is not necessary.
- In popular areas
  - Concentrate use on existing trails and campsites.
  - Walk single file in the middle of the trail, even when wet or muddy.
  - Keep campsites small. Focus activity in areas where vegetation is absent.

In pristine areas:

- Disperse use to prevent the creation of campsites and trails.
- Avoid places where impacts are just beginning.

Dispose of Waste Properly

- Pack it in, pack it out. Inspect your campsite and rest areas for trash or spilled foods. Pack out all trash, leftover food and litter.
- Deposit solid human waste in catholes dug 6 to 8 inches deep, at least 200 feet from water camp and trails. Cover and disguise the cathole when finished if port-a-johns are not available.
- Pack out toilet paper and hygiene products.
- To wash yourself or your dishes, carry water 200 feet away from streams or lakes and use small amounts of biodegradable soap. Scatter strained dishwater.

Leave What You Find

- Preserve the past; examine but to not touch cultural or historic structures or artifacts.
- Leave rocks, plants, and other natural objects as you find them.
- Avoid introducing or transporting non-native species.
- Do not build structures, furniture, or dig trenches.

Minimize Campfire Impacts

- Campfires can cause lasting impacts to the environment. Use a lightweight stove for cooking and enjoy a candle lantern for light.
- Where fires are permitted, use established fire rings, fire pans, or mound fires
- Keep fires small. Only use sticks from the ground that can be broken by hand.
- Burn all wood and coals to ash, put out campfires completely, then scatter cool ashes.

Respect Wildlife

- Observe wildlife from a distance. Do not follow or approach them.
- Never feed the animals. Feeding wildlife damages their health, alters natural behaviors, and exposes them to predators and other dangers.
- Protect wildlife and your food by storing rations and trash securely.
- Control pets at all times or leave them at home.
- Avoid wildlife during sensitive times, mating, nesting, raising young or winter.

Be Considerate of Other Visitors

- Respect other visitors and protect the quality of their experience.
- Be courteous. Yield to other users on the trail.
- Step to the downhill side of the trail when encountering pack stock.
- Take breaks and camp away from trails and visitors.
- Let nature’s sounds prevail. Avoid loud voices and noises.