NEW YORK STATE

Department of Environmental Conservation

DIVISION OF LANDS & FORESTS

Hoffman Notch Wilderness

Unit Management Plan

Towns of Schroon, North Hudson, and Minerva

Essex County

ANDREW M. CUOMO	JOE MARTENS
Governor	*Commissioner*

For Further Information Contact:

New York State Department of Environmental Conservation
232 Golf Course Road
Warrensburg, NY 12885
Phone: (518) 623-1200
r5ump@gw.dec.state.ny.us

April 2012

This page intentionally left blank

ANDREW M. CUOMO
GOVERNOR

JOE MARTENS
COMMISSIONER

STATE OF NEW YORK
DEPARTMENT OF ENVIRONMENTAL CONSERVATION
ALBANY, NEW YORK 12233-1010

M E M O R A N D U M

TO: The Record

SUBJECT: Hoffman Notch Wilderness

DATE: APR 2 7 2012

The Final Hoffman Notch Unit Management Plan has been completed and the Adirondack Park Agency found it to be in conformance with the Adirondack Park State Land Master Plan.

The Final UMP is consistent with the State Constitution, Environmental Conservation Law, and Department Rules, Regulations and Policies and is hereby approved and adopted.

Joseph J. Martens

This page intentionally left blank

RESOLUTION AND SEQRA FINDINGS
ADOPTED BY THE ADIRONDACK PARK AGENCY
WITH RESPECT TO
HOFFMAN NOTCH WILDERNESS
UNIT MANAGEMENT PLAN

MARCH 15, 2012

WHEREAS, section 816 of the Adirondack Park Agency Act directs the Department of Environmental Conservation to develop, in consultation with the Adirondack Park Agency, individual management plans for units of land classified in the Master Plan for Management of State Lands and requires such management plans to conform to the general guidelines and criteria of the Master Plan; and

WHEREAS, in addition to such guidelines and criteria, the Adirondack Park State Land Master Plan prescribes the contents of unit management plans and provides that the Adirondack Park Agency will determine whether a proposed individual unit management plan complies with such general guidelines and criteria; and

WHEREAS, the Department of Environmental Conservation has prepared a unit management plan for the Hoffman Notch Wilderness in the towns of Schroon, North Hudson, and Minerva in Essex County; and

WHEREAS, this action is a Type I action pursuant to 6 NYCRR Part 617 for which the Department of Environmental Conservation is the lead Agency and the Adirondack Park Agency is an involved Agency; and

WHEREAS, a final environmental impact statement was completed by the Department of Environmental Conservation on February 7, 2012; and

WHEREAS, the Department of Environmental Conservation has consulted with the Adirondack Park Agency staff in the preparation of the proposed plan; and

WHEREAS, the Agency is requested to determine whether the final Hoffman Notch Wilderness Unit Management Plan, dated February, 2012, is consistent with the Standards and Guidelines of the Adirondack Park State Land Master Plan; and

WHEREAS, the Adirondack Park Agency has reviewed the proposed Hoffman Notch Wilderness Unit Management Plan; and

WHEREAS, the Plan includes providing public access where appropriate in order to provide visitors with a wide range of recreational opportunities while protecting unique trailless and roadless resources(FEIS p. 79 and 82); and

WHEREAS, the Plan proposes new camping opportunities including two designated tent sites at Big Pond, one tent site at Bailey Pond, one tent site on North Pond, and a lean-to in the vicinity of Platt Brook(FEIS p. 86); and

WHEREAS, the Plan proposes the promulgation of a new regulation to limit maximum group sizes to 15 for day use and 8 for overnight use, as has been adopted in neighboring Wilderness and Primitive units(FEIS p. 88); and

WHEREAS, the Department has committed to work with the Adirondack Park Invasive Plant Program to effectively manage and eradicate invasive plants in the unit (FEIS p. 71); and

WHEREAS, the Department has committed to initiate a Limits of Acceptable Change study to evaluate user impacts on trails and campsites, which study will provide an opportunity to improve management of these appropriate recreational opportunities and assist the Department and Agency in assessing impacts and identifying where restoration, revegetation and erosion control may be necessary (FEIS p. 78 and 86).

NOW, THEREFORE, BE IT RESOLVED, that pursuant to Section 816 of the Adirondack Park Agency Act, the Adirondack Park Agency finds the Hoffman Notch Wilderness Unit Management Plan, dated February, 2012, conforms with the general guidelines and criteria of the Adirondack Park State Land Master Plan; and

BE IT FURTHER RESOLVED, that consistent with the social, economic and other essential considerations, from among the reasonable alternatives, the proposed Final EIS/UMP seeks to minimize or avoid adverse environmental effects to the maximum extent practicable, including the effects disclosed in the environmental impact statement; and

BE IT FINALLY RESOLVED, that the Adirondack Park Agency authorizes its Executive Director to advise the Commissioner of Environmental Conservation of the Agency’s determination in this matter.

Ayes:	R. Booth, S. Craig, A. Lussi, F. Mezzano, D. Scozzafava (DOS), R. Stegemann (DEC), W. Thomas, L. Ulrich, W. Valentino, C. Wray
Nays:	None
Abstentions:	None
Absent:	J. McCormick (DED)

This page intentionally left blank

PREFACE

The Hoffman Notch Wilderness 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 Adirondack Park State Land Master Plan, Department of Environmental Conservation ("DEC") Rules and Regulations, Department Policies and Procedures and the State Environmental Quality and Review Act.

The State land which is the subject of this Unit Management Plan (UMP) is Forest Preserve lands protected by Article XIV, Section 1 of the New York State Constitution. This Constitutional provision, which became effective on January 1, 1895 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, or shall the timber thereon be sold, removed or destroyed."*

ECL §3-0301(1)(d) and 9-0105(1) provide the Department with jurisdiction to manage Forest Preserve lands, including the Hoffman Notch Wilderness Area.

The Adirondack Park State Land Master Plan (APSLMP) was initially adopted in 1972 by the Adirondack Park Agency (APA), with advice from and in consultation with the Department, pursuant to Executive Law §807, now recodified as Executive Law §816. The APSLMP provides the overall general framework for the development and management of State lands in the Adirondack Park, including those State lands which are the subject of this UMP. The APSLMP places State land within the Adirondack Park into the following classifications: Wilderness, Primitive, Canoe, Wild Forest, Intensive Use, Historic, State Administrative, Wild, Scenic and Recreational Rivers, and Travel Corridors, and sets forth management guidelines for the lands falling within each major classification. The APSLMP classifies the lands which are the subject of this UMP as part of the Hoffman Notch Wilderness Area.

The APSLMP sets forth guidelines for such matters as: structures and improvements; ranger stations; the use of motor vehicles, motorized equipment and aircraft; roads, jeep trails and State truck trails; flora and fauna; recreation use and overuse; boundary structures and improvements and boundary markings.

Executive Law §816 requires the Department to develop, in consultation with the APA, individual UMPs for each unit of land under the DEC's jurisdiction which is classified in one of the nine classifications set forth in the APSLMP. The UMPs must conform to the guidelines and criteria set forth in the APSLMP. Thus, UMPs implement and apply the APSLMP's general guidelines for particular areas of land within the Adirondack Park.

Executive Law §816(1) provides in part that "(until) amended, the APSLMP for management of State lands and the individual management plans shall guide the development and management of State lands in the Adirondack Park." Thus, the APSLMP and the UMPs have the force of law in guiding DEC actions.

It is important to understand that the State Land Master Plan has structured the responsibilities of the Department and the Agency in the management of State lands within the Adirondack Park. Specifically, the APSLMP states that:

> *..... the legislature has established a two-tiered structure regarding state lands in the Adirondack Park. The Agency is responsible for long range planning and the establishment of basic policy for state lands in the Park, in consultation with the Department of Environmental Conservation. Via the master plan, the Agency has the authority to establish general guidelines and criteria for the management of state lands, subject, of course, to the approval of the Governor. On the other hand, the DEC and other state agencies with respect to the more modest acreage of land under their jurisdictions, have responsibility for the administration and management of these lands in compliance with the guidelines and criteria laid down by the master plan.*

In order to put the implementation of the guidelines and criteria set forth in the APSLMP into actual practice, the DEC and APA have jointly signed a Memorandum of Understanding concerning the implementation of the State Land Master Plan for the Adirondack Park. The document defines the roles and responsibilities of the two agencies, outlines procedures for coordination and communication, defines a process for the revision of the APSLMP, as well as outlines procedures for State land classification, the review of UMPs, state land project management, and state land activity compliance. The MOU also outlines a process for the interpretation of the APSLMP.

No Action Alternative or Need for a Plan

From the legal perspective, the "No Action" alternative of not writing an UMP is not an option. Executive Law §816 requires the Department of Environmental Conservation to develop, in consultation with the APA, individual unit management plans (UMPs) for each unit under its jurisdiction classified in the APSLMP. In addition an UMP serves as a mechanism for the DEC to study and identify potential areas for providing access to the HNWA for persons with disabilities in accordance with the Americans with Disabilities Act (ADA of 1990). The UMP also serves as an administrative vehicle for the identification and removal of nonconforming structures as required by the APSLMP.

From the administrative perspective, the "No Action" alternative is not an option. The UMP provides guidance necessary for staff to manage the lands of the unit in a matter that is most protective of the environment while at the same time providing the most enjoyable outdoor recreation opportunities for the public. Without the UMP the sensitive environmental resources of the unit could be negatively impacted and it is highly likely that the public enjoyment of such resources would decrease. Management of the Hoffman Notch Wilderness Area via an UMP will allow the DEC to improve public use and enjoyment of the area, avoid user conflicts and prevent over use of the resources (e.g., through trail designations, access restrictions, placement of campsites and lean-to in relation to a sensitive resource, etc.).

CONTENTS

ACKNOWLEDGEMENTS

DEC Planning Team

Ben Thomas	Forester -Task Force Leader
Stewart Brown	Forester- Task Force Leader (Retired)
John Hastings	Forester- Task Force Leader (Retired)
Ed Russell	Public Protection- Forest Ranger
Harold Barber	Public Protection- Environmental Conservation Officer
Lance Durfey	Senior Fisheries Biologist
Paul Jensen	Senior Wildlife Biologist
Phil Johnstone	Operations Supervisor(Retired)
Darwin Tubbs	Operations Supervisor
Clive Friend	Maintenance Assistant
David Winchell	Citizen Participation Specialist II
Josh Clague	Natural Resources Planner
Kevin Prickett	Natural Resources Planner – Adirondack Park Agency

Special thanks to John Hastings and Stew Brown for preparing much of the content in this plan.

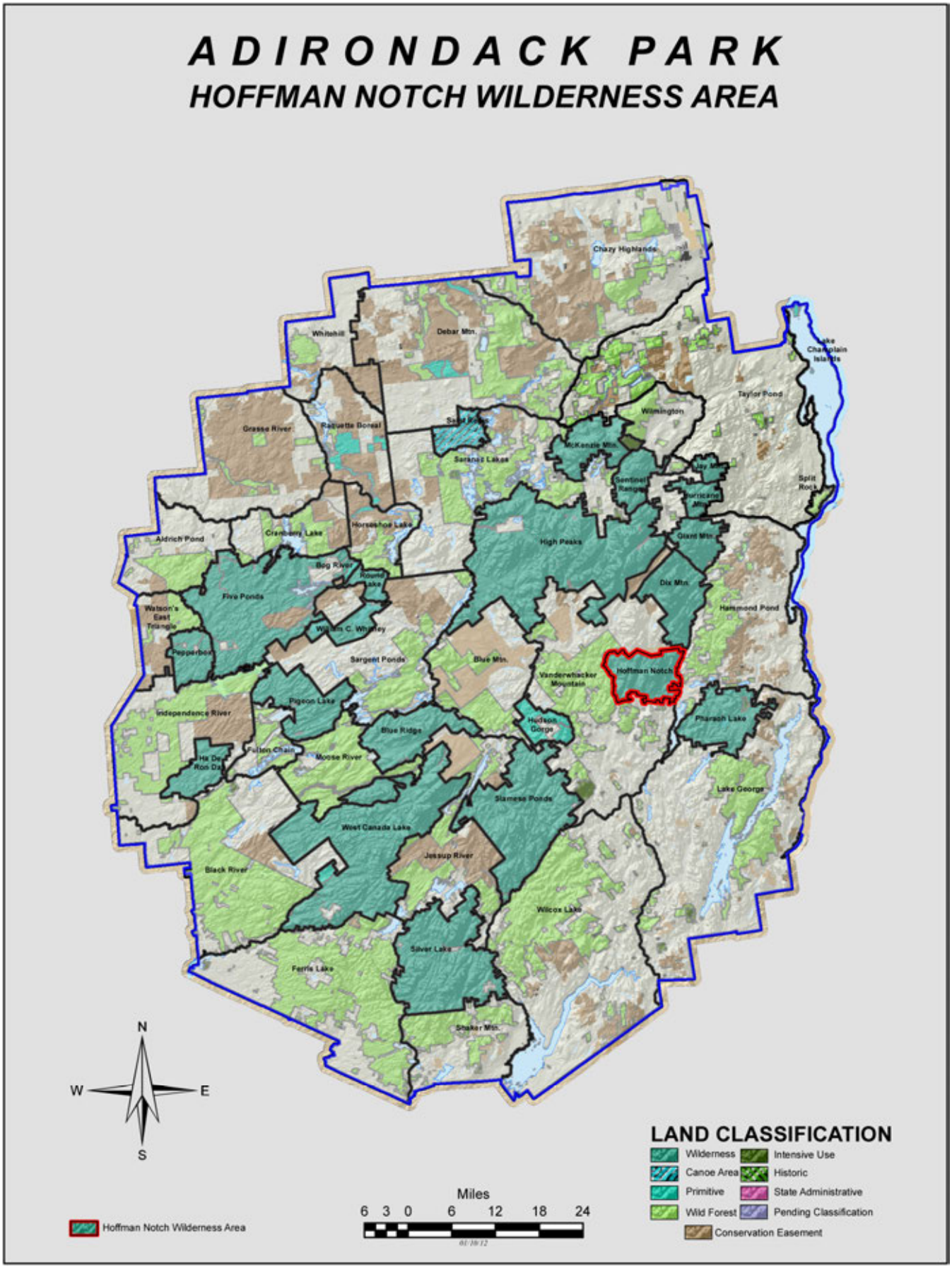
Other DEC Staff Preparers

Bruce Barnard	Forester I
Tad Norton	Forester I
Michael Curley	Forester II (retired)
Tom Martin	Regional Forester
Robert Messenger	Forester III
Ed Reed	Wildlife Biologist I
Brian Finlayson	Cartographic Technician III
Mike Grove	Real Property Specialist I
Les Eggleton	Real Property Supervisor
Patrick Magee	Assistant Land Surveyor
Robert Bradley	Land Surveyor
Howard Lashway	Forest Ranger (retired)
Mary Lupo	Secretary I (retired)
Susan Clickner	Program Aid
Ken Hamm	DEC attorney
Linda Kashdan-Schrom	Environmental Analyst
Bill Schoch	Regional Fisheries Manager

DEC Gratefully acknowledges the contributions made by the following:

Roger Friedman	Schroon Lake
Cathy Moses	Schroon Lake
Betty Lou Bailey	ADK, Schenectady
John Huston	Schroon Lake
Paul Clickner	Minerva

This page intentionally left blank


ADIRONDACK PARK
HOFFMAN NOTCH WILDERNESS AREA
Chazy Highlands
Whitehill
Debar Mtn.
Taylor Pond
Wilmington
Grasse River
Raquette Boreal
Saranac Lakes
McKenzie Mtn.
Sentinel Range
Split Rock
Aldrich Pond
Cranberry Lake
Horseshoe Lake
High Peaks
Grand Mtn.
Bog River
Round Lake
Dix Mtn.
Five Ponds
Watson's East Triangle
Hammond Pond
William C. Whitney
Pepperbox
Sargent Ponds
Blue Mtn.
Vanderwhacker Mountain
Hoffman Notch
Pigeon Lake
Independence River
Blue Ridge
Hudson Gorge
Pharaoh Lake
Fulton Chain
Moose River
Lake George
Siamese Ponds
West Canada Lake
Jessup River
Black River
Wilcox Lake
Silver Lake
Ferris Lake
Shaker Mtn.
N
W
E
S
Miles
6 3 0 6 12 18 24
Hoffman Notch Wilderness Area
LAND CLASSIFICATION
Wilderness
Canoe Area
Primitive
Wild Forest
Intensive Use
Historic
State Administrative
Pending Classification
Conservation Easement

This page intentionally left blank

I. INTRODUCTION

A. Planning Area Overview

The Hoffman Notch Wilderness Area (HNWA) is located in the east central Adirondack Park within the towns of Minerva, Schroon, and North Hudson (Essex County). The unit is located within the watersheds of the Boreas and Schroon Rivers. The unit is made up of one large contiguous parcel, covering 38,488 acres and has 52.23 miles of boundary line, 17.42 of which are shared with other State management units.

The planning area is adjacent to the following: on the north the High Peaks Wilderness Area, on the east by Schroon Lake, on the south and west by the Vanderwhacker Wild Forest.

Adjacent to the planning area, and not subject to this UMP, are privately-owned lands, most of which are classified as "Resource Management" and "Rural Use" by the Adirondack Park Agency. There are also several private "rod & gun" clubs with small to moderate land holdings adjacent to the HNWA.

1. Unit Geographic Area

The unit is covered by the following U.S.G.S. quadrangle maps:

7½' x 15' series: Blue Ridge, Schroon Lake, Paradox Lake
15' x 15' series: Schroon Lake, Paradox Lake

2. General Location

The major roads providing access to the Hoffman Notch Wilderness Area are: the Blue Ridge Road (or Boreas Road or County Route 2B) which provides access to the northern portion of the unit; and Hoffman Road (or Irishtown Road or Carl Hill Road), which provide access in the town of Schroon along the south. Several communities are adjacent to the unit. These include the hamlets of North Hudson, Minerva, Olmstedville, Schroon Lake and Newcomb.

The unit is in proximity to several other Forest Preserve units including the High Peaks Wilderness Area to the northwest, the Dix Mountain Wilderness Area to the north and the Vanderwhacker Mountain Wild Forest to the west, the Pharoah Lake Wilderness Area to the southeast, and the Hammond Pond Wild Forest to the east. The unit is also near several State-owned or State-run intensive use areas including: Harris Lake Campground, Eagle Point Campground, Scaroon Manor, Camp Santanoni Historic Area, and the Visitor Interpretive Center at Newcomb.

3. Acreage

The overall size of the unit is 38,488acres. The largest proportion of the unit is comprised of lands in the Tract West of Road Patent (approximately 45%). The Totten and Crossfield (Township 30) and Hoffman Township contain considerable acreage (approximately 20% each). Other areas are contained in the Rogers Road Patent and the Gore between Hoffman Township and the tract west of Road Patent.
.00
Much (about 60%) of the lands in the Hoffman Notch Wilderness were acquired through the tax sales of 1871, 1877, 1881, 1885, 1890, 1895 and 1900. Much of the balance was purchased in 1891, 1892, 1897,

1898, 1899, and 1900. The sources of these titles were either the purchase from owners, sales due to unpaid taxes, appropriations (condemnation) or conveyance.

Hoffman Township

Tax sale:	All or part of lots A, B, C, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 14, 15, 16, 18, 20, 23, 28, & 29
Purchase:	All or part of lots 3, 11, 12, 13, 15, 19, 21, 22, & 30.
Acquired after 1920:	Part of lots 13, 17, 19, 24, 28, & 33.

Co. Road Patent

Tax sale:	Part of lot 4
Purchase:	Part of lots 3 and 4.
Acquired after 1920:	Part of lots 1, 3, 4, 5, & 8.

Township 30 of the Totten and Crossfield Purchase

Tax sale:	Part or all of lots 5, 6, 7, 8, 9, 10, 11, 12, 16 & 18.
Purchase:	All or part of lots 7, 8, 10 & 17

Tract West of Road Patent

Tax sale:	All or part of lots 28,29, 33, 34, 35, 36, 37, 47, 51, 52, 53, 54, 55, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 85, 86, 93, 94, 100, 101, 102, 103, 104, 105, 106, 113, 117, 129, 131, 132, 133, 134, 142, 146, 147, 148, 149, 150, 156, 157, 160, 161, 162, & 168.
Purchase:	All or part of lots 28, 29, 30, 31, 38, 39, 44, 45, 46, 59, 60, 61, 62, 68, 88, 89, 90, 110, 111, 112, 118, 119, 120, 121, 122, 123, 130, 132, 158, 159, 160, 167, & 175.
Acquired after 1920:	All or part of lots 48, 49, 50, 56, 57, 58, 67, 69, 70, 71, 72, 83, 84, 85, 86, 95, 96, 97, 98, 99, 107, 108, 109, 115, & 116.

Acquired in the 1950's from Finch Pruyn Co: Township 44, lots 1 & 8
The town by town breakdown of the HNWA acreage is as follows:

Essex County	acres
Minerva	1,615 (4 %)
North Hudson	15,280 (40%)
Schroon	21,593 (56%)
Total	**38, 488**

4. General Access

In addition to the roads listed in Section 2. above, there are several tertiary and quaternary roads that provide access to the automobile-traveling public. These include Loch Muller Road, Potash Hill Road, Youngs and Hoffman Road in Schroon and Byrns Road in Minerva. Many, but not all, of the above are town and county roads. A detailed location description of these roads will not be included here, as they are

more easily located using the accompanying map, as well as the Essex County highway map.
The HNWA can also be accessed via the Boreas River, two small lakes: Lester Flow and Cheney Pond, and several underpasses beneath I-87Approximately 70 million people live within a day's drive of the unit. Nearby population centers include: the city of Glens Falls (45 miles), the city of Plattsburgh (65 miles), the urban areas of the Capital District (90 miles), Montreal (120 miles), and New York City (230 miles).

B. General History

The area around the HNWA is rich with history. Only some incidents that relate directly to the development of the unit will be presented here. For an in-depth look into the local history, the reader is referred to several useful sources, including Watson's 1869 History of Essex County, Smith's 1885 History of Essex County, and other sources listed in the bibliography and reference section of this document.

1. Warren's Inn

Originally known as the Bailey Pond Inn this establishment was located at the end of the road at Loch Muller and was built in the late 1890's. Between 1914 and 1915 the name was changed to "Warren's" to reflect the name of the owner A E.Warren. This was a popular spot and was well known for its access to many of the ponds, streams and mountains in the HNWA. Advertisements noted hiking trails to Hoffman Mountain (Cole's Schroon Mountain), Bailey Pond, and Hayes Mountain, as well as equestrian trails to similar locations. The Inn was ultimately destroyed by fire. Nearby is the Loch Muller white pine, which was planted in 1845 by Paschal P.Warren when he and the tree were 12 years old. He placed a plaque on the tree in 1920 with the above information and the inscription "Woodsman Spare That tree, Touch Not a Single Bough, In Youth It Protected Me, And I'll Protect It Now." Mr. Warren's granddaughter, Marion was born at the hotel in 1896 and may be the source for the naming of Marion Pond.

2. Logging History

During the 19th century, harvesting of white pine, red spruce, and, in some locales, hemlock occurred throughout the southern Adirondacks, and often took place on lands in close proximity to water courses, because the logs could be easily transported down rivers and streams. During this time period, softwoods were harvested from private lands that would later become part of the HNWA in areas along the Boreas River, Minerva Stream, and the Schroon River. Early cutting (1800-1850) concentrated on the harvesting of pine, while later in the century it shifted to red spruce. Much of the hemlock was cut in the 1850-1880 period to supply the local tanneries. Hardwoods were not generally harvested, because profitable markets did not exist for them until the early 1900's, and because they could not be transported as easily (they don't float). In fact, hardwoods were generally only harvested in the conversion of forests to farmlands and used to make charcoal and potash in order to subsidize that land clearing. Consequently, much of the lands that would later make up interior sections of the HNWA sustained very little harvesting of hardwood logs since most of these lands were purchased prior to cost effective means and markets were available for hardwood logging. However, softwood logging continued over much of the 19th century, and eventually reached most areas of the HNWA before (or in between) State ownership. (Laws of the time required the State to bid for lands at tax sale that had no other bidders. Prior to the creation of the Forest Preserve, the State would acquire such lands and later attempt to sell them. In between State ownership, these lands might be logged. This explains why many Forest Preserve lots were acquired by the State several times.)

In some cases, even State ownership did not preclude harvesting of some State lots. Because of tax laws of the time, it was not uncommon for individuals to challenge the State's title to lands acquired through tax sales and win. This often resulted in further logging and then abandonment of these lots. After such abandonment the land would go up for bid at tax sale and would be re-purchased by the State. Many viewed the problematic tax law as a State subsidy for the logging industry. Several individuals, such as George Ostrander, P. J. Marsh, and George Underwood became masters at acquiring title to land the State thought it owned. It is quite likely that some of these lots were lost through title challenges and logged during this time.

Early single-log river-driving was started by the Fox brothers, Norman and Alanson, on the Upper Hudson in 1813 when they floated logs from the Brant Lake Tract via the Schroon River to Glens Falls (Freeman 1996). The Boreas River, which flows along the western edge of the unit, served as a route initially for sawlogs and later for pulpwood making their way to the Hudson and eventually to the softwood mills in Glens Falls. Reminders of this logging history are still evident nearby. For example, the old abutments of Brace Dam on the Boreas River north of the Blue Ridge Road are easily discernable. Similarly, Lester Dam, further south along the Boreas, was last used to transport logs to mill as late as 1949 and is even more conspicuous. The system of flush dams served to bring logs to the Hudson and on to Glens Falls in a journey that in some cases took two years to complete.

Fires often followed logging and as a result, portions of the Adirondacks were consumed by fire around the turn of the 19th and 20th centuries. Generally only smaller fires occurred in the HNWA, evidence of which can still be seen around Big Pond as well as in the vicinity of the Blue Ridge Road.

3. Tanning Industry

Harvesting hemlock bark for its use in the tanning of leather was an important industry in the area around the HNWA in the mid-nineteenth century. The abundance of hemlock and water for transportation and power helped fuel an industry which provided one of the first sources of employment for many of the local residents. People were needed to cut and transport bark to the mill, haul hides to and from the mills, cut fuelwood, work in the tanneries, and the many other support services such as grocery/hardware stores, blacksmiths, wagon makers, etc. As a result, much of the accessible hemlock of the HNWA was cut during this period (early on the logs were left in the woods to rot but this changed later on), and the bark sent to several tanneries in the immediate area, including Olmstedville, Pottersville, North Hudson and Schroon Lake. In fact, the hamlet of Olmstedville gets its name from Sanford and Levi Olmstead, who built the Alpine Tannery there in 1840. The tannery, which burned in 1867, was said to have consumed bark at five thousand cords per year. Other tanneries which operated in the area and likely utilized hemlock from the HNWA area include:

- Schroon Lake Tannery. Erected in 1852 by L. Hall. About one mile west of Schroon Lake Village on the Hoffman Road.
- Schroon (or Excelsior) Tannery. Erected in 1861 by W. Potter and D. Wyman. At the mouth of the West Branch.
- Sawyer and Mead Tannery. 1867. Located on the West Branch about 3 miles from the State road.
- Hoffman Tannery. Erected in 1856 by Bracket and Boyle. Six miles west of Schroon Lake Tannery.
- Burhans Tannery. Erected 1859 by E. Potter. West of North Hudson.
- Wickham Tannery. Located opposite the Schroon Tannery.

In 1869, Winslow Watson described the industry: "In the Towns of Schroon, Minerva, and North Hudson, this business is now the predominant and a highly important industrial pursuit. The vast hemlock forests, which spread over that region, afford an abundant and accessible material for those works."

By 1880, most of these tanneries were out of business, due to a variety of reasons; but primarily because of the economic slowdown during the 1870's, and the cost and/or unavailability of the tanbark. These tanneries were consuming up to 15,000 cords of bark per year with a cost of $5.00 per cord. Although hemlock was still present, the cost to get the bark to the mill, due to distance and terrain (and seasonal availability), coupled with the economic conditions resulted in the closure of most of these tanneries.

Much of these lands reverted to State ownership as a result of tax sales during the later part of the 19th century.

4. Mining

The immediate area surrounding the HNWA also has a rich mining history. Most of the mining has taken place on neighboring private land.

Although, not located on the HNWA, the mining operation to have the most obvious impact on the unit has been the MacIntyre Mines at Tahawus. Originally, the mines concentrated on the production of iron ore. However, the ore was found to have copious quantities of an impurity, making iron extraction more costly. This impurity was later identified as titanium and became significant in the early 1940's as the US was drawn into World War II. In order to extend the D & H railroad tracks from the hamlet of North Creek to the titanium mines at Tahawus, the federal government appropriated forest preserve land along the Boreas River and Vanderwhacker Brook and the railroad was constructed. Regular railroad service along these tracks has since been discontinued, but the tracks remain privately owned. Near the end of the 19th century, a route was proposed from Crown Point to parallel the Carthage Road (modern-day Blue Ridge Road) through parts of Township 30 near Wolf Pond and Vanderwhacker Pond. When Township 30 was sold to the State, an exception was made for the reservation of a 4-rod right-of-way through certain lots for the construction of a railroad. However, plans for the railroad never got much further and it was never built. Also, some lots of the HNWA in the Tract West of Road Patent, which were acquired by the State, were formally railroad lands. These include lots 71, 72, 85, and 86.

The Schroon River Forge was built on The Branch, just west of North Hudson, in 1857 by Jacob Parmeter and later sold to John Roth. It produced blooms, billots and slabs. It had two fires, a 1800 pound hammer and two wheels. This mill was able to operate at a profit as a result of high prices which resulted from the Civil War. A sawmill and gristmill also occupied the site. Most of the ore for this mill came from the Paradox Lake and Moriah areas. It burned in 1880.

5. General Acquisition History

Although State acquisition of the lands comprising the HNWA has been ongoing from the 1870's up to the present, it occurred mainly in two distinct periods in time; the end of the 19th century and during the Great Depression. The unit is entirely in the Towns of Schroon, Minerva and North Hudson and was acquired by the State for back taxes or by purchase in the late 19th and early 20th centuries. The bulk of these lands (60%) were acquired as a result of the tax sales in 1871, 1877, 1881, 1885, 1890, 1895 and 1900, while about 25% were purchased in 1891, 1892, 1897, 1898, 1899, and 1900.

In 1901, the State acquired sole title to over 23,000 acres of land centered around Cheney Pond from George Finch of Finch Pruyn Paper Company. This acquisition represented the majority of Township 30 of Totten and Crossfield's Purchase, which stretches from Hewitt Pond north to the current Vanderwhacker Mountain Wild Forest (VMWF) boundary north of the Blue Ridge Road and from the Durgin Brook drainage west to the point where State Highway(SH) 28N enters the VMWF from Newcomb. The eastern portion of the State lands in Township 30 are now classified as Hoffman Notch Wilderness Area and the remaining as VMWF lands. The land was acquired through the settlement of litigation, apparently because of legal problems with the State's title to the land. Much of the Township had originally been acquired by the State in the tax sale years of 1877, 1881,and 1885. However, title was also held by George Finch, who claimed the lots had been offered at tax sale illegally and improperly. Litigation between Finch and the State ensued and resulted in a settlement in which Finch's underlying title was sold to the State for $1.50 an acre. In the settlement, George Finch reserved some rights and passed them on to Finch Pruyn and Company. These reservations included; the right to dam waters and flood land throughout the Township in order to drive logs to the Hudson, a reservation to cut logs on certain lots in order to build and repair dams and build camps for purposes of river driving, a ten-year timber reservation on certain lots, and a right-of-way for an east-west railroad across the Township. Finch Pruyn did exercise some of these rights over the years including cutting timber locally to maintain Lester Dam and continuing to use the Boreas River and lesser waterways in the Township for river driving.

In the litigation for Township 30, George Finch also negotiated several 25-year, 50-year, and lifetime leases to certain individuals then living along the Blue Ridge Road and the now SH 28N (Gregorie, LaBier, Provenchu, LeClaire, Kay, Havron,). Extinguishing these leases would prove time consuming to the State in the 20's and 30's as occupants were reminded of the temporary nature of their rights. A few of them resulted in further settlements, which explain the existence of a few of the private inholdings in the township; specifically the old LaBier Farm on Blue Ridge Road and Kay's Place on SH 28N.

Additional lands were acquired from timber companies and private citizens during the Great Depression as their use for the production of softwood pulpwood or for farming decreased, as did people's and companies' ability to pay property taxes.

On August 31, 1959 Finch, Pruyn and Company, Incorporated ("Finch Pruyn") conveyed to the People of the State of New York, title to Lots 48, 49, 50, 56, 57, 58, 83, 84, 85, 86, 95, 96, 97, 98, 99, 107, 108, and 109 of the West of Road Patent. These lands are located in the northern central area of the HNWA. The deed to this property provides as follows: "as the owner of extensive wild forest lands in the State of New York, and approving of the public ownership, extension and maintenance of wild forest lands within the Forest Preserve and Adirondack Park in said State of New York, and desirous of making a gift to The People of the State of New York, for forestry purposes, in accordance with the provisions of Subdivision 7 of Section 50 of the Conservation Law of the State of New York, (Finch Pruyn) does hereby remise, release and quitclaim (the subject lands) unto (The People of the State of New York), it successors and assigns forever..."

Conservation Law §50 (7) provided at the time that the Conservation Department had the "power, duty and authority" to "receive and accept in the name of the People of the State, by gift or devise, the fee or other estate therein of lands or timber or both, for forestry purposes."

During the 1950's and early 1960's, Finch Pruyn gifted several such parcels of land in the Adirondack Park to the State pursuant to Conservation Law §50 (7). Recently, Finch Pruyn sued the Department over its management of similarly gifted parcels of land located elsewhere in the Park, demanding that the Department either harvest trees from such parcels or convey title back to Finch Pruyn. Finch Pruyn &

Company, Inc. v. Erin Crotty, Albany County Supreme Court (Index Number 6370-01-2001). On May 4, 2002, the Court held that Finch Pruyn had no right of reverter, and that the language in certain 1956 and 1957 deeds which was virtually identical to that found in the deed to these parcels did not indicate that the lands conveyed were not intended to be added to the Forest Preserve, and that Article XIV, Section 1 of the New York State Constitution was applicable to the lands. The Court also noted that the lands at issue had been classified by the Master Plan in 1972 and that Finch Pruyn had failed to commence timely litigation challenging that classification within the applicable four month statue of litigation.

One of these gifted parcels, approximately 2,426 acres, as described above, combined lots 1 and 8, township 44, abutted the HNWA on the north side and was part of the Vanderwhacker unit as Wild Forest. In 2005, this 2,426 acre parcel was reclassified by the APA to Wilderness and is now part of the HNWA

The holding in that case is equally applicable to the instant parcels. Thus, the instant parcels constitute Forest Preserve lands and will be managed as Wilderness pursuant to their classification by the 1972 Master Plan.

Other smaller scattered parcels were added to the HNWA over the years, but as has been mentioned above, the largest additions by far were made at the end of the 19th century.

6. Durgin Farm

South of the Blue Ridge Rd. in the western portion of the Hoffman Unit the Durgin farm was active during the later part of the 19th Century. The Durgins may have been one of the stakeholders involved in George Finch's negotiated leases.

An Essex County 1875 Census lends some valuable insight to the Durgin family and their farm which occupied a portion of the northwest corner of the Hoffman Notch Unit and whose name can now be recognized in "Durgin Brook" a stream adjacent to the area this family once farmed. The 1875 census reports that David D Durgin - 42, His wife Jennie - 34, and their sons; George D. – 10, Orson J – 6, Leslie H – 3 ¾ , William H - 11 months all lived in a log cabin on this farm.

Agricultural statistics for the Durgin Farm were recorded June 2, 1875 and are as follows:

- 200 acres of total land
- 115 acres of which were improved with 85 acres of woods or timberland.

Cash value:

- of farm - $2,000,
- of farm buildings other than dwellings - $300,
- of stock - $630,
- of tools and implements - $260
- and of gross sales from farm in 1874 - $422.

Yield statistics:

- 16 acres plowed in 1874 and 14 acres plowed in 1875.
- 25 acres in pasture in 1874 and 1875.
- 74 acres in meadow 1874
- and 76 acres in meadow 1875.

- 35 tons of hay in 1874.
- 8 acres of oats sown in 1874 and 1875 with 150 bushells of oats harvested in 1874.
- 6 acres of buckwheat sown in 1874 and 2 acres of buckwheat sown in 1875 with 34 bushells of buckwheat harvested in 1874.
- 2 ½ acres of potatoes planted in 1874 and 1875 with 225 bushells of potatoes harvested in 1874.
- ½ acre of peas planted in 1874 and 2 acres of peas planted in 1875 with 5 ½ bushells of peas harvested in 1874.
- ¼ acre of root crops planted in 1874 and 1875 with 20 bushells of root crops harvested in 1874.
- In 1875 there were 25 apple trees on this property,
- 300 pounds of maple sugar and 2 gallons of maple molasses produced during the spring of 1875.

The Durgins had 1 milk cow in 1874 and 1875 and made 180 pounds of butter in 1874. There were 2 horses (older than 2 years) located on the farm in 1875. There was one pig slaughtered on the farm in 1874 and 30 pounds of pork made that same year. 13 sheep shorn in 1874 produced 44 pounds of wool while 17 sheep shorn in 1875 produced 70 pounds of wool. 6 lambs were raised in 1874 and 3 lambs were raised in 1875. One sheep was slaughtered in 1874. Poultry value on the farm in 1875 was $6 and $4.90 worth of poultry was sold in 1874.

7. Adirondack Northway I-87

After WWII, the importance of highways in the national defense system led Congress to appropriate massive funds for interstate highway systems. A four to six lane highway was planned from Albany to Canada which had to pass near Plattsburgh (Air Force base). Ninety percent of the cost was to be provided by the federal government.

In 1954 Assemblyman James FitzPatrick and Senator Gilbert Seeley of Saratoga, introduced a bill to locate the Northway in the eastern section of the Adirondacks, i.e. Lake George, Schroon Valley, Keeseville, Plattsburg to the Canadian border. The problem was that part of the highway would have to cross Forest Preserve lands which is not permissible without a Constitutional amendment. In 1958, the Department of Public Works submitted a report which described three alternative routes: 1. The Champlain Valley Route, 2. The FitzPatrick Route, and 3. Pharoah Lake Route. Ultimately, the FitzPatrick Route was chosen which required the use of 254 acres of Forest Preserve lands. A joint concurrent resolution, initiated by Assemblyman Richard Bartlet, to amend the State Constitution to allow the use of not more than 300 acres of Forest Preserve land to be used for construction and maintenance of the Adirondack Northway (I-87) was passed later in 1958. In 1959, the joint concurrent resolution passed the legislature a second time and in the fall of 1959 the Constitutional amendment was approved by the People of the State of New York at the General Election. I-87, which forms the eastern boundary of the HNWA, was opened in 1967.

8. Hoffman Mountain Ski Center

As a result of the establishment of the Whiteface Mountain Ski Center on Forest Preserve lands in 1949, a number of other proposals for other ski centers were developed. In the late 40's a constitutional amendment was passed which allowed the construction of Belleayre and Gore Mountain Ski areas in 1950 and 1965, respectively. Similar proposals for Hunter Mountain and in the McIntyre Range were either not acted upon or withdrawn before fully enacted upon.

In 1967 a proposal was put forth to establish a ski slope on Hoffman Mountain which would include 30 miles of ski trails, include lifts to the summits of Hoffman Mountain and two of the Peaked Hills. This was

sponsored by the Schroon/ North Hudson Winter Sports Council. The Adirondack Mountain Club opposed construction on aesthetic, financial and technical grounds. The proposal passed the legislature, but was defeated by the voters by a margin of nearly 3 to1.

This page intentionally left blank

II. INVENTORY OF RESOURCES, FACILITIES, AND USE

A. Natural Resources

1. Physical

a. Geology

Information summarized from "New Mountains from Old Rocks: the Adirondacks" NYS Geological Survey Educational Leaflet 23 - Donald Fisher, Yngvar Isachsen, Philip Whitney, "Longstreet Highroad Guide to the New York Adirondacks" Phil Brown and "Geology of the Schroon Lake Quadrangle-William Miller.

Much of the area is made up of sedimentary Precambrian rock of the Grenville formation. These sediments were laid down on the bottom of a sea that once covered a very large area of North America. The sediments occur throughout the Adirondacks and are also quite common in the provinces of Quebec and Ontario. Eventually, after continued accumulation, these sediments attained such depth and exerted such pressure that the bottom layers turned into rock such as sandstone, limestone, and shale. Around 1.1 billion years ago, a continent to the east collided with proto-North America with enough force to lift these rocks into a 5-mile high mountain range and recrystallize the sedimentary rock into metamorphic rock. Thus the sandstone became quartz, the limestone became marble, and the shale became gneiss. Igneous rock from magma from deep within the earth's crust also underwent metamorphosis to form granitic gneiss, olivine metagabro, and metanorthosite. Metamorphosis of the gabbros resulted in localized occurrences of rock containing garnet. In addition, anorthosite underlies the entire Adirondack region and comes to the surface along the Blue Ridge in the northeast section of the HNWA. Minor minerals in anorthosite include oxides of iron and titanium. As a result, over the years there have been a few mining operations in close proximity to the Hoffman Notch Wilderness Area. These include the iron and titanium mine at Tahawus and at least two small mines, one near Loch Muller and one near the Blue Ridge Road.

The forces of wind and water slowly eroded this mountain range down to a level plain and the landscape remained unchanged for hundreds of millions of years. Then, as recently as 5 to 10 million years ago, a localized domical uplift began which created the present mountains. "The uplift established the present radial drainage pattern, which is overprinted on an earlier trellis pattern, controlled by the parallel, northeast-trending faults (Isachsen, 1980)." The mountains largely to the north of the HNWA (the area constituting the High Peaks) are the highest in the Adirondacks, because they were at the center of the domical uplifting and because they are composed of anorthosite, which resists erosion more than the metamophosed sedimentary rocks or gneisses. Consequently the highest peaks on the unit, the Blue Ridge, which includes Hoffman Mountain, are composed of anorthosite and are located in the northeastern section of the HNWA. Additionally, the rocks less resistant to erosion are found mainly in lower elevations, such as the area around the area of Loch Muller and continuing west and north along Minerva Stream.

During the Ice Age, glaciers covered the entire area of the HNWA, however glacial till or moraine only superficially covers valley floors and certain mountains. In a few places, glacial outwash dominates the local geography. For example, along the Branch River near the Blue Ridge Road and a section between North Pond and Loch Muller were formed from glacial deposits. In addition, a great number of the ponds and lakes in the unit were formed when a preglacial valley was blocked by a morainal wall. Also, glacial erratics are common throughout the unit.

b. Soils

Most soils in the HNWA are derived from glacial deposits that have been moved and deposited as glaciers advanced and retreated and are thus, quite different from the bedrock beneath them. These soils are divided into two broad categories: those derived from glacial till and those derived from glacial outwash, or eskers and moraines. Soils from glacial till are much more common on the HNWA and somewhat richer than those from outwash.

A summary of the major soil types and their location are as follows:

1. Lyman-Ricker Complex - The Lyman soils are shallow to bedrock, well drained, low lime, loamy soil formed in glacial till deposits. The Ricker soils are very shallow to moderately deep, well to excessively drained, partially decomposed organic deposits over loamy soil. Permeability is moderate or moderately rapid. Available water capacity is low. These soils are found mostly in the eastern section (between I-87 and Blue Ridge) on east facing slopes such as Peaked Hills, Wyman Hill, Jones Hill and Mt. Severance.

2. Becket-Tunbridge-Skerry Complex - The Becket soils are very deep, well drained, low lime, loamy soil formed in glacial till. The Tunbridge soils are moderately deep, well drained, low lime soil formed in glacial till. The Skerry soils are very deep, moderately well drained, low lime, loamy soil formed in glacial till. Surface runoff is medium. Permeability is moderate in the surface and subsoil, and slow or moderately slow in the substratum. Available water capacity is moderate. This soil is common in the northeast and southeast sections, especially in the foothills of Texas and Blue Ridge to the south and east slopes of Hedgehog Hill, Severance Hill, Jones Hill, Spruce Mt. and Wyman Hill.

3. Tunbridge-Lyman Complex - (See above descriptions of individual soils). Surface runoff is rapid. Permeability is moderate to moderately rapid. Available water capacity is low. This soil is primarily located in the eastern section on slopes and small hills such as Jones Hill, Severance Hill, Peaked Hills, and Wyman Hill. It is also found along Minerva Stream.

4. Becket Fine Sandy Loam - This soil is very deep, moderately steep, well drained, low lime, loamy soil formed in glacial till deposits. Surface runoff is rapid. Permeability is moderate in the surface and subsoil, and slow or moderately slow in the dense substratum. Available water capacity is moderate. Becket soil is found along the lower foothills to the north and west of Blue Ridge and the eastern section between I-87 and Blue Ridge. Other areas are found along Bailey Pond and within Hoffman Notch.

5. Skerry-Becket Complex - See No.2 above. Surface runoff is slow. This is found in scattered pockets in the eastern section, around Loch Muller and on the south slope of Texas Ridge near the East Branch.

6. Monadnock-Tahawus Complex - The Monadnock soils are very deep, well drained, low lime, loamy over sandy soil formed in glacial till. The Tahawus soil is very deep, poor and very poorly drained, low lime, sandy soil formed in glacial till. Surface runoff is slow to moderate. Permeability is moderate in the surface and subsoil, and moderately rapid or rapid in the substratum. Available water capacity is moderate. This soil can be found along the outlet to Bailey Pond and in an area west of Big Pond.

7. Adirondack-Tughill-Lyme Complex - The Adirondack soils are very deep, somewhat poorly to poorly drained. The Tughill soils are very deep and very poorly drained. The Lyme soils are very deep and poorly drained. All three of the above are low lime, loamy soils formed in glacial till. This complex is found scattered with in the eastern section and in a section along Durgin Brook.

8. Skerry-Adirondack Complex - See above descriptions. This soil is found along the upper reaches of Durgin Brook and its tributaries, as well as the upper section of Minerva Creek.

9. Monadnock Fine Sandy Loam - See above description. This soil is located at the southern end of Hoffman Notch and near Platt Brook on the east side.

10. Monadnock-Tunbridge-Tahawus Complex - See above descriptions. The upper elevations of Blue Ridge and Hoffman Mountain are the primary locations of this soil.

11. Mundal-Rawsonville-Worden Complex - The Mundal soils are very deep, well drained, low lime, loamy soil formed in glacial till. Rawsonville and Worden soils are similar except that the Rawsonville soils is moderately deep and Worden soils are somewhat poorly drained. Surface runoff is moderate. Permeability is moderate in the surface and subsoil, and slow or moderately slow in the substratum. Available water capacity is moderate. This soil complex is found along the mid-slopes of Bailey Hill, Washburn Ridge and Sand Pond Mountain and along the southern slope of Texas and Blue Ridge.

12. Mundalite Fine Sandy Loam - This is a very deep, well drained, low lime, loamy soil formed in dense glacial till. Surface runoff is slow to moderate. Permeability is moderate in the surface and subsoil and slow or moderately slow in the substratum. Available water capacity is moderate. This is common in the hill along Durgin Brook in the northeast section of the unit.

13. Rawsonville-Hogback Complex - See above for Rawsonville soils. Hogback soils are shallow, well drained, low lime, loamy soils formed in glacial till. Surface runoff is rapid to very rapid. Permeability is moderate to moderately rapid. Available water capacity is moderate to high. These soils are found on the upper slopes of Washburn Ridge, Bailey Hill, Hayes Mountain, Texas Ridge and Blue Ridge.

14. Hogback-Ricker Complex - See above descriptions. These are common at the upper elevation on Texas and Blue Ridge, Hayes Mountain, Washburn Ridge and Bailey Mountain.

15. Ricker-Couchsachraga-Skylight Complex - Ricker (See above description) Couchsachraga and Skylight soils are shallow or very shallow to bedrock, well drained, low lime, sandy soils formed in colluvium derived from residuum and glacial till. Surface runoff is very rapid. Permeability is moderate or moderately rapid. Available water capacity is low. The top elevations on the Blue Ridge are composed of these soils.

Actual soil types should be referred to when any activity (primarily construction related) is undertaken in the HNWA such that soil characteristics as permeability, drainage, etc. are conducive to the activity contemplated. For example, areas where the placement of new trails is being considered, soils should be well drained and have high permeability rates.

c. Terrain/Topography

Winslow Watson's apt description of Minerva in his 1869 History of Essex County also holds for much of the region surrounding the town. He describes it, as "a rugged and mountainous town, containing about one-third mountain, one-third feasible land, and the residue rough and stony." A glance at a map reveals that the "one-third mountain" and the other third "rough and stony" is now state land, some of which comprises the HNWA.

In general, the land in this locale rises from south southeast, along Schroon Lake to north northwest. There are three main ranges which are oriented in a southwest/northeast direction; Washburn Ridge, Texas Ridge, and Blue Ridge Range. Elevation in the HNWA ranges from around 900 ft above Mean Sea Level (MSL) on the parcels near Schroon Lake up to 3,693 ft above MSL on Hoffman Mountain. Hoffman Mountain and Bailey Hill (3050 ft.) are the only points where the elevation rises above 3,000 feet on the unit. There are several other notable peaks on the unit that are easy to distinguish from others because of their size or shape including Blue Ridge (2825 ft.), Hayes Mountain (2787 ft.), and Severance Hill (1638).

d. Water

The Hoffman Notch Wilderness Area lies within the Upper Hudson watershed. The Boreas River, a "scenic river", designated by ECL §15-2713(2)(c)) flows directly into the Hudson River and drains the northwestern portion of the unit. Minerva Stream flows into Trout Brook, which along with Rogers Brook, Platt Brook and The Branch flow directly into the Schroon River, a "recreational river" designated by ECL §15-2714(3)(z)) and drain most of the HNWA. The Schroon River flows into the Hudson River at Warrensburg.

Ponded waters in the HNWA range in size from small beaver flows to 57 acre Big Pond at the south central edge of the unit. The NYS Biological Survey lists 11 ponded waters within or bordering on the unit.

Appendix 3 lists the major ponded water in and bordering the unit with a brief narrative pertaining to their important features, including past and current management, accessibility, size, water chemistry, and fish species composition. Appendix 3 also gives statistical information about ponded waters including definitions of fisheries management classifications and depth.

e. Wild, Scenic, and Recreational Rivers

Within the unit, no rivers are designated under the Wild, Scenic and Recreational Rivers Act.

Immediately adjacent to the Hoffman Notch Unit, a portion of the Boreas River is classified scenic in the Vanderwhacker Unit and the Schroon River is classified as Recreational off the eastern boundary.

f. Wetlands

Wetlands within the HNWA have been inventoried and mapped, and are protected under the 1975 New York State Freshwater Wetlands Act by the Department of Environmental Conservation and the Adirondack Park Agency. The most recent inventory from 1989 is available on 7.5 minute quad sheets of the area at the APA offices in Ray Brook, NY. In the Adirondack Park, regulations cover wetlands of 1 acre or larger and include a buffer of 100 ft. Wetlands under an acre in size are also regulated if they border a body of water. Outside the Adirondack Park, New York State regulations cover wetlands of 12.4 acres or larger and include a 100 ft buffer. Federal regulations do not have a minimum size requirement, nor do they include a buffer distance.

Hoffman Notch Wilderness Area Wetlands Statistics

According to APA regulatory wetland coverage:

Type	Acreage
Wetland	3,092
Open Water	155
Upland	35,241

According to APA covertype wetland coverage (note difference with above):
There are approximately 2,057 acres of regulated wetlands located in HNWA, which are broken up into the following categories and acreage:

Wetland Type	Area (acres)	% of Total Wetland Area
Forested Needle-Leaved Evergreen	1284	62.4
Scrub/Shrub Broad-Leaved Deciduous	204	9.9
Emergent Persistent	162	7.9
Scrub/Shrub Needle-Leaved Evergreen	219	10.6
Scrub/Shrub Broad-Leaved Evergreen	68	3.3
Forested Broad-Leaved Deciduous	48	2.4
Forested Dead	70	3.4
Dead scrub/shrub	2	.1
Total	2057	100

See Appendix 11 for a regulated wetlands map. The most common are forested needle-leaved evergreen wetlands, which are those with a high percentage of mature balsam fir and spruce tree cover. Scrub/shrub broad-leaved deciduous wetlands, those where speckled alder, willow and other deciduous shrubs predominate, are also quite common. Wetlands with cattails, sedges, and grasses (emergent persistent wetlands) are also common on the unit. Wetlands consisting of young or stunted spruce and fir (scrub/shrub needle-leaved evergreen) or a variety of evergreen shrubs such as leatherleaf, sheep laurel, and/or Labrador tea also are present. There are smaller areas of wetlands dominated by hardwood trees, such as red maple (forested broad-leaved deciduous), and beaver activity has created wetlands of standing dead trees (forested dead).

g. Climate

Weather conditions affect public recreation and can be important in determining trail location, seasonal use trends, public uses, and management. The local climate of the HNWA area can be described as generally cool and moist. Climatic data exist for the hamlet of Newcomb on the outskirts of the unit, but

information for interior portions of the unit is unavailable. Data for Newcomb are fairly representative of conditions on most of the HNWA. Conditions on the easternmost parcels of the HNWA in the vicinity of Schroon Lake will be generally warmer in winter months and have less snow cover. Of course, weather conditions will vary across the unit according to elevation, aspect, tree cover, distance from large bodies of water, and local wind patterns.

Data collected by SUNY ESF at their Huntington Forest property near the Hamlet of Newcomb follows (1941 through 1994):

Average Yearly Precipitation (including snowfall)	=	40"
Average Yearly Snowfall	=	121"

Mean Monthly Temperature (Fahrenheit)

January	15	April	39	July	65	October	44
February	17	May	51	August	63	November	32
March	26	June	60	September	55	December	19

[mean of daily high and low temperature]
(data from personal communication with Ray Masters, SUNY ESF Huntington Forest)

Blowdown

Winds have affected portions of the HNWA in recent years causing areas of blowdown on a relatively small scale. In 1950, winds leveled stands throughout the Adirondacks from Fulton County to Franklin County. Except for higher elevations, much of the HNWA escaped extensive damage from the 1950 blowdown. According to maps drawn shortly after the event, blowdown was limited to higher elevations such as south facing slopes of Hoffman Mountain and Texas Ridge. The area south of Lester Flow was also affected. In 2011, tropical storm Irene brought considerable blowdown over certain portions of the Hoffman Notch Wilderness, one area impacted heavily was the Big Pond Trail which sustained numerous large blowdown along most of its length.

h. Air Resources and Atmospheric Deposition

The effects of various activities on the Hoffman Notch Wilderness air quality have not been sufficiently measured nor determined. Air quality and visibility in the unit appears to be good to excellent, rated Class II (moderately well controlled) by federal and state standards. The county comprising the Hoffman Notch Wilderness have not been designated as a non-attainment area for ozone or other criteria pollutants.

The adverse effect of atmospheric deposition (i.e., acid rain) on the Adirondack environment over the last two decades has been documented by many researchers. While permanent monitoring sites have not been established in the Hoffman Notch Wilderness Area, general observations of the effects of acidic deposition on the regional ecosystem are numerous and well documented.

Air quality in the region is good to excellent, rated Class II (moderately well controlled) by federal and state standards. The region receives weather flowing south from the Arctic Circle that tends to be cleaner than weather emanating from the west and southwest. Summit visibility is often obscured by haze caused by air

pollutants when a large number of small diameter particles exist in the air. Air quality may be more affected by particulate matter blown in from outside pollution sources rather than from activities inside the Adirondack Park. The relative assimilation of outside pollutants, commonly referred to as "acid rain," is under investigation and study by staff at the NYS Atmospheric Science Research Station located on Whiteface Mountain and other researchers. Whiteface's preeminent feature as a high standing mountain apart from the other High Peaks, in the face of prevailing winds, and a long-term collection center of weather research data, makes it an outstanding outdoor research laboratory.

Recent results of lake chemistry monitoring by DEC from 1992 through 1999, sulfates declined in 92 percent of a representative sample of lakes, selected by the Adirondack Lakes Survey Corporation (ALSC), but nitrates increased in 48 percent of those lakes. The decrease in sulfates is consistent with decreases in sulfur emissions and deposition, but the increase in nitrates is inconsistent with the stable levels of nitrogen emissions and deposition.

Continued monitoring by collection and analysis of acid deposition will allow the monitoring network to determine if improvements will continue as a result of reductions of SO2- and NO4- legislated in the 1990 Clean Air Act Amendments (CAAA).

Effects of Acidic Deposition on Forest Systems

At present, the mortality and decline of red spruce at high elevations in the Northeast and observed reductions in red spruce growth rates in the southern Appalachians are the only cases of significant forest damage in the United States for which there is strong scientific evidence that acid deposition is a primary cause (National Science and Technology Council Committee on Environment and Natural Resources, 1998). The following findings of the National Acid Precipitation Assessment Program (1998) provide a broad overview of the effects of acidic deposition on the forests of the Adirondacks.

The interaction of acid deposition with natural stress factors has adverse effects on certain forest ecosystems. These effects include:

- Increased mortality of red spruce in the mountains of the Northeast. This mortality is due in part to exposure to acid cloud water, which has reduced the cold tolerance of these red spruce, resulting in frequent winter injury and loss of foliage.
- Reduced growth and/or vitality of red spruce across the high-elevation portion of its range.
- Decreased supplies of certain nutrients in soils to levels at or below those required for healthy growth.

Nitrogen deposition, in addition to sulfur deposition, is now recognized as an important contributor to declining forest ecosystem health both at low and at higher elevations. Adverse effects occur through direct impacts via increased foliar susceptibility to winter damage, foliar leaching, leaching of soil nutrients, elevation of soil aluminum levels, and/or creation of nutrient imbalances. Excessive amounts of nitrogen cause negative impacts on soil chemistry similar to those caused by sulfur deposition in certain sensitive high-elevation ecosystems.

Sensitive Receptors

High-elevation spruce-fir ecosystems in the eastern United States epitomize sensitive soil systems. Base cation stores are generally very low, and soils are near or past their capacity to retain more sulfur or nitrogen. Deposited sulfur and nitrogen, therefore, pass directly into soil water, which leaches soil

aluminum and minimal amounts of calcium, magnesium, and other base cations out of the root zone. The low availability of these base cation nutrients, coupled with the high levels of aluminum that interfere with roots taking up these nutrients can result in plants not having sufficient nutrients to maintain good growth and health.

Sugar maple decline has been studied in the eastern United States since the 1950s. One of the recent studies suggests that the loss of crown vigor and incidence of tree death is related to the low supply of calcium and magnesium to soil and foliage (Driscoll 2002).

Exposure to acidic clouds and acid deposition has reduced the cold tolerance of red spruce in the Northeast, resulting in frequent winter injury. Repeated loss of foliage due to winter injury has caused crown deterioration and contributed to high levels of red spruce mortality in the Adirondack Mountains of New York, the Green Mountains of Vermont, and the White Mountains of New Hampshire.

Acid deposition has contributed to a regional decline in the availability of soil calcium and other base cations in high-elevation and mid-elevation spruce-fir forests of New York and New England and the southern Appalachians. The high-elevation spruce-fir forests of the Adirondacks and Northern New England are identified together as one of the four areas nationwide with a sensitive ecosystem and subject to high deposition rates.

Effects of Acidic Deposition on Hydrologic Systems

New York's Adirondack Park is one of the most sensitive areas in the United States affected by acidic deposition. The Park consists of over six million acres of forest, lakes, streams and mountains interspersed with dozens of small communities, and a large seasonal population fluctuation. However, due to its geography and geology, it is one of the most sensitive regions in the United States to acidic deposition and has been impacted to such an extent that significant native fish populations have been lost and signature high elevation forests have been damaged.

There are two types of acidification which affect lakes and streams. One is a year-round condition when a lake is acidic all year long, referred to as chronically or critically acidic. The other is seasonal or episodic acidification associated with spring melt and/or rain storm events. A lake is considered insensitive when it is not acidified during any time of the year. Lakes with acid-neutralizing capability (ANC) values below 0 µeq/L are considered to be chronically acidic. Lakes with ANC values between 0 and 50 µeq/L are considered susceptible to episodic acidification; ANC may decrease below 0 µeq/L during high-flow conditions in these lakes. Lakes with ANC values greater than 50 µeq/L are considered relatively insensitive to inputs of acidic deposition (Driscoll et al. 2001). Watersheds which experience episodic acidification are very common in the Adirondack Region. A 1995 EPA Report to Congress estimated that 70% of the target population lakes are at risk of episodic acidification at least once during the year.

Recent results of lake chemistry monitored by NYS DEC

From 1992 through 1999, sulfates declined in a majority of selected lakes by the Adirondack Lake Survey Corporation, but nitrate patterns were less clear with a few lakes improving and most lakes not changing. The decrease in sulfates is consistent with decreases in sulfur emissions and deposition, but the nitrate pattern is not explained by the unchanged levels of nitrogen emissions and depositions of recent decades.

In addition to sensitive lakes, the Adirondack region includes thousands of miles of streams and rivers which are also sensitive to acidic deposition. While it is difficult to quantify the impact, it is certain is that

there are large numbers of Adirondack brooks that will not support native Adirondack brook trout. Over half of these Adirondack streams and rivers may be acidic during spring snowmelt, when high aluminum concentrations and toxic water conditions adversely impact aquatic life. Acid ion depositions, "acid rain," has apparently had some impact on the fisheries resources in the Hoffman Notch Wilderness.

Permanent Long-Term Monitoring (LTM) sites in and around this unit

As part of an Adirondack Park extensive survey in 1986, the ALSC surveyed a total of two waters in this unit (See Appendix 3 table for ALSC ponds). One other surveyed pond is on private lands within the geographical boundary of the unit. Summaries of those ponded waters data can be found at (http://www.adirondacklakessurvey.org), see ALS Pond Information. Since 1992, the Adirondack Long-Term Monitoring (LTM) program managed by the ALSC has been sampling chemistry in 52 lakes across the Park on a monthly basis.

2. Biological

a. Vegetation Inventory

The vegetation of the unit has been shaped over the years through the effects of wind, fire, logging, and settlement, and influenced by soils, elevation, aspect, hydrological regimes, and many other processes. In the mid to late 1800's, much of the unit was extensively logged, lessening the softwood component (pine, spruce and hemlock) resulting in extensive areas of hardwoods in the HNWA. The areas of settlement and agriculture were also much larger than they are today, as attested by the number of stone fences and old stone foundations throughout the unit. Beech bark disease (Nectria coccinea var. faginata) has also had an effect throughout the unit over the recent years. Many of the large diameter American beech have been killed, and mainly small root sprouts exist with scattered large diameter trees persisting. All plants on state land are protected by the General State Land Use Regulations (6 NYCRR § 190.8)

The most common forest types of the unit include:

- Lowland Coniferous Forest - This type is quite common and typical of low lying areas of the HNWA, where soils are generally high in moisture content and exhibit poor drainage. It is often composed of balsam fir (*Abies balsamea*) and red spruce (*Picea rubra*) and occasionally has an eastern white pine (*Pinus strobus*) component. Infrequent associated species include northern white cedar (*Thuja occidentalis*), black spruce (*Picea mariana*), and tamarack (*Larix laricina*). Often tree canopy is very dense and subsequently the herbaceous layer is quite sparse. This forest type is very common along the banks of the Boreas River, which was named for the "boreal" look of the vegetation along its banks.

- Mixed Coniferous and Deciduous Forest - This type is generally composed of northern hardwoods with a major red spruce and/or balsam fir component. It usually occurs at elevations above spruce-fir swamps and eventually fades into northern hardwoods above. In some places, white spruce (*Picea glauca*) replaces red spruce.

- Northern Hardwoods Forest - This type is the most common throughout the unit and usually consists of sugar maple (*Acer saccharum*), American beech (*Fagus grandifolia*), and yellow birch (*Betula alleghaniensis*). Other associated tree species may include northern red oak (*Quercus rubra*) on warmer and drier sites, eastern hemlock (Tsuga canadensis), black cherry (*Prunus serotina*), white ash (*Fraxinus americana*), red maple (*Acer rubrum*), and less frequently American

basswood (*Tilia americana*). Characteristic understory vegetation includes hobblebush (*Viburnum lantanoides*), striped maple (*Acer pennsylvanicum*), and overstory tree saplings. This type is normally found at elevations up to 2,500 ft. on moderately well-drained sites. Examples of this type can be seen along the major ridge lines of the unit, including Texas and Hoffman.

- Mountain Spruce-Fir Forest - This type generally occurs at elevations above 2,500 ft. It is composed of mainly red spruce and balsam fir often in association with yellow birch. Mountain-ash (*Sorbus americana*) is often a sparse associate.

- Successional Forests - This type is common to burned over areas, old openings and more recently abandoned areas on the unit. This type can vary considerably, but is often made up of one or more of the following species; quaking aspen (*Populus tremuloides*), paper birch (*Betula papyrifera*), white pine, black cherry, and white ash. Examples of this type can be seen along roadsides and on parcels near the hamlet of Minerva. Stands of pure white pine also occur in some locations and are generally indicative of areas of fire or blowdown.

- Northern White Cedar Swamp - a conifer or mixed swamp that occurs on organic soils in cool poorly drained depressions in central and northern New York and along streams and lakes in the northern half of the state. A large community, near Durgin Brook, that occurs in association with high quality spruce-fir swamp. A potentially high quality community that needs further field studies.

- Red Pine variant of Pitch Pine-oak-heath rocky summit - a community that occurs on warm, dry, rocky ridgetops and summits where the bedrock is noncalcareous and the soils are more or less acidic. The vegetation may be sparse or patchy with numerous rock outcrops. Found near Peaked Hills. A potentially high quality community that needs further field studies.

- Plantation - Although not necessarily natural in character, plantations are present in several locations on the unit. Many of these were planted on abandoned farmland and burned over areas in the '30s by the Civilian Conservation Corps (CCC) and may be made up of one or more species of softwoods, including eastern white pine, red pine (*Pinus rubra*), Norway spruce (*Picea abies*), and Scots pine (*Pinus sylvestris*). Examples of scotch pine plantations can be seen near the trail head on Hoffman Road. Norway spruce plantations were also established and can be seen along the northern portion of the Cheney Pond-Irishtown snowmobile trail. A large red pine plantation is found along the southwestern boundary below Loch Muller.

Other forest types occur on the unit but occupy relatively small areas.

Threatened, Rare, and Endangered Plants

Based on the Natural Heritage Maps, there are no known threatened, rare, or endangered plants known to exist on the unit.

Invasive Plants

Terrestrial Invasive Plant Inventory

In 1998 the Adirondack Nature Conservancy's Invasive Plant Project initiated Early Detection/Rapid Response (ED/RR) surveys along Adirondack Park roadsides. Expert and trained volunteers reported 412 observations of 10 plant species throughout the area surveyed, namely NYS DOT Right-of-Ways (ROW). In

1999 the Invasive Plant Project was expanded to include surveying back roads and the "backcountry" (undeveloped areas away from roads) to identify the presence or absence of 15 invasive plant species. Both surveys were conducted under the auspices of the Invasive Plant Council of New York "Top Twenty List" of non-native plants likely to become invasive within New York State. A continuum of ED/RR surveys now exists under the guidance of the Adirondack Park Invasive Plant Program (APIPP).

Assessments from these initial ED/RR surveys determined that four terrestrial plant species would be targeted for control and management based upon specific criteria such as geophysical setting, abundance and distribution, multiple transport vectors and the likelihood of human-influenced disturbance. The four priority terrestrial invasive plants species are Purple loosestrife (*Lythrum salicaria*), Common reed (*Phragmites australis*), Japanese knotweed (*Polygonum cuspidatum*) and Garlic mustard (*Alliaria petiolata*).

The Adirondack Park is susceptible to further infestation by invasive plant species intentionally or accidentally introduced to this ecoregion. While many of these species are not currently designated a priority species by APIPP, they may become established within or in proximity to a Unit and require resources to manage, monitor, and restore the site.

Infestations located within and in proximity to a Unit may expand and spread to uninfected areas and threaten natural resources within a Unit; therefore it is critical to identify infestations located both within and in proximity to a Unit and then assess high risk areas and prioritize Early Detection Rapid Response (ED/RR) and management efforts.

Terrestrial Invasive Plant Locations (See Appendix 11 for map of infestations)

There is one (1) spotted knapweed infestation within the unit.

At 4857383 N 599912 E, multiple spotted knapweed infestations occur at the Severance Hill trail head parking area, expanding westward from I-87, into the trail head parking area, and along the trail for approximately .25 mile. Affected area is approximately 10,000 square feet.

There is one (1) spotted knapweed infestation in close proximity to the unit.

At 4856978 N 590036, spotted knapweed occurs within both right-of-ways of Loch Muller Road, expanding into upland fringe, .75 mile south of Warrens Pond. Additional infestations occur near the Bailey Pond trail head parking area and both right-of-ways at the intersection of Hill Road with Loch Muller Road. Affected area is approximately 2000 square feet.

There is one (1) purple loosestrife infestation in proximity to the unit.

At 4867605 N 593799 E, purple loosestrife occurs within the northern, maintained right-of-way of Boreas Road. Affected area is approximately 2500 square feet.

Aquatic Invasive Plant Inventory

A variety of monitoring programs collect information directly or indirectly about the distribution of aquatic invasive plants in the Adirondack Park including the Department, Darrin Fresh Water Institute, Paul Smiths College Watershed Institute, lake associations, and lake managers. In 2001, the APIPP compiled existing information about the distribution of aquatic invasive plant species in the Adirondack Park and instituted a regional long-term volunteer monitoring program. APIPP trained volunteers in plant identification and

reporting techniques to monitor Adirondack waters for the presence of aquatic invasive plant species. APIPP coordinates information exchange among all of the monitoring programs and maintains a database on the current documented distribution of aquatic invasive plants in the Adirondack Park.

Aquatic invasive plant species documented in the Adirondack Park are Eurasian watermilfoil (*Myriophyllum spicatum*), Water chestnut (*Trapa natans*), Curlyleaf pondweed (*Potamogeton crispus*), Fanwort (*Cabomba caroliniana*), European frog-bit (*Hydrocharis morsus-ranae*), and Yellow floating-heart (*Nymphoides peltata*). Species located in the Park that are monitored for potential invasibility include Variable-leaf milfoil (*Myriophyllum heterophyllum*), Southern Naiad (*Najas guadalupensis*), Swollen Bladderwort (*Utricularia inflata*), and Brittle Naiad (*Najas minor*). Additional species of concern in New York State but not yet detected in the Park are Starry Stonewort (*Nitellopsis obtusa*), Hydrilla (*Hydrilla verticillata*), Water hyacinth (*Eichhornia crassipes*), and Brazilian elodea (*Egeria densa*).

Infestations located within and in proximity to a Unit may expand and spread to uninfected areas and threaten natural resources within a Unit; therefore it is critical to identify infestations located both within and in proximity to a Unit to identify high risk areas and prioritize Early Detection Rapid Response (ED/RR) and management efforts.

Aquatic invasive plants are primarily spread via human activities, therefore lakes with public access, and those connected to lakes with public access, are at higher risk of invasion. Documentation of aquatic invasive plant distributions in the Park is limited by the number of lakes and ponds that have been surveyed and the frequency of monitoring. In some cases, only a portion of the water's shoreline has been surveyed. In other cases, a single specimen may have been identified without documentation as to its location within the waterbody. It follows that a negative survey result indicates only that an invasive plant has not been detected and does not preclude the possibility of its existence.

While a comprehensive survey for the presence of aquatic invasive plant species has not been completed at present, APIPP volunteers monitored the following waterway in 2006 within the Unit: Big Pond. No aquatic invasive plants were detected during this survey. The APIPP Park-wide volunteer monitoring program aims to maintain a long-term monitoring program on this and other lakes. All aquatic invasive species pose a risk of spreading via transport mechanisms which may include seaplanes, motorized and non-motorized watercraft (canoes, kayaks, jet skies, motor boats etc.) and associated gear and accessories.

Aquatic Invasive Plant Locations

No aquatic invasive plants were documented in the Unit.

b. Wildlife Inventory

Wildlife communities in the unit reflect those species commonly associated with mature northern hardwood and mixed hardwood/softwood forests that are transitional to the boreal forests of higher latitudes. Significant boreal forest within the unit includes high elevation (limited primarily to the Blue Ridge and Washburn ranges) and lowland spruce-fir habitats that are important for a number of wildlife species with statewide distributions mostly or entirely within the Adirondacks (e.g., Bicknell's Thrush, Spruce Grouse). Terrestrial fauna are represented by a variety of bird, mammal, and invertebrate species. Amphibians and reptiles also occur on the unit and, similar to other areas within the central Adirondacks, species diversity is relatively low as compared with other vertebrates. 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 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 HNWA.

Comprehensive field inventories of wildlife species have not focused specifically on the HNWA, or Forest Preserve units in general. Statewide wildlife survey efforts conducted by the DEC have included two Breeding Bird Atlas projects (1980-1985 and 2000-2005) (See Appendix 1) and the New York State Amphibian and Reptile Atlas Project (1990-1999). 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 unit is largely covered by mature forests with limited areas of early successional habitat. 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 lands than they do on private lands characterized by a greater variety of habitat types. Natural forest disturbances including wind storms, 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. These natural disturbances create important habitat for a variety of species that depend on early succession vegetation communities and the edges created between these communities and the surrounding forest. However, these areas are usually limited in size. 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.

Amphibians and Reptiles

The New York State Amphibian and Reptile Atlas Project (1990-1999) confirmed the presence of 20 species of reptiles and amphibians in USGS Quadrangles within, or partially within HNWA. 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. Some species may have been found on private lands adjacent to the state lands. However, these data should provide a good indication of the species found throughout the HNWA. These included 2 species of turtles, 2 species of snakes, 9 species of frogs and toads, and 7 species of salamanders (Table 1). These species are classified as protected wildlife and some may be harvested during open hunting seasons. Of the 20 confirmed species, 1 was classified as special concern (Jefferson salamander) and none were classified as endangered or threatened.

Table 1. Amphibian and reptile species recorded in USGS Quadrangles within, or partially within, the Hoffman Notch Wilderness Area (HNWA) during the New York State Amphibian and Reptile Atlas Project, 1990-1999.

Common Name	***Scientific Name***
Spotted Salamander	*Ambystoma maculatum*
Red-spotted Newt	*Notophthalmus v. viridescens*
Northern Dusky Salamander	*Desmognathus fuscus*

Northern Redback Salamander	*Plethodon cinereus*
Northern Spring Salamander	*Gyrinophilus p. porphyriticus*
Northern Two-lined Salamander	*Eurycea bislineata*
Jefferson Salamander	*Ambystoma jeffersonianum*
Eastern American Toad	*Bufo a. americanus*
Northern Spring Peeper	*Pseudacris c. crucifer*
Gray Treefrog	*Hyla versicolor*
Bullfrog	*Rana catesbeiana*
Green Frog	*Rana clamitans melanota*
Mink Frog	*Rana septentrionalis*
Wood Frog	*Rana sylvatica*
Northern Leopard Frog	*Rana pipiens*
Pickerel Frog	*Rana palustris*
Common Snapping Turtle	*Chelydra s. serpentina*
Painted Turtle	*Chrysemys picta*
Northern Redbelly Snake	*Storeria o. occiptomaculata*
Common Garter Snake	*Thamnophis sirtalis*

[1]Special Concern species.

Habitat Associations

Spotted Salamander (*Ambystoma maculatum*).-- The spotted salamander prefers vernal pools for breeding, but its jelly-like globular egg masses are found in a variety of wetland habitats. Because of its fossorial habits, the spotted salamander is rarely encountered except during the breeding season. At that time they can be found under rocks, logs, and debris near the edges of the breeding pools.

Red-spotted Newt (*Notophthalmus viridescens)*.-- One of the most fascinating life histories of any salamander is that of the Red-spotted Newt, with four stages in its life cycle (egg, aquatic larva, terrestrial immature red eft, and aquatic adult). Interestingly, the red eft remains on land from two (Bishop, 1941) to seven years (Healy, 1974) before they transform into their final life stage, the aquatic adult.

Northern Dusky Salamander (*Desmognathus fuscus*).-- The Northern Dusky Salamander inhabits rocky stream ecotones, hillside seeps and springs, and other seepage areas in forested or partially forested habitat. They are typically found under rocks and other cover objects such as logs adjacent to, or in the water (Harding, 1997).

Northern Redback Salamander (*Plethodon cinereus*).-- The Northern Redback Salamander is found in deciduous, coniferous or mixed forest where it nests in moist, rotten logs. It favors pine logs in advanced stages of decay rather than deciduous tree logs that appear to be more susceptible to molds, thus attributing to possible fungal infections in the eggs (Pfingsten and Downs 1989).

Northern Spring Salamander (*Gyrinophilus porphyriticus*).-- Although Northern Spring Salamanders inhabit cool, well-oxygenated streams in forested areas where they can be found under rocks and logs, they sometimes can be found foraging in the open on rainy nights. This species also uses underground springs that are a considerable distance away from their natal habitat (Harding, 1997).

Northern Two-lined Salamander (*Eurycea bislineata*).-- Northern Two-lined Salamanders inhabit springs and seeps in forested wetlands, edges of brooks and streams, and terrestrial areas many meters from water. They are usually found under rocks, logs, and debris (Pfingsten and Downs, 1989).

Jefferson salamander (*Ambystoma jeffersonianum*).-- Jefferson salamanders are considered vernal pool obligates. The salamanders require pools that remain deep long enough to complete metamorphosis. Typical Jefferson salamander breeding pools are ringed with scattered shrub vegetation in upland deciduous forest. Although vernal pools are a limiting habitat parameter for Jefferson salamanders, adults spend a very short period actually using the pools, remaining there only during the breeding season (Pfingsten and Downs, 1989). Consequently, the surrounding forested habitat used during the remainder of the year (including during hibernation) is of utmost importance.

Eastern American Toad (*Bufo americanus*).-- Although Eastern American Toads can be found in almost every habitat from cultivated gardens to woodlands, they are typically found in moist upland forest. Special habitat requirements include shallow water for breeding (DeGraaf and Rudis, 1983).

Northern Spring Peeper (*Pseudacris crucifer*).-- Northern Spring Peepers inhabit coniferous, deciduous and mixed forested habitat where they typically breed in ponds, emergent marshes or shrub swamps. However, their spring chorus is commonly heard from just about any body of water, especially in areas where trees or shrubs stand in and near water (Hunter, et al., 1999).

Gray Treefrog (*Hyla versicolor*).-- Gray Treefrogs are found in forested areas where they hibernate near the soil surface, tolerating temperatures as cold as -6 degrees C for as long as five consecutive days. Due to the production of glycerol which serves as an antifreeze, gray treefrogs can freeze up to 41.5% of their total body fluids. The frogs breed in both permanent or temporary ponds and wetlands (Hunter, et al., 1999).

Bullfrog (*Rana catesbeiana*).-- Bullfrogs require permanent bodies of water with adequate emergent and edge cover. Their aquatic habitats include shallow lake coves, slow-moving rivers and streams, and ponds (Hunter, et al., 1999).

Green Frog (*Rana clamitans*).-- Green frogs are rarely found more than several meters from some form of water, including lakes and ponds, streams, quarry pools, springs, and vernal pools (DeGraaf and Rudis, 1983).

Mink Frog (*Rana septentrionalis*).-- Mink frogs prefer cool, permanent water with adequate emergent and floating-leaved vegetation where they feed on aquatic insects and other invertebrates. Here they also hibernate on the bottom in the mud (Harding, 1997).
Wood Frog (*Rana sylvatica*).-- Wood frogs prefer cool, moist, woodlands where they select temporary pools for breeding. However, where vernal pools are absent, wood frogs will breed in a variety of habitats including everything from cattail swamps to roadside ditches (Hunter, et al., 1999).

Northern Leopard Frog (*Rana pipiens*).-- Although sometimes found in wet woodlands, Northern Leopard Frogs are the frog of wet meadows and open fields, breeding in ponds, marshes, and slow, shallow, vegetated streams (DeGraaf and Rudis, 1983).

Pickerel Frog (*Rana palustris*).-- Whether the habitat selected is a bog, fen, pond, stream, spring, slough, or cove, Pickerel Frogs prefer cool, clear waters, avoiding polluted or stagnant habitats. Grassy stream banks and inlets to springs, bogs, marshes, or weedy ponds are preferred habitats (Harding, 1997).

Common Snapping Turtle (*Chelydra serpentina*).-- Snapping Turtles are found in most permanent and semi permanent bodies of fresh and brackish water. Areas that have dense aquatic vegetation with deep, soft,

organic substrates and plenty of cover are favored (Mitchell, 1994).

Painted Turtle (*Chrysemys picta*).-- Painted Turtles most often inhabit ponds, lakes, and other slow-moving bodies of water with soft substrates and abundant aquatic vegetation. A critical habitat parameter is adequate basking sites such as logs, rocks, and mats of aquatic vegetation.

Northern Redbelly Snake (*Storeria occipitomaculata*).-- Although the Northern Redbelly Snake prefers wetland-upland ecotones, it is found in a variety of terrestrial habitats. This extremely secretive nocturnal species may be found under rocks, logs, bark, and leaves; but if conditions are dry, they are apt to go underground in unused rodent borrows (Mitchell, 1994).

Common Garter Snake (*Thamnophis sirtalis*).-- Garter Snakes are found in a wide variety of habitats including, but not limited to, woodlands, meadows, wetlands, streams, drainage ditches, and even city parks and cemeteries (Conant and Collins, 1998). But large populations of Common Garter Snakes are usually found in moist, grassy areas near the edges of water (Harding, 1997).

Birds

The avian community varies seasonally. Some species remain within the area year round, but the majority of species utilize the area during the breeding season and for migration. The first Breeding Bird Atlas Project (BBA) conducted during 1980-1985 (Andrle and Carroll, 1988) and the Breeding Bird Atlas 2000 Project (2000-2005) documented 124 and 98 species, respectively, in atlas blocks within, or partially within the HNWA. It is important to note that atlas blocks overlap and extend beyond the land boundary of the HNWA . 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 the state lands. However, the BBA data should provide a good indication of the species found throughout the unit and adjacent region. It is also important to note that many factors can influence survey results (e.g., weather, survey effort), therefore, BBA data should be used as a tool for further study and monitoring of bird populations and not as a definitive statement on bird population changes.

Birds Associated with Boreal Forest

The HNWA contains high elevation (limited primarily to the Blue Ridge and Washburn ranges) and lower elevation boreal forest that is significant for a variety of birds. In total, boreal forest comprises approximately 4,185 acres or 11% of the unit. This includes approximately 1,922 acres of lower elevation boreal forest, which occurs mostly in the northwestern portion of the unit. The state endangered Spruce Grouse prefers lowland boreal forests, where it selects immature or uneven-aged spruce-fir habitats. Spruce Grouse was detected during the first BBA, but not the second project.

Additionally, there are approximately 2,263 acres of high elevation boreal forest (equal to or greater than 2,800 feet elevation) in the unit. This area is restricted primarily to the Blue Ridge Range (2,053 acres) with lesser amounts on Bailey Hill (133 acres), Washburn Ridge (72 acres), and Sand Pond Mountain (5 acres). High elevation spruce-fir forest is especially important as breeding habitat for Bicknell's Thrush, a special concern species in New York. Throughout the range of this species, montane forest between 2,900 ft. and 4,700 ft. and dominated by stunted balsam fir and red spruce is the primary breeding habitat (Atwood et al., 1996). This species utilizes fir waves and natural disturbances as well as the dense regenerated ecotones along the edges of ski slopes. The species is most common on the highest ridges of the Adirondacks, preferring young or stunted dense stands of balsam fir up to 9 ft. in height. Here they lay their eggs above the ground in the dense conifer thickets. No extant or historical records of Bicknell's

Thrush exist for HNWA.

Of 27 bird species associated with boreal forest that occur in New York (Tim Post, NYSDEC, personal communication), 20 (74%) have been documented in BBA survey blocks within, or partially within, HNWA. During the two BBA projects, 13 species of lowland boreal forest birds, 3 species of high elevation boreal forest birds, and 4 species commonly associated with boreal forest, have been documented on the unit (Table 2). Some notable differences in boreal bird species composition were recorded between the two atlas periods; Spruce Grouse, Black-backed Woodpecker, Blackpoll Warbler, and Blackburnian Warbler were documented in the first atlas project but not the second, and the Bay-breasted Warbler and Pine Sisken were documented in the second atlas project but not the first.

Table 2. Bird species associated with boreal forest as recorded by the New York State Breeding Bird Atlas projects (1980-1985 and 2000-2005) occurring in atlas blocks within, or partially within the Hoffman Notch Wilderness Area (HNWA).

Common Name	Scientific Name	1980-1985	2000-2005
Lowland Boreal Forest Species			
Spruce Grouse	*Falcipennis canadensis*	✓	
Black-backed Woodpecker	*Piocoides dorsalis*	✓	
Olive-sided Flycatcher	*Contopus cooperi*	✓	✓
Boreal Chickadee	*Poecile hudsonicus*	✓	✓
Ruby-crowned Kinglet	*Regulus calendula*	✓	✓
Bay-breasted Warbler	*Dendroica castanea*		✓
Rusty Blackbird	*Euphagus carolinus*	✓	✓
White-throated Sparrow	*Zonotrichia albicollis*	✓	✓
Yellow-bellied Flycatcher	*Empidonax flaviventris*	✓	✓
Lincoln's Sparrow	*Melospiza lincolnii*	✓	✓
Pine Sisken	*Carduelis pinus*		✓
White-winged Crossbill	*Loxia leucoptera*	✓	✓
Red Crossbill	*Loxia curvirostra*	✓	✓
High Elevation Boreal Forest Species			
Blackpoll Warbler	*Dendroica striata*	✓	
Winter Wren	*Troglodytes troglodytes*	✓	✓
Swainson's Thrush	*Catharus ustulatus*	✓	✓
Species Commonly Associated with Boreal Forest			
Evening Grosbeak	*Coccothraustes vespertinus*	✓	✓
Blackburnian Warbler	*Dendroica fusca*	✓	
Magnolia Warbler	*Dendroica magnolia*	✓	✓
Northern Parula	*Parula americana*	✓	✓

Habitat Associations

In additional to boreal and mixed-boreal forests, other habitats types of importance include deciduous forests, lakes, ponds, streams, bogs, beaver meadows, and shrub swamps.

Birds associated with marshes, ponds, lakes, and streams include: common loon, pied-billed grebe, great blue heron, green-backed heron, American bittern, and a variety of waterfowl. The most common ducks include the mallard, American black duck, wood duck, hooded merganser, and common merganser. Other species of waterfowl migrate through the region following the Atlantic Flyway.

Bogs, beaver meadows, shrub swamps, and any areas of natural disturbance provide important habitat for species that require or prefer openings and early successional habitats. Species such as Alder and Olive-sided Flycatchers, American Woodcock, Lincoln Sparrow, Nashville Warbler, Chestnut-sided Warbler, Brown Thrasher, Blue-winged Warbler, Yellow Warbler, Common Yellowthroat, Indigo Bunting, Eastern Towhee, and Field Sparrow rely on these habitats and are rarely found in mature forests. These species, as a suite, are declining more rapidly throughout the Northeast than species that utilize more mature forest habitat. Currently, habitat for these species is very limited within HNWA.

Birds that prefer forest habitat are numerous, including many neotropical migrants. Some species prefer large blocks of contiguous forest (e.g., Northern Goshawk), others prefer blocks of forest with adjacent openings, and many prefer forest with a relatively thick shrub layer. The forest currently is maturing, and will eventually become old growth forest dominated by large trees.

Songbirds are a diverse group filling different niches in the Adirondacks. The most common species found throughout the deciduous or mixed forest include the Ovenbird, Red-eyed Vireo, Yellow-bellied Sapsucker, Black-capped Chickadee, Blue Jay, Downy Woodpecker, Brown Creeper, Wood Thrush, Black-throated Blue Warbler, Pileated Woodpecker, and Black and White Warbler. The Golden-crowned Kinglet, Purple Finch, Pine Sisken, Red and White-winged Crossbill and Black-throated Green Warbler are additional species found in the coniferous forest and exhibit preference for this habitat. Birds of prey common to the area include the Barred Owl, Great Horned Owl, Eastern Screech-owl, Northern Goshawk, Red-tailed Hawk, Sharp-shinned Hawk, and Broad-winged Hawk.

Game birds include upland species such as turkey, ruffed grouse and woodcock, as well as a variety of waterfowl. Ruffed grouse and woodcock prefer early successional habitats and their habitat within the area is limited due to the lack of timber harvesting. Turkey are present in low numbers and provide some hunting opportunities. Waterfowl are fairly common along the waterways and marshes and provide hunting opportunities.

Mammals

Large and Medium-sized Mammals

Large and medium-sized mammals known to occur in the central and southern Adirondacks are also believed to be common inhabitants of the HNWA and include the white-tailed deer, moose, black bear, coyote, raccoon, red fox, gray fox, bobcat, fisher, American marten, river otter, mink, striped skunk, long-tailed weasel, short-tailed weasel, beaver, muskrat, porcupine, and snowshoe hare (Saunders, 1988). Of these species, white-tailed deer, black bear, coyote, raccoon, red fox, gray fox, long-tailed weasel, short-tailed weasel, bobcat, and snowshoe hare can be hunted. Additionally, these species (with the exception of white-tailed deer, black bear, and snowshoe hare) along with fisher, American marten, mink, muskrat,

beaver, and river otter can be trapped. Hunting and trapping activities are highly regulated by DEC, and the DEC's Bureau of Wildlife collects annual harvest data on many of these species.

Important big game species within the area include the white-tailed deer and black bear. Generally, white-tailed deer can be found throughout HNWA. From early spring (April) to late fall (November), deer are distributed on their "summer range". When snow accumulates to depths of 20 inches or more, deer travel to their traditional wintering areas. This winter range is characteristically composed of lowland spruce-fir, cedar or hemlock forests, and to a lesser degree, a combination of mixed deciduous and coniferous cover types. Often found at lower elevations along water courses, this habitat provides deer with protective cover from adverse weather and easier mobility in deep snows (see Critical Habitat section).

Chronic Wasting Disease (CWD) in White-tailed Deer

Chronic Wasting Disease (CWD) is a rare, fatal, neurological disease found in members of the deer family (cervids). It is a transmissible disease that slowly attacks the brain of infected deer and elk, causing the animals to progressively become emaciated, display abnormal behavior, and invariably results in the death of the infected animal. Chronic Wasting Disease has been known to occur in wild deer and elk in the western U.S. for decades and its discovery in wild deer in Wisconsin in 2002 generated unprecedented attention from wildlife managers, hunters, and others interested in deer. Chronic Wasting Disease poses a significant threat to the deer and elk of North America and, if unchecked, could dramatically alter the future management of wild deer and elk. However, there is no evidence that CWD is linked to disease in humans or domestic livestock other than deer and elk.

In 2005, the DEC received confirmation of CWD from two captive white-tailed deer herds in Oneida County and subsequently detected the disease in 2 wild deer from this area. Until recently, New York was the only state in the northeast with a confirmed CWD case in wild deer. However, CWD was recently detected in wild deer in West Virginia.

The DEC has established a containment area around the CWD-positive samples and will continue to monitor the wild deer herd in New York State. More information on CWD, New York's response to this disease, the latest results from ongoing sampling efforts, and current CWD regulations are available on the DEC website: *http://www.dec.ny.gov/animals/7191.html.*

Black bears are essentially solitary animals and tend to be dispersed throughout the unit. The Adirondack region supports the largest black bear population in New York State (4,000 to 5,000 bears). Hikers and campers in this region are likely to encounter a bear, and negative interactions between black bears and humans, mainly related to bears stealing food from humans, have been a fairly common occurrence in the Adirondack High Peaks for at least twenty years. In 2005 a new regulation was enacted, requiring all overnight campers in the Eastern High Peaks Wilderness Area to use bear-resistant canisters for food, toiletries, and garbage. In other areas of the Adirondacks, DEC recommends the use of bear resistant canisters as well.

Moose entered the state on a continuous basis in 1980, after having been absent since the 1860's. Currently, the moose population in New York State is estimated to be approximately 800 animals (Al Hicks, DEC, personal communication). In the northeastern United States, moose use seasonal habitats within boreal and mixed coniferous/deciduous forests. The southern distribution of moose is limited by summer temperatures that make the regulation of body temperature difficult. Moose select habitat primarily for the most abundant and highest quality forage (Peek 1997). Disturbances such as wind, fire, logging, tree diseases, and insects create openings in the forest that result in regeneration of important hardwood

browse species such as white birch, aspen, red maple, and red oak. Typical patterns in moose habitat selection during the summer include the use of open upland and aquatic areas in early summer followed by the use of more closed canopy areas (such as upland stands of mature aspen and white birch) that provide higher quality forage in late summer and early autumn. After the fall rut and into winter, moose intensively use open areas again where the highest biomass of woody browse exists (i.e., dormant shrubs). In late winter when browse quantity and quality are lowest, moose will use closed canopy areas that represent the best cover available within the range (e.g., closed canopy conifers in boreal forest). From late spring through fall, moose commonly are associated with aquatic habitats such as lakes, ponds, and streams. However, use of aquatic habitats can vary geographically over their range. It is believed that moose use aquatic habitats primarily to forage on highly palatable plants, however, moose may also use these areas for relief from insects and high temperatures.

Small Mammals

The variety of habitats that occur within the Adirondack region are home to an impressive diversity of small mammals. These mammals inhabit the lowest elevations to those as high as 4,400 feet (Southern bog lemming). Most species are found in forested habitat (coniferous, deciduous, mixed forest) with damp soils, organic muck, or soils with damp leaf mold. However, some species (e.g., hairy-tailed mole) like dry to moist sandy loam soils and others (e.g., white-footed mouse) prefer the drier soils of oak-hickory, coniferous, or mixed forests. Small mammals of the Adirondack region are found in alpine meadows (e.g., long-tailed shrew), talus slides and rocky outcrops (e.g., rock vole), grassy meadows (e.g., meadow vole, meadow jumping mouse), and riparian habitats (e.g., water shrew). It is likely that many, if not most, of the small mammal species listed below inhabit the HNWA (Table 3). An exception may be the Northern bog lemming, a species whose southernmost range extends just into the northern portion of Adirondack Park; only one recently-verified specimen exists (Saunders, 1988). All listed species are known to occur within Adirondack Park.

Table 3. Small mammal species recorded within Adirondack Park towns (data based on museum specimens; Saunders, 1988). Number of towns represents the number of towns in which each species was recorded.

Common Name	***Scientific Name***	***Number of Towns***
Star-nosed mole	*Condylura crestata*	6
Hairy-tailed mole	*Parascalops breweri*	11
Short-tailed shrew	*Blarina brevicauda*	31
Pygmy shrew	*Sorex hoyi*	1
Long-tailed shrew	*Sorex dispar*	7
Smoky shrew	*Sorex fumeus*	18
Water shrew	*Sorex palustris*	10
Masked shrew	*Sorex cinereus*	25
Deer mouse	*Peromyscus maniculatus*	26
White-footed mouse	*Peromyscus leucopus*	14
Southern red-backed vole	*Myodes gapperi*	32
Meadow vole	*Microtus pennsylvanicus*	31
Yellownose vole	*Microtus chrotorrhinus*	6
Woodland vole	*Microtus pinetorum*	1
Southern bog lemming	*Synaptomys cooperi*	12

Northern bog lemming	*Synaptomys borealis*	1
Meadow jumping mouse	*Zapus hudsonicus*	22
Woodland jumping mouse	*Napaeozapus insignis*	25

Endangered, Threatened, and Special Concern Species

New York has classified species at risk into three categories: endangered, threatened, and species of special concern (*6 NYCRR* §*182*). The following section indicates listed species documented in HNWA (Table 4) and their protective status and general habitat requirements. These data were compiled from the 1980-1985 and 2000-2005 BBA projects, 1990-1999 Amphibian and Reptile Atlas Project, and New York Natural Heritage Program (NYNHP) surveys.

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

Table 4. Endangered, threatened, and special concern species documented in survey blocks within, or partially within, Hoffman Notch Wilderness Area (HNWA). Bird data were collected during the 1980-1985 and 2000-2005 Breeding Bird Atlas (BBA) projects and New York Natural Heritage Program (NYNHP) surveys. Amphibian and reptile data were collected during the 1990-1999 Amphibian and Reptile Atlas Project[1].

		Breeding Bird Atlas Project	
Common Name	Scientific Name	1980-1985	2000-2005
Birds			
Endangered			
Spruce Grouse	*Falcipennis canadensis*	✓	
Threatened			
Northern Harrier	*Circus cyaneus*	✓	
Bald Eagle	*Haliaeetus leucocephalus*		✓
Special Concern			
American Bittern	*Botaurus lentiginosus*		✓
Common Loon[2]	*Gavia immer*	✓	✓
Common Nighthawk	*Chordeiles minor*	✓	✓
Cooper's Hawk	*Accipiter cooperii*	✓	✓
Osprey	*Pandion haliaetus*	✓	✓
Red-shouldered Hawk	*Buteo lineatus*	✓	✓
Sharp-shinned Hawk	*Accipiter striatus*	✓	✓

Whip-poor-will	*Caprimulgus vociferus*	✓

Amphibians and Reptiles[1]

Special Concern

Jefferson Salamander	*Ambystoma jeffersonianum*

[2]Also recorded during New York Natural Heritage Program (NYNHP) surveys.

Habitat Associations

Endangered Species

Spruce Grouse (*Dendragapus canadensis*).-- In the Adirondacks, the rare Spruce Grouse is a denizen of the boreal acid bog forest where it selects immature or uneven-aged spruce-fir habitat (Andryle and Carroll, 1988). Mosses, lichens, and shrubs provide nesting and foraging ground cover in areas where the forest canopy is less dense. Because their forested wetland habitat is poorly drained, grouse move on to upland summer range to dust and forage (Andryle and Carroll, 1988).

Threatened Species

Northern Harrier (*Circus cyaneus*).-- The Northern Harrier is a bird of open country and is associated with wet to mesic habitats (Johnsgard,1990). Results of a 1979 survey showed that bogs and other wetland habitats provided nesting sites for Northern Harriers in the Adirondacks (Kogut, 1979 *In*: Andrle and Carroll 1988). Unlike most New York raptors, harriers nest on the ground, either on hummocks or directly on the ground in nests that are woven from grass and sticks (Andrle and Carroll, 1988).

Bald Eagle (*Haliaeetus leucocephalus*).-- Bald eagles breed in forested and open areas that are usually near large bodies of water with an abundance of fish. Bald eagles construct their nests in large living trees, approximately 50 to 60 feet off the ground and occasionally on cliffs. Tree species used for nesting is not as important as its structural characteristics (e.g., size, shape) and distance to other nesting eagles. Nesting sites with an unobstructed view are preferred and access points to and from the nest (pilot trees) and perch trees are important components of bald eagle habitat. Bald eagles are sensitive to human disturbance.

Special Concern Species

a. Bird

American Bittern (*Botaurus lentiginosus*).-- In the Adirondacks, the American Bittern is a bird of freshwater emergent wetlands where it typically nests on a grass tussock or among the cattails. Here it lays its eggs from 4 to 18 inches above the water (Bull, 1974) in scanty nests made from sticks, grass, and sedges. Separate paths are made in the tall vegetation for entering and exiting the nest (Erlich et al., 1988).

Common Loon (*Gavia immer*).-- Common Loons use small and large freshwater lakes in open and densely forested areas for breeding and nest on lakes as small as two acres. Special habitat requirements include bodies of water with stable water levels with little or no human disturbance. Loons use islets for nesting and shallow coves for rearing their young. Nests are constructed on the ground at the water's edge on sand, rock, or other firm substrates. Loons prefer small islands for nesting (to avoid predators) but will

also nest along protected bays and small peninsulas of the shoreline. In an extensive project undertaken to determine the status of the common loon in New York, DEC staff surveyed 557 lakes in the northern part of the state during 1984 and 1985.

Common Nighthawk (*Chordeiles minor*).-- Two distinct habitats are used by nesting Common Nighthawks: bare flat rocks or bare ground in open fields and pastures, and, more recently (since the mid-late 1800s), on flat, gravel rooftops (Bent, 1940). In upstate New York nighthawks also nest in mountainous areas, provided woods are interspersed with clearings or openings (Bull, 1974).

Cooper's Hawk (*Accipiter cooperii*).-- Cooper's Hawks use a variety of habitat types, from extensive deciduous or mixed forests to scattered woodlots interspersed with open fields. Floodplain forests and wooded wetlands are also used by Cooper's Hawks. Cooper's hawk construct nests typically at a height of 35 to 45 feet in both conifer (often white pine) and deciduous trees (often American beech). Nests are commonly constructed on a horizontal branch or in a crotch near the trunk. Cooper's Hawks have been known to use old crow nests as well. Foraging areas are usually located away from the nest in forested areas or open areas adjacent to forest.

Osprey (*Pandion haliates*). -- Osprey breed near large bodies of water, including rivers and lakes that support abundant fish populations. Osprey typically construct their nest in tall dead trees, but also use rocky ledges, sand dunes, artificial platforms, and utility poles. Nests are placed in locations that are taller than adjacent areas, which provide vantage points.

Red-shouldered Hawk (*Buteo lineatus*).-- Red -shouldered Hawks breed in moist hardwood, forested wetlands, bottomlands and the wooded margins of wetlands, often close to cultivated fields, Red-shouldered hawks are reported as rare in mountainous areas. Special habitat requirements include cool, moist, lowland forests with tall trees for nesting. Red-shouldered hawks forage in areas used as nesting habitat as well as drier woodland clearings and fields.

Sharp-shinned Hawk (*Accipiter striatus*).-- Sharp-shinned Hawks prefer breeding habitats that consist of open or young woodlands that support a large diversity of avian species, the hawk's primary prey (Johnsgard, 1990). Although Sharp-shinned Hawks use mixed conifer-deciduous forest for nesting, most nests recorded in New York State have been located in conifers, with 80% of the nests found in hemlocks (Bull, 1974).

Whip-poor-will (*Caprimulgus vociferus*).--Whip-poor-will select open woodlands in lowland deciduous forest, montane forest, or pine-oak woods (Erlich, et. al., 1988) that is interspersed with open fields, with a preference for dry oak-hickory woods in some areas of upstate New York (Bull, 1974). Whip-poor-will nest on the ground in dry, sparse areas. Eggs are typically laid in the open or under a small shrub on the leaf litter where they are well concealed (Bent, 1940).

b. Amphibians and Reptiles

See Habitat Associations of Amphibians and Reptiles.

Extirpated and Formerly Extirpated Species

Moose, elk, wolf, eastern cougar, Canada lynx, bald eagle, golden eagle, and peregrine falcon inhabited the Adirondacks prior to European settlement. All of these species were extirpated from the Adirondacks, mostly as a result of habitat destruction during the nineteenth century. In combination with landscape-

level changes (e.g., large-scale fires and timber harvesting), unregulated wildlife harvest also lead to the decline of some species, such as moose, wolf, elk, beaver, river otter, American marten, and fisher. More recently, some bird populations declined due to the widespread use of DDT.

Projects to re-establish peregrine falcon, bald eagle, and Canada lynx in the Adirondacks have been implemented. A total of 83 Canada lynx were released into the High Peaks region from 1989 to 1991 by the SUNY College of Environmental Science and Forestry. Lynx dispersed widely from the release area and mortality was high, especially mortality caused by vehicle-animal collisions. It is generally accepted that the lynx restoration effort was not successful and that there are no lynx from the initial releases or through natural reproduction of released animals remaining in the Adirondacks. Recent habitat suitability models developed at the University of Maine suggest that lynx habitat in the Adirondacks is limited to a small area of the High Peaks region and is not adequate to support a lynx population. Lynx are legally protected as a game species with no open season as well as being listed as threatened on both the Federal and State level.

Efforts to reintroduce the peregrine falcon and the bald eagle through "hacking" programs began in 1981 and 1983, respectively. These projects have been remarkably successful within New York. Bald Eagles are becoming much more common (documented in HNWA during the 2000-2005 BBA Project), and Peregrines are recovering. Golden Eagles are considered to have always been rare breeders within the state.

The wolf and eastern cougar are still considered to be extirpated from New York State. Periodic sightings of cougars are reported from the Adirondacks, but the source of these individuals is believed to be from released captive individuals and there is no evidence to suggest a resident population. However, in 2011 a cougar was killed by vehicle collision in the state of Connecticut. Prior to this mortality, genetic material from this animal was retrieved by NYSDEC in December 2010 in the town of Lake George (hair sample from a bedding site). Subsequent analyses of multiple genetic samples revealed that this cougar dispersed from South Dakota, east through the Great Lakes region to New York and ultimately Connecticut. Reports of timber wolves are generally considered to be misidentified coyotes, although there is evidence to suggest that wolf genes may be present in the Eastern coyote population found in the Adirondacks.

Invasive/Exotic Wildlife

As with plant species, these organisms do not occur naturally in New York State. While some species go relatively unnoticed (e.g., spiny water flea), other introductions such as the zebra mussel have caused great concern. There are no confirmed reports of zebra mussels in unit waters. Domestic canines and felines can also have an impact on native deer, rodents, and birds.

Other Fauna

Other, less known, members of the animal kingdom occur within the unit. Insects are the most notable and abundant form of animal life. Some species can cause human health concerns (e.g., Giardia, swimmer's itch) or are generally considered a nuisance (e.g, black flies, mosquitoes) to individuals that recreate in the area.

Critical/Significant Habitat

An area within the unit has been identified as important wildlife habitat**:**

Loon Nesting Areas- Sand Pond (see Public Use section).

Deer Wintering Areas

The maintenance and protection of deer wintering areas (or deer yards) are important in maintaining northern deer populations. These areas provide deer with relief from the energetic demands of deep snow and cold temperatures at a time when limited fat reserves are being used to offset reduced energy intake (i.e., nutritionally, winter browse is poor). Previous researchers have demonstrated that deer consistently choose wintering areas which provide relief from environmental extremes over areas that may provide more abundant forage (Severinghaus, 1953; Verme, 1965). These observations are consistent with the fact that the nutritional value of winter browse is poor due to low digestibility and that deer can expend more energy obtaining browse than the energy gained by its consumption (Mautz, 1978).

Severinghaus (1953) outlined several habitat components of deer yards, including topography and forest cover type (i.e., presence of conifers). The most important characteristic of an Adirondack deer yard is the habitat configuration making up a "core" and travel corridors to and from the core. The core is typically an area, or areas, of dense conifer cover used by deer during severe winter weather conditions. Travel corridors are dense but narrow components which allow access to food resources (hardwood browse) in milder conditions. Use of wintering areas by deer can vary over time depending on winter severity and deer population density. Although Severinghaus (1953) reported that some Adirondack deer yards have been used since the early 1800's, recent research suggests that the location of some current deer yards may overlap very little (or not at all) with their historical counterparts mapped in the late 1960's and early 1970's by DEC (Hurst, 2004). Therefore, planning for the protection of deer wintering areas relative to recreational activities in the unit should consider the dynamic nature of these areas (not the static representation of historical boundaries) and seek to update our understanding of wintering areas currently used by deer.

a. Historical Deer Wintering Habitat

Historical deer wintering areas have been identified within HNWA from aerial surveys conducted by NYSDEC in the 1950's and 1960's. These general areas include:

1.) Durgin Brook
2.) Northeast of Spruce Mountain
3.) East of Squaw Mountain along the Schroon River
4.) Platt Brook
5.) Between the East Branch Trout Brook and Big Pond
6.) Western boundary of unit southeast of Lester Flow

b. Guidelines for Protection of Deer Wintering Areas

Research on wildlife responses to winter recreation (e.g., cross-country skiing, foot travel, and snowmobiling) is limited. Studies conducted on mule deer (Freddy et al., 1986) and elk (Cassirer et al., 1992) suggest that these species can be disturbed by these activities. However, when planning the location of recreational trails, general guidelines for protecting deer wintering areas can be followed which should reduce the potential for disturbance.

Activities which substantially diminish the quality or characteristics of the site should be avoided, but this does not mean human use is always detrimental. Pass through trails, and other recreational uses can be compatible with deer wintering areas if they are carefully considered. Recreational planning which affords protection of core sections and avoids fragmenting travel corridors are acceptable in many situations. Certain types of recreation such as cross-country skiing are not presently considered to significantly impact

deer yards in an overall negative way, particularly if the traffic along trails is not prone to stopping or off-trail excursions. These types of trails in or adjacent to deer wintering areas can provide a firm, packed surface readily used by deer for travel during periods of deep snow. They can also create access for free-roaming dogs if the location is close to human habitation; thus, trails should avoid deer yards in these situations. High levels of cross-country ski use can increase the energy demands of deer within the yard due to increased movement.

In summary, general guidelines for protecting deer wintering areas include:

- Within travel corridors between core wintering areas, avoid placement of trails within a 100 foot buffer on either side of streams,
- Avoid placement of trails through core segments of deer yards to reduce disturbance associated with users stopping to observe deer,
- Trails should not traverse core segments of deer yards in areas adjacent to densely populated areas such as hamlets, villages, or along roadsides developed with human habitation because they provide access to free roaming dogs,
- In areas with nearby human habitation, avoid land uses which result in remnant trails, roadways or other access lanes which facilitate accessibility to free-roaming dogs.

High Elevation Boreal Forest and Bird Conservation Areas

In 1997, New York Sate created a model Bird Conservation Area (BCA) program based on Audubon's Important Bird Area (IBA)program under §11-2001 of the Environmental Conservation Law of New York. The program is designed to safeguard and enhance bird populations and their habitats on selected state lands and waters. In November of 2001, New York designated the Adirondack mountain summits above 2,800 feet in Essex, Franklin, and Hamilton counties as the Adirondack Subalpine Forest Bird Conservation Area (BCA). The site was nominated because of its diverse species concentration, individual species concentration and its importance to species at risk, in particular the Bicknell's Thrush (special concern). That portion of the HNWA over 2,800 feet includes areas primarily within the Blue Ridge and Washburn ranges.

Management Guidance for Bird Conservation Areas

The vision for the Adirondack Subalpine Forest BCA is to "continue to maintain the Wilderness quality of the area, while facilitating recreational opportunities in a manner consistent with conservation of the unique bird species present" (DEC, 2001). The DEC has developed management guidance to identify education and research needs, and to outline operational management considerations. Considerations specific to the unit include:

- The BCA is comprised of lands that are within the HNWA and other lands within the broader Adirondack Forest Preserve. The HNWA portion is subject to relatively stringent regulations and use limitations. Portions of the BCA that are not within the HNWA may have less stringent use limitations.
- To ensure disturbances are kept to a minimum, trail maintenance and construction activities within the BCA should be accomplished outside of the breeding season, when possible. If, in accordance with DEC policy, motorized equipment use is necessary, such use shall be minimized during the breeding or nesting periods.
- There is a need to educate the public regarding the distinctive bird community present in subalpine forests over 2,800 feet. The potential impacts of human intrusion need to be communicated to the

public, and a "please stay on the trails" approach may be beneficial. Partnerships with the National Audubon Society, Adirondack Mountain Club, and other groups involved in education and conservation of birds in New York State should continue.

- Acid rain deposition may be having an impact on nesting success of songbirds at high elevations by causing die-offs of high altitude conifer forests, and killing snails and other sources of calcium needed for egg production. More research on this topic is needed. The curtailment of sulphur dioxide emissions and the reduction of acid rain is currently a significant New York State initiative.
- A detailed inventory and standardized monitoring of special concern species is needed for the area. In particular, all peaks above 2,800 feet should be surveyed for Bicknell's Thrush and other bird species associated with high elevation boreal forests.
- The impact of the current levels of human use on nesting success needs to be assessed.

c. Fisheries Inventory

Fish communities in the Adirondacks are a result of geological and human influences. Prior to human influences relatively simple fish communities were common. Human-caused changes in habitat and introduction of fishes have altered those natural communities.

Geological History

The Fishes of the Adirondack Park, a DEC publication (August 1980) by Dr. Carl George of Union College, provides a summary of geological events which influenced the colonization of the Adirondack ecological zone by fishes. A limited number of cold tolerant, vagile, lacustrine species closely followed the retreat of the glacier. Such species presumably had access to most Adirondack waters. About 13,000 BP (before present) glacial Lake Albany, with a surface elevation of 350' average sea level, provided colonizing route for Atlantean and eastern boreal species to portions of the Hudson Watershed. Barriers above that elevation would have excluded those species from interior portions of the Adirondacks.

By about 12,300 BP, the Ontario lobe of the glacier had retreated sufficiently to allow species associated with the Mississippi drainage access to fringes of the Adirondacks via the Mohawk Valley and the St. Lawrence drainage including Lake Champlain. Lake Albany had apparently drained prior to that, as barriers had formed on the Lake George outlet.

The sequence of colonization routes to surrounding areas, combined with Adirondack topography, resulted in highly variable fish communities within the Adirondacks. In general, waters low in the watersheds would have the most diverse communities. The number of species present would have decreased progressing towards headwater, higher elevation sections. Chance and variability in habitat would have complicated the trends. Consequently, a diversity of fish communities, from no fish to monocultures to numerous species, occurred in various Adirondack waters.

Fish Community Changes

A variety of nonnative species were distributed into the Adirondack uplands via stocking efforts described by George (1980) as "nearly maniacal." He notes that many species were "... almost endlessly dumped upon the Adirondack upland." Nonnative species were introduced and the ranges of native species, which previously had limited distributions, were extended. The result has been a homogenization of fish communities. Certain native species, notably brook trout and round whitefish, have declined due to the introduction of other fishes. Other natives, brown bullhead and creek chubs, for example, are presently much more abundant than historically, having been spread to many waters where previously absent. Native species often were introduced concurrently with the nonnatives. Native-but-widely-introduced

(NBWI) fishes were stocked right along with the native fishes. NBWI introductions are just as unnatural as nonnative introductions, and due to the lack of early surveys, it is often unknown which NBWI fishes were actually native to a pond or if they have been introduced.

Consequently, fish populations in the majority of waters in today's Adirondack wilderness areas have been substantially altered by the activities of mankind. Indeed, of the 1,123 Adirondack ecological zone waters surveyed by the Adirondack Lakes Survey Corporation (ALSC), 65% contained known nonnative species.

Detailed documentation of the historic fish communities is not available. Extensive fishery survey data was first collected in the 1930's, decades after the massive stockings and introductions of the late 1800's. Reviewing work by Mathers from the 1880's and others, George (1980) has summarized what is known. Table 3 presents information on species known to be native, native-but-widely-introduced (NBWI), and nonnative. It should be noted that the native classification does not mean those species were found in every water or even in a majority of waters. For example, of 1,123 waters surveyed by the ALSC in the 1980's which contained fish, white suckers and northern redbelly dace were found respectively in 51 and 19 percent of the lakes. Such distributions, after a century of introductions, demonstrate that “native” does not necessarily imply a historically ubiquitous distribution. Barriers, high stream gradients, low stream fertilities, and rigorous climatic conditions following retreat of the glacier resulted in low species diversity for fishes in most Adirondack waters. Low diversity allowed the brook trout to occur in large areas of the Adirondack upland.

Habitat Changes

Natural reproduction by brook trout is also very sensitive to impacts from sedimentation caused, for example, by extensive logging, fires and other human activities. Due to their reproductive behavior, brook trout are among the most susceptible of all Adirondack fish fauna to the impacts of sedimentation. Brook trout spawn in the fall, burying their eggs in gravel. Flow must be maintained through the gravel, around the eggs, until hatching the following spring. Sand or fine sediments restrict flow around the eggs resulting in an inadequate supply of oxygen.

The long incubation period, the lack of care subsequent to egg deposition and burying of the eggs contribute to the brook trout's susceptibility to sedimentation. Most other Adirondack fishes are spring spawners, yielding short incubation periods, and do not bury their eggs. Various strategies further minimize vulnerability to sediments, such as eggs suspended from vegetation (e.g.. yellow perch, northern pike, and certain minnow species) and fanning the nest during incubation (e.g.. bullhead, pumpkinseed, smallmouth bass and largemouth bass). In general, the species less susceptible to sedimentation have thrived during the recent history of the Adirondacks.

Acid Precipitation

Recently acid deposition has impacted the aquatic resources of the Adirondacks. The ALSC surveyed 1,469 Adirondack waters, 24 percent of which had pH levels less than 5.0 (Kretser el al. 1989). Historic data and water chemistry analysis demonstrates that many of those waters were historically circumneutral and able to support fishes. Although less well studied, streams have also been impacted by acidification (Colquhoun 1984). Acid deposition has had little impact on the fisheries resources in the HNWA. With one exception, the pH ranges from 6.6 to 7.4 on area ponds for which chemistry data is available. The exception is Marion Pond with a pH of 5.78.

Conclusion

Habitat changes, widespread introductions of nonnative fishes and broad dispersal of native fishes which historically had limited distributions have drastically altered the fish fauna of Adirondack waters. Throughout the Adirondack Park, native species sensitive to competition and habitat changes have declined. Distributions of other natives, and nonnatives, have increased due to stocking. Within the HNWA, brook trout populations maintained by natural reproduction have been nearly eliminated.

Simple fish communities containing only brook trout, or brook trout in association with one or a few other fishes, are depressed within the unit. In ponds currently managed for brook trout abundance is low compared to other DEC managed waters.

Streams

Major streams in or near the Hoffman Notch Wilderness include the Boreas River, The Branch, and Minerva Stream. Many additional small streams are also present. The Schroon River is near the eastern boundary of the unit.

The Boreas River flows along the northeast corner of the HNWA unit. In addition, portions of Minerva Stream flow along the western edge of the unit. These streams and their tributaries support coldwater communities of fishes including: brown trout, brook trout, cutlips minnows, common shiners, blacknose dace, longnose dace, northern redbelly dace, creek chub, white sucker and slimy sculpin. In addition, smallmouth bass, a warmwater species, have been collected in portions of the Boreas.

d. Visual/Scenic Resources/Land Protection

Travel Corridors

The main corridors for automobile traffic access to the HNWA are the Hoffman Road, and Blue Ridge Rd, also known as Boreas Road. The main route from North Creek to Newcomb is SH 28N and offers many spectacular views. As SH 28N winds through the hamlet of Minerva, it offers a beautiful vista of the peaks of HNWA and beyond, brief, yet dramatic glimpse of the sheer slopes of the High Peaks to the north.

Blue Ridge Road is also quite scenic as it threads its way between North Hudson and Newcomb, and is officially designated as a New York State Scenic Byway. Not far from Cheney Pond, there is a scenic pull-off to the top of a small knob, offering fabulous views of the Boreas River and Minerva Stream valleys to the south.

Observation Points

Overall, there are few peaks which provide rewarding views of the surrounding area. Mt. Severance provides a good view of the Schroon River Valley and Pharaoh Mountain. There are a few lesser peaks and ledges in the HNWA that deliver rewarding views to anyone ready to leave the beaten path. One such area is just south of Marion Pond on the slopes of Hayes Mountain, its many rocky outcrops offering views of the Minerva Stream valley and beyond.

Other Natural Areas

Other significant natural areas include the Boreas River and the many lakes and ponds of the HNWA.

Critical/ Significant Habitat

The New York Natural Heritage Program (NYNHP) is a cooperative effort between the Nature Conservancy

(TNC) and the DEC to identify, inventory, and manage the occurrence of rare plants and animals and exemplary natural communities in New York State. No unique plant communities are known to exist in the Hoffman Notch Wilderness Area. The NYNHP would like to perform additional research in this unit to identify existing plant communities that may exist.

B. Man-Made Facilities

Designated Foot Trails	**Miles**	**Classification**
Bailey Pond Trail	.8	III Primitive
Hoffman Notch Trail	7.4	III Primitive / Cross country ski
Mt Severance Trail	1.0	IV Secondary
Big Pond Trail	5.7	III Primitive / Cross country ski
Total	**14.9**	

Brief Description of HNWA existing facilities

Trails

- **Hoffman Notch Trail** - historic route through the notch; was a designated snowmobile trail until adoption of the APSLMP in 1972 made it a non-conforming use and it became a foot trail. This trail also serves as a popular cross country ski trail.
- **Bailey Pond Trail** was once a town road but was abandoned sometime after the state acquired ownership of the surrounding lands. The beginning portion of this trail (approximately .25 mile) is not located on the abandoned road, this section of trail winds through the woods connecting the parking lot with the old roadbed portion of the trail.
- **Big Pond Trail** (From Hoffman Road to junction of Hoffman Notch Trail) was once a logging road which still shows evidence of old corduroy. This trail also sees cross country ski use.
- **Mt. Severance Trail** was recently rerouted along the ridge which forms the southern approach to the mountain.

Unmarked trails

The Hoffman Notch Wilderness has a wide array of unmarked trails that occur in the unit. Historic trails present in the unit vary in character and have different origins. Abandoned town roads, historic logging roads, historic homesite access roads, old snowmobile trails, motor vehicle easements, illegally blazed or painted paths, paths that show obvious illegal use by all terrain vehicles and simple cleared unmarked foot paths all exist in this unit. These unmarked trails have different origins and were constructed to different standards. Some of these trails tell tales of considerable construction work and planning during their layout, while others have seemingly been quickly placed without much thought to erosion potential and suitable site location. Due to the vast number of existing unmarked trails present in this unit, trails will continue to be catalogued by the Department as they are discovered. When considering placement of the new trails described in this UMP or any potential new trails in this unit in the future, unmarked trails of various origins will be considered first in an attempt to utilize where possible, existing properly constructed trails and

minimize the impact to the unit during placement of new trails (See Historic trails map in appendix 11).

Parking Lots

Location	Capacity
Loch Muller	10
Hoffman Road (Big Pond)	5
Mt. Severance	15
SH 9 North of Schroon Lake Village(Easement to Culvert under I-87)	5
Blue Ridge Road(Hoffman Notch Trail)	3
Total	38

Bridges (8)

Type	Location	Quantity
Foot	Mt. Severance trail	2
Foot	Big Pond Trail	2
Foot	Hoffman Notch Trail	4

Trail registers (3) — Location

- Mt. Severance — Off SH 9, north of Schroon Lake
- Hoffman Notch Trail — Loch Muller Road
- Big Pond Trail — Hoffman Road

Pit privy (1) — Near Loch Muller Parking lot

Signs

There are numerous signs located throughout the unit including trailhead signs, and directional signs.

C. Cultural Resources

The term "cultural resources" encompasses a number of categories of human-created resources including structures, archaeological sites and related resources. The DEC is required by the New York State Historic Preservation Act (SHPA - PRHPL Article 14) and the State Environmental Quality Review Act (SEQRA - ECL Article 8) to include such resources in the range of environmental values that are managed on public lands. The Adirondack Forest Preserve was listed as a National Historic Landmark by the National Park Service in 1963. This designation also results in automatic listing of the Park in the State and National Registers of Historic Places

Archaeological sites are, simply put, any location where materials (artifacts, ecofacts) or modifications to the landscape reveal evidence of past human activity. This includes a wide range of resources ranging from pre-contact Native American camps and villages to Euro-American homesteads and industrial sites. Such sites can be entirely subsurface or can contain above ground remains such as foundation walls or earthwork features.

As a part of the inventory effort associated with the development of this plan the DEC arranged for the archaeological site inventories maintained by the New York State Museum and OPRHP to be searched in order to identify known archaeological resources that might be located within or near the unit. The two inventories overlap to an extent but do not entirely duplicate one another. The purpose of this effort was to identify any known sites that might be affected by actions proposed within the unit and to assist in understanding and characterizing past human use and occupation of the unit.

Much of the derivation of the names of geographical features of the unit is unclear. Many features are probably named after local individuals and families as hinted at through old census records and maps, but direct evidence is hard to come by. Examples of such features include Mt. Severance, Bailey Pond, Big Pond, Marion Pond and Durgin Brook.

Cultural

Evidence of human settlement and occupation exists throughout the HNWA. Old farm clearings, stone and barbed wire fences, foundations, softwood plantations, old hunting camps, and woods roads and trails exist in many places in the unit including sites along Hoffman Road, in the Mt. Severance area, the trail to Bailey Pond and countless other locations. Since almost all of the area was logged and/or settled, few locations within the unit are without evidence of human interference.

Historical

Documented archeological sites are located on the unit and are listed in Appendix 2.

D. Economic Component

Besides its many intrinsic values relative to watershed protection, preservation of wildlife and natural habitats, and outdoor recreation, the state lands in this area are an important asset to local and regional economies. These lands are an attraction to tourists and local users. Maintenance of their natural setting has a positive influence on private land values.

A direct economic benefit is the amount of land and school taxes paid to local governments for forest preserve lands. Pursuant to Real Property Tax Law §532(a), the People of the State of New York pay all local taxes on forest preserve lands. This is especially significant because state lands do not require the same infrastructure, government goods and services demanded by the private sector. The state government pays the same taxes on unimproved forest lands as private landowners do. State lands are assessed by local assessors and subject to review by the New York State Office of Real Property Services (formerly the State Board of Equalization and Assessment).

Tax payments for forest preserve lands in all the representative towns of the HNWA are paid to the County Treasurer's offices of Essex counties who disburses payment to the towns. Real property values and assessments are determined by local assessors based on comparable values of similar lands in each town.

Table 2. 2007 Land and School Taxes Paid on Forest Preserve Lands to towns of the HNWA. Representative Forest Preserve acres in towns may not be located entirely within the HNWA.

Town	HNWA Forest Preserve Acres in Town	Total Taxes Paid ($) For all FP land	Approx. Annual payment received from state for HNWA ($)
Schroon	21,439	$832,520	$316,357.00
North Hudson	14,332	$1,023,734	$174,034.00
Minerva	2,886	$3,140,109	$125,604.00
		Total	$615,995.00

E. Public Use

1. Land Resources

A variety of activities are allowed on the Hoffman Notch Wilderness Area and its facilities. Most trails in the unit are used by a variety of recreationists including those interested in hiking, skiing, snowshoeing, fishing and hunting.

Presently, three trail registers are located in the HNWA. The oldest trail register exists at the base of Mt Severance. During the 1990's, only two years of full data with total people visiting the summit were tallied: 1995(4585) and 1996(4841). In 2003(3753), 2004(4315), 2006(4086), and 2007, 4036 individuals were tallied.

2. Wildlife

Data regarding the amount of public use of the wildlife resource within HNWA are not available. A variety of wildlife recreation uses occur on the unit, including: hunting, trapping, hiking, bird watching, and wildlife photography. Past studies by DEC indicate that few sportsmen sign-in at trailhead registers. This, combined with the fact that many hunters and trappers traditionally bush whack, and use unmarked trails and watercourses to enter State lands, prevents an accurate estimate of total visitor use. Information regarding non-consumptive use of wildlife is also lacking. For the most part, observations of wildlife enhance the recreational experience of the general public. Recreational use tends to be heaviest near towns, roads, and access points. With the exception of the more readily accessible areas (e.g., adjacent to Hoffman Road), the majority of the unit probably is not heavily used by sportsmen during the hunting and trapping seasons.

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), Section 11-0903 and 11-0908. The DEC has the authority to set hunting and trapping season dates and bag limits by regulation for all game species. White-tailed deer and bear may be taken during archery, muzzleloading, and regular seasons. 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.

Small game hunters may take certain waterfowl, woodcock, snipe, rail, crow, ruffed grouse, wild turkey, coyote, bobcat, raccoon, red fox, gray fox, weasel, skunk, varying hare, cottontail rabbit and gray squirrel. Muskrat, beaver, weasel, river otter, mink, fisher, American marten, skunk, raccoon, coyote, red fox, gray fox, and bobcat may also be trapped.

Harvest statistics are generated and compiled by DEC using an automated licensing and reporting system (DECALS) for deer, bear, coyote, and turkey and a pelt sealing system for beaver, river otter, fisher, American marten, and bobcat. Harvest information is reported by township, county, and Wildlife Management Unit (WMU). Since harvest information is not collected on a Forest Preserve unit basis and harvest distribution is not evenly distributed across the landscape, harvest data by town are generally not representative of the actual harvest within units. Types and levels of non-consumptive uses of wildlife within HNWA have not been determined.

a. Potential Impacts

The impact of public use on most wildlife species within the unit is unknown. Wildlife species that can be vulnerable to disturbance associated with public recreational activity include:

Nongame Species

Common Loon: Common loons nest along shorelines of lakes and ponds. Their nests are often very near the water line, and are susceptible to disturbance from the land or from the water. Nests along shore are more susceptible to human disturbance where trails follow the shore of a lake. Nests along the shore or on islands are more susceptible to human disturbance if boats or canoes can be carried readily into lakes occupied by loons. Water bodies with greater boating access will have higher levels of disturbance. If adults are forced to leave the nest, nest abandonment could occur. Additionally, fledgling mortality can occur if chicks are chased by boats.

Loons are a long-lived species and a predator near the top of the food chain. These characteristics make loons more susceptible to the accumulation of environmental toxins. Thus, this species is often used by scientists as an ecological indicator of the health of the environment and water quality. Airborne contaminants, including “acid rain”, can cause the bioaccumulation of mercury, a neurotoxin, and a decreased food supply, which can potentially lead to decreased reproductive success. The death of adult loons due to lead toxicity from the ingestion of lead fishing tackle accidentally lost by anglers is a concern and has recently been documented in New York State. The effects of direct human impacts, such as disturbance or shoreline use, on breeding loons within this unit has not been determined, but is presumed to be low due to the minimal number of improvements and facilities. Management efforts will concentrate on protecting loon nesting areas and habitat.

Game Species

Impacts appear to be minimal for those game species that are monitored. The DEC Bureau of Wildlife monitors the populations of game species partly by compiling and analyzing harvest statistics, thereby determining levels of consumptive wildlife use. Several recent legislative changes have occurred that likely have had impacts on use of the area by hunters. Both hunting of bears by using bait and by using dogs have been prohibited, probably lowering use by bear hunters. Use by deer hunters probably has increased because of two legislative changes, one allowing successful archers to purchase a second tag for use during the regular firearms season and similar legislation allowing successful muzzleloader hunters the same privilege. Harvest statistics are compiled by town, county and wildlife management unit. Regular season deer regulations (bucks only) for this area result in limited impacts to the reproductive capacity of the deer

population. Overall, deer populations within the unit are capable of withstanding current and anticipated levels of consumptive use.

An analysis of black bear harvest figures, along with a study of the age composition of harvested bears, indicates that hunting has little impact on the reproductive capacity of the bear population. Under existing regulations, the unit's bear population is capable of withstanding current and anticipated levels of consumptive use.

The coyote, varying hare, and ruffed grouse are widely distributed and fairly abundant throughout the Adirondack environment. Hunting and/or trapping pressure on these species is relatively light. Under current regulations, these species undoubtedly are capable of withstanding current and anticipated levels of consumptive use.

While detrimental impacts to game populations over a large area are unlikely, wildlife biologists continually monitor furbearer harvests, with special attention to beaver, river otter, bobcat, fisher, and American marten. These species can be susceptible to overharvest to a degree directly related to market demand for their pelts as well as a variety of other economic and environmental factors. The DEC Bureau of Wildlife closely monitors furbearer harvest by requiring trappers to have the pelts of beaver, bobcat, fisher, American marten, and river otter sealed by DEC staff. Additionally, biological samples are required for all trapped martens, which biologists use to closely monitor the harvest. Specific regulations are changed when necessary to protect furbearer populations.

Other Impacts

Water fluctuations can have a significant impact on nesting activity of loons, marsh birds, and waterfowl and can also have a negative impact on furbearers such as muskrats and beaver. The maintenance and protection of winter deer yards remains a concern of wildlife managers, particularly in the Adirondacks, as they fulfill a critical component of the seasonal habitat requirements of white-tailed deer. Few data are available on the impacts of cross-country ski trails and foot travel during winter on deer use of wintering areas.

Fisheries

Quantitative information about the numbers of anglers who visit the waters of the HNWA is unavailable. However, fishing appears to be a popular activity in selected waters.

Fishing pressure is generally higher on the more readily accessible lakes and streams, but angler use of the unit's streams is believed to be less than on lakes and ponds. Much of the fishing activity is concentrated on coldwater lakes, and on Adirondack brook trout ponds (See definitions in Appendix 3). Bailey and Marion ponds are probably the most frequently fished ponds, with brook trout being the primary target species. Trout fishing on lakes and ponds typically peaks in April, May, and June when trout can still be found in the cool water near the surface. Surface fishing activity declines in the summer due to formation of a thermocline which causes fish to move to deeper water. Warmwater angling on the unit's warmwater lakes peaks in July-August.

DEC angling regulations are designed to conserve fish populations in individual waters by preventing over-exploitation. When necessary, populations of coldwater game fishes are maintained or augmented by DEC's annual stocking program. Most warmwater species (smallmouth bass, largemouth bass, northern pike and panfishes) are maintained by natural reproduction; however, stocking is sometimes used to

introduce those fishes to waters where they do not exist.
Under existing angling regulations, the coldwater and warmwater fish populations are capable of withstanding current and anticipated levels of angler use.

DEC monitors the effectiveness of angling regulations, stocking policies, and 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. Statewide angling and special angling regulations provide the protection necessary to sustain or enhance natural reproduction where it occurs.

Water Resources

Aside from fishing, the water resources of the HNWA are mainly used by the public for wildlife viewing, non-motorized boating, and of course for their general scenic character. However, information regarding public use of the water resource is mostly anecdotal, as there are no DEC registers relating to water bodies on the HNWA.

Most waterbodies, substantially or fully contained within the HNWA, are small and accessible by non-motorized means only. These ponds receive limited use by anglers willing to carry small boats or canoes moderate to long distances to aid in fishing. These ponds include Bailey Pond, Big Pond, and North Pond. Of course, there are several ponds and lakes with less demanding ingress that receive heavier use such as Cheney Pond and Lester Flow. They probably experiences highest use in mid- to late-summer and early fall due to the access road and the existence of primitive campsites on the east and west shores of the pond, but public use figures are not available.

F. Relationship between Public and Private Land

1. Land Ownership Patterns

The unit borders other Forest Preserve units in a few places and a fair amount of private land, as well. To the north, much of the private land is owned by large corporations (Finch & Pruyn, Co., Inc.) and managed for the production of forest products and may also be leased to rod and gun clubs. Private lands on the southern and eastern boundaries of the unit are mainly individually owned and also used in the production of forest products and/or as primary and secondary residences. Most of these private lands are posted against public entrance.

2. Land Use Regulations

Much of the private land both surrounding and surrounded by the unit is zoned “Resource Management” or “Rural Use” by the APA. Around the Hamlets of Minerva, North Hudson, and Schroon Lake, the unit shares short borders with private land zoned “Low Intensity Use”, “Moderate Intensity Use,” and “Hamlet.”

3. Impact of NYS Ownership on Adjacent Lands

The economic impact of state ownership on adjacent private land is minor, although desirable, attributable to an increase in the value of the private lands due to a confidence in future stability of area use.

Although the state does pay full taxes on the assessed value of Forest Preserve Lands pursuant to Real

Property Tax Law §532(a), there may nonetheless be some impact on the area's other taxpayers. Some argue that if Forest Preserve land were privately held and "improved", property taxes on this land would increase, adding to the tax base. State ownership precludes improvements which generate significant property tax increases. However, this state land generates tax revenues without creating the public service demands usually required by improved properties.

Quantitative hunter and angler use estimates and their economic impact for the HNWA are not available. Angling-related expenditures contribute to the economy of the area and have probably remained stable or increased in the last decade. Tourism and outdoor recreation are a major portion of the area's economy.

a. Relationship to Adjacent State Lands

The Hoffman Notch Wilderness Area is not the only unit of state land in the area. As mentioned before, there are several Wilderness units, and other state lands in close proximity to the HNWA. Inherent in the classification of "Wilderness "are the many restrictions on allowable public uses and activities. Wild Forest areas, on the other hand are less fragile, ecologically, and consequently the resources in these areas can withstand more human impact. In addition, Wild Forest areas are generally more accessible to the public, with more roads reaching in to areas that might otherwise be difficult to access.

The southern boundary of the Hoffman Notch Wilderness with Vanderwhacker Mt. Wild Forest in the western portion of the unit is somewhat confusing. This section of boundary located west of Loch Muller Rd. and just north of Bigsby Hill follows a meandering path which crosses the land in a seemingly random way. This boundary appears to be the same as a path which can be seen on a 1953 USGS Topographic map but which on the ground there are no obvious signs. In order to make this boundary between Wilderness and Wild Forest more discernable it may be desirable at some point to move this boundary to a more identifiable geographic location such as a drainage, ridgeline or perhaps on a single bearing, so that it may be easily identified and marked on the ground. Another option may be to move this boundary south to the Hoffman Rd.

b. Adjoining Forest Preserve Areas

The High Peaks Wilderness Complex, Dix Mountain Wilderness, Vanderwhacker Mountain Wild Forest, Hammond Pond Wild Forest and Pharaoh Lake Wilderness border Hoffman Notch Wilderness Area. Area statistics are presented below.

High Peaks Wilderness Complex

State Lands	193,385 acres
Bodies of Water (117)	1,700 acres
Elevation (maximum)	5,344 feet
Foot Trails	303+ miles
Lean-tos	73

The High Peaks Wilderness Complex is the best known Wilderness in the Adirondacks and consequently receives the most visitation. The area contains many of New York's highest peaks including Mount Marcy at 5,344 feet. The High Peaks Wilderness is an extremely popular Wilderness area and receives considerable use, to the point of being damaging. There is an opportunity to encourage increased use of the HNWA in order to alleviate problems created by over-use of this Wilderness area.

Dix Mountain Wilderness

State Lands	45,208 acres
Bodies of Water (12)	92 acres
Elevation (maximum)	4,857 feet
Foot Trails	36.5 miles
Lean-tos	3

This area is in the towns of Elizabethtown, Keene and North Hudson. The terrain is rough, rocky and mountainous with several of the mountain tops exceeding 4,000 feet. There are four trailless peaks in the area; South Dix, East Dix, Hough and McComb, which are all over 4,000 feet in elevation. Most use of this area is for hiking and camping, but significant use is for fishing and hunting.

Vanderwhacker Mountain Wild Forest

State Lands	91,854 acres
Bodies of Water (47)	1,399 acres
Elevation (maximum)	3,878 feet
Foot Trails	14.4 miles
Lean-tos	1

The Vanderwhacker Mountain Wild Forest (VMWF) is located in the central Adirondack Park within the towns of Minerva, Newcomb, Schroon, North Hudson (Essex County), Johnsburg, Chester (Warren County), and Indian Lake (Hamilton County). The unit is located within the Hudson River watershed and the lesser watersheds of the Boreas and Schroon Rivers. The unit is made up of almost two dozen non-contiguous parcels, covering 91,854 acres in area and has 261 miles of boundary line. The bulk of the unit is made up of a single parcel of approximately 60,000 acres, located mainly within the town of Minerva. The remainder of the parcels range in size from 100 acres to more than 6,000 acres.

Pharaoh Lake Wilderness

State Lands	46,291 acres
Bodies of Water (39)	1,100 acres
Elevation (maximum)	2,551 feet
Foot Trails	62.8 miles
Lean-tos	13

The Pharaoh Lake Wilderness straddles the Essex-Warren County line in the towns of Ticonderoga, Hague, Horicon and Schroon. The unit is located in the Upper Hudson Watershed. Use of the area is for a wide range of activities, including hiking, camping, hunting and fishing which is quite extensive in many of the smaller ponds as well as in Pharaoh Lake.

Hammond Pond Wild Forest

State Lands	40,036 acres
Bodies of water(32)	1,331 acres
Elevation (maximum)	2,680 feet
Foot trails	9.5 miles
Lean-tos	1

This area is located in the towns of Crown Point, Moriah, North Hudson and Schroon in Essex County. Many ponds offer scenic fishing opportunities and have defined but unmarked trails. Use of the area is for hunting, fishing and other recreation. Access to the area is abundant which provides recreational opportunities similar to Pharaoh Lake Wilderness.

G. Capacity of the Resource to Withstand Use

1. Carrying Capacity Concepts

The HNWA cannot withstand ever-increasing, unlimited visitor use levels without suffering the eventual loss of Wilderness character. The challenge for managers is to determine how much use and what type of use the area, or particular sites within it, can withstand before the impacts of use cause serious degradation of the wilderness resource. A manager's most important responsibility is to work to ensure that a natural area's "carrying capacity" is not exceeded while 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 or related resources" (Arthur Carhart 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 been shown to be significantly flawed when the outcome sought has been the maximum number of people who should be allowed to visit an area such as the HNWA. Much research had shown that the derivation of such a number is not useful, 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, low levels of use can cause observable impacts. For example, in sensitive areas the elimination of ground vegetation at a campsite can become significant after only a few camping parties have occupied it. Once moderate use levels have removed nearly all the vegetation, large increases in use cause relatively little additional impact. It has been discovered that such factors as visitor behavior, site resistance and resiliency and type of use may actually be more important in determining the degree of impact than the amount of use, although the total amount of use contributes to a significant extent (Hammit and Cole, 1987).

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?" Because of the complex relationship between use and use impacts, the manager's job is much more involved than simply counting, redirecting, or restricting the number of visitors in an area. Professionally-informed judgements must be made so that carrying capacity is defined in terms of acceptable resource and social conditions. These conditions must be compared to real conditions, projections must be made, and management policies and actions must be drafted and enacted to maintain or restore the desired conditions. Influencing visitor behavior can require a well-planned, multi-faceted educational program. Determining site resistance and resiliency always requires research, often involving much time, legwork and experimentation. Shaping the types 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. The DEC embraces this new approach, recognizing the ambitious scope of the work required to adopt it and subsequently implement needed management.

The shift in the focus of managers, 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, will be more effective in assuring that all areas of the Forest Preserve will, as required by the New York State Constitution, be "forever kept as wild forest lands," and that in the HNWA, the primeval character inherent in the APSLMP definition of Wilderness will be retained. A central goal of this plan is to lay out a strategy for achieving an appropriate balance between resource protection and public use in the HNWA. This strategy reflects legal requirements, policy guidelines and established management principles and has directed the development of goals, objectives, and ultimately the management proposals which are detailed in Section IV.

The Goal-Achievement Framework

In Wilderness areas, the DEC is mandated by law to implement actions designed to realize the intent of the Wilderness guidelines of the APSLMP. The goal-achievement framework will be used to organize this management plan to direct the process of determining appropriate management actions through the careful development of goals and objectives. Goals are general descriptions of management direction reflecting legal mandates and general conditions to be achieved or maintained in the Wilderness area. Once articulated, the goals for the management of the HNWA will shape management objectives, which are statements of more specific conditions whose achievement will be necessary to assure progress toward the attainment of the established goals. Objectives in turn will serve as criteria for deciding what management actions are needed.

General goals proposing a long-term direction for the management of the HNWA are given in Section IV. In each category of management activity included in Section V, the current management situation is assessed and assumptions about future trends and conditions are discussed. Proposed objectives describing conditions to be achieved on the way toward meeting long-term management goals are presented and individual actions to meet the objectives are proposed.

The goal-achievement framework provides an organized approach to planning that is effective in addressing the full range of issues affecting a Wilderness area. 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 (LAC) process will be used.

Limits of Acceptable Change (LAC) Process

The Limits of Acceptable Change (LAC) process employs carrying capacity concepts to prescribe the desired resource and social conditions that should be maintained regardless of use. It does not prescribe the total number of people who can visit an area. 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 process dictate how much change will be allowed, as well as how management will respond to change. Indicators - measurable variables that reflect conditions - are chosen and standards, representing the bounds of acceptable conditions, are set, so management efforts can address unacceptable change. A particular standard may be chosen to act as a boundary which allows for management action before conditions deteriorate to the point of unacceptability. The monitoring of resource and social conditions is critical. The LAC process relies on monitoring to provide systematic and periodic feedback to managers

concerning specific conditions related to a range of impact sources, from visitor use to the atmospheric deposition of pollutants.

Though the LAC process is ideally suited to solving many management problems, it does not work in every situation. LAC is designed to help managers decide how best to address competing goals where there are concerns about the potential for unacceptable change. For instance, two goals of Wilderness management are protecting natural conditions and providing public recreational access. Yet the promotion of recreational use could have unacceptable impacts to natural resources, such as the soils and vegetation in a popular camping area. The LAC process could be used to determine the thresholds of acceptable soil and vegetation impacts and what management actions would be taken to protect resources from camping use. Issues that do not involve potential trade-offs do not lend themselves to LAC treatment. For example, managers do not need a process to help them determine how much motor vehicle use is acceptable in Wilderness. Because existing Wilderness guidelines and regulations explicitly prohibit all public motor vehicle use, it is clear that no amount of public motor vehicle use is acceptable.

The DEC will identify all significant management issues affecting the HNWA and prioritize them. Issues suitable for the application of the LAC process will be selected. For these issues, the DEC will implement the four major components of the LAC process:

1. The identification of acceptable resource and social conditions represented by measurable indicators;
2. An analysis of the relationship between existing conditions and those desired;
3. Determinations of the management actions needed to achieve and preserve desired conditions; and,
4. A monitoring program to determine whether objectives continue to be met over time.

The process involves 10 steps:

Step 1: Define Goals and Desired Conditions
Step 2: Identify Issues, Concerns and Threats
Step 3: Define and Describe Acceptable Conditions
Step 4: Select Indicators for Resource and Social Conditions
Step 5: Inventory Existing Resource and Social Conditions
Step 6: Specify Standards for Resource and Social Indicators for Each Opportunity Class
Step 7: Identify Alternative Opportunity Class Allocations
Step 8: Identify Management Actions for Each Alternative
Step 9: Evaluate and Select a Preferred Alternative
Step 10: Implement Actions and Monitor Conditions

Though generally the levels of human impact within the HNWA are relatively low, a number of management issues could develop within the area that could be addressed by the LAC process. Such issues may be categorized as conflicts between public use and resource protection, conflicts between users, and conflicts between outside influences and the objectives for natural resource or social conditions within the unit. The capacity of the area to withstand use can be divided into three categories for which impact indicators can be chosen:

Physical capacity - May include indicators that measure visitor impacts to physical resources (e.g., soil erosion on trails, campsites and access sites) and changes to environmental conditions (e.g., air and water

quality).

Biological capacity - May include indicators that measure visitor impacts to biological resources (e.g., vegetation loss at campsites or waterfront access sites) and changes in the ecosystem (e.g., diversity and distribution of plant and animal species).

Social capacity - May include indicators that measure visitor impacts on other visitors (e.g., conflicts between user groups), the effectiveness of managerial conditions (e.g., noncompliant visitor behavior), and interactions with the area's physical or biological capacity (e.g., the impacts of the sight of significant erosion on trails on the recreational experience of visitors).

The following list gives examples of indicators that could be used in assessing and monitoring conditions in the HNWA.

Physical capacity

- Extent of soil erosion on trails and at campsites
- Extent of air and water quality degradation caused by fossil fuel combustion[1]

Biological capacity

- Extent of unvegetated soil in camping areas and riparian areas near lakes and streams
- Diversity and distribution of plant and animal species

Social capacity

- Noise volume and frequency of aircraft overflights[2]
- Incidence and volume of late night noise at campsites
- Extent of illegal tree cutting for firewood near campsites
- Number of encounters with large groups on trails

The application of the LAC process will require a substantial commitment of staff time and public involvement. Because each DEC office is responsible for several Forest Preserve management units, the full implementation of LAC for each unit will occur over a period of years. It will be important to prioritize the issues within each unit and focus management attention on the most significant issues first. Of the 10 steps of the LAC process, these plan implements steps 1, 2 and 3, which apply to all the resources and conditions of the unit. The application of steps 4, 5 and 6 to selected land resource issues is proposed for the next five years.

Though LAC will not be fully implemented during the five-year scope of this plan, the plan is complete, organized according to the goal-achievement framework. It provides substantial resource inventory information, sets goals founded on law, policy and the 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 management actions will be revised and refined over time in response to the results of periodic evaluation to assure that desired conditions will be attained or maintained. LAC will be incorporated into the

[1] Though LAC could be useful in addressing this issue, it is beyond the scope of a UMP.
[2] Though LAC could be useful in addressing this issue, it is beyond the scope of a UMP.

management of the HNWA as a fully-developed, science-based approach to protecting and managing the area's physical, biological and social resources.

1. Wildlife Resource

Current levels of consumptive (i.e., hunting and trapping) and non-consumptive wildlife uses are not expected to significantly impact wildlife populations in HNWA. The inaccessibility of much of the unit substantially reduces the potential for overharvest of game species, including many furbearer species (e.g., river otter, fisher, and American marten) and provides a "reservoir" that ensures that harvests are sustainable over time.

Defining the amount and type of use that the area could withstand before negative impacts to the wildlife resource occurred would be a significant challenge. However, consideration of relative differences in wildlife or community sensitivities to disturbances could be useful for recreational planning. Endangered, threatened, and special concern wildlife species, critical habitats, and significant ecological communities should receive primary attention during planning efforts, because their capacity to withstand use is likely less than that for more abundant wildlife species and common habitats and communities. Furthermore, impacts to these resources due to our limited understanding of their capacity to withstand use could be much more serious than for other more common resources.

Several areas within HNWA should receive careful consideration during planning efforts, including: 1) high-elevation and lowland boreal forests that are important to a number of wildlife species, 2) shorelines of lakes where Common Loons nest, (Reschke, 1990) identified by NYNHP, and 3) core deer wintering areas.

2. Fisheries Resource

Quantitative angler use estimates and their economic impact for the Hoffman Notch Wilderness are not available. Fishing pressure on the unit's streams is probably light. Trout fishing on lakes and ponds typically peaks in April, May, and June when trout can still be found in the cool water near the surface. Surface fishing activity declines in the summer due to formation of a thermocline which causes fish to move to deeper water. These periods of peak angler use do not overlap the periods of peak usage by campers and hikers during summertime.

DEC angling regulations are designed to conserve fish populations in individual waters by preventing over-exploitation. When necessary, populations of coldwater gamefishes are maintained or augmented by DEC's annual stocking program. Most warmwater species (smallmouth bass, largemouth bass, northern pike and panfishes) are maintained by natural reproduction; however, stocking is sometimes used to introduce those fishes to waters where they do not exist.

Under existing angling regulations, the coldwater and warmwater fish populations are capable of withstanding current and anticipated levels of angler use.

DEC monitors the effectiveness of angling regulations, stocking policies, and 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. Statewide angling and special angling regulations provide the protection necessary to sustain or enhance natural reproduction where it occurs.

This page intentionally left blank

III. MANAGEMENT AND POLICY OVERVIEW

A. Administration

Administration of the HNWA is shared by several programs in the DEC. Within the context of the HNWA, DEC 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, Wildlife and Marine Resources protects and manages fish and wildlife species, provides for public use and enjoyment of natural resources, stocks freshwater fish, licences fishing, hunting and trapping, protects and restores habitat, and provides public fishing, hunting and trapping access.

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

The Division of Operations designs, builds and maintains DEC 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 DEC. The Division communicates with the public, promotes citizen participation in the UMP process, produces, edits and designs DEC publications.

The Division of Law Enforcement is responsible for enforcing all of New York's Environmental Conservation Laws relating to hunting, fishing, trapping, licence 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 are the primary public contact for the HNWA and responsible for fire control and search and rescue functions. In 1980, state law designated Forest Rangers as Peace Officers with all powers to enforce all state laws and regulations with emphasis on the Article 9 of the Environmental Conservation Law and Part 190 of the Department's Regulations. Examples include enforcement of laws protecting state lands, open burning laws and licensed guide regulations.

B. Past Management

The administration of Forest Preserve land is the responsibility of the Division of Lands and Forests. The responsibility for the enforcement of DEC rules and regulations lies with the Office of Public Protection. The Division of Operations conducts interior construction, maintenance and 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.

Most management activities in HNWA in the past have focused on public uses, such as hunting, fishing and recreation.

Past and present wildlife management activities on HNWA have been shaped largely by Article XIV of the New York State Constitution that provides that the lands of the Forest Preserve "shall be forever kept as wild forest lands" and that the timber thereon shall not be "sold, removed, or destroyed." 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 wildlife 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

In addition, the relatively small network of trails, relative to the unit's size, consists mostly of abandoned roads used for public and private travel in years gone by. Many of these trails lead to popular fishing and hunting locations, and consequently have remained as designated trails.

In the 1930's, the Civilian Conservation Corps (CCC) was responsible for establishing Norway spruce, Scots pine, and white pine plantations on the unit on burned over areas and abandoned farmland acquired by the state for back taxes. Examples of such plantations can be seen in the vicinity of the Hoffman Road trailhead and near the southwest section of the unit.

1. Land Management

Maintenance of the trails in the HNWA has generally included annual blowdown removal and periodic drainage work. Other land management activities include maintenance of existing bridges and the removal of the non-conforming use of former snowmobile trails.

2. Wildlife Management

A number of changes have occurred over the history of the Forest Preserve that have impacted a variety of wildlife species within the HNWA. Habitat changes have resulted from pre-Forest Preserve logging, wild fires, acid precipitation, recreational uses, natural plant succession, and other natural and human-caused disturbances. Other influences on wildlife populations have included legislation involving timber harvesting and harvesting of wildlife species, reintroduction of extirpated species , and natural population recovery of some species to the area. 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 Atlas Project). Lastly, NYNHP surveys have focused on endangered, threatened, and special concern species and significant and high-quality ecological communities.

3. Fisheries Management

a. Early Stocking

During the mid- to late 1800's, exploitation of pristine fisheries combined with environmental degradation resulted in the decline of fish populations and stimulated early management efforts consisting primarily of stocking. In the early years of fishery management in the Adirondacks, volunteers who applied for fish from the state and federal hatcheries would drive to the hatchery or to train depots with horse and buggy to pick

up their allocated cans of fish for stocking. Later on, hatchery employees would employ wagons and teams to haul fish to individual waters or to train depots for more distant delivery (Pfeiffer 1979). In the year 1891, the state purchased its own specially designed wooden railroad car appropriately named "The Adirondack". Initially, the railroad companies furnished free transportation as a public service (Lindsey 1958).

Despite the difficulty of moving live fish, "enthusiastic citizens secured and distributed all sorts of fish for New York's inland waters" (NYS Forest, Fish and Game Commission, 1909). Brook trout, brown trout, landlocked salmon, rainbow trout, lake trout, lake whitefish, round whitefish, cisco, smelt, walleye, yellow perch, crappie, largemouth bass, smallmouth bass and rock bass were among the species distributed by the state hatcheries (NYS Forest, Fish and Game Commission 1909).

Although millions of fish were stocked in waters selected by volunteers, stocking was not done scientifically prior to the 1930's when the first biological surveys established stocking policies (planned annual stocking). Few waters were stocked every year and many waters were stocked only occasionally, because volunteers were not available in all areas of the Adirondacks.

Stocking of fish from the New York Fish and Game Commission was frequently not carried out as planned. The Fifteenth Annual Report of the Forest, Fish and Game Commission, in the year 1909 cited that, "The messenger (railroad) is obliged to take the fish to the next applicant on his route if applicants for fish failed to meet messengers. Often the applicants were not on hand to meet the messenger because certain persons who occupy summer homes in the Adirondacks or some other resorts apply for fish which have to be sent after those persons have returned to their winter homes." Consequently, fish were sent to the next applicant on the route, who stocked the fish in nearby waters. Fishes may have become established in waters where stocking was not intended by the Forest, Fish and Game Commission because of difficulties in distribution and because unclaimed fish were disposed of along the route.

The New York Forest, Fish and Game Commission feared that many of our Adirondack lakes had received bass and other fish from the United States Commission of Fisheries (obtained by volunteers via application) "which never should have been placed in trout waters." In its report to the legislature in the year 1909, the Forest, Fish and Game Commission expressed concern about stocking nonnative fishes via the federal stocking program and cited New York law "prohibiting the placing of anything but trout in Adirondack waters. We most certainly desire to continue to produce from the Federal hatcheries every year such allotments as are necessary to keep up the stock in our inland waters, but we respectively submit that this allotment should only be made with the advice of this Commission based on the scientific knowledge of the State Fish Culturist." (NYS Forest, Fish and Game Commission 1909). Similarly, "... the one outstanding reason why so many of the lakes, ponds and streams of this and other Adirondack areas are now unfit for the native species is that small–mouthed bass, perch, northern pike and other species of non-native warmwater fishes have been introduced" (1932 Biological Survey of the Upper Hudson Watershed).

The decline in brook trout associated with the introduction of other fishes is a result of both predation and competition for food. Brook trout feed primarily on invertebrates. Many other fishes, including white sucker, longnose sucker, redbreast sunfish, pumpkinseed, brown bullhead, yellow perch, and the cyprinids (minnows, shiners, and dace) also feed primarily on invertebrates (Scott and Crossman 1973). In low fertility waters such as Adirondack ponds, competition for such forage can be intense.

In addition to competing with brook trout for food, many fishes prey directly on brook trout. Northern pike, largemouth bass, smallmouth bass, and rock bass are highly piscivorus. Species which may feed on eggs

and/or fry include yellow perch, brown bullhead, pumpkinseed, creek chub, common shiner, white sucker and longnose sucker (Scott and Crossman 1973). The relative importance of competition versus predation in the decline of brook trout is not known for individual waters, but the result is the same regardless of the mechanism.

Competition and predation by introduced species has greatly reduced the abundance of brook trout sustained by natural reproduction. Only about 40 (10%) of the traditional brook trout ponds in public ownership in the Adirondack Park now support viable, self-sustaining brook trout populations, and they are subject to reproductive failure as other fishes become established. No ponds in the HNWA are presently known to sustain brook trout by natural reproduction.

Human introductions of nonnative and native-but-widely-introduced (NBWI) fishes have nearly eliminated natural brook trout monocultures in the Adirondacks. The presence of brook trout monocultures is well known, and the survival of even a few such unique communities through the massive environmental disturbances and species introductions of the 19th and 20th centuries is quite remarkable.

b. Recent Management Activities

Fish management in the HNWA has emphasized brook trout restoration through an annual stocking program. Area waters generally are subject to statewide angling regulations with the exception that the use of fish as bait is prohibited in the unit to minimize the potential for introducing additional nonnative fishes. Future management will continue to concentrate on brook trout, but may focus on pond liming to offset the effects of acidification on those ponds that meet the Division of Fish, Wildlife and Marine Resources' criteria for liming candidates.

Biological data are available for slightly under half the ponded waters in the unit. Appendix 3 presents pond specific survey and management data for ponds in the unit.

C. Management Guidelines

1. Guiding Documents

This unit management plan has been developed within the guidelines set forth by Article XIV of the State Constitution, Article 9 of the Environmental Conservation Law, Parts 190-199 of Title 6 NYCRR of the State of New York, the Adirondack Park State Land Master Plan (APSLMP), and established Department policy.

The lands of the HNWA are Forest Preserve lands protected by Article XIV, Section 1 of the New York State Constitution. This Constitutional provision, which became effective on January 1, 1895, 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."

The APSLMP provides guidance for the use and management of lands which it classifies as "Wilderness" and "Primitive" by establishing basic guidelines. Guidelines are set forth for such matters as: structures and improvements; ranger stations; the use of motor vehicles, motorized equipment and aircraft; roads, jeep trails and state truck trails; flora and fauna; recreation use and overuse; boundary structures and

improvements and boundary markings. Actions by the State on lands covered by the APSLMP must be consistent with the provisions of the APSLMP.

DEC policy has been developed for the public use and administration of Forest Preserve lands. Select policies relevant to the management of this unit include:

- Administrative Use of Motor Vehicles and Aircraft in the Forest Preserve (CP-17)
- Standards and Procedures for Boundary Line Maintenance (NR-91-2; NR-95-1)
- Tree Cutting on Forest Preserve Land (O&D #84-06)
- Cutting and Removal of Trees in the Forest Preserve (LF-91-2)
- The Administration of Conservation Easements (NR-90-1)
- Acquisition of Conservation Easements (NR-86-3)
- Division Regulatory Policy (LF-90-2)
- Adopt-A-Natural Resource (ONR-1)
- Policies and Procedures Manual Title 8400 - Public Land Management
- Fishery Management in Wilderness, Primitive and Canoe Areas, as amended -November 2, 1993 (O&D #93-35)
- Adirondack Subalpine Forest Bird Conservation Area – Management Guidance

Guidance and Clarification Documents

- Memorandum of Understanding Between the Adirondack Park Agency and the Department of Environmental Conservation Concerning the Implementation of the State Land Master Plan for the Adirondack Park

SEQRA

The recommendations presented in this unit management plan are subject to the requirements of the State Environmental Quality and Review Act of 1975. All proposed management activities will be reviewed and significant environmental impacts and alternatives will be assessed.

The DEC also maintains policy to provide guidelines for the design, location, siting, size, classification, construction, maintenance, reconstruction and/or rehabilitation of dams, fireplaces, fire rings, foot bridges, foot trails, primitive camping sites, road barriers, sanitary facilities and trailheads. Other guidelines used in the administration of Forest Preserve lands are provided through Attorney General Opinions, Department policy memos, and Regional operating procedures.

The recommendations presented in this unit management plan are subject to the requirements of the State Environmental Quality and Review Act of 1975. All proposed management activities will be reviewed and significant environmental impacts and alternatives will be assessed.

2. Application of Guidelines and Standards

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

- Locating trails to minimize necessary cut and fill;
- Wherever possible, lay out trails on existing old roads or clear or partially cleared areas;
- Locating trails away from streams, wetlands, 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 crossings with low, stable banks, firm stream bottom and gentle approach slopes;
- Constructing stream crossings at right angles to the stream;
- Limiting stream crossing construction to periods of low or normal flow;
- Using stream bank stabilizing 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;
- Consultation with the Adirondack Park Agency in cases where existing bridge abutments must be replaced.

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.

All fish stocking projects will be in compliance with the *Programmatic Environmental Impact Statement on Fish Species Management Activities of the Department of Environmental Conservation, Division of Fish and Wildlife,* dated December 1979.
All liming projects will be in compliance with the *Final Generic Environmental Impact Statement on the New York State Department of Environmental Conservation Program of Liming Selected Acidified Waters*, dated October 1990, as well as the Division of Fish, Wildlife and Marine Resources liming policy.

All pond reclamation projects will be in compliance with the "Programmatic Environmental Impact Statement on Fish Species Management Activities of the Department of Environmental Conservation" and *"Programmatic Environmental Impact Statement on Undesirable Fish Removal by the Use of Pesticides Under Permit Issued by the Department of Environmental Conservation, Division of Lands and Forests, Bureau of Pesticide Management."*

D. Management Principles

The call for a management approach which balances the need for recreational use with the need to preserve the Wilderness character of the area and the capacity of the resources to withstand use presents a challenging and complex task - one which requires both long-term and a day-to-day approach to problem solving. Managers must recognize that there may be no one right answer to a problem - that in making decisions, the key is to apply a systematic rationale based on monitoring and evaluation. In order to accomplish this, the following principles will be used to manage the HNWA.

- **Manage Wilderness as a composite resource, not as separate parts.**
  Wilderness is a distinct resource producing many societal values and benefits. One of Wilderness's distinctive features is the natural relationship between all its component parts: geology, soil, vegetation, air, water, fish and wildlife - everything that makes up a Wilderness. In most cases, separate management plans will not be developed for vegetation, fish, wildlife, recreation, etc. Rather, one plan must deal simultaneously with the interrelationships between these and all other components.

- **Manage the use of other resources and activities within Wilderness in a manner compatible with the Wilderness resource itself**
  All proposed management actions must consider their effect on the Wilderness resource so no harm comes to it. For example, recreation should be managed and kept within acceptable levels that maintain the HNWA's Wilderness character, including opportunities for solitude or a primitive and unconfined type of recreation emphasizing a quality visitor experience.

- **Allow natural processes to operate freely in Wilderness.**
  This principle is derived in part from the APSLMP (2001) definition of Wilderness in dealing with the term "natural conditions." According to the APSLMP, the primary wilderness management guideline will be to achieve and perpetuate a natural plant and animal community where man's influence is not apparent. It means, for example, not introducing exotic plants and animals not historically associated with the Adirondacks nor manipulating vegetation to enhance one resource over another.

- **Attain a high level of Wilderness character within legal constraints.**
  An important APSLMP Wilderness goal is to retain and make, where necessary, Adirondack

Wilderness areas as wild and natural as possible. Examples of this principle include efforts to rehabilitate alpine summits, closing roads to motor vehicle use, or restoring severely eroded trails.

- **Preserve and enhance Wilderness air and water quality.**
  Wilderness air and water quality bear testimony to the general health of our environment. Federal and state laws are designed specifically to protect air and water quality. In wilderness, internal pollution sources such as human and animal wastes must be controlled.

- **Safeguard human values and benefits while preserving Wilderness character.**
  Wilderness areas are not just designated to protect natural communities and ecosystems; they are also for people. The APSLMP (2001) states: "Human use and enjoyment of those lands (meaning state lands within the Adirondack Park) should be permitted and encouraged, so long as the resources in their physical and biological context and their social and psychological aspects are not degraded." This is especially true for Wilderness.

- **Preserve outstanding opportunities for solitude or a primitive and unconfined type of recreation.**
  This principle comes directly from the APSLMP (2001) definition of Wilderness. Levels of solitude within any given Wilderness will vary; sometimes substantially. However, each wilderness should have places and times where visitors can find little or no contact with others. Management strategies to protect the wilderness resource should strive to minimize the amount of contact or control over visitors once they are in the unit.

- **Control and reduce the adverse physical and social impacts of human use in Wilderness through education and minimum regulation.**
  When human use must be controlled to prevent misuse and overuse, it is best to do so by education followed by the minimum degree of regulation necessary to meet management objectives. The latter option is sometimes called the minimum tool rule - application of the minimum tools, equipment, regulations, or practices that will bring the desired result.

- **Favor Wilderness dependent activities when managing Wilderness use.**
  Wilderness is a distinct resource, and many recreational or other activities taking place there can be enjoyed elsewhere. Not all outdoor activities require a wilderness setting. Examples are large group use, orienteering schools, competitive events, and other organized events (DEC policy, 1972-present). A DEC management goal is to refer these activities to Wild Forest areas. While it is the goal to refer these activities away from Wilderness areas, in some instances, the most practical choice may be to direct a minimal impact event or outdoor activity toward a Wilderness setting such as the Hoffman Notch Wilderness Snowshoe Challenge. This snowshoe race occurring from 2006 through 2009 is an example of a minimal impact traditional recreation use which has been handled successfully using the Temporary Revocable Permit Process. Conditions of the permit such as staggering the flow of racers so that large groups do not end up occupying the same space during the race in combination with favorable environmental conditions resulted in very minimal impact during this event.

- **Remove existing structures and terminate uses and activities not essential to Wilderness management except for those provided by the APSLMP.**
  "A Wilderness area is further defined to mean an area of state land or water having a primeval character without significant improvements or permanent human habitation..." (APSLMP, 2001). Except for those conforming structures, uses, and administrative actions specifically identified by

the APSLMP, DEC is mandated to remove all non-conforming structures and uses not compatible with a Wilderness environment as soon as possible.

- **Accomplish necessary Wilderness management work with the "minimum tool."**
  This principle requires every management action to be scrutinized to see first if it is necessary, then plan to do it with the "minimum tool" to accomplish the task. Its goal is to have the least possible impact on the environment and the visitor experience.

- **Establish specific management objectives, with public involvement, in a management plan for each Wilderness.**
  Working together within the constraints of the APSLMP, managers and the public need to define acceptable levels of use and specific management practices for each Adirondack Wilderness. These need to be clearly stated in management plans available for public review and comment. It is essential visitors and other users understand wilderness values, and managers clearly know their management responsibilities…

- **Harmonize Wilderness with adjacent land uses.**
  Wilderness management should be coordinated with the management of adjacent state and private lands in a manner that recognizes differing land management goals.

- **Manage Wilderness with interdisciplinary scientific skills.**
  Because Wilderness consists of complex relationships, it needs the skills of natural resource professionals and social scientists that work as an interdisciplinary team focusing on preserving wilderness as a distinct resource. Environmental and social sciences are used to replace nostalgia and politics in decision-making.
- **Manage special exceptions provided by the APSLMP with the minimum impact on the Wilderness resource.**
  The APSLMP (2001) provides for certain conforming uses and structures that differ from the Wilderness definition. These exceptions, in part, include interior outposts, existing dams on established impoundments, existing or new fish barrier dams, trails, bridges, signs, trail shelters (lean-tos), etc. Construction of additional conforming structures and improvements will be restrained to comply with wilderness standards, and all management and administrative actions will be designed to emphasize the self-sufficiency of users in an environmentally sound and safe way.

E. Management Strategy

The development of a unit management plan and long-term strategy for managing the HNWA uses a combination of two generally accepted Wilderness planning methods: (1) the goal-achievement framework; and (2) the Limits of Acceptable Change (LAC) model employed by the U.S. Forest Service and other agencies. Given the distinctly different, yet important purposes of these methods, there are clear benefits offered by employing a blend of these two approaches.

F. Application of LAC Process

The impacts of public use on the land resources of the HNWA are relatively low, so other units sustaining

more severe impacts will take priority in the application of the LAC process. In the HNWA, work during the next five years will concentrate on the development of a list of indicators and an inventory of trail and campsite conditions, mostly in zone 1, to establish a baseline for monitoring, and the selection of standards to quantify management goals and objectives. The inventory will involve an initial measurement of indicators such as:

1. Trail Condition Indicators

- Depth of trail tread compared to surrounding grade at fixed locations every 500 feet along trail
- Width of trail tread at fixed locations every 500 feet along trail.
- Number and development of user-created trails.
- Number of locations, and at each location, distance of trail where drainage is not controlled and erosion is active.
- Number of locations, and at each location, distance along trail and width of disturbance where standing water/wetlands requires hikers to walk around.

2. Campsite Condition Indicators

- General inventory indicating the number of campsites too close to water, trails, roads and each other.
- Frissell campsite condition class (one of five classes related to the degree of disturbance to vegetation and soils).
- Area of barren core.
- Distance of down firewood from fire ring.

3. Social Condition Indicators

- Average number of trail register entries per day by season.
- Average size of party signing in to trail registers.
- Number of parties per week larger than 10 signing in to trail registers by season.
- Number of other groups camping within sight and sound.
- Number of pieces of litter at campsites.

LAC standards for the indicators, once selected, will be the targets against which the results of periodic monitoring will be compared. Future effort will focus on the development of management prescriptions to prevent standards from being exceeded.

G. Americans with Disabilities Act (ADA)

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 people with disabilities are afforded equality in their recreational pursuits. The ADA is a comprehensive law prohibiting discrimination against people with disabilities in employment practices, use of public transportation, use of telecommunication facilities and use of public accommodations. Title II of the ADA requires, in part, that reasonable modifications must be made to the services and programs of public entities, so that when those services and programs are viewed in their entirety, they are readily accessible to and usable by people with disabilities. This must be done unless such modification would result in a

fundamental alteration in the nature of the service, program or activity or an undue financial or administrative burden.

Consistent with ADA requirements, the Department incorporates accessibility for people with disabilities into the planning, construction and alteration of recreational facilities and assets supporting them. This UMP incorporates an inventory of all the recreational facilities or assets supporting the programs and services available on the unit, and an assessment of the programs, services and facilities on the unit to determine the level of accessibility provided. In conducting this assessment, DEC employs guidelines which ensure that programs are accessible, including buildings, facilities, and vehicles, in terms of architecture and design, transportation and communication to individuals with disabilities. A federal agency known as the Access Board has issued the ADA Accessibility Guidelines (ADAAG) for this purpose.

An assessment was conducted, in the development of this UMP, to determine appropriate accessibility enhancements which may include developing new or upgrading of existing facilities or assets. The Department is not required to make each of its existing facilities and assets accessible so long as the Department's programs, taken as a whole, are accessible. New facilities, assets and accessibility improvements to existing facilities or assets proposed in this UMP are identified in the proposed management actions section.

For copies of any of the above mentioned laws or guidelines relating to accessibility, contact Carole Fraser, DEC Universal Access Program Coordinator at 518-402-9428 or UniversalAccessProgram@gw.dec.state.ny.us

H. Current Problems and Opportunities

The HNWA has relatively few facilities, given its overall acreage. Therefore, the HNWA has many natural resources that are unaffected by DEC facilities. For example, at over 38,488 acres, the HNWA has less than 16 miles of hiking and ski trails. In other words, the capacity of the resource to withstand use is a great deal higher than the use which the current facilities support. Locals and visitors have few places to recreate without leaving established trails. The unit has a small number of stocked lakes and ponds. Currently, the unit experiences little recreation use compared to neighboring units for this and several other reasons. One major factor is the aforementioned paucity of destination-type trails. Some HNWA trails, such as the one leading to Bailey Pond and the extended unmarked path to Marion Pond, do not see much public use, because they do not offer compelling scenic destinations and require the user to return via the same route. In comparison, the Mt. Severance trail is one of the best used trails in the unit, partly due to the fact that it is relatively short (1.2 miles) and leads to a scenic vista.

Minor problems exist throughout the unit concerning trail locations and parking facilities. Overall, management activities on the HNWA should seek to remedy minor problems of environmental degradation where they exist and increase recreation opportunities for visitors.

The towns in the area, specifically Minerva, Schroon and North Hudson are surrounded by state land. Presently, economic benefit is derived from the presence of the Wilderness area beyond state payments in lieu of taxes. The majority of public comments received during and after the scoping sessions (both written and spoken) stressed the public's wish to have additional trails developed. The towns of Newcomb and Schroon have also been major proponents of such trail development over the years.

This page intentionally left blank

IV. PROPOSED MANAGEMENT RECOMMENDATIONS

The APSLMP charges the DEC with the responsibility of developing UMPs for all DEC managed lands within the Adirondack Park. Additionally, the APSLMP prohibits construction of new facilities within units unless authorized by approved UMPs. In general, UMPs establish a five-year schedule of management activities for a specific unit, but necessarily address a longer period of planning. This is the first UMP to be developed for the Hoffman Notch Wilderness Area. Therefore, few management activities beyond maintenance of existing facilities have occurred within the HNWA for 30 years. Those proposed activities that should be performed within the five-year period of the UMP are listed below. For each activity, the appropriate permits, if any, will be acquired prior to construction.

A. Bio-Physical Resource

1. Water

Present Conditions:

The DEC Bureau of Fisheries routinely conducts biological surveys to assess and monitor fish populations in area waters. Additionally, the Adirondack Lakes Survey Corporation (ALSC) conducts water quality studies researching the effects of acid deposition on aquatic ecosystems. The DEC Division of Water conducts the statewide Lake Classification and Inventory (LCI), which is a comprehensive lake monitoring program that measures both water chemistry and biological parameters to evaluate lake water quality and trophic condition. Two HNWA water bodies are currently included in the LCI, Big Pond and Marion Pond. There are few surface waters in the unit. No degradation of water quality is presently known in the unit or in the adjacent Wild Forest lands comprising the Vanderwhacker unit.

No studies have specifically focused on the effects of recreation use on water quality.

Objectives:

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

Management Actions:

- Continue existing research and management activities that monitor the effects of acid deposition and recreational use on water resources. Support new research as appropriate (e.g. funding, staffing, permitting, etc.).
- Support and encourage research to determine the effects of recreational use on water quality.

2. Soils

Present 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 served well in overall

protection of the unit's soil resources. A limited number of trails located on relatively mild grades (under 10%) has resulted in minimal soil disturbances.

Objectives:

- To keep soil erosion and compaction caused by recreational use within acceptable limits that closely approximate the natural erosion process.
- To minimize the amount of soil compaction from human activity on undeveloped areas where natural plant communities exist.

Management Actions:

- Through field observation, inventory and monitor soil conditions within the unit affected by recreational use.
- The Regional Forester, 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.
- Concentrate trail maintenance efforts on areas prone to erosion and overuse.
- Design, locate, and construct all new structures and improvements in ways that will minimize the potential for soil erosion.

3. Wetlands

Present Conditions:

The APA has authority under the NYS Freshwater Wetlands Act (1975) and the Adirondack Park Agency Act (1971) to regulate wetlands within the Adirondack Park. This authority extends to all wetlands over one acre in size, or any size wetlands adjacent to open water. Wetland inventories and maps for the entire Park are incomplete, but official maps are available for this unit.

Objectives:

- 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

Management Actions:

- Coordinate all future construction and maintenance activities that may affect wetlands with the Adirondack Park Agency to determine wetland boundaries and the need for wetlands permits. DEC will acquire APA wetlands permits as necessary for all proposed management activities in wetlands.
- Install bridges and other erosion control devices as appropriate to protect wetland areas.
- Promote the development of GIS information to assist managers in accessing inventoried wetland data.
- Correct any undesirable wet conditions and relocate any trails or facilities when necessary to reduce the impacts on wetlands or associated vegetation.
- Install and maintain erosion control devices on trails to minimize soil movement.
- Minimize the impacts of construction and maintenance activities on wetlands.

4. Vegetation

***Present Conditions**:*
Impacts to the vegetation of natural communities come from a variety of sources; however most are related to visitor activities in the unit. Culture and nature have impacted the distribution and types of vegetative cover within the unit over time. However, due to the stringent constitutional protections, human disturbances have had little impact on the unit's vegetation in the past century. Impacts directly attributed to recreational use do exist, but these problems are concentrated to areas of high use and are not widespread. 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.

Due to the remoteness of lands within the unit, there is a need for additional inventories for unique, rare, and endangered plants.

Objectives:

- 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.
- 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 continue and expand programs that identify and map ecological communities and sensitive, rare, threatened, and endangered plant species or communities.

Management Actions:

- Enforce existing policies and regulations that protect the unit's vegetation.
- Relocate existing facilities, or locate and construct new facilities where they will not impact rare, threatened or endangered plant species or communities.
- As authorized by New York Education Law § 235-a and pursuant to Environmental Conservation Law § 3-0302, support the New York State Biodiversity Research Institute in the identification of lands and waters that harbor plants, animals and ecological communities that are rare within the unit.
- Utilize only native vegetation when necessary to reclaim or restore an area negatively impacted by recreational use.
- Monitor vegetation in high-use areas to determine overuse and the need for restricting use in such areas.
- 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 HNWA.
- Continue to allow and support appropriate Wilderness research activities by Temporary Revocable Permit.
- Enforce the Lands and Forests general rules and regulations regarding tree cutting on State land. 6 NYCRR §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."
- 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 members of APIPP or other volunteers under supervision of DEC through an Adopt-a-Natural Resource Agreement

Invasive Plants

The negative impacts of invasive species on natural forest 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. Terrestrial and aquatic invasive species have been identified at increasing rates of colonization along roadsides in 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.

Although in the context of a global society, the transfer of species from one location to another may be viewed as part of a "natural process," there may be occasions when this relocation of non-native species becomes unacceptable and an active response is warranted.

The Department of Environmental Conservation has created an Office of Invasive Species to work with various universities, state agencies and non-profit groups in coordinating a response to invasive species. The Department is a member and will continue to collaborate with other partners of the Adirondack Park Invasive Plant Program (APIPP) (Adirondack PRISM) to support education, inventory, research, control protocol, and control of invasive species. An inventory and analysis of the current distribution of invasive species on Forest Preserve lands will provide the necessary information on the present extent of invasive exotics and provide the basis for long term decision making.

In 2010 the Department and the Adirondack Park Agency developed Inter-Agency Guidelines for Implementing Best Management Practices for the Control of Terrestrial and Aquatic Invasive Species on Forest Preserve Lands in the Adirondack Park (see appendix 9). These Guidelines provide a template for the process through which comprehensive active terrestrial and aquatic invasive species management will take place on Forest Preserve lands in the Adirondack Park. The Department shall be responsible for management of terrestrial and aquatic invasive species on Forest Preserve lands while the Agency will be responsible for providing review of, and advice on, APSLMP compliance and permit jurisdiction.

The control methods and Best Management Plans (BMPs) contained in these Guidelines restrict the use of herbicides so that adverse impacts to non-target species are avoided and native plant communities are restored. Aquatic invasive species will be managed using non-mechanical harvesting techniques (hand-pulling) and temporary benthic matting as described in the Guidelines. Use of pesticides for aquatics is not a part of this guidance. The Guidelines are meant to be a dynamic document that is periodically revised to reflect new invasive species threats, continuing inventory of the Forest Preserve, and evolving invasive species management techniques.

Efforts should be made to restore and protect the native ecological communities in the Hoffman Notch Wilderness through early detection and rapid response efforts to eradicate or control existing or newly identified invasive species populations. Adoption of the Guidelines and implementation through the UMP and site specific work planning process, gives the Department the basic tools needed to preserve, protect and restore the natural native ecosystems of the Forest Preserve.

Prior to implementing containment and/or eradication controls, terrestrial invasive plant infestations occurring within the Unit need to be assessed on a site-by-site basis. The geophysical setting and the presence, or absence, of sensitive native flora within or adjacent to the targeted infestation often predicts the Best Management Practices (BMP's) and limitations of the control methodology. Infestations occurring

within specific jurisdictional settings may trigger a permitting process, as do most terrestrial infestations occurring within an aquatic setting. The species itself often dictates whether manual management controls, e.g. hand-pulling or cutting, or the judicious, surgical application of herbicides is warranted in order to best control that specific species in that specific setting. No single BMP guarantees invasive plant containment or eradication. Many infestations require multiple, seasonal control efforts to reduce the density and biomass at that setting. Adaptive management protocols suggest that implementation of integrated control methodologies may provide the best over-all efficacy at specific infestations.

All management recommendations are based on knowledge of non-native invasive species present within the Unit and their location, species, abundance and density. A complete inventory of the Unit is necessary to identify aquatic and terrestrial invasive plant threats facing the unit. Inventory should be based on existing inventories, formal or informal inventories during routine operations, and by soliciting help from volunteers to actively study the Unit and report on invasive species presence, location, and condition.

Management Actions

Many, if not all, invasive plant infestations within a respective Unit will have multiple transport and distribution vectors or 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.

The Department will collaborate with APIPP to implement the management controls at the Severance Hill trail head's spotted knapweed infestations. APIPP staff will collaborate with Essex County to implement ongoing controls at the Boreas Road purple loosestrife infestation and Loch Muller spotted knapweed infestations in proximity to the Bailey Pond trail head parking area. APIPP will collaborate with NYS DOT in order to implement ED/RR inventories of the I-87 Adirondack Northway corridors as they relate to the eastern boundary of Hoffman Notch Wilderness Area Unit.

No aquatic plant occurrences are documented within the unit, therefore there are no management recommendations prescribed at this time. However, ongoing inventory is required to detect new invasive plant occurrences. Aquatic invasive species signage will be posted at all public access locations. All waters with public access will be inventoried for the presence of aquatic invasive plants. When identified, all "easy to contain – low abundance" aquatic plant infestations will be considered immediate targets for containment and eradication controls. Minimizing the spread of newly documented and immature infestations before they have the chance to become well-established will be considered a priority management action. Rapid response will be implemented by hand-pulling plants via the guidelines set forth by the Adirondack Park Agency's "Advice on the Hand-harvesting of Nuisance and Invasive Aquatic Plants." Additional methods may be required to manage an infestation to contain, reduce, or eradicate the population. Management will require assessing a set of criteria to evaluate site conditions to determine appropriate and permitted actions. Additional research and collaboration among partners and stakeholders will occur to develop an appropriate, effective, and approved prevention and integrated plant management plan.

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 ED/RR protocols will be implemented within the Hoffman Notch Wilderness at probable locations of invasive plant introductions, such as

parking/trailhead areas.

Protocols to minimize the introduction and transfer of invasive plant species will be incorporated during routine operations and historic and emergency maintenance activities, which may include the following:

Construction Projects

Supplemental to the principals of the Minimum Tools Approach, all soils/straw/seed or sources of materials to be used as stabilization/cover for construction projects within the unit will be certified as weed-free.

Trail Maintenance

Supplemental to the principals of the Minimum Tools Approach, all soils/straw/seed or sources of materials to be used as stabilization/cover for construction projects within the Unit will be certified as weed-free.

Field Sampling

Personnel performing field sampling will avoid transferring aquatic invasive species between waters by thoroughly inspecting and cleaning equipment between routine operations. Potential pathways include: vehicles, boats, motors, and trailers; sampling equipment; measuring and weighting devices; monitoring equipment; and miscellaneous accessories.

Angling Tournaments / Derbies

Licensing, registration, and/or permitting information distributed by the Department to Tournament or Derby applicants will include guidelines to prevent the introduction and transport of invasive species.

Restoration of sites where invasive plant management occurs is critical to maintain or enhance historical ecological function and structure. Restoration will incorporate best available science to determine effective techniques and the use of appropriate native or non-invasive plant species for site restoration.

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.

5. Air Quality

Present conditions:

One of the most important features of the Adirondacks is clean air. Federal Clean Air Act Standards rate Adirondack air as Class II (Class I being the cleanest). Research indicates that air quality problems tend to originate outside the Park boundaries and are transported long distances. There are no known air pollution activities within the Adirondacks that have negatively affected sight visibility, water quality, or open space in general. More research needs to be conducted to determine whether the air quality of the area is static, improving, or deteriorating.

Objective:

- To achieve Federal Class I air standards.

Management Actions:

- Cooperate with other agencies and scientific researchers in developing baseline data to identify the effects of potential air pollutants on natural resources within the unit.
- Support and encourage research to determine the effects and impacts of recreational use on air quality.
- Monitor air quality at various locations within the Adirondack Park.

6. Wildlife

Present Conditions:

While all of the objectives and management actions 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 HNWA. This priority is reflected under the list of potential management action projects (denoted by letters) outlined below.

Objectives:

- To perpetuate, support, and expand a variety of wildlife recreational opportunities, including sustainable hunting and trapping and wildlife observation and photography as desirable uses of wildlife resources.
- To assure that wildlife populations are of appropriate size to meet the demands placed on them, including consumptive and non-consumptive uses.
- To increase our understanding of the occurrence, distribution, and ecology of game and nongame wildlife species and their habitats
- To minimize wildlife damage and nuisance problems
- To meet the public's desire for information about wildlife and its conservation, use, and enjoyment.

Management Actions:

- Manage and protect wildlife through enforcement of the Environmental Conservation Law and applicable Rules and Regulations.
- Support traditional use of the unit's wildlife resources, particularly activities designed to perpetuate hunting and trapping programs and education efforts.
    a) Conduct a survey of hunters and trappers that use the unit.
- Continue to monitor and inventory wildlife populations and their habitats, particularly game species, species classified as rare, threatened, endangered or special concern, and those species associated with boreal habitats.
    a) Conduct targeted surveys for endangered, threatened, and special concern bird species that were documented in the first Breeding Bird Atlas Project, but not the second.
    b) Inventory boreal forest habitats within the unit.
    c) Where harvest information is lacking, conduct surveys for American marten to better understand distribution and habitat use.
    d) Conduct surveys for bird species associated with lowland and high-elevation boreal forest. Priority should be placed on those species that were detected during the first Breeding Bird Atlas Project, but not the second and on those species that were not detected during either project.
    e) Monitor existing radio-collared moose and continue to collar new individuals on an opportunistic basis.

f) Monitor use of deer wintering areas in the unit.
g) Continue to support statewide survey efforts that increase our understanding of the occurrence and distribution of flora, fauna, and significant ecological communities (e.g., New York Natural Heritage Program surveys).

- 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.
- Re-establish, to the extent possible, self-sustaining wildlife populations of species that are extirpated, endangered, threatened or of special concern in habitats where their existence will be compatible with other elements of the ecosystem and human use of the area.
    a) Conduct surveys for Spruce Grouse and evaluate the distribution and quality of potential Spruce Grouse habitat. Based on results of the surveys and habitat assessment, consider reintroducing this species.
- Provide information, advice and assistance to individuals, groups, organizations and agencies interested in wildlife whose activities and actions may affect, or are affected by, the wildlife resources or the users of wildlife.
- Provide information, advice and/or direct assistance to requests for relief from, or solutions to reduce or alleviate problems with nuisance wildlife.
    a) Provide information to user groups on avoiding problems associated with black bears. Encourage the use of bear-resistant food canisters.
    b) Work cooperatively with the Division of Lands and Forests to assess problems associated with beaver-flooded trails. Work with area trappers and encourage trapping at nuisance sites during the open beaver trapping season.

7. Fisheries

Present Conditions:

The surface waters of the HNWA are located in the Upper Hudson watershed. The first large- scale biological survey of the unit's surface waters was conducted in 1932. The first survey identified the widespread presence of nonnative fishes throughout most of the Hoffman Notch Wilderness Area. By 1932, lakes and ponds in the unit often contained two nonnative species. Apparently during the late 19th or early 20th century, fishes such as smallmouth bass, largemouth bass, yellow perch, and golden shiner were introduced in the unit. Along with these species came nonnative bait fish which further impacted the native fishes by replacing small native fish.

At one time, brook trout were well represented in the unit, but their exact distribution remains obscure because the early establishment of nonnative species heavily impacted the unit's brook trout fisheries. Today, brook trout are maintained principally through routine stocking and by reclamation of impacted ponds, lakes, and streams.

Eleven ponds occur within, or border the unit. All of these surface waters are shown on the current U.S.G.S. 7.5-minute topographic maps. Surface waters are dispersed throughout the planning unit, and range in size from less than an acre to Big Pond, which is 63 acres. Many other ponded areas occur within the unit, but these represent in-stream impoundments, wetlands, and temporal beaver ponds that are too small and shallow for fisheries management potential.

Ponded waters in or bordering the unit have an approximate acreage of 210 acres. The area also contains many miles of small, coldwater streams and beaver flows. Prominent streams include Minerva Stream, North Branch Trout Brook, Hoffman Notch Brook, Platt Brook and 0.25 miles of the Boreas River. See Appendix 3 for Pond Narratives section and related fisheries tables.

It has been determined that some of the ponds within the unit contain non-native species and cannot be returned to natural conditions (natives only). In some of these ponds, their association with contiguous wetlands precludes effective treatment with rotenone. In other ponds, the absence of a natural fish barrier or a suitable site upon which to construct a fish barrier precludes effective treatment with rotenone. As other fishes become established in these waters, it is likely that brook trout will be eliminated from these ponds. These ponds cannot be restored with current technology.

Objectives:

The 1993 Organizational and Delegation Memorandum regarding "Fishery Management in Wilderness, Primitive, and Canoe Areas" forms the basis for fishery management goals in the unit. That memorandum includes policy guidelines that resulted from negotiations between the DEC, APA and several citizen organizations.

- Restore native fish communities with emphasis on native species that have declined due to man's influences. This goal is consistent with the primary Wilderness management guideline in the SLMP. Implementation may include reclamations, liming, stocking and other activities as per the "Fishery Management Policy in Wilderness, Primitive, and Canoe Areas."
- Protect native fish communities from the addition of undesirable non-native fishes. This goal is also consistent with the primary Wilderness management guideline in the SLMP.
- Provide recreational angling as part of a larger Wilderness experience emphasizing quality over quantity.
- Protect the fishless state of naturally barren waters that have not been stocked.

Management Actions:

- Reduce the distribution of nonnative and native-but-widely-introduced fish species, and increase the abundance of the depressed native brook trout. This will include reclaiming Marion Pond.
- Restore a native fish community in Marion Pond through reclamation.
- Manage one pond (Marion) as an Adirondack brook trout pond, and one pond (Bailey) as a Coldwater pond.
- Manage two ponds (Big and North) as Warmwater ponds.
- Assess North Pond as a potential reclamation candidate to restore a native fish community there.
- Survey Unnamed Ponds UH-P392, UH-P453D, UH-P455C, UH-P5427, and UH-P5428 to determine their fish communities and habitat characteristics.
- Maintain and enforce regulations that prohibit the use of fish as bait in the unit. The use of fish as bait is a potentially significant vector for introductions of disruptive non-natives.
- Promote angler use of the waters in the unit, but generally only in the context of numerous additional waters throughout the Adirondacks. For example, leaflets distributed to anglers will list waters in the Hoffman Unit along with other waters that provide similar fish resources; they will not highlight the Hoffman waters over other waters.
- Conduct biological surveys of waters within the unit as required.
- Manage the aquatic resources of the ponds in the unit as is appropriate based on their water

quality, habitat, and biological resources. This may include reducing the distribution of nonnative and native-but-widely-introduced fish species, and increase the abundance of native species including brook trout. Marion Pond has been identified as a reclamation candidate. If future surveys on other waters indicate reclamation is appropriate, the UMP will be amended to include a justification and description of the proposed work. Concurrent with this shall be the revision of the pond narrative to reflect new survey data.

- Enhance partially effective natural fish barriers, and construct fish barrier dams as needed to prevent the spread of non-natives and NBWI fishes. The SLMP specifies that fish barrier dams are conforming structures in wilderness areas. When non-natives have been established upstream of an existing barrier, enhanced/constructed fish barriers may be the only option to prevent the spread of fishes further upstream in that portion of the watershed. Specific sites for newly enhanced or constructed barriers are not proposed in this plan. If or when the need for a new barrier site is identified, the UMP will be amended to include the proposed work.
- Fish stocking will emphasize native species, although historically associated fishes may be stocked as per the "Fishery Management Policy in Wilderness, Primitive, and Canoe Areas." Heritage strains of brook trout are preferred in ponds where habitat and the degree of competition allow viable brook trout populations to be maintained. Historically associated species that are predators on brook trout would not be stocked in waters with good brook trout populations. If the abundance of non-native/competing fishes increases to the point that the viability of the brook trout population declines, then brown trout are likely to be stocked.

B. Land Protection

1. Open Space/Land Acquisition / Boundaries / Deeded Rights

Present Conditions:

A land protection plan, under the conceptual framework of the Open Space Plan and the Environmental Protection Act (1993), specific to the HNWA has not been completed. This task is commonly referred to as a "needs assessment." Assessing needs for protection of Wilderness resources, including open space, are difficult to determine. Each Wilderness resource and open space viewshed has its own characteristics and is usually found in only one or a few specific locations. However, this needs assessment must be completed before an acquisition list is developed. Aside from public roads and riparian boundaries, the unit has approximately 52 miles of boundary lines that must be maintained on a regular basis.

Deeded private water sources exist in Hoffman Notch Wilderness. Three separate deeds have been identified at this point. These deeds provide for use of springs / spring houses / basins etc. located on state lands. Some of these water rights include motor vehicle access and maintenance of water structures. These areas will require a primitive corridor classification to ensure that the fulfillment of these rights are in compliance with the SLMP.

There are approximately 2 miles of unclear unit boundary along the southern edge of this unit on the west side. This 2 mile shared boundary with Vanderwhacker Mt. Wild Forest appears to be based on a trail from an old USGS topographic map, however, there are no identifiable features of this boundary on the ground. Should there be a need to identify this boundary between the Wilderness and Wild Forest units it may prove difficult. Future consideration of this area may prompt a decision to relocate this boundary to a more easily identifiable location.

Objectives:

- Complete land protection needs assessment task for the HNWA in accordance with the Open Space Plan.
- Locate and mark all boundary lines on a scheduled basis.
- Physically identify APSLMP unit designations on the ground for administrative and public use.

Management Actions:

- Develop a HNWA- wide open space protection priority listing including a fee and conservation easement acquisition priority list. Determine if landowners express selling an interest in their properties. Acquire properties only through negotiated sale with willing sellers under established guidelines, as opportunities arise and funds are available.
- Physically inspect the boundary to determine resurvey and maintenance needs; assign a priority to each. Undertake maintenance activity to ensure all boundaries are identified and marked within the five-year implementation of this plan. Brush, paint, and sign all boundary lines at least once every seven years. Mark boundaries where they cross any trail, road, or stream. Monitor boundaries for unauthorized activities, such as illegal motor vehicle and mountain bike entry and timber trespass.
- Sign unit boundaries with boundary signs identifying the Wilderness land classification of the unit. Sign trailheads, trails and other entrances to the HNWA with specific signage identifying the unit's designation, so that both DEC personnel and the public know individual unit designations.
- Enforce the Lands and Forests general rules and regulations regarding operation of motorized equipment in wilderness. NYCRR §196.8(b) provides that "No person or employee of a city, village, town or county government agency or employee of a state government agency other than the department shall possess or operate motorized equipment within the boundaries of an area of state land classified as wilderness, primitive, or canoe in the Adirondack Park, or an area of state land classified as wilderness or primitive bicycle corridor in the Catskill Park, except at times and locations and for purposes authorized by the department or in the performance of activities authorized by an easement or use reservation on lands subject to such easement or use reservation."

C. Man-Made Facilities

1. Trails

Present 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. Most Hoffman Notch trails are in good condition due to limited use and relatively gentle terrain.

Objectives:

- Preserve the largely trail-less character of the interior of the HNWA
- To provide visitors with a trail system that offers a range of wilderness recreational opportunities in a manner that keeps natural resource impacts and maintenance needs to a minimum.
- Identify suitable locations and Create improved access to the unit and access information about the unit for people with disabilities.

- 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.
- In the construction of new trails, seek routes that would minimize environmental impacts and ongoing maintenance costs by utilizing historic trails where practical, avoiding wetlands, stream crossings, significant habitats, unstable soils and steep slopes, while taking advantage of natural features that would contribute to the enjoyment of the trail by visitors.
- Identify important existing vistas and maintain them by cutting of brush and tree limbs and by minor tree cutting but only to the extent that vista maintenance will not significantly reduce the wild character of the area.
- Design and locate trail markers and trail signs in accordance with the unified system developed for all Forest Preserve lands.

Management Actions:

- Formally adopt, as a matter of DEC policy, the trail classification system and marking standards proposed in Appendix 4 for all trail management activities and assign appropriate classification to all trails in the unit.
- Construct and maintain all trails in the unit 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 accordance with project work plans and APA permits if required, subject to the availability of funds and volunteer labor. Hoffman Notch Trail and Big Pond Trail are to be classified as foot trail and cross country ski trails. The Hoffman Notch Trail will be maintained generally to meet the character of a Class III Primitive trail but also to accommodate cross country ski use at a moderate to advanced level. The Big Pond Trail will likewise be maintained generally to meet the character of a Class III Primitive trail but also to accommodate cross country ski use at a moderate level.
- 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 the posting of signs at trailheads and through the media. Seek voluntary compliance first, regulation and enforcement only when and where lack of voluntary compliance poses a serious threat to natural resources.
- Improve accessibility of trail to Bailey Pond, and the Big Pond Trail from Hoffman Rd. to the first bridge, which crosses an unnamed water body (a distance of 0.45 miles). Both of these trails are old road beds and retain that character over most of the trail length described here. Improvement will include trail hardening and improved drainage on muddy stretches of trail and bridging over drainages that would significantly impede wheelchair use.
- Develop a hardened turn-around / resting area and box privy at the end of the improved section of Big Pond Trail at the unnamed pond (0.45 miles from trailhead).
- Provide UTAP descriptions of improved accessibility trails.
- 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 HNWA.
- Conduct a detailed inventory of chosen LAC indicators for all marked trails in the unit. Begin an

inventory of major unmarked trails after the inventory of marked trails has been completed.
- Analyze inventory information in relation to LAC standards.
- Take appropriate actions when and where necessary to keep LAC standards from being exceeded.
- Re-inventory trails every five years.
- Presently, an unmarked trail system (approx. 3.2 miles long) exists south and west of Big Pond. This trail forms a loop to the Big Pond Trail. Approximately .27 miles of this trail cross private property. This plan proposes to formalize this trail as a Class Three and cross country ski trail pending an easement with the private landowner allowing public hiking, skiing, trail maintenance and trail markers along this trail segment. Should the agreement to cross private land not work out, a class III hiking and ski trail approximately .5 miles in length including a potential bridge will be developed between the existing Big Pond trail and a point on the loop trail near the outlet of Big Pond. DEC and APA staff will work cooperatively to site the new trail or reroute portions of this existing trail that adversely affect wetlands.
- Near the summit of Severance Hill, a short loop reroute of approximately 200 feet, is proposed to alleviate a section of eroded trail.
- Regardless of the North Country National Scenic Trail, adopt the eastern 4-mile Platt Brook trail segment from North Pond to Route 9 to be constructed as an addition to the Hoffman Notch Wilderness trail system
- If approved, adopt the western segment of the North Country National Scenic Trail through the southern portion of the unit, as described in the NCNST section below.
- Develop and cut out an unmarked trail and corresponding 3-4 car parking area along the northwest portion of the Unit. This approximately one-mile trail segment will head south east from the Blue Ridge Rd. and roughly follow the property line of the adjoining private parcel. This trail will link up with the old access road to the Durgin Farm and provide access to the northwest corner of the Hoffman Unit. A simple 2-3 log bridge crossing a drainage along the mid portion of this trail will be constructed as part of this trail.

North Country National Scenic Trail (NCNST)

Present Conditions:

The North Country National Scenic Trail (NCNST) was originally conceived in the mid 1960's as a trail to connect through eight northern states, from the Lewis & Clark Trail on the Missouri River in South Dakota to the Appalachian Trail in the Green Mountains of Vermont. In 1980, Federal legislation authorized the establishment of the entire length of the NCNST from South Dakota through New York as a component of the National Trails System. It is one of only eight trails authorized by Congress to be National Scenic Trails.

The portion of the NCNST through western New York has been designated and generally follows the Finger Lakes Trail (FLT). The completion of the trail through eastern New York (the Adirondacks) has been an issue from the start. Several problems were perceived with the original concept for the trail route through the already heavily impacted High Peaks Region. For a variety of reasons, local trail groups opposed this route and have been reluctant to actively adopt the NCNST as a cause, and without the critical elements of local support and advocacy, the trail has literally gone nowhere.

One issue that there is general agreement on is that the trail should pass through the southern Adirondacks, outside the High Peaks Region. With this in mind, several new alternative routes were developed. One of the alternatives recommends that the trail pass through the HNWA. However, it is impractical at this point to consider a specific location until the APA and DEC decide on a general route and

how to handle a trail of this nature within the framework of the UMP process. It is believed that the HNWA would be able to support this type of trail system, and is thus a potential candidate for selection. The criteria for this assessment are based on the National Scenic Trail standards, the APSLMP, DEC policy, and comment from the New York State Trails Council and the Forest Preserve Advisory Committee. The resulting recommendations for the most appropriate route will be the major consideration in deciding the final approved route.

The approximate proposed route is included in the location map. The preferred route through the HNWA has the proposed trail entering the unit at its southwestern boundary. The proposed trail will follow an abandoned road north to Bailey Pond for approximately 2.6 miles. At Bailey Pond, the trail follows the Bailey Pond Trail to the intersection of the Hoffman Notch Trail. The proposed trail then follows the Hoffman Notch Trail north for about 1 mile and turns east onto the Big Pond Trail, then heads eastward for approximately 4 miles. In the vicinity of North Pond, approximately 4 miles of new trail will be required to reach SH 9 to the east and eventually to a culvert underneath I-87.

Management Action:

- Should the upcoming assessment of proposed routes for the NCNST determine that the most environmentally sound route for the trail is to pass through the HNWA, and the DEC and APA approve the resulting recommendations from the assessment, construct the trail using the route prescribed in the assessment. If the DEC or APA disapprove of the specific trail layout described in the assessment, DEC and APA will work together to identify an acceptable route for the trail to cross through the unit.

2. Trailheads/ Entry Points

Present Conditions:

The HNWA is served by six public entry points, five of which are considered developed, as a parking area is available at that location. One additional trailhead / parking area is planned for the northwest portion of the unit along the Blue Ridge Rd. 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. Access to the area is limited **a**long the east, south and north sides. Please see maps in the appendix 11 for locations of trailheads and/or culverts that allow access to this unit. The following is a description of those locations:

1. Trailhead- North side of unit (developed)- travel approximately 5.5 miles west on the Blue Ridge Road from exit 29 of I-87. Once across the bridge over The Branch, turn left off the Blue Ridge Road to a parking lot to access the Hoffman Notch Trail. While this trailhead is not on state land, in 2010 the state (DEC) bought a conservation easement on this property. The conservation easement allows for the construction of a larger parking area than currently exists so that winter parking does not interfere with highway snow removal.
2. East side of unit(undeveloped)- travel approximately 1.6 miles south of exit 29 of I-87 on SH 9 to access Hammond Pond Wild Forest lands on the west side of SH 9. Walk to the Schroon River on the unmarked old logging road. An old fish management structure is evident in the river. At one time, a walkway was available to cross the river but was destroyed in high waters. In order to cross the river to gain access to a pedestrian underpass which goes beneath I-87, one must use a canoe/ boat unless water level is very low enabling an individual to cross the old fish management structure. The pedestrian underpass at this location along with a substantial timber bridge located

in the median of I-87 between the north and south bound lanes was provided for during construction of the Northway, however, has probably almost never been used due to the difficulty associated with crossing the Schroon River.

3. East side of unit (developed)- travel approximately 1.6 miles north of exit 28 off I-87on SH 9. Turn left into small parking area. The People of New York State have a deeded access to park and travel the trail only that leads to a culvert that is under I-87 that leads to unit lands. Follow trail system here to the vehicular underpass beneath I-87.
4. Trailhead- East side of unit(developed)- travel approximately .6 miles south of exit 28 of I-87 on SH 9. Take right across from Alder Meadow Road into parking lot for access to hiking trail and pedestrian underpass leading to Severance Hill.
5. Trailhead- South side of unit (developed)- travel approximately 2.1 miles west on the Hoffman Road from Route 9. Enter small parking lot on the north side of road to access trail to Big Pond.
6. Trailhead- South side of unit (developed)- travel approximately 5 miles west on the Hoffman Road from Schroon Lake village to junction of the Hoffman Road and Loch Muller Road. Turn right onto Loch Muller Road and travel about 3 miles to the dead end. Find parking lot here to access Hoffman Notch Trail. The final segment of this access road (approximately ¼ mile) connects the town plow turn-around to the developed lot. This road segment is in need of maintenance as it is somewhat rocky and rough for smaller vehicles. The developed lot at this location is prone to wet conditions and limits parking especially at wet times of the year. Some work here is needed.
7. Driveway located on south side of Blue Ridge Rd. west of a private parcel in the vicinity of Durgin Brook. This driveway is located at the point which the character of the Blue Ridge Rd. abruptly changes from straight open stretches to a winding narrower road. This driveway is planned to be expanded to accommodate 3-4 vehicles.

Informal Public Access Points include access from adjacent wild forest boundaries primarily located along the western edge of the unit and access from adjacent roads which can be found in the north along a short portion of the Blue Ridge Rd. directly east of the Boreas River and another short segment of Blue Ridge Rd located just west of Sand Pond. Access points to the unit along the eastern edge are fairly limited, however there are a few access points which the public may use to access the unit by foot. Located at the I-87 #28 interchange is a short paved road which travels north along the west side of I-87 before ending at private property. Just before the end of this road, a small piece of Hoffman Notch Wilderness bounds the west edge of this road. An additional pedestrian underpass exists beneath I-87 in the vicinity of 17th Brook. A spot along Route 9 once suitable for a parking area, but now grown in with trees along with an easement to site a trail would provide access to this pedestrian underpass, however it would require construction of a new bridge over the Schroon River and is also only a short distance from the vehicular underpass located just to the south of this location which the State also holds deeded rights to, so this access is not called to be developed in this plan.

Informal Private Access points have the potential to occur anywhere private lands adjoin the Unit. Numerous informal herd paths enter the Hoffman Notch Wilderness from adjacent private lands. It is believed that a majority of informal private access to the unit occurs during the hunting season as many private hunting camps are located adjacent to the unit. Some adjacent private landowners also grant hunters permission to cross their property to access the Hoffman Unit. It is believed that a significant amount of privately gained access to The Hoffman Notch Wilderness occurs along the eastern side of the southern boundary in the vicinity of the Big Pond Trailhead. Should historic privately accessed points become shut off to the individuals who have used these access points for years, it is logical to believe Big Pond Trailhead may see increased use. The Big Pond Trailhead currently has space for approximately 3-4

vehicles. For the popularity and size of this existing trail, the addition of the new trail segment from North Pond to Route 9 and to provide more adequate public access to this section of the unit it is recommended to increase the size of this parking lot by 1-2 vehicle spaces.

Objectives:

- To provide adequate access to the unit.
- To provide and manage adequate trailhead facilities that accommodates visitor needs and protect resource values.
- To provide adequate parking and mitigate any parking related problems.
- To reduce the amount of litter and vandalism occurring at trailheads.
- To provide wooden ID signs and kiosks / registers at all trailheads.

Management Actions:

- Construct a 5-car parking area at the Hoffman Notch Trailhead on the Blue Ridge Road.
- Develop Route 9 gravel pit Access point #3. Clear debris, grade parking area, install ID sign and kiosk and mark foot trail to underpass.
- Support development of a foot bridge across the Schroon River in the vicinity of the Fish weir (Hammond Pond Wild Forest UMP) and development of a marked foot trail leading from this bridge to the pedestrian underpass and timber bridge to facilitate foot access to the Hoffman Notch Wilderness.
- Encourage partnerships with local governments and outside volunteers to maintain and snowplow trailhead parking facilities.
- Install new trail registers at the north end of the Hoffman Notch Trail, at the Route 9 gravel pit access point and at Durgin Access point #7 along Blue Ridge Rd.
- Encourage proposed snowmobile / multiple use trail north of unit to cross The Branch at a location across the Palmer Pond Dam to facilitate public foot access to The Hoffman Notch Wilderness at this location.
- Construct a 3-4 car parking lot in existing driveway along Blue Ridge Rd Access point #7 near northwest corner of the unit and construct associated unmarked path approximately one-mile in length with associated 2-3 log bridge along private land boundary to link up with old road access to Durgin Farm. This would provide a much needed access to the Northwest corner of the Hoffman Notch Wilderness.
- Increase the size of the Big Pond Trailhead parking by 1-2 vehicle spaces. This may be accomplished to an extent by using fill from the adjacent Vanderwhacker Mountain Wild Forest if the parking area for Muller Pond could be improved by relocating it to an adjacent location at the height of ground just east of the current access road to Muller Pond. A lot in this location would improve winter access and safety of vehicles into and out of the lot as well as provide material for the Big Pond Trailhead.
- Correct water issues at the Hoffman Notch Trailhead parking lot (south) through addition of geotextile fabric and gravel.
- Replace privy at Lock Muller Trailhead with accessible privy.

3. Signs

Current Conditions:

Signs are provided to mark trails, minimize impacts, and provide safety information. Signage is kept to a

minimum to avoid interfering with Wilderness values and guidelines.
Currently, Lands and Forests, Operations, and Fish and Wildlife all use signs in the unit. Trailheads and much of the Wilderness boundaries are not well identified. Trailhead signing is limited to small signs on standards. Register boxes exist at the following trailheads; Mt. Severance, Big Pond, and Hoffman Notch (south). Interior signing is limited to trail junctions and special information and regulatory signs.

Progress is being made to reduce overall signing and to use smaller sign boards. Sign theft and vandalism is an occasional problem near Wilderness boundaries.

Objectives:

- More adequately identify access points to the unit.
- Provide for the minimal use of signs necessary to manage and protect the Wilderness resource and user safety.
- Bring current signing into compliance with Wilderness standards i.e., made of rustic materials and limited in number (APSLMP, 2001, Page 22).

Management Policies and Actions:

- Update and maintain sign inventory annually.
- Coordinate and review all sign needs through a single area manager.
- Signs will be provided for visitor safety and resource protection, not for the convenience of the user.
- Signs may be erected at trail junctions, showing directions with arrows; wording will be reduced to the minimum necessary.
- Minimize regulatory signs at interior locations in favor of signs posted at trailheads or access points and published, where feasible, in brochures and maps or otherwise made available to users prior to entry into the unit.
- Install roadside signs designating unit boundaries along the Blue Ridge Road and Hoffman Road near the Big Pond trailhead and along the road north of I-87 interchange#28 and west of I-87.
- Install new and/or maintain existing ID signs and kiosks with register books at the six developed parking lot access points to Hoffman Notch Wilderness.

4. Bridges

Present Conditions:

Eight bridges currently exist on Hoffman Notch Trails. Many of these bridges are in good to excellent condition. Some crossing locations are missing bridges that had them in the past. Many drainages show evidence of old logs, timbers and boards which most likely are the remains of historic Hoffman Notch bridges. The foot bridge along the north end of Hoffman Notch Trail over the Sand Pond Brook, as well as two bridges on the trail up Mt. Severance, were all replaced around 2000. Another bridge along the northern Hoffman Notch Trail which crosses Hoffman Notch Brook at its northernmost location is in good condition. Two bridges on the north end of the Hoffman Notch trail over the Hoffman Notch Brook were washed away. One of these two was replaced with a temporary bridge but will need to be replaced. The other bridge location and one additional location a short distance away, pose a difficult crossing situation and should be addressed through new bridges or a trail re-route. The old Durgin Access Rd. has an existing wooden bridge in fair condition, this bridge should be replaced with a simple 2-3 log stringer bridge. Along the southern end of the Hoffman Notch Trail a bridge over the West Branch Trout Brook was replaced just a few years ago and is in good condition. The Big Pond Trail has two bridges; one bridge is located over

North Branch Trout Brook on the western end of the trail and is in good condition, the other is located on the outlet of the pond downstream from Big Pond. This bridge is in fair condition. A bridge is proposed to be built on the Big Pond Trail over the large tributary stream East Branch Trout Brook, approximately 3.4 miles from the Big Pond trailhead. Of the numerous small stream crossings one encounters in the Hoffman Unit which are not bridged, a small number appear to have qualities that may necessitate a bridge, many of which may have had a bridge in the past.

Bridges generally do provide a safer means of crossing waterways, particularly during high water times or during the winter months with ice buildup. Bridges also help to lessen trampling of soil and vegetation along the banks.

Objectives:

- To adopt a bridge design system that meets the user's needs, provides resource protection and requires minimal future maintenance.
- To ensure all bridges are properly maintained and safe for travel.

Management Actions:

- Develop a comprehensive MMS type bridge inventory with location maps, design sketches, and material construction details.
- Conduct regular safety inspections of all bridges to identify maintenance needs and develop a priority list.
- Assess replacement needs in coordination with all DEC program units and volunteer organizations.
- Incorporate the use of Best Management Practices (BMPs) identified in the Management Guidelines section of this plan in all new bridge construction and relocation projects.
- Incorporate the principles of universal design where required into all new bridge construction projects and maintenance work.
- Construct all bridges of natural materials as indicated in the APSLMP.
- Remove any building scrap from new bridge construction and/or old bridge maintenance/ removal and dispose of properly.
- Repair or replace unit bridges as necessary.
- Reroute a portion of the Hoffman Notch Trail to avoid two large Hoffman Notch Brook crossings. A ¼ mile reroute has been identified which would eliminate the need for two large bridge crossings on Hoffman Notch Brook. This trail reroute located on the west side of the brook is somewhat limited as to where it can be built due to terrain constraints, but will serve a good alternative to multiple bridges. The reroute provides a very interesting section of trail, adjacent to the brook on the north and south ends and furthest from the brook along the middle stretch. The reroute passes magnificent cedar and hemlock trees and fascinating terrain features. Specialized work required for this reroute will require some bench cutting where the bank is steep in a few locations, two smaller bridges constructed of natural materials to facilitate safe hiking and ski passage across side hill drainages, brushing will be needed to clear most of the trail, however, a handful of trees larger than 3" diameter will need to be removed at specified pinch points along the re-route. The reroute and associated drainage structures will be handled through a work order , trail design will be based on Class III primitive trail standards modified where necessary to accommodate cross country ski use at a moderate to advanced level. This reroute will provide a safe, minimal impact, and interesting alternative to multiple large bridge construction along Hoffman Notch Brook.
- For remaining stream crossings along trails in this unit that do not currently have bridges, but

perhaps should, this plan recommends monitoring these potential bridge locations throughout an annual cycle to observe seasonal flows, trail use and erosion, erosion potential and safety considerations. The Unit Manager will monitor and assess these questionable crossings and make the determination if a natural timber bridge, stepping stones or other acceptable structure will be necessary. These bridges or crossings will be compliant with the master plan and will be handled through a work plan.

- Construct bridges along Bailey Pond Trail to improve accessibility. While this trail will not be constructed to be universally accessible, drainages that would significantly impede wheelchair access along this trail will be bridged.
- Construct two bridges on unit trails and two smaller bridges on proposed reroute. The two bridges on unit trails will consist of, one on the Hoffman Notch Trail over the Hoffman Notch Brook, and one on the Big Pond Trail. A temporary bridge was placed on the northern end of the Hoffman Notch Trail during the fall of 2006 at a location, approximately 1.4 miles south of the Blue Ridge Road Trailhead. The plan proposes to construct a more permanent bridge with longer stringers a short distance upstream from this location. The Big Pond Trail bridge will cross the East Branch Trout Brook (approximately 3.4 miles from the Big Pond Trailhead) Old evidence of sill logs exist at this crossing location just downstream from a large erratic. Rocky stable base located along east shore of stream and firm stable bank on west side of stream provide excellent locations to support cribbing. Bridge will consist of two to three large stringers and a railing. Bridge will be constructed of materials found at site and will utilize some fasteners. Approximate coordinates for the two bridges are as follows:

  Hoffman Notch Trail
  N43 56 35.156
  W73 50 58.519

  Big Pond Trail
  N 43 52 7.814
  W 73 50 51.806

5. Campsites

Present Conditions:

There are no designated primitive campsites located on this unit. There are numerous fire rings - three on North Pond and one each on Bailey Pond, Big Marsh, Tyrrell Marsh, Big Pond, Marion Pond and one in Hoffman Notch located mostly on the larger bodies of water where people have camped. However, these areas are used only occasionally and show no site deterioration. Over the years, an occasional camping permit has been issued for one or more of these sites by the Forest Ranger.

Objectives:

- Keep camping back away from shorelines (150 feet) to reduce the impacts of erosion, pollution and aesthetics on the Wilderness resource through enforcement of regulations.
- Keep designated campsites properly spaced (at least one quarter mile apart) to maintain the solitary atmosphere of the Wilderness setting.
- To provide a small number of designated favorable tent sites in a manner which minimizes impact to the site while providing an enjoyable experience for the user.

Management Actions:

- Due to the absence of any designated tent sites in the unit, two tent sites will be designated at Big Pond. Campers should be educated whenever possible from DEC personnel on the appropriate use of camping areas to prevent tent site deterioration.
- Designate and develop a tent site at Bailey Pond with accessibility in mind. Level / hardened site with accessible fire ring and accessible Privy.
- Construct a lean-to in the vicinity of Platt Brook along the 4-mile new trail segment.
- Develop LAC indicators and standards for vegetative cover for primitive tent sites of the unit. Primitive tent sites will be closed, re-vegetated and/or relocated when these standards are exceeded.
- Designate 1 campsite on North Pond
- Install accessible box privy at all designated tent sites and lean-to.

D. Public Use and Access

1. Public Use

Present Conditions:

Accurate figures for the public's use of the unit are not available. Primarily, use is concentrated seasonally at a few locations. The public's use of the area, as with most of the Forest Preserve, is free and relatively unregulated. Regulations do exist for certain activities such as length of stay, and the DEC requires the issuance of a Temporary Revocable Permit for organized activities, such as sanctioned snowshoe races.

Public use is permitted to the extent that it does not degrade the physical, biological, and social characteristics of the area. The "minimum tool" concept is used to manage public use and achieve management objectives, using indirect methods when possible (i.e. limiting 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 wilderness. Most wilderness users prefer not to feel crowded, and highly value privacy, solitude, and peace and quiet (Dawson, et al, 2005). Aside from behavioral factors, the potential to cause impact varies with party size and the type of user. Parties larger than 8 persons in a group have been documented to cause greater impacts to certain environmental and sociological resources than smaller groups (Cole, 1987, 1989, Hendee, 1990, and USDA Forest Service, 1994). Although large party use in the unit represents a small proportion of total users, they contribute a disproportionate amount of impact when compared to smaller parties.

Large groups commonly create congestion problems in trailhead facilities, on trails, rock climbing sites, 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.

Large camping groups require greater campsite space and often clear areas to accommodate additional tents, store equipment, or make room to eat and congregate. Large groups cooking with wood fires generally consume greater amounts of fuel wood and extend firewood gathering areas. Impacts tend to be

more spread out and extend well beyond campsite boundaries. DEC regional practice limits overnight groups in Wilderness Areas to a maximum of 12 individuals. Forest rangers issue the permits and are given the authority to lower this ceiling depending on campsite suitability, time of desired use, and location.

There are currently no restrictions limiting day use in the HNWA. Groups of any size may enter the unit. It is a major source of visitor dissatisfaction when large groups, just by their sheer size, displace other users. There is also a problem when groups from one organization split into several smaller groups and then rejoin at interior locations, often fragile summit areas. Large group use is inconsistent with the concept of solitude, which is called for in Wilderness Areas as per the APSLMP.

Selecting a specific group size requires judgment; no magic formula exists to calculate an ideal number. The situation is parallel to setting speed limits to control use on highways. Research indicates that the size of a group should be low, ideally 4-6 people per group, but generally less than 10 persons per party to be effective in reducing environmental and sociological impacts (Cole, and others, 1987).

Day use group size restrictions of a maximum of 15 people are recommended in order to protect the natural resources and the "wilderness character" of the unit as called for in the Management Principles of this plan. This number is consistent with group size limitations recently established in other nearby Wilderness Areas, and will help to set a standard for the recreational use of Wilderness within the Adirondack Park.

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 their activities have on the resource. Visitors need to be informed of the proper use of state land and all special rules and regulations that apply before they enter the unit. A well developed education and information program can help reduce any user related impacts while improving the visitor experience.

The Hoffman Notch Wilderness has been used in the past for use appropriate organized events such as the Hoffman Notch Snowshoe Race. A Temporary Revocable Permit process was the tool used to ensure that this traditional use based event would be held in such a way as to meet Wilderness concepts and protect sensitive areas of the unit. Event specifics outlined in this permit process included: 1) clearly identified beginning and ending points along with the specified route to be used, 2) provisions on adjoining private land at race beginning and ending points to account for human waste, 3) clearly defined timeframe in which to hold the event, 4) staggered race starting times to prevent an accumulation of racers at any one point along the race course, and 5) general provisions prohibiting injuring of vegetation, littering etc. and leave-no –trace concepts. Conditions present for the snowshoe race such as frozen ground and snow cover provided an event site that was quite resistant to environmental overuse and site conditions after the snowshoe race showed little if any environmental impact associated with this activity.

Objectives:

- To enforce existing laws, rules, regulations and policies.
- To permit and encourage recreational use levels consistent with the protection of the unit's natural resources and character and consistent with the concept of wilderness as described by the APSLMP.
- Monitor changes in use and level of use over time.

- Encourage both overnight and day users to keep parties small and establish desirable maximum party sizes.
- To provide users with information on the unit and its facilities and the appropriate use of the area.
- To identify and develop methods to monitor public use accurately.
- To minimize user conflicts by providing appropriate information to visitors.

Management Actions:

- Develop a Hoffman Notch Wilderness Area web page on the DEC public website that details the unit's history, recreational opportunities, and use guidelines. The web page will include a unit map showing present boundaries of the HNWA parcels and existing trails, parking lots, or other important public facilities. Such map will be updated periodically as facilities are created or removed and as funds are made available. .
- Supplement trail register data with site sampling techniques (trail timers, head counts, infrared counters, surveys, etc.) to better determine actual public use numbers.
- Develop a system to monitor the public use of the area.
- Employ the "minimum tool" necessary to regulate public use, using indirect methods whenever possible (such as limiting parking) and direct methods such as regulations when necessary.
- Install registers at unit trailheads as outlined in "Trailheads/ Entry Points" above.
- Adopt regulations to limit the maximum number of overnight users to groups of eight. This will be implemented over a two year period.

  YEAR ONE – Inform the public of the impending change through an information and education effort.

  YEAR TWO – Adopt a specific regulation to conform with the APSLMP to reduce the maximum number of persons per campsite to eight.
- Adopt regulations to limit the size of day use groups to a maximum of 15 persons per party. This will be implemented over a two year period.

  YEAR ONE – Inform the public of the impending change through an information and education effort.

  YEAR TWO – Adopt a specific regulation to conform with the APSLMP to reduce the size of day use groups to a maximum of 15 persons per party.

  1. When larger groups split up to meet size limits, each subgroup must be equipped as a self-sustaining group. Each division of a larger group must camp and travel at least one mile apart from other divisions of the group so as not to violate group size limits. Day use groups must adhere to this same requirement and not congregate into larger groups on trails or at destination points.
  2. Those groups desiring a larger group size for day and overnight activities will be referred to appropriate Wild Forest areas where a higher degree of recreational use can be sustained and is permitted by the APSLMP.
  3. Information about group size limits will be disseminated through the unit's information and education program, to Inform visitors of limits during trip planning and/or prior to arrival.
- Promote "Leave-No-Trace" ethics and techniques with all users, particularly with 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 appropriate organized events in the unit such as the traditional use snowshoe race. The character of the area in question must be such that any proposed use will not cause physical alteration of the area and the nature of the proposed activity must be in line with Wilderness characteristics to the extent that it does not degrade the physical, biological, and social characteristics of the area.

2. Access for Persons with Disabilities

Present Conditions

Past management of the HNWA has not focused on provision of access for people with disabilities. Slopes and other terrain constraints make much of the unit difficult to access. Exposed roots, rocks and other natural barriers also limit access. The primitive nature of Wilderness coupled with APSLMP guidelines that Wilderness be "without significant improvement," and "generally appears to be affected primarily by the forces of nature, with the imprint of man's work substantially unnoticeable" severely limits what forms of interior modification can be undertaken. The APSLMP provides for limited development along the periphery of the unit. These areas remain the most likely candidates for development of accessible facilities.

The Universal Trail Assessment Process (UTAP) is an objective method of measuring such site conditions as average and maximum grade, minimum trail width, cross slope, trail length, and surface type. These variables can then be presented to the user at the trailhead to allow them to make an informed decision on whether they would like to use the facility or not.

Objectives

- Increase access opportunities for people with disabilities where such development is economically feasible, does not alter the fundamental nature of existing programs, is compliant with Department regulation and policy, and conforming under the guidelines of the APSLMP.
- Comply with the Americans with Disabilities Act (ADA) of 1990 by improving access and creating recreational opportunities for people with disabilities.
- 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., to allow them to make informed decisions regarding whether they choose to use a facility or not.

Management Actions

- Incorporate accessible signage/ kiosks at trailhead access points.
- Increase the accessibility of two portions of trails in the Hoffman Notch Wilderness. Bailey Pond Trail and Big Pond trail retain old road characteristics over portions of their length. While it would not be feasible to make these trails universally accessible, portions of these trails will be improved for accessibility allowing improved access for people with less severe disabilities. Bailey Pond Trail will be improved from the trailhead to Bailey Pond and The Big Pond Trail will be improved from the trailhead to the unnamed pond 0.45 miles in from the trailhead. Improvement will include correcting drainage issues and hardening the more severe muddy portions of these trails. Additionally, drainages that would pose a significant barrier to wheelchair use along these trails will be bridged to allow for wheelchair use. The tentsite at Bailey Pond will be sited and constructed with accessibility in mind, utilizing a level and hardened site and containing an accessible fire ring and accessible privy. A hardened turn-around/ resting spot and associated box privy will be

opened at the end of the improved portion of the Big Pond trail at the unnamed pond (0.45 miles from trailhead).
- Provide a UTAP assessment of these trails at the kiosk and on our website.
- Identify potential additional opportunities for access in the unit.
- Identify potential additional opportunities to perform Universal Trail Assessment (UTAP) process.

E. Proposed Regulations

Present Conditions

Several of the management proposals outlined in this section require the promulgation of new rules and regulations in accordance with the State Administrative Procedure Act, Department policies and procedures, and the APSLMP. Statutory authority for regulations is found in the ECL §9-0105(3), and Executive Law §816. Executive Law §816.3 directs the Department to develop rules and regulations necessary to implement the APSLMP. Existing regulations relating to public use of State lands under the jurisdiction of the Department are found in 6 NYCRR, Part 190.

These proposed regulations constitute the minimum level of direct regulation necessary to assure APSLMP compliance and directly influence visitor behavior to protect resources and the experiences of visitors. Amend 6 NYCRR §190.13 (Wilderness Areas in the Adirondack Park) to apply the following regulations to the HNWA:

- 190.13(c) Group size restrictions: which prohibit day use groups of sixteen or more people, prohibit camping groups of nine or more people, and prohibit larger groups unless separated into smaller groups which do not exceed such limitations and such smaller groups maintain a separation distance from each other of at least one mile at all times.
- 190.13(f) Miscellaneous Restrictions:

    - Requiring registration at trail registers.
    - Prohibiting the use of soap or detergent in any pond, stream or other water body.
    - Prohibiting the disposal of any food scrap, food matter or food container in any pond, stream or other water body.
    - Prohibiting the marking of trails with plastic ribbons, paint, blazes or other devices.
    - Prohibiting unattended pets or pets not under the complete control of their owners.
    - Requiring users to have proof of a valid and current rabies inoculation for any dog which is accompanying them.

V. SCHEDULE FOR IMPLEMENTATION

The APSLMP charges the DEC with the responsibility of developing UMP's for all DEC managed lands within the Adirondack Park. Additionally, the APSLMP prohibits construction of new facilities within units without approved UMP's. In general, UMPs establish a five- year schedule of management activities for a specific unit, but necessarily address a longer period of planning. Even though this responsibility was assigned to the DEC in the early 1970's, this is the first UMP to be developed for the HNWA. Therefore, few management activities beyond maintenance of existing facilities have occurred within the HNWA for 30 years. For each activity, the appropriate permits, if any, will be sought prior to construction.

Annual Maintenance

1. Annual maintenance of facilities: blowdown removal, maintenance of trails, erosion control, litter removal, sign replacement, etc	$3,000
2. Locate / paint boundary line (10.4 miles a year) within the unit. Focus on private / public boundaries more prone to boundary line issues first.	11 days
3. Stock fish in unit waters consistent with Bureau of Fisheries policies and the Final Programmatic Environmental Impact Statement on Fish Species Management Activities of the Department of Environmental Conservation Division of Fish and Wildlife (1980).	Routine program funding
4. Conduct biological, chemical and/or physical surveys of selected waters to assess management needs and to determine progress towards the stated objectives.	10 days
5. Annual surveys for Invasive Species, annual control program	$1,000
6. Laminate and replace kiosk maps as necessary	$100
7. Repair / surface / grade parking lots / drainage work - annually	$6,000
8. Conduct regular safety inspections of all bridges to identify maintenance needs and develop a priority list.	3 days
Total Annual Maintenance:	**$10,100 and 24 days**

YEAR ONE

1. Designate two tentsites in the unit on Big Pond	2 days
2. Construct bridge over Hoffman Notch Brook in the north end of the unit.	Crew of 5 people 10 days $200 materials
3. Assess North Pond as a potential reclamation candidate to restore a native fish community there.	
4. Place new sign and register box / kiosk off the Blue Ridge Road at the Hoffman Notch Trail	$600
5. Severance Hill Trail reroute	8 days
6. Improve parking lot at gravel pit along west site Route 9 north of I-87 interchange #28 access to vehicular underpass. Install sign and kiosk at this site.	$3,600
7. Designate tent site on North Pond	2 days
8. Designate tent site on Bailey Pond on hardened level surface construct accessible fire ring and install accessible privy.	10 days
9. Conduct targeted surveys for endangered, threatened, and special concern bird species That were documented in the first Breeding Bird Atlas Project, but not the second	
10. Conduct surveys for bird species associated with lowland and high-elevation boreal forest. Priority should be placed on those species that were detected during the first Breeding Bird Atlas Project, but not the second and on those species that were not detected during either project.	
11. Develop a comprehensive MMS type bridge inventory with location maps, design sketches, and material construction details.	4 days
12. Inform the public of the impending regulation to limit the maximum number of overnight users to groups of eight and day use groups to fifteen.	
Total costs year one:	**$4,400 and 76 days**

YEAR TWO

1. Construct the bridge over East Branch Trout Brook along the Big Pond Trail	Crew of 5 people 10 days $200 materials
2. ¼ mile reroute of Notch trail north of Big Marsh with construction of two small bridges	Crew of 5 people 10 days $200 materials
3. Conduct a detailed inventory of chosen LAC indicators for all marked trails in the unit. Begin an inventory of major unmarked trails after the inventory of marked trails has been completed.	12 days
4. Develop a Hoffman Notch Wilderness Area brochure that details the unit's history, recreational opportunities, and use guidelines. The brochure will include a unit map showing present boundaries of the HNWA parcels and existing trails, parking lots, or other important public facilities.	4 days
5. Inventory boreal forest habitats within the unit.	
6. Survey Unnamed Ponds UH-P392, UH-P453D, UH-P455C, UH-P5427, and UH-P5428 to determine their fish communities and habitat characteristics.	
7. Build necessary reroutes and sign the existing herd path around Big Pond as an official Class Three and cross country ski trail	30 days
8. Adopt a specific regulation to limit the maximum number of overnight users to groups of eight and day use groups to fifteen.	
Total costs year two:	**$400 and 146 days**

YEAR THREE

1. Construct a 5-car parking area at Hoffman Notch trailhead on Blue Ridge Rd.	$10,000
2. Locate and construct Platt Brook trail segment connecting Big Pond Trail in the vicinity of North Pond to vehicular underpass at trailhead on Route 9 north of I-87 Interchange #28. Approximately 4 miles in length.	5-person crew 15 days
3. Where harvest information is lacking, conduct surveys for American marten to better understand distribution and habitat use.	
4. Reestablish a native fish community in Marion Pond through reclamation	$8,000
5. Improve accessibility of trail to Bailey Pond and the Big Pond Trail from Hoffman Rd. to the unnamed pond 0.45 miles from trailhead. Both of these trails are old road beds and retain that character over most of the trail length described here. Improvement will include trail hardening and improved drainage on muddy stretches of trail and bridging over drainages that would significantly impede wheelchair use.	5-person crew 15 days $2000 materials
6. Provide UTAP descriptions of improved accessibility trails.	4 days
7. Develop a hardened turn-around / resting area and associated accessible box privy at the end of the improved section of Big Pond Trail at the unnamed pond which is 0.45 miles from the trailhead.	10 days
8. Correct water issues at the Hoffman Notch Trailhead parking lot (south) through addition of geotextile fabric and gravel and replace outhouse with accessible outhouse.	$4000
Total costs year three:	**$24,000 and 164 days**

YEAR FOUR

1. Monitor existing radio-collared moose and continue to collar new individuals on an opportunistic basis.	
2. Construct Lean-to in the vicinity of Platt Brook along the new eastern trail segment.	$7,000
3. Increase the size of the Big Pond Trailhead parking by 1-2 vehicle spaces.	$2000
4. Construct 3-4 car parking lot, install sign and register box/ kiosk and cut out an unmarked path to provide access along old Durgin access Rd. in Northwest corner of unit south of Blue Ridge Rd. 2-3 stringer log bridge to replace existing wooden bridge along this trail.	$2000
Total costs year four:	**$11,000**

YEAR FIVE

1. Conduct a survey of hunters and trappers that use the unit.	
2. Monitor use of deer wintering areas in the unit.	
3. Conduct surveys for Spruce Grouse and evaluate the distribution and quality of potential Spruce Grouse habitat. Based on results of the surveys and habitat assessment, consider reintroducing this species.	
4. Ensure all six trailheads in unit have ID signs at road and map/kiosk registers on trail.	
5. Ensure all designated tent sites and lean-to have accessible privy boxes.	

This page intentionally left blank

BIBLIOGRAPHY AND REFERENCES

Adironack Park Agency. 2001. *Adirondack Park State Land Master Plan*. Adirondack Park Agency: Ray Brook, NY.

Andrle, R.F., and J.R. Carroll. 1988. The Atlas of Breeding Birds in New York State. Cornell University Press, Ithaca.

Architectural and Transportation Barriers Compliance Board. 1999. Regulatory Negotiation Committee on Accessibility Guidelines for Outdoor Developed Areas - Final Report. The Access Board: Washington, DC. (http://www.access-board.gov/outdoor/outdoor-rec-rpt.htm)

Arthur Carhart National Wilderness Training Center. 1999. Wilderness Planning Training Module, Missoula, MT. (http://carhart.wilderness.net/manual/aware/aware.pdf)

Atwood, J.L., C.C. Rimmer, K.P. McFarland, S.H. Tsai, and L.R. Nagy. 1996. Distribution of Bicknell's Thrush in New England and New York. Wilson Bulletin 108:650-662..

Ball, J. 1974. *Birds of New York State*. Doubleday/Natural History Press. Garden City, NY.

Beehler, B. 1978. *Bird Life of the Adirondack Park*. Adirondack Mountain Club: Glens Falls, NY.

Bent, A.C. 1940. Life Histories of North American Cuckoos, Goatsuckers, Hummingbirds, and their Allies. Dover Publications, Inc. New York.

Bishop, Sherman C. 1941. The Salamanders of New York. New York State Museum Bulletin 324:1-365.

Bowie, Mark. 2003. An Adirondack Wilderness- Hoffman Notch . Adirondack Life 34:4 pp42-46.

Brown, E. 1985. *The Forest Preserve of New York State*. Adirondack Mountain Club: Glens Falls, NY.
.

Brown, Phil. date unknown. "*Longstreet Highroad Guide to the New York Adirondacks*", Longstreet, Atlanta, Georgia

Bull, J. 1974. Birds of New York State. Comstock Publishing Associates, Ithaca.

Cassirer, E.F. , D.J. Freedy, and E.D. Ables. 1992. Elk responses to disturbance by cross-country skiers in Yellowstone National Park. Wildlife Society Bulletin 20:375-381.

Cole, D.N. 1989. *Wilderness Campsite Monitoring Methods: A Source Book.* Gen. Tech. Report INT-259, USDA Forest Service, Intermountain Research Station: Ogden, UT. (http://www.wilderness.net/pubs/179.pdf)

Cole, D.N. 1989. *Low-Impact Recreational Practices for Wilderness and Backcountry.* Gen. Tech. Report Int-265, USDA Forest Service, Intermountain Research Station: Ogden, UT. (http://www.wilderness.net/pubs/183.pdf)

Cole, D.N., Petersen, M. and Lucas, R. 1987 *Managing Wilderness Recreation Use: Common Problems and Potential Solutions.* Gen. Tech. Report INT-230, USDA Forest Service, Intermountain Research Station: Ogden, UT. (http://www.wilderness.net/pubs/169.pdf)

Cole, D.N. 1994. *The Wilderness Threats Matrix, A Framework for Assessing Impacts.* Research Paper INT-475, USDA Forest Service, Intermountain Research Station: Ogden, UT. (http://www.wilderness.net/pubs/247.pdf)

Conant, R. and J.T. Collins. 1998. A Field Guide to Reptiles and Amphibians, Eastern and Central North America. Houghton Mifflin Company, Boston.

Dawson, C.P., Peters, N., Connelly, N.A. and Brown, T.L. 2005. *Adirondack Visitor Studies Conducted in Support of NYSDEC Unit Management Planning: Bog River Unit, McKenzie Mountain Wilderness, West Canada Lake*. Human Dimensions Research Unit Report HDRU Series No. 05-6, Cornell University. Ithaca, NY.

Dawson, C.P., Connelly, N.A. and Brown, T.L. 2005. *Adirondack Visitor Studies Conducted in Support of NYSDEC Unit Management Planning: Lake George Wild Forest (North) and William C. Whitney Wilderness*. Human Dimensions Research Unit Report HDRU Series No. 05-7, Cornell University. Ithaca, NY.

DeGraaf, R.M. and D.D. Rudis. 1983. Amphibians and Reptiles of New England. The University of Massachusetts Press, Amherst.

DeGraaf, R.M. and D.D. Rudis. 1986. New England Wildlife: Habitat, Natural History, and Distribution. U.S. Department of Agriculture, Forest Service. General Technical Report NE-108.

Driscoll, C. T. et. al. 2001. Acidic Deposition in the Northeastern United States: Sources and Inputs, Ecosystem Effects, and Management Strategies. BioScience 51:3, p 180-198.

Driscoll, C. T., K. M. Driscoll, M. J. Mitchell and D. J. Raynal. 2002. Effects of acidic deposition on forest and aquatic ecosystems in New York State. Environmental Pollution. (In Press).

Erlich, P. R., D.S. Dobkin, and D. Wheye. 1988. The Birder's Handbook: a field guide to the natural history of North American birds. Simon and Schuster, Inc., New York.

Essex County Soil and Water District. Map and soils descriptions.

Fisher, Donald. Isachsen, Yngvar. Whitney, Philip. "*New Mountains from Old Rocks: the Adirondacks*" NYS Geological Survey Educational Leaflet 23

Fox, William F. 1976. "*History of the Lumber Industry in the State of New York*", Harbor Hill Books, Harrison, NY.

Freddy, D.J., W.M. Bronaugh, and M.C. Fowler. 1986. Responses of mule deer to disturbance by persons afoot and snowmobiles. Wildlife Society Bulletin 14:63-68.

Freeman, Aileen Sallon. 1996. "*There's a Fox in Pinchot's Forest*", FOSI, Ltd, Paupack, Pa.

George, C.J. 1980. *The Fishes of the Adirondack Park*. GNOSTIC Publications. 93 pp.

Hammit, W. E. and D. N. Cole. 1987. *Wildland Recreation: Ecology and Management*. John Wiley and Sons: New York, NY.

Harding, J.H. 1997. Amphibians and Reptiles of the Great Lakes Region. The University of Michigan Press, Ann Arbor.

Healy, W.R. 1974. Population consequences of alternative life histories in *Notophthalmus v. viridescens*. Copeia 1:221-229.

Hendee, J. C., G. H. Stankey and R. C. Lucas. 1990. *Wilderness Management*. International Wilderness Leadership Foundation: Golden, CO.

Hunter, M.L., A.J.K. Calhoun, and M. McCollough. 1999. Maine Amphibians and Reptiles. The University of Maine Press, Orono.

Hurst, J.E. 2004. An evaluation of historical change in white-tailed deer winter yards in the Adirondack region of New York. M.S. Thesis, State University of New York, College of Environmental Science and Forestry. Syracuse, NY.

Johnsgard, P.A. 1990. Hawks, Eagles, and Falcons of North America, Biology and Natural History. Smithsonian Institution Press, Washington DC.

Kretser, W., J. Gallagher and J. Nicolette. *Adirondack Lakes Study 1984-1987, an Evaluation of Fish Communities and Water Chemistry*. Adirondack Lake Survey Corporation: Ray Brook, NY.

Mather, F. 1884. Memoranda relating to Adirondack fishes with descriptions of new species, from researches made in 1882. *Appendix E, New York State Land Survey*. p. 113- 182.

Mautz, W.W. 1978. Sledding on a bushy hillside: the fat cycle in deer. Wildlife Society Bulletin 6:88-90.

McMartin, Barbara. 1986. "*Discover the Central Adirondacks*", Backcountry Publications, Woodstock, Vermont.

McMartin, Barbara. 1994. "*The Great Forests of the Adirondacks*", North Country Books, Utica, NY.

Metcalfe, Ann Breen. 2000. "*The Schroon River*", Warren County Historical Society, Glens Falls, NY.

Miller, William J. 1919. "The Geology of the Schroon Lake Quadrangle", New York State Museum Bulletin , Albany, New York.

Minerva Historical Society. 1967. "*Minerva 1817-1967; A History of a Town in Essex County, NY*", Multiprint, Inc., New York, NY.

Mitchell , J.C. 1994. The Reptiles of Virginia. Smithsonian Institution Press. Washington.

National Science and Technology Council Committee on Environment and Natural Resources. 1998. *National Acid Precipicitation Assessment Program Biennial Report to Congress: An integrated Assessment*. US National Acid Precipitation Assessment Program, Silver Springs, MD. (www.nnic.noaa.gov/CENR/NAPAP/NAPAP_96.htm).

O'Neill, W. 1990. Air Resources in the Adirondack Park. The Adirondack Park in the Twenty-First Century, Technical Reports, Volume One. Commission on the Adirondacks in the Twenty-First Century: Albany, NY.

Peek, J.M. 1997. Habitat relationships. Pages 351-376 in Franzmann, A.W. and C.C. Schwartz (eds.) Ecology and management of the North American moose. Smithsonian Institution Press, Washington, D.C.

Pfingston, R.A. and F.L. Downs. 1989. Salamanders of Ohio. College of Biological Sciences, The Ohio State University, Columbus, Ohio.

Proskine, Alec. 1986. "*Adirondack Canoe Waters; South and West Flow*", Adirondack Mountain Club.

Reschke, Carol. 1990. *Ecological Communities of New York State.* New York Natural Heritage Program, New York State Department of Environmental Conservation, Latham, NY 96 pp. + xi

Saunders, D.A. 1988. Adirondack Mammals. Adirondack Wildlife Program, State University of New York College of Environmental Science and Forestry, Syracuse, NY.

Severinghaus, C.W. 1953. Springtime in New York - another angle: what goes on in our Adirondack deeryards. New York State Conservationist 7:2-4.

Smith, H. P. 1885. "*History of Essex County, New York"*, D. Mason & Co., Syracuse, NY.

Tuttle, S.E. and D.M. Carroll. 1997. Ecology and natural history of the wood turtle (*Clemmys insculpta*) in southern New Hampshire. Chelonian Conservation and Biology 2:447-449.

U.S. Forest Service. 1994. *Leave No Trace: A Program to Teach Skills for Protecting the Wilderness Environment.* Washington, D.C.

Verme, L.J. 1965. Swamp conifer deeryards in northern Michigan. Journal of Forestry 523-529.

Van Valkenburgh, Norman. 1985. "*Land Acquisition for New York State, An Historical Perspective*", The Catskill Center, Arkville, NY.

Van Valkenburg, N. J. 1987. *Unit Management Planning for Wilderness Management*. The Association for the Protection of the Adirondacks: Schenectady, NY.

Wadsworth, Bruce. 1986. "Guide to Adirondack Trails: Central Region", Adirondack Mountain Club

Watson, Winslow C. 1869. "*The Military and Civil History of the County of Essex, New York*", J. Munsell, Albany, NY.

APPENDIX 1: BREEDING BIRD ATLAS

Table 1. Breeding Bird List - HNWA (of 12 blocks)
1980 – 1985 Data

Common Name	Scientific Name	Federal Classification	NYS Classification
Alder Flycatcher	*Empidonax alnorum*	MBTA	Protected
American Black Duck	*Anas rubripes*	MBTA	Game Species
American Crow	*Corvus brachyrhynchos*	MBTA	Game Species
American Goldfinch	*Carduelis tristis*	MBTA	Protected
American Kestrel	*Falco sparverius*	MBTA	Protected
American Redstart	*Setophaga ruticilla*	MBTA	Protected
American Robin	*Turdus migratorius*	MBTA	Protected
American Woodcock	*Scolopax minor*	MBTA	Game Species
Baltimore Oriole	*Icterus galbula*	MBTA	Protected
Bank Swallow	*Riparia riparia*	MBTA	Protected
Barn Swallow	*Hirundo rustica*	MBTA	Protected
Barred Owl	*Strix varia*	MBTA	Protected
Belted Kingfisher	*Ceryle alcyon*	MBTA	Protected
Black-and-white Warbler	*Mniotilta varia*	MBTA	Protected
Black-backed Woodpecker	*Picoides arcticus*	MBTA	Protected
Black-billed Cuckoo	*Coccyzus erythropthalmus*	MBTA	Protected
Blackburnian Warbler	*Dendroica fusca*	MBTA	Protected
Black-capped Chickadee	*Poecile atricapillus*	MBTA	Protected
Blackpoll Warbler	*Dendroica striata*	MBTA	Protected
Black-throated Blue Warbler	*Dendroica caerulescens*	MBTA	Protected
Black-throated Green Warbler	*Dendroica virens*	MBTA	Protected
Blue Jay	*Cyanocitta cristata*	MBTA	Protected
Blue-headed Vireo	*Vireo solitarius*	MBTA	Protected
Bobolink	*Dolichonyx oryzivorus*	MBTA	Protected
Boreal Chickadee	*Poecile hudsonicus*	MBTA	Protected
Broad-winged Hawk	*Buteo platypterus*	MBTA	Protected
Brown Creeper	*Certhia americana*	MBTA	Protected
Brown Thrasher	*Toxostoma rufum*	MBTA	Protected
Brown-headed Cowbird	*Molothrus ater*	MBTA	Protected
Canada Warbler	*Wilsonia canadensis*	MBTA	Protected
Cedar Waxwing	*Bombycilla cedrorum*	MBTA	Protected
Chestnut-sided Warbler	*Dendroica pensylvanica*	MBTA	Protected
Chimney Swift	*Chaetura pelagica*	MBTA	Protected
Chipping Sparrow	*Spizella passerina*	MBTA	Protected
Cliff Swallow	*Petrochelidon pyrrhonota*	MBTA	Protected
Common Grackle	*Quiscalus quiscula*	MBTA	Protected

Common Name	Scientific Name	Federal Classification	NYS Classification
Common Loon	*Gavia immer*	MBTA	Protected-Special Concern
Common Merganser	*Mergus merganser*	MBTA	Game Species
Common Nighthawk	*Chordeiles minor*	MBTA	Protected-Special Concern
Common Raven	*Corvus corax*	MBTA	Protected
Common Yellowthroat	*Geothlypis trichas*	MBTA	Protected
Cooper's Hawk	*Accipiter cooperii*	MBTA	Protected-Special Concern
Dark-eyed Junco	*Junco hyemalis*	MBTA	Protected
Downy Woodpecker	*Picoides pubescens*	MBTA	Protected
Eastern Bluebird	*Sialia sialis*	MBTA	Protected
Eastern Kingbird	*Tyrannus tyrannus*	MBTA	Protected
Eastern Phoebe	*Sayornis phoebe*	MBTA	Protected
Eastern Towhee	*Pipilo erythrophthalmus*	MBTA	Protected
Eastern Wood-Pewee	*Contopus virens*	MBTA	Protected
European Starling	*Sturnus vulgaris*	Unprotected	Unprotected
Evening Grosbeak	*Coccothraustes vespertinus*	MBTA	Protected
Field Sparrow	*Spizella pusilla*	MBTA	Protected
Golden-crowned Kinglet	*Regulus satrapa*	MBTA	Protected
Gray Catbird	*Dumetella carolinensis*	MBTA	Protected
Great Blue Heron	*Ardea herodias*	MBTA	Protected
Great Crested Flycatcher	*Myiarchus crinitus*	MBTA	Protected
Great Horned Owl	*Bubo virginianus*	MBTA	Protected
Green Heron	*Butorides virescens*	MBTA	Protected
Hairy Woodpecker	*Picoides villosus*	MBTA	Protected
Hermit Thrush	*Catharus guttatus*	MBTA	Protected
Herring Gull	*Larus argentatus*	MBTA	Protected
Hooded Merganser	*Lophodytes cucullatus*	MBTA	Game Species
House Finch	*Carpodacus mexicanus*	MBTA	Protected
House Sparrow	*Passer domesticus*	Unprotected	Unprotected
House Wren	*Troglodytes aedon*	MBTA	Protected
Indigo Bunting	*Passerina cyanea*	MBTA	Protected
Killdeer	*Charadrius vociferus*	MBTA	Protected
Lawrence's Warbler	*Vermivora chrysoptera x V. pinus*	MBTA	Protected
Least Flycatcher	*Empidonax minimus*	MBTA	Protected
Lincoln's Sparrow	*Melospiza lincolnii*	MBTA	Protected
Magnolia Warbler	*Dendroica magnolia*	MBTA	Protected
Mallard	*Anas platyrhynchos*	MBTA	Game Species
Mourning Dove	*Zenaida macroura*	MBTA	Protected

Common Name	Scientific Name	Federal Classification	NYS Classification
Mourning Warbler	*Oporornis philadelphia*	MBTA	Protected
Nashville Warbler	*Vermivora ruficapilla*	MBTA	Protected
Northern Cardinal	*Cardinalis cardinalis*	MBTA	Protected
Northern Flicker	*Colaptes auratus*	MBTA	Protected
Northern Harrier	*Circus cyaneus*	MBTA	Threatened
Northern Mockingbird	*Mimus polyglottos*	MBTA	Protected
Northern Parula	*Parula americana*	MBTA	Protected
Northern Saw-whet Owl	*Aegolius acadicus*	MBTA	Protected
Northern Waterthrush	*Seiurus noveboracensis*	MBTA	Protected
Olive-sided Flycatcher	*Contopus cooperi*	MBTA	Protected
Osprey	*Pandion haliaetus*	MBTA	Protected-Special Concern
Ovenbird	*Seiurus aurocapillus*	MBTA	Protected
Pileated Woodpecker	*Dryocopus pileatus*	MBTA	Protected
Pine Siskin	*Carduelis pinus*	MBTA	Protected
Pine Warbler	*Dendroica pinus*	MBTA	Protected
Purple Finch	*Carpodacus purpureus*	MBTA	Protected
Red Crossbill	*Loxia curvirostra*	MBTA	Protected
Red-breasted Nuthatch	*Sitta canadensis*	MBTA	Protected
Red-eyed Vireo	*Vireo olivaceus*	MBTA	Protected
Red-shouldered Hawk	*Buteo lineatus*	MBTA	Protected-Special Concern
Red-tailed Hawk	*Buteo jamaicensis*	MBTA	Protected
Red-winged Blackbird	*Agelaius phoeniceus*	MBTA	Protected
Rock Dove	*Columba livia*	Unprotected	Unprotected
Rose-breasted Grosbeak	*Pheucticus ludovicianus*	MBTA	Protected
Ruby-crowned Kinglet	*Regulus calendula*	MBTA	Protected
Ruby-throated Hummingbird	*Archilochus colubris*	MBTA	Protected
Ruffed Grouse	*Bonasa umbellus*	Unprotected	Game Species
Rusty Blackbird	*Euphagus carolinus*	MBTA	Protected
Savannah Sparrow	*Passerculus sandwichensis*	MBTA	Protected
Scarlet Tanager	*Piranga olivacea*	MBTA	Protected
Sharp-shinned Hawk	*Accipiter striatus*	MBTA	Protected-Special Concern
Song Sparrow	*Melospiza melodia*	MBTA	Protected
Spotted Sandpiper	*Actitis macularia*	MBTA	Protected
Spruce Grouse	*Falcipennis canadensis*	Unprotected	Endangered
Swainson's Thrush	*Catharus ustulatus*	MBTA	Protected
Swamp Sparrow	*Melospiza georgiana*	MBTA	Protected
Tree Swallow	*Tachycineta bicolor*	MBTA	Protected

Common Name	Scientific Name	Federal Classification	NYS Classification
Turkey Vulture	*Cathartes aura*	MBTA	Protected
Veery	*Catharus fuscescens*	MBTA	Protected
Warbling Vireo	*Vireo gilvus*	MBTA	Protected
Whip-poor-will	*Caprimulgus vociferus*	MBTA	Protected-Special Concern
White-breasted Nuthatch	*Sitta carolinensis*	MBTA	Protected
White-throated Sparrow	*Zonotrichia albicollis*	MBTA	Protected
White-winged Crossbill	*Loxia leucoptera*	MBTA	Protected
Winter Wren	*Troglodytes troglodytes*	MBTA	Protected
Wood Duck	*Aix sponsa*	MBTA	Game Species
Wood Thrush	*Hylocichla mustelina*	MBTA	Protected
Yellow Warbler	*Dendroica petechia*	MBTA	Protected
Yellow-bellied Flycatcher	*Empidonax flaviventris*	MBTA	Protected
Yellow-bellied Sapsucker	*Sphyrapicus varius*	MBTA	Protected
Yellow-rumped Warbler	*Dendroica coronata*	MBTA	Protected

2000 – 2005 Data

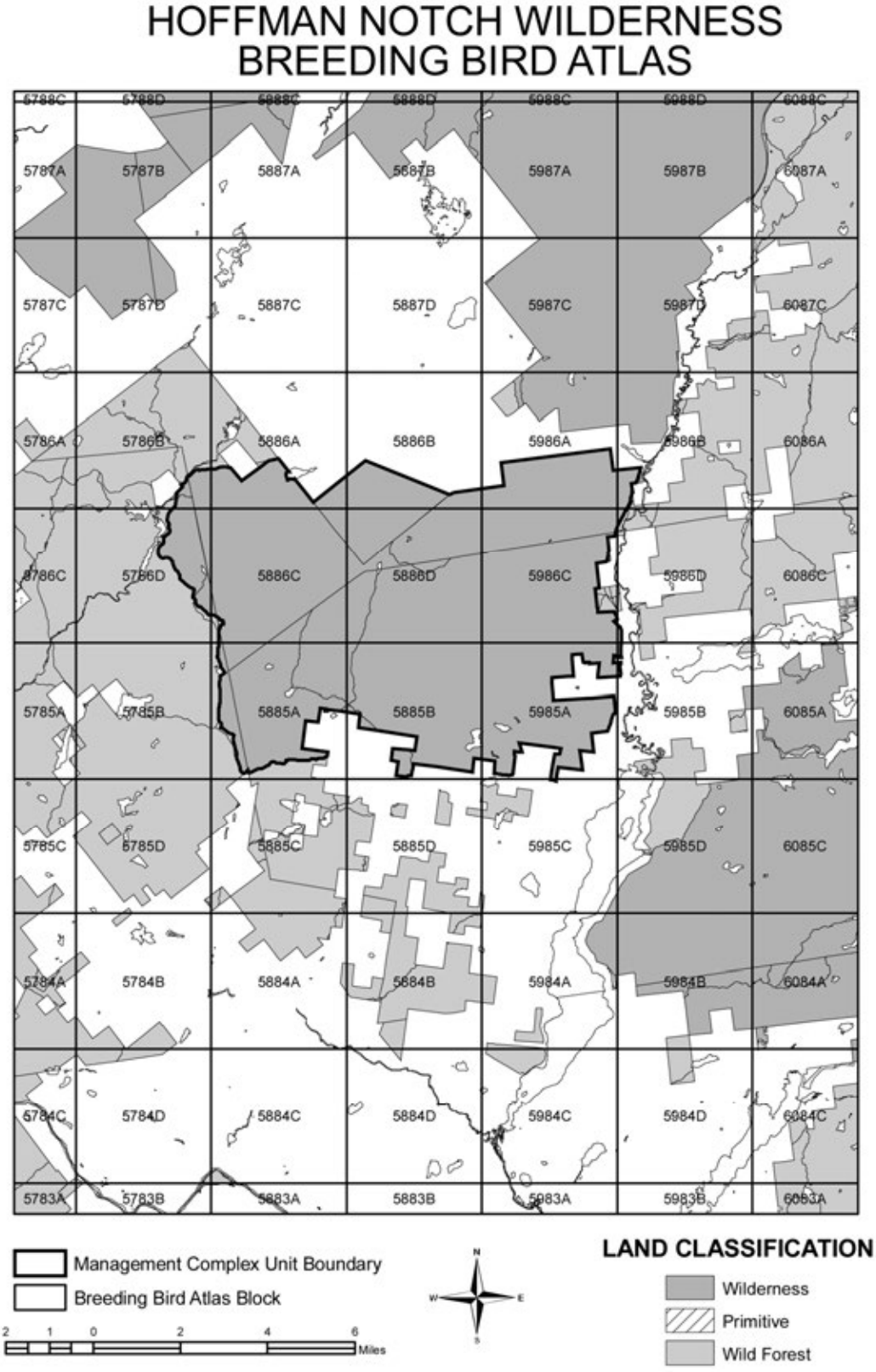
Common Name	Scientific Name	Federal Classification	NYS Classification
Alder Flycatcher	*Empidonax alnorum*	MBTA	Protected
American Bittern	*Botaurus lentiginosus*	MBTA	Protected-Special Concern
American Goldfinch	*Carduelis tristis*	MBTA	Protected
American Kestrel	*Falco sparverius*	MBTA	Protected
American Redstart	*Setophaga ruticilla*	MBTA	Protected
American Robin	*Turdus migratorius*	MBTA	Protected
Bald Eagle	*Haliaeetus leucocephalus*	MBTA-Endangered	Threatened
Barred Owl	*Strix varia*	MBTA	Protected
Bay-breasted Warbler	*Dendroica castanea*	MBTA	Protected
Belted Kingfisher	*Ceryle alcyon*	MBTA	Protected
Black-capped Chickadee	*Poecile atricapillus*	MBTA	Protected
Black-throated Blue Warbler	*Dendroica caerulescens*	MBTA	Protected
Blue Jay	*Cyanocitta cristata*	MBTA	Protected
Bobolink	*Dolichonyx oryzivorus*	MBTA	Protected
Boreal Chickadee	*Poecile hudsonicus*	MBTA	Protected
Broad-winged Hawk	*Buteo platypterus*	MBTA	Protected
Brown Creeper	*Certhia americana*	MBTA	Protected
Brown Thrasher	*Toxostoma rufum*	MBTA	Protected
Canada Goose	*Branta canadensis*	MBTA	Game Species
Canada Warbler	*Wilsonia canadensis*	MBTA	Protected

Common Name	Scientific Name	Federal Classification	NYS Classification
Chestnut-sided Warbler	*Dendroica pensylvanica*	MBTA	Protected
Chimney Swift	*Chaetura pelagica*	MBTA	Protected
Chipping Sparrow	*Spizella passerina*	MBTA	Protected
Cliff Swallow	*Petrochelidon pyrrhonota*	MBTA	Protected
Common Grackle	*Quiscalus quiscula*	MBTA	Protected
Common Loon	*Gavia immer*	MBTA	Protected-Special Concern
Common Merganser	*Mergus merganser*	MBTA	Game Species
Common Nighthawk	*Chordeiles minor*	MBTA	Protected-Special Concern
Common Raven	*Corvus corax*	MBTA	Protected
Common Yellowthroat	*Geothlypis trichas*	MBTA	Protected
Cooper's Hawk	*Accipiter cooperii*	MBTA	Protected-Special Concern
Double-crested Cormorant	*Phalacrocorax auritus*	MBTA	Protected
Downy Woodpecker	*Picoides pubescens*	MBTA	Protected
Eastern Bluebird	*Sialia sialis*	MBTA	Protected
Eastern Kingbird	*Tyrannus tyrannus*	MBTA	Protected
Eastern Phoebe	*Sayornis phoebe*	MBTA	Protected
Evening Grosbeak	*Coccothraustes vespertinus*	MBTA	Protected
Fish Crow	*Corvus ossifragus*	MBTA	Protected
Golden-crowned Kinglet	*Regulus satrapa*	MBTA	Protected
Gray Catbird	*Dumetella carolinensis*	MBTA	Protected
Great Blue Heron	*Ardea herodias*	MBTA	Protected
Great Crested Flycatcher	*Myiarchus crinitus*	MBTA	Protected
Great Horned Owl	*Bubo virginianus*	MBTA	Protected
Green Heron	*Butorides virescens*	MBTA	Protected
Hairy Woodpecker	*Picoides villosus*	MBTA	Protected
Hermit Thrush	*Catharus guttatus*	MBTA	Protected
Hooded Merganser	*Lophodytes cucullatus*	MBTA	Game Species
House Finch	*Carpodacus mexicanus*	MBTA	Protected
House Sparrow	*Passer domesticus*	Unprotected	Unprotected
House Wren	*Troglodytes aedon*	MBTA	Protected
Indigo Bunting	*Passerina cyanea*	MBTA	Protected
Killdeer	*Charadrius vociferus*	MBTA	Protected
Least Flycatcher	*Empidonax minimus*	MBTA	Protected
Lincoln's Sparrow	*Melospiza lincolnii*	MBTA	Protected
Magnolia Warbler	*Dendroica magnolia*	MBTA	Protected
Mallard	*Anas platyrhynchos*	MBTA	Game Species
Mourning Dove	*Zenaida macroura*	MBTA	Protected
Mourning Warbler	*Oporornis philadelphia*	MBTA	Protected
Nashville Warbler	*Vermivora ruficapilla*	MBTA	Protected

Common Name	Scientific Name	Federal Classification	NYS Classification
Northern Parula	*Parula americana*	MBTA	Protected
Northern Waterthrush	*Seiurus noveboracensis*	MBTA	Protected
Olive-sided Flycatcher	*Contopus cooperi*	MBTA	Protected
Osprey	*Pandion haliaetus*	MBTA	Protected-Special Concern
Ovenbird	*Seiurus aurocapillus*	MBTA	Protected
Pileated Woodpecker	*Dryocopus pileatus*	MBTA	Protected
Pine Siskin	*Carduelis pinus*	MBTA	Protected
Pine Warbler	*Dendroica pinus*	MBTA	Protected
Purple Finch	*Carpodacus purpureus*	MBTA	Protected
Red Crossbill	*Loxia curvirostra*	MBTA	Protected
Red-breasted Nuthatch	*Sitta canadensis*	MBTA	Protected
Red-eyed Vireo	*Vireo olivaceus*	MBTA	Protected
Red-shouldered Hawk	*Buteo lineatus*	MBTA	Protected-Special Concern
Red-tailed Hawk	*Buteo jamaicensis*	MBTA	Protected
Red-winged Blackbird	*Agelaius phoeniceus*	MBTA	Protected
Ring-necked Duck	*Aythya collaris*	MBTA	Game Species
Rock Dove	*Columba livia*	Unprotected	Unprotected
Rose-breasted Grosbeak	*Pheucticus ludovicianus*	MBTA	Protected
Ruby-crowned Kinglet	*Regulus calendula*	MBTA	Protected
Ruby-throated Hummingbird	*Archilochus colubris*	MBTA	Protected
Ruffed Grouse	*Bonasa umbellus*	Unprotected	Game Species
Rusty Blackbird	*Euphagus carolinus*	MBTA	Protected
Scarlet Tanager	*Piranga olivacea*	MBTA	Protected
Sharp-shinned Hawk	*Accipiter striatus*	MBTA	Protected-Special Concern
Song Sparrow	*Melospiza melodia*	MBTA	Protected
Spotted Sandpiper	*Actitis macularia*	MBTA	Protected
Swainson's Thrush	*Catharus ustulatus*	MBTA	Protected
Swamp Sparrow	*Melospiza georgiana*	MBTA	Protected
Turkey Vulture	*Cathartes aura*	MBTA	Protected
Veery	*Catharus fuscescens*	MBTA	Protected
Warbling Vireo	*Vireo gilvus*	MBTA	Protected
White-breasted Nuthatch	*Sitta carolinensis*	MBTA	Protected
White-throated Sparrow	*Zonotrichia albicollis*	MBTA	Protected
White-winged Crossbill	*Loxia leucoptera*	MBTA	Protected
Willow Flycatcher	*Empidonax traillii*	MBTA	Protected
Winter Wren	*Troglodytes troglodytes*	MBTA	Protected
Wood Thrush	*Hylocichla mustelina*	MBTA	Protected
Yellow-bellied Flycatcher	*Empidonax flaviventris*	MBTA	Protected
Yellow-bellied Sapsucker	*Sphyrapicus varius*	MBTA	Protected

FEDERAL PROTECTED STATUS

MBTA = Migratory Bird Treaty Act



This page intentionally left blank

APPENDIX 2: ARCHEOLOGICAL SITES

QUAD	**SHPO/NYSM**	**Site Name**	**Description**
Schroon Lake Ele. 980 ft.	A03112.000001	Schroon River (Roth's) Forge, HAA 113-1	Built in 1857 by Jacob Parmeter, operated by E.B. Walker & Co. and by Phelps, Walker and Parmeter. In 1858 indicated as on the north bank of the West Branch of the Schroon River on Lot 25. Spotted as "Branch Iron Works" and "Walker & Co.". In 1861 became property of John Roth.Forge lost by Roth in 1881. then owned by P. Smith and later Clark & True. Destroyed by fire in 1883. Reported by Hartgen Archeological Associates.
Schroon Lake Ele. 850-1112 ft.	NYSM 3292	ACP ESEX5	Prehistoric site. Mound? Camp? 'Mound … may be natural but arrowheads found'… camp symbol on Parker map. Reported by Marsh and Parker.
Schroon Lake Pharaoh Mt. Ele. 943 ft.	NYSM 7520	No info.	Prehistoric sites reported by C. Gillette. No other info.
Schroon Lake Ele. 885-923 ft.	NYSM 7745	ACP ESEX (no number)	Prehistoric site reported by AC Parker as traces of occupation.
Schroon Lake Ele. 899 ft.	NYSM 7546	ACP ESEX (no number)	Traces of occupation. Reported by Arthur C. Parker

This page intentionally left blank

APPENDIX 3: POND MANAGEMENT CLASSIFICATIONS

Adirondack Brook Trout Ponds – Adirondack Zone ponds which support and are managed for populations of brook trout, sometimes in company with other salmonid fish species. These waters generally lack warmwater fishes but frequently support bullheads. Management may include stocking.

Coldwater Ponds and Lakes – Lakes and ponds which support and are managed for populations of several salmonids. These waters generally lack warmwater fishes but frequently support bullheads. Management may include stocking.

Other Ponds and Lakes – Fishless waters and waters containing fish communities consisting of native and nonnative fishes which will be managed for their intrinsic ecological value.

Two-Story Ponds and Lakes – Waters which simultaneously support and are managed for populations of coldwater and warmwater game fishes. The bulk of the lake trout and rainbow trout resource fall within this class of waters. Management may include stocking.

Unknown Ponds and Lakes – Waters which could not be assigned to the subprogram categories specifically addressed in this document due to a lack of or paucity of survey information.

Warmwater Ponds and Lakes – Waters which support and are managed for populations of warmwater game fishes and lack significant populations of salmonid fishes. Management may include stocking

This list of ponded waters in the Hoffman Notch Wilderness Area was obtained from the NYS Biological Survey. Some ponds listed in the Biological Survey were created by beaver dams and are now drained. In the following discussion and in Tables 1 and 2, the drained ponds continue to be listed for consistency with the Biological Survey, but the acreages have been reduced to reflect conditions as observed in the field. Also, the number of ponds may vary depending on whether referencing ponds as listed in the Biological Survey, or ponds existing in the unit.

Bailey Pond (UH-P397)

Bailey Pond (sometimes spelled Baily Pond) is an 18 acre brook trout pond. Bailey Pond is accessible via a foot trail from the parking area at Warrens Pond. Based on a 2002 survey, the fish community consists of stocked brook trout, pumpkinseed, northern redbelly dace, brown bullhead, white sucker, creek chub, and golden shiner. A 1932 survey determined that Bailey Pond supported brook trout, golden shiner and white sucker. Brook trout have been stocked since 1941. A 1949 survey collected brown bullhead, brook trout and white sucker. In 1978 a survey collected brook trout , golden shiner, white sucker, brown bullhead, pumpkinseed, northern redbelly dace, and creek chub. With the exception of golden shiner, these are all native or native but widely introduced species. A recent pre-reclamation survey in 2002 revealed that this pond does not have a suitable fish migration barrier site, and therefore this pond is not a candidate for reclamation.

Due to the lack of a suitable fish migration barrier site, this pond will be managed as Coldwater Pond to preserve its native fishes in the presence of non-native species.
Management Class: Coldwater

Big Marsh (UH-P396)

Big Marsh is the headwaters of the North Branch of Trout Brook. This pond is 13.1 acres in size and surrounded by extensive wetlands. A trail runs along the west side of the lake. Although this pond has not been surveyed, it probably contains native and non-native fish communities. Due to the large wetland area, this pond is not a candidate for reclamation. This pond will be managed to protect the fish species present for their intrinsic value.

Management Class: Unknown

Big Pond (UH-P406)

Big Pond is a 63 acre warmwater fishery dominated by nonnative northern pike. The pond is accessible via foot trail from the parking area on CR 24. A survey conducted in 2002 found northern pike and nonnative golden shiner, native but widely introduced creek chub and brown bullhead and native redbreast sunfish and white sucker. Nonnative smallmouth bass were reported in 1932 and 1955 in addition to the other species found in 2002. Smallmouth bass were not detected in our recent survey. Summer-time temperature and dissolved oxygen profiles reveal the pond is too warm to support native brook trout.

Big Pond will be managed as a warmwater pond to preserve its native fishes in the presence of nonnative species.

Management Class: Warmwater

Marion Pond (UH-P398)

Marion Pond is a 10 acre brook trout pond. Nonnative golden shiner were present when the pond was surveyed in 1949, 1963, 1978, 1987 and 2008. The pond is air-stocked in the fall with fingerling brook trout. The pond is accessible via trail from Bailey Pond and the Warrens Pond parking lot. This pond has been assessed as a reclamation candidate, and an effective natural fish barrier on its outlet and lack of problematic wetlands indicate it is an excellent candidate. Marion Pond will be reclaimed, and will be stocked with an Adirondack Heritage Strain of brook trout. Until the reclamation, Marion Pond will be managed as an Adirondack brook trout pond to preserve its native fishes in the presence of a nonnative species.

Management Class: Adirondack brook trout

North Pond (UH-P405)

North Pond is a 25 acre warmwater pond accessible by foot trail from CR 24. The pond is not visible from the trail and a 750 foot bushwack was necessary when the pond was last surveyed in 2002. Nonnative northern pike, smallmouth bass, and golden shiner dominate the community. Native but widely introduced brown bullhead and creek chub and native redbreast sunfish and longnose dace were present in 1955. In the 2002 survey, golden shiner had replaced creek chub. Summer-time temperature and dissolved oxygen profiles reveal the pond is suitable for native brook trout. However, the pond has not been assessed as a potential reclamation candidate. Until an assessment of the pond for its potential for native species restoration work, North Pond will be managed as a warmwater fishery to preserve its native fishes in the presence of nonnative species. If a reclamation is determined to be necessary and feasible, the UMP will be amended to include it in the Schedule for Implementation and the pond narrative will be revised to reflect the new survey information.

Management Class: Warmwater

Sand Pond (UH-P457)

Sand Pond is a 64 acre coldwater pond on the edge of the Hoffman Notch Unit. Land ownership of the edge of the pond is a mix of public and private. Access is via road and trial on both the north and south sides of the pond from CR 2. As a border water, Sand Pond will not be managed as a Wilderness water. ALSC survey in 1987 found native common shiner, and northern redbelly dace, and native but widely introduced brook trout, lake trout, pumpkinseed, and nonnative rainbow smelt, golden shiner and bluntnose minnow. A 1932 survey reported brook trout and lake trout. In 1946, only lake trout were reported. In a 1959 survey, brook trout and lake trout were both present, along with pumpkinseed, creek chub and white sucker. From 1941 to 1957 the pond was intermittently stocked with brook trout and lake trout. Sand Pond will be managed as a coldwater fishery to preserve its native fishes in the presence of nonnative species.

Management Class: Coldwater

Unnamed Ponds (UH-P392, P453D, P455c, P5427, P5428)

Five unnamed ponds have been identified within the Hoffman Notch Unit. These ponds range in size from 1 to 6 acres. Although these ponds have never been surveyed, they probably contain native and nonnative fish communities. P392 is the largest and is surrounded by wetland, however an experimental stocking of brook trout was conducted in 1979. P392 is a headwater of Minerva Stream and about 3/4 of a mile from the nearest marked trail. P453D is the smallest, has no trail access and drains to the Schroon River. P455C is a headwater of Hoffman Notch Brook with no marked trail access. P5428 and P5427 are located near North Pond on tributaries to Rogers Brook. These unnamed ponds will be managed to protect the fish species present for their intrinsic value.

Management Class: Unknown

Table X.

CLASSIFICATION OF COMMON ADIRONDACK UPLAND FISH FAUNA INTO
NATIVE, NONNATIVE, AND NATIVE BUT WIDELY INTRODUCED
Adapted from George, 1980

NATIVE TO ADIRONDACK UPLAND

Blacknose dace	Redbreast sunfish	Common shiner
White sucker	Finescale dace	Lake chub
Longnose sucker	Creek chubsucker	Slimy sculpin
Northern redbelly dace	Longnose dace	Round whitefish

NATIVE SPECIES WIDELY INTRODUCED WITHIN THE ADIRONDACK UPLAND[1]

Brook trout	Cisco	Brown bullhead
Lake trout	Pumpkinseed	Creek chub

NONNATIVE TO ADIRONDACK UPLAND

Golden shiner	Northern pike	Chain pickerel	Rock bass
Bluntnose minnow[5]	Smallmouth bass	Largemouth bass	Yellow perch
Johnny darter	Fathead minnow[2]	Brown trout	Rainbowtrout
Splake	Atlantic salmon	Lake Whitefish	Bandedkillifish[3]
Rainbow smelt	Fallfish[4]	Bluegill	Walleye
Pearl dace	Central mudminnow	Redhorse suckers (spp.)	Black crappie

1 These native fishes are known to have been widely distributed throughout Adirondack uplands by DEC, bait bucket introduction, and unauthorized stocking. This means that their presence does not necessarily indicate endemicity. Other native species listed above also may have been moved from water to water in the Adirondack Upland, but the historical record is less distinct.

2 Not mentioned by Mather (1884) from Adirondack collections, minor element southern Adirondack Uplands (Greeley 1930-1935).

3 Early collections strongly suggest dispersal as a bait form.

4 Adventive through stocking.

5 Not mentioned by Mather (1884) from Adirondack collections, widely used as bait.

Table X. Hoffman Notch Unit Management Plan Ponded Water Inventory Data

Name	P#	W' shed	File #	County	USGS Quad (7.5")	Management Class	Biological Survey Area (acres)	Maximum Depth (meters)	Planimetered Mean Depth (meters)
Bailey Pond	397	UH	714	Essex	Schroon Lake	Coldwater	19.0		
Big Marsh	396	UH		Essex	Blue Ridge	Unknown	13.1		
Big Pond	406	UH	725	Essex	Schroon Lake	Warmwater	62.5	5.5	2.3
Marion Pond	398	UH	715	Essex	Cheney Pond	Adirondack brook trout	9.9	7.9	3.3
North Pond	405	UH	724	Essex	Schroon Lake	Warmwater	25.0		
Sand Pond	457	UH	794	Essex	Blue Ridge	Coldwater	63.8	12.2	5.0
Unnamed Pond	392	UH		Essex	Blue Ridge	Unknown	5.9		
Unnamed Pond	453D	UH		Essex	Blue Ridge	Unknown	1		
Unnamed Pond	455C	UH		Essex	Blue Ridge	Unknown	3.7		
Unnamed Pond	5427	UH		Essex	Schroon Lake	Unknown	3.0		
Unnamed Pond	5428	UH		Essex	Schroon Lake	Unknown	3.2		

Table X. Hoffman Notch Unit Management Plan Ponded Water Survey Data

Name	W' shed	P#	Most Recent Chemical Survey					Most Recent Biological Survey		
			Year	Source	ANC (ueq/l)		Conductivity (ppm)	Year	Source	Fish Species Present and Number Caught*
Bailey Pond	UH	397	2002	DEC	114.7	6.7	24	2002	DEC	ST (11), PkS (22), NRD (2), BB (2), WS (66), CC (11), GS (19)
Big Marsh	UH	396								Unknown
Big Pond	UH	406	2002	DEC	166.1	7.0	32	2002	DEC	NP (8), CC (1), RbS (92), GS (31), WS (8), BB (56)
Marion Pond	UH	398	1987	ALSC	11.1	5.78	16.3	2008	DEC	ST (12), GS (400)
North Pond	UH	405	2002	DEC	206.4	7.4	36	2002	DEC	NP (4), BB (21), SmB (9), GS (39), RbS (6)
Sand Pond	UH	457	1987	ALSC	212.6	7.32	43.4	1987	ALSC	NRD (6), BnM (9), CC (16), PkS (3), ST (10), RSM (8), GS (50), CS (58), WS (55), BK (1), LT (1), FF (1), BB (6)
Unnamed Pond	UH	392								Unknown
Unnamed Pond	UH	453D								Unknown
Unnamed Pond	UH	455C								Unknown
Unnamed Pond	UH	5427								Unknown
Unnamed Pond	UH	5428								Unknown

* Fish species caught by various gear.

ST Brook trout PkS Pumpkinseed NRD Northern redbelly dace BB Brown bullhead
WS White sucker CC Creek chub GS Golden shine NP Northernpike
RbS Redbreast sunfish SmB Smallmouth bass BnM Bluntnose minnow RSM Rainbow smelt
CS Common shiner LT Lake trout FF Fallfish Unknown - No biological survey

Table 4.
Hoffman Notch Wilderness - Fish Community Ecological Analysis
Known Fish Distributions from Early Surveys vs. Present

Lake/Pond Category	Prior to 1980	%	Post-1980	%	Net Change in # Lakes	% Net Change by Species
Total # Lakes	11	-	11	-	-	-
# Ponds Surveyed	5	-	5	-	-	-
# Un-surveyed	6	-	6	-	-	-
# Historically Fishless Ponds	0	-	0	-	-	-
# Historically Supporting Fish Life	6	-	6	-		-
# Ponds Formerly Supporting Fish but now Fishless	0	-	0	-	-	-
SPECIES CATEGORIES						
Native but Widely Introduced						
Brook Trout	3	50%	3	50%	0	0%
Lake Trout	1	17%	1	17%	0	0%
Brown Bullhead	3	50%	3	50%	0	0%
Pumpkinseed	2	33%	2	33%	0	0%
Creek Chub	4	67%	2	33%	-2	-33%
Native Species						
White Sucker	3	50%	2	33%	-1	-17%
Northern Redbelly Dace	1	17%	2	33%	1	17%
Longnose Dace	1	17%	1	17%	0	0%
Redbreast Sunfish	2	33%	2	33%	0	0%
Common Shiner		0%	1	17%	1	17%
Non-Native Species						
Golden Shiner	4	66%	5	83%	1	17%
Rainbow Smelt		0%	1	17%	1	17%
Northern Pike	2	33%	2	33%	0	0%
Bluntnose Minnow		0%	1	17%	1	17%
Smallmouth Bass	2	33%	1	17%	-1	-17%

This page intentionally left blank

APPENDIX 4: TRAIL CLASSIFICATION SYSTEM

TRAIL CLASSIFICATION SYSTEM –HOFFMAN NOTCH WILDERNESS AREA						
TITLE	**EXAMPLE**	**MARKING**	**TREAD**	**BARRIERS**	**USE LEVEL**	**ACCEPTABLE MAINTENANCE**
I Unmarked Route	Historic USGS map roads / trails, historic logging trails, Old snowmobile trails	None	Intermittently apparent, relatively undisturbed organic soil horizon	Natural obstructions present, logs and water courses	Occasional	None
II Unmarked Path	Trail from Bailey Pond to Marion Pond Trail to North Pond	None	Intermittently apparent, compaction of duff, mineral soils occasionally exposed	Same as unmarked route	Low, varies by location	Occasional barrier removal only to define appropriate route.
III Primitive	Big Pond Trail Hoffman Notch Trail	Trail markers, sign at junction with secondary or other upper level trail	Apparent, soil compaction evident	Limited natural obstructions (logs and river fords)	Low	Drainage (native materials) where necessary to minimize erosion, blowdown removed 2-3 years, brushing as necessary to define trail (every 5-10 years). Bridges only to protect resource (max - 2 log width). Ladders only to protect exceptionally steep sections, Tread 14"-18", clear: 3' wide, 3' high.
IV Secondary	Mt Severance Trail	Markers, signs with basic information	Likely worn and possibly quite eroded. Rocks exposed, little or no duff remaining	Up to one year's accumulated blowdown, small streams.	Moderate	Drainage where needed to halt erosion and limit potential erosion (using native materials), tread hardening with native materials where drainage proves to be insufficient to control erosion. Remove blowdown annually. Brush to maintain trail corridor. Higher use may warrant greater use of bridges (2–3 logs wide) for resource protection. Ladders on exceptionally steep rock faces. Tread 18"-24". Clear 4' wide, 3' High.

TRAIL CLASSIFICATION SYSTEM –HOFFMAN NOTCH WILDERNESS AREA						
TITLE	**EXAMPLE**	**MARKING**	**TREAD**	**BARRIERS**	**USE LEVEL**	**ACCEPTABLE MAINTENANCE**
V Trunk or Primary Trail	None in the HNWA	Markers, signed with more information and warnings.	Wider tread, worn and very evident. Rock exposed, possibly very eroded.	Obstructions only rarely, small streams	High	Same as above; Plus: regular blowdown removal on designated ski trails, non-native materials as last resort, Extensive tread hardening when needed, bridge streams (2–4 logs wide) difficult to cross during high water, priority given to stream crossings below concentrations of designated camping. Tread 18"-26", clear 6' wide, 8' high, actual turn piking limited to 2% of trail length.
VI Front Country	None in HNWA	Heavily marked, detailed interpretive signing	Groomed	None	Very High	Extensive grooming, some paving, bark chips, accessible. This is to be implemented within 500' of wilderness boundary.
VII Horse Trail	None in the HNWA	Marked as Trunk or Secondary	Wide tread, must be rather smooth.	Same as Trunk Trail.	Moderate to High	Same as trunk trail, except use techniques appropriate for horses. Bridges: 6' minimum width with kick rails, nonnative dimensional materials preferred. Tread: 2'-4' wide, clear 8' wide, 10' high.
VIII Ski Trail	Hoffman Notch Trail, Big Pond Trail	Marked High. Special markers, sign at all junctions with hiking trails.	Duff remains. Discourage summer use	Practically none due to hazards.	High	Focus on removal of obstructions, maintenance should be low profile, tread determined by clearing 6' (Should be slightly wider at turns and steep sections. Provide drainage using native materials to protect resource.

APPENDIX 5: CAMPSITE MONITORING FORM

1)Old Site Number:_____ 1a) New Site Number_____

2) Inventoried By:_____ 3) Date:____/____/____

INVENTORY PARAMETERS

4) Substrate of site area: (B=bedrock C=cobble S=sand O=soil) _____
5) Number of Other Recreational Sites Visible: _____
6) Fire Ring Present: (y or n) _____
Construction:(stone or metal) _____
Condition: (1=good, 2=poor, 3=replace) _____
7) Privy Present:(y or n) _____
Condition: (1= good, 2=poor, 3=replace) _____
8) Picnic Table Present: (y or n) _____
Condition: (1=good, 2=poor, 3=replace) _____
9) Tree Canopy Cover:(1=0-25%,2=26-50%,3=51-75%,4=76-100%) _____

IMPACT PARAMETERS (Begin with Site Boundary Determination)

10) Condition Class: (3,4 or 5) _____
11) Vegetative Ground Cover Onsite:(Use categories below) _____
(1=0-5%, 2=6-25%, 4=51-75% 5=76-95%, 6=96-100%)
12) Vegetative Ground Cover Offsite:(Use categories above) _____
13) Soil exposure: (use categories above) _____
14) Tree Damage: None/Slight____, Moderate____, Severe_____
15) Root Exposure: None/Slight____, Moderate_____, Severe_____
16) Number of Tree Stumps: _____
17) Number of Trails: _____
18) Number of Fire Sites: _____
19) Litter/Trash: (N=None, S=Some, M=Much) _____
20) Human Waste: (N=none, S=Some, M=Much) _____
21)Comments/Recommendations:_____
_____
22) Take Center point and Site Photographs:

<u>Site Center point References</u>

1)
2)
3)
4)

<u>Satellite Site Dimensions</u>

Island Site Dimensions

Site area from Program:_____
+Satellite Area _____
-Island Area _____=
Total Site Area _____(sq ft)

Transect Data
AzimuthDistance (ft)

1)
2)
3)
4)
5)
6)
7)
8)
9)
10)
11)
12)
13)
14)
15)
16)
17)
18)
19)
20)
21)
22)
23)
24)
25)

MONITORING FORM B

1)Old Site Number:_____ 1a) New Site Number:_____

2)Fire Ring Present:_____ Condition:_____

3) Privy Present:_____ Condition:_____

4) Picnic Table Present:_____ Condition:_____

5) Condition Class (1 or 2)_____ Site Size:_____(ft^2)

DESIGNATED CAMPSITE MONITORING MANUAL

DESCRIPTION OF PROCEDURES

For the purpose of this manual, designated campsites are defined as those areas either designated by the Department with a yellow DEC designated campsite marker, or shown on an area brochure. In areas with multiple sites there may not always be undisturbed areas separating sites, and an arbitrary decision may be necessary to define separate sites. For each site, monitoring begins with an assessment of Condition Class:

CONDITION CLASS DEFINITIONS

Class 1: Recreation site barely distinguishable; slight loss of vegetation cover and/ or minimal disturbance of organic litter.
Class 2: Recreation site obvious; vegetation cover lost and/ or organic litter pulverized in primary use area.
Class 3: Vegetation cover lost and/ or organic litter pulverized on much of the site, some bare soil exposed in primary use areas.
Class 4: Nearly complete or total loss of vegetation cover and organic litter, bare soil widespread.
Class 5: Soil erosion obvious, as indicated by exposed tree roots and rocks and/or gullying.

For sites rated Condition Class 1 or 2, complete Form B; for sites rated Class 3, 4 or 5, complete Form A. Form B is an abbreviated version of Form A and greatly reduces the amount of field time. The rationale for this approach is that detailed information on lightly impacted sites is not as critical to management.

During subsequent surveys an attempt should be made to relocate and reassess all sites from the proceeding survey. Former designated sites that have been closed, and are still being used, should be noted as illegal sites. Always note information regarding the history of site use under the comment parameter.

Materials:
- Compass, peephole or mirror type (not corrected for declination)
- GPS data recorder (GPS point will be taken at each sites center point)
- Tape measure, 100-foot (marked in tenths)
- Flagged wire pins (25 min), one large steel center point stake.
- Digital camera
- Clipboard, pencil, field forms, field procedures
- Steel nails (5 inch)

Form A Procedures

Inventory Parameters

1. Site Number: All sites will be assigned an old site number as well as a new site number. Old site numbers will use the existing site numbering system, while new site numbers will be assigned

following completion of the mapping of all sites.

2. Inventoried By: List the names of field personnel involved in data collection.
3. Date: Month, day and year the site was evaluated (e.g., June 12, 1999 = 06/12/99)
4. Substrate of site area: Record the predominant substrate for the area of human disturbance for each site using the coded categories below.
   B=bedrock - shelf bedrock
   C=cobble - includes gravel size stone and up
   S=sand - includes sandy soils that do not form a surface crust in trampled areas
   O=soil - includes clays to loamy sands

5. Number of other sites visible: Record the number of other campsites, which if occupied, would be visible from this site.
6. Fire ring : if present or not (y or n)
   a. Construction: stone/masonry or metal
   b. Condition: good=intact, functional for cooking
   Poor= missing stones, broken , not functional for cooking but will contain open fire.

7. Privy: if present or not (y or n)
   a. Condition: good= functional, has door, wood not deteriorated(would you use it?)
   Poor=nonfunctional, door missing, wood rotten,

8. Picnic table: if present or not (y or n)
   a. Condition: good= usable, no broken boards, table is solid
   Poor=not usable, broken/rotten boards, not sturdy

9. Tree canopy cover: Estimate the percentage of tree canopy cover directly over the campsite.
   1=0-25%, 2=26-50%, 3=51-75%, 4=76-100%

Impact Parameters

The first step is to establish the sites boundaries and measure its size. The following procedures describe use of the variable radial transect method for determining the sizes of recreational sites. This is accomplished by measuring the lengths of linear transects from a permanently defined center point to the recreation site boundary.

Step 1. Identify Recreation Site Boundaries and Flag Transect Endpoints. Walk the recreation site boundary and place flagged wire pins at locations which, when connected with straight lines, will define a polygon whose area approximates the recreation site area. Use as few pins as necessary, typical sites can be adequately flagged with 10-15 pins. Look both directions along site boundaries as you place the flags and try to balance areas of the site that fall outside the lines with offsite(undisturbed) areas that fall inside the lines. Pins do not have to be placed on the site boundaries, as demonstrated in the diagram following these procedures. Project site boundaries straight across areas where trails enter the site. Identify site boundaries by pronounced changes in vegetation cover, vegetation height/disturbance, vegetation composition, surface organic litter, and topography. Many sites with dense forest over stories will have very little vegetation and it will be necessary to identify boundaries by examining changes in organic litter, i.e. leaves that are untrampled and intact versus leaves that are pulverized or absent. In defining the site boundaries, be careful to include only those areas that appear to have been disturbed from human trampling. Natural factors such as dense shade and flooding can create areas lacking vegetative cover. Do

not include these areas if they appear "natural" to you. When in doubt, it may also be helpful to speculate on which areas typical visitors might use based on factors such as slope or rockiness.

Step 2. Select and Reference Site Center point. Select a site center point that is preferably a) visible from all site boundary pins, b) easily referenced by distinctive permanent features such as larger trees or boulders, and c) approximately 5 feet from a steel fire ring if present. Embed a 5 inch nail in the soil at the center point location so that the head is 3-4 inches below the surface. During future sight assessments a magnetic pin locator can be used to locate the center point. Next, insert a large steel stake at the center point and reference it to at least three features. Try to select reference features in three opposing directions, as this will enable future workers to triangulate the center point location. For each feature, take a compass azimuth reading and measure the distance (nearest 1/10 foot) from the center point to the center of trees or the highest point of boulders. Also measure the approximate diameter of reference trees at 4.5 feet above ground (dbh). Be extremely careful in taking these azimuths and measurements, as they are critical to relocating the center point in the future. Record this information on the back of the form.

Take a digital photograph that clearly shows the center point location in relation to nearby trees or other reference features, such as the fire ring, trees or boulders. Record a photo description, such as" center point location site 23 ", in the photo log.
Options: Some sites may lack the necessary permanent reference features enabling the center point to be accurately relocated. If only one or two permanent reference features are available, use these and take additional photographs from several angles. If permanent features are unavailable, simply proceed with the remaining steps without permanently referencing the center point. This option will introduce more error in comparisons with future measurements, particularly if the site boundaries are not pronounced. Note your actions regarding use of these options in the comment section.

Step 3. Record Transect Azimuths and Lengths. Standing directly over the center point, identify and record the compass bearing (azimuth) of each site boundary pin working in a clockwise direction, starting with the first pin clockwise of north. Be careful not to miss any pins hidden behind vegetation or trees. Be extremely careful in identifying the correct compass bearings to these pins as error in these bearings will bias current and future measurements of site size. Next, anchor the end of your tape to the center point stake, measure and record the length of each transect (nearest 1/10 foot), starting with the same boundary pin and in the same clockwise direction as before. Be absolutely certain that the appropriate pin distances are recorded adjacent to their respective compass bearing.

Step 4. Measure island and satellite areas. Identify any undisturbed islands of vegetation inside the site boundaries (often due to the clumping of trees and shrubs) and disturbed satellite use areas outside the site boundaries (often due to tent sites or cooking sites). Use site boundary definitions for determining the boundaries of these areas. Use the geographic figure method to determine the areas of these islands and satellites (refer to the diagrams following these procedures). This method involves superimposing one or more imaginary geometric figures (rectangles, circles or right triangles) on island or satellite boundaries and measuring appropriate dimensions to calculate their areas. Record the types of figures used and their dimensions on the back of the form; the size of these areas should be computed in the office using a calculator.

Site Remeasurement: During site remeasurement use the data from the last monitoring period to reestablish the center point and all site boundary pins. If steel nails were embedded in the ground, a magnetic pin locator can assist in this process. Place flagged wire pins at each transect boundary point. Boundary locations based on the following procedures:

II Keep the same transect length if that length still seems appropriate, i.e., there is no compelling reason to alter the initial boundary determination.

II Record a new transect length if the prior length is inappropriate, i.e., there is compelling evidence that the present boundary does not coincide with the pin and the pin should be relocated either closer to or further away from the center point along the prescribed compass bearing. Use different colored flags to distinguish these current boundary points from the former boundaries.

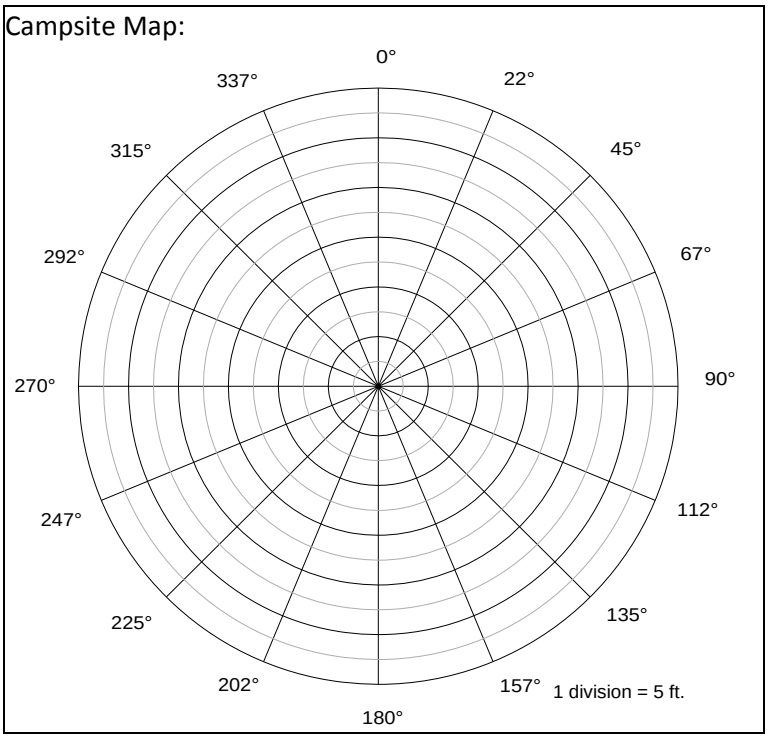
II Repeat steps 1 and 3 from above to establish additional transects where necessary to accommodate any changes in the shape of recreation site boundaries (diagram below). Also repeat step 4.

II Leave all pins in place until all procedures are completed. Pins identifying the former site boundaries are necessary for tree damage and root exposure assessments.

These additional procedures are designed to eliminate much of the measurement error associated with different individuals making subjective judgements on those sites or portions of sites where boundaries are not pronounced. These procedures may only be used for sites whose center points can be relocated.

Site Number / Site Name	_____/_____
Compass Bearing:	

X																
O																



10. Condition class: Record the condition class you assessed for the site using the categories described earlier.

11. Vegetative ground cover on site: An estimate of the percentage of live non-woody vegetative ground cover (including herbs, grasses, and mosses and excluding tree seedlings, saplings, and shrubs) within the flagged campsite boundary using the coded categories listed next. Include any disturbed satellite use areas and exclude any undisturbed Island areas of vegetation. For this and the following two parameters, it is often helpful to narrow your decision to two categories and concentrate on the boundary that separates them. For example, if the vegetation cover is either category 2 (6-25%) or category 3 (26-50%), you can simplify your decision by focusing on whether vegetative cover is greater than 25%.

    1=0-5%, 2=6-25%, 3=26-50%, 4=51-75%, 5=76-95%,6=96-100%

12. Vegetative ground cover offsite: An estimate of the percentage of vegetative ground cover in an adjacent but largely undisturbed "control" area. Use the codes and categories listed earlier. The control site should be similar to the campsite in slope, tree canopy cover (amount of sunlight penetrating to the forest floor), and other environmental conditions. The intent is to locate an area that would closely resemble the campsite area had the site never been used. In instances where you cannot decide between two categories, select the category with less vegetative cover. The rationale for this is simply that, all other factors being equal, the first campers would have selected a site with the least amount of vegetation cover.

13. Soil exposure: An estimate of the percentage of soil exposure, defined as ground with very little or no organic litter (partially decomposed leaf, needle, or twig litter) or vegetation cover, within the

campsite boundaries and satellite areas. Dark organic soil, which typically covers lighter colored mineral soil, should be assessed as bare soil. Assessments of soil exposure may be difficult when organic litter becomes highly decomposed and forms a patchwork with areas of bare soil. If patches of organic material are relatively thin and few in number, the entire area should be assessed as bare soil. Otherwise, the patches of organic litter should be mentally combined and excluded from assessments. Code as for vegetative cover.

14. Tree damage: Tally the number of live trees (> 1 in, diameter at 4.5 ft.) Within the campsite boundaries, including trees in undisturbed islands and excluding trees in satellite areas, into one of the rating classes described below. Assessments are restricted to trees within the flagged campsite boundaries in order to ensure consistency with future measurements. Multiple tree stems from the same species that are joined at or above ground level should be counted as one tree when assessing damage to any of its stems. Assess a cut stem on a multiple-stemmed tree as tree damage, not as a stump. Do not count tree stumps as tree damage. Take into account tree size. For example, damage for a small tree would be considerably less in size than damage for a large tree. Omit scars that are clearly not human-caused (e.g., lightning strikes).
During site remeasurement, begin by assessing tree damage on all trees within the site boundaries identified in the last measurement period. Tally the number of trees in areas where the boundary has moved closer to the center point, i.e., former site areas that are not currently judged to be part of the site separately. Place a box around this number. Next, assess tree damage in areas where boundaries have moved further from the center point, i.e. expanded site areas that are newly impacted since the last measurement period. Circle these tallies. These additional procedures are necessary in order to accurately analyze changes

None/Slight- No or slight damage such as broken or cut smaller branches, one nail, or a few superficial trunk scars.
Moderate- Numerous small trunk scars and/or nails or one moderate-sized scar.
Severe- Trunk scars numerous with many that are large and have penetrated to the inner wood; any complete girdling of trees (cut through tree bark all the way around tree).

15. Root exposure: Tally the number of live trees (> 1 in, diameter at 4.5 ft.) Within the campsite boundaries, including trees in undisturbed islands and excluding trees in satellite areas, into one of the rating classes described below. Assessments are restricted to trees within the flagged campsite boundaries in order to ensure consistency with future measurements. Where obvious, omit exposed roots that are clearly not human-caused (e.g., stream/river flooding).
During site remeasurement, begin by assessing root exposure on all trees within the site boundaries identified in the last measurement period. Tally the number of trees in areas where the boundary has moved closer to the center point, i.e., former site areas that are not currently judged to be part of the site separately. Place a box around this number. Next, assess root exposure in areas where boundaries have moved further from the center point, i.e. expanded site areas that are newly impacted since the last measurement period. Circle these tallies. These additional procedures are necessary in order to accurately analyze changes in root exposure over time.

None/Slight- No or slight root exposure such as is typical in adjacent offsite areas.
Moderate- Top half of many major roots exposed more than one foot from base of tree.
Severe- Three-quarters or more of major roots exposed more than one foot from base of tree; soil erosion obvious.

16. Number of tree stumps: A count of the number of tree stumps (> 1 in. Diameter) within the campsite boundaries. Include trees within undisturbed islands and exclude trees in disturbed satellite areas. Do not include cut stems from a multiple-stemmed tree.
During site remeasurement, begin by assessing stumps on all trees within the site boundaries identified in the last measurement period. Tally the number of trees in areas where the boundary has moved closer to the center point, i.e., former site areas that are not currently judged to be part of the site separately. Place a box around this number. Next, assess stumps in areas where boundaries have moved further from the center point, i.e. expanded site areas that are newly impacted since the last measurement period. Circle these tallies. These additional procedures are necessary in order to accurately analyze changes in stumps over time.

17. Number of trails: A count of all trails leading away from the outer campsite boundaries. Do not count extremely faint trails that have untrampled tall herbs present in their tread or trails leading out to any satellite sites.

18. Number of fire sites: A count of each fire site within campsite boundaries, including satellite areas. Include old inactive fire sites as exhibited by blackened rocks, charcoal, or ashes. Do not include areas where ashes or charcoal have been dumped. However, if it is not clear whether or not a fire was built on the site, always count questionable sites that are within site boundaries and exclude those that are outside site boundaries.

19. Litter/trash: Evaluate the amount of litter/trash on the site: n=None or less than a handful, S=some-a handful up to enough to fill a 2-1/2-gallon bucket, M=Much- more than a 2-1/2-gallon bucket.

20. Human waste: Follow all trails connected to the site to conduct a quick search of likely "toilet" areas, typically areas just out of sight of the campsite. Count the number of individual human waste sites, defined as separate locations exhibiting toilet paper and/or human feces. The intent is to identify the extent to which improperly disposed human feces is a problem. Use the following code categories: N=None, S=Some-1-3 sites, M=Much-4 or more sites evident.

21. Comments/Recommendations: An informal list of comments concerning the site: note any assessments you felt were particularly difficult or subjective, problems with monitoring procedures or their application to this particular campsite, or any other comment.

22. Campsite photograph: Select a good vantage point for viewing the entire campsite, preferably one of the site boundary pins, and take a digital picture of the campsite. Note the azimuth and distance from the center point to the photo point and record on the form. The intent is to obtain a photograph that includes as much of the site as possible to provide a photographic record of site condition. The photo will also allow future workers to make a positive identification of the site. Label disks with date, and site number.

23. Total campsite area: Calculate the campsite area based on the recorded transect measurements. Add the area of any satellite sites and subtract the area of any undisturbed islands to obtain the Total Campsite Area. Record campsite area to nearest square foot (ft^2).

Form B Procedures

Refer to the procedures described earlier, all procedures are the same with the exception of campsite size. Measure campsite size using the geometric figure method. Typically, class 1 and 2 campsites are quite small in size and this method should be both efficient and accurate. Be sure to record on form B the types of figures used (rectangle, square, triangles...etc.) And all necessary dimensions. Record campsite area to nearest square foot (ft^2).

APPENDIX 6: SEQR REQUIREMENTS

12-12-79 (3/99)-9c **SEQR**

State Environmental Quality Review
NEGATIVE DECLARATION
Notice of Determination of Non-Significance

Identifying #

Date August 1, 2002

This notice is issued pursuant to Part 617 of the implementing regulations pertaining to Article 8 (State Environmental Quality Review Act) of the Environmental Conservation Law.

The NYS Department of Environmental Conservation as lead agency, has determined that the proposed action described below will not have a significant environmental impact and a Draft Environmental Impact Statement will not be prepared.

Name of Action: Adoption and Implementation of the Hoffman Notch Unit Management Plan

SEQR Status: Type 1 X
Unlisted

Conditioned Negative Declaration: ___ **Yes**
X **No**

Description of Action:
Adopt a comprehensive unit management plan addressing the use of and preservation of public lands. Section 816 of the Adirondack Park Agency Act (Executive Law) requires the Department of Environmental Conservation to develop in consultation with the Adirondack Park Agency, individual unit management plans for each unit under its jurisdiction classified in the Adirondack Park State Land Master Plan.

Actions include boundary line marking, new trail construction, trail upgrades and relocations, parking lot improvements, improvement of facilities, search and rescue operations, maintenance of existing facilities, including blowdown removal, erosion control, litter removal, and sign replacement, public information and education and public use controls.

Location: Adirondack Forest Preserve, Towns of Schroon, North Hudson and Minerva, Essex County

Reasons Supporting This Determination:
(See 617.7(c) for requirements of this determination; see 617.7(d) for Conditioned Negative Declaration)

The entire purpose of this unit management plan for the Hoffman Notch Wilderness is to manage this resource as a Wilderness area, pursuant to the management guidelines for Wilderness areas in the Adirondack Park State Land Master Plan (APSLMP). The APSLMP defines a "Wilderness area" as "an area where the earth and its community of life are untrammeled by man–where man himself is a visitor who does not remain...an area of state land or water having primeval character, without significant improvement or permanent human habitation, which is protected and managed so as to preserve, enhance and restore, where necessary, its natural conditions..."

This UMP sets forth management goals and objectives to protect, preserve and where necessary restore the Hoffman Notch Wilderness by monitoring and regulating human use of the areas so that user impacts are virtually nonexistent.

Specifically, this plan proposes to maintain, reconstruct and relocate trails to appropriate wilderness standards. These wilderness trail standards emphasize resource protection and visitor safety rather than user convenience or comfort. For example, such trail maintenance will include: drainage (using native materials) only where necessary to minimize erosion, bridges only where necessary to protect the resource. APA will be consulted in any management activities in wetlands and in adjacent to wetlands to determine if an APA wetlands permit is required. The APA wetlands permit process ensures that wetlands will not be negatively impacted as that process requires a site specific assessment of impacts.

All actions undertaken pursuant to the UMP will also incorporate the use of Best Management Practices (BMPs), which are intended to minimize soil erosion and stream siltation.

All tree cutting activities will be in compliance with the Commissioner's Delegation Memorandum #84-06 on Tree Cutting in the Forest Preserve.

All management actions will comply with the Adirondack Park State Land Master Plan, Department policies, the Environmental Conservation Law, rules and regulations, and guidelines and will be consistent with Article XIV of the New York State Constitution.

Physical disturbances due to construction of trails and parking lots will be minor. Public safety will be enhanced by providing safe-off road parking facilities. It is not anticipated that this project will increase the use of the area measurably, but rather provide safer facilities for current users. Tree cutting will be in compliance with the Commissioner's Delegation Memorandum on Tree Cutting in the Forest Preserve, #91-2. Trails may be closed during wet seasons if other action to minimize impacts cannot prevent damage.

Trail construction will incorporate the use of best management practices, including, but not limited to the following:

Locating trails to minimize necessary cut and fill;
Wherever possible, lay out trails on existing old roads or cleared or partially cleared areas;
Locating trails away from streams, wetlands, and unstable slopes, wherever possible;
Use of proper drainage devices such as water bars and broad- based dips, or crowning;
Locating trails to minimize grade;

Using natural materials to blend the structure into the natural surroundings.

Minimize necessary cut and fill;
Avoid trees, streams, and wetlands.

Trail relocations and extensions will also avoid steep grades and poor soils to avoid erosion. As necessary, proper drainage devices such as water bars and broad-based dips will be employed to reduce potential for erosion. Designated trails will be maintained annually to protect resources and promote visitor safety.

Posting of Signs

The plan proposes posting of various informational signs. Sign posting will have no adverse impacts to the resource given the nonintrusive and minimal nature of this activity.

Location: (Include street address and the name of the municipality/county. A location map of appropriate scale is also recommended.) Forest Preserve, Towns of Schroon, Minerva and North Hudson in the County of Essex.

If Conditioned Negative Declaration, provide on attachment the specific mitigation measures imposed, and identify comment period (not less than 30 days from date of publication in the ENB)

For Further Information:

Contact Person: Ben Thomas
Address: NYSDEC
232 Golf Course Road
Warrensburg NY 12885

Telephone Number: 623-1268

For Type 1 Actions and Conditioned Negative Declarations, a Copy of this Notice is sent to:

Appropriate Regional Office of the Department of Environmental Conservation

Chief Executive Officer, Town/City/Village of Schroon Lake, Minerva and North Hudson

Other involved agencies (if any): Adirondack Park Agency

Applicant (if any)

Environmental Notice Bulletin - NYS DEC - 625 Broadway - Albany, NY 12233-1750 (Type One Actions Only)

This page intentionally left blank

APPENDIX 7: ACRONYMS

ADA	Americans with Disabilities Act
ADAAG	American with Disabilities Act Accessibility Guideline
ALSC	Adirondack Lakes Survey Corporation
ANC	Acid Neutralizing Capacity
APA	Adirondack Park Agency(Agency)
APSLMP	Adirondack Park State Land Master Plan
ATV	All Terrain Vehicle
BP	Before Present
DEC	Department of Environmental Conservation(Department)
ECL	Environmental Conservation Law
EIS	Environmental Impact Statement
NCNST	North Country National Scenic Trail
NYNHP	New York Natural Heritage Program
NBWI	Native-But-Widely-Introduced
HNWA	Hoffman Notch Wilderness Area
HPWA	High Peaks Wilderness Area
HPWC	High Peaks Wilderness Complex
LAC	Limits of Acceptable Change
MSL	Mean Sea Level
OSP	Open Space Plan
ROW	Right Of Ways
SEQRA	State Environmental Quality Review Act
SH	State Highway
TNC	The Nature Conservancy
UMP	Unit Management Plan
VMWF	Vanderwhacker Mountain Wild Forest
WMU	Wildlife Management Unit

This page intentionally left blank

APPENDIX 8: DEFINITIONS/GLOSSARY OF TERMS

Abandoned Town Road - road on which town maintenance has been permanently discontinued. For such roads, ownership of the right-of-way reverts to the surrounding landowners. In contrast, see "Qualified Abandoned Town Road".

Adirondack Brook Trout Ponds - Adirondack Zone ponds which support and are managed for populations of brook trout, sometimes in company with other salmonid fish species. These waters generally lack warmwater fishes but frequently support bullheads.

Adirondack Forest Preserve - consists of land owned by the State within the 12 Adirondack counties. Essentially all of the 2 ½ million acres of State land within the Adirondack Park is Forest Preserve and is protected by Article 14 of the State Constitution.

Adirondack Park - consists of six million acres of public and private land within a boundary delineated in the Environmental Conservation Law. At the present time, State ownership accounts for some 40 percent of this area.

Adirondack Park State Land Master Plan-A document prepared by the Adirondack Park Agency in consultation with the Department of Environmental Conservation that is designed to guide the preservation, management, and use of all State lands within the Adirondack Park.

Administrative Barrier - A barrier that can be opened to allow travel over the road by State personnel for administrative or emergency purposes. An administrative barrier should consist of a swing barrier constructed of pipe.

Beaver Ponds - Impoundments created by dam building activities of beaver.

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.

Coldwater Ponds and Lakes - Lakes and ponds which support and are managed for populations of several salmonids. These waters generally lack warmwater fishes but frequently support bullheads.

Controlled Access Barrier - A barrier that can be opened to allow travel over the road by private individuals or organizations who have the legal right of such travel. A controlled access barrier should be of the same design and construction as an administrative barrier.

Cross-Country (Nordic) 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.

Endangered Species - Those species of fish, shellfish, crustacea and wildlife designated by the DEC, by order filed with the Secretary of State, as seriously threatened with extinction (Section 11- 0535 ECL).

Fee Acquisition - The Term "fee" applies to the purchase of all rights to property. This differs from

purchasing an easement in which only certain rights are purchased.

Fish Barrier Dam - A man-made device or structure used to prevent the upstream or downstream migration of fish for the purpose of protecting a high-value fishery or population of fish indigenous to the protected body of water.

Fishing and Waterway Access Site - A site for fishing or other water access which provides public access and parking for vehicles which does not contain a ramp for or otherwise permit the launching of trailered boats.

Forage Fishes - Small fishes which serve as food for larger, carnivorous fishes; e.g., rainbow smelt represents a traditional forage fish for landlocked salmon.

Foot Trail - A marked and maintained path or way for foot travel.

Lean-to - An open front shelter made of natural materials suitable for temporary or transient residence.

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.

Multi-Species Waters - Waters which support more than one fish species. The great bulk of Adirondack Zone waters meets this definition.

Native Species Waters - Waters supporting native Adirondack Zone fish species. Example: brook trout, lake trout, round whitefish.

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.

Natural Spawning Adequate (N.S.A.) Waters - Brook trout ponds and numerous small, headwater stream sections with mainly slow-growing or stunted brook trout populations which are self-maintained by natural reproduction. Also includes the great majority of warmwater and non-game fish species.

Nonnative Species Waters - Waters supporting introduced, nonnative fish species, such as yellow perch and black bass.

Other Ponds and Lakes - Fishless waters and waters containing fish communities consisting of native and nonnative fishes which will be managed for their intrinsic ecological value.

Permanent Barrier - A barrier that will close a road permanently to all future travel -- public or administrative -- on such road. A permanent barrier should consist of an earth, rock, or ditch (or any combination thereof) barricade of substantial proportions so as to be obvious and require little or non maintenance.

pH Value - Represents the effective concentration of hydrogen ion. The practical pH scale extends from 0

(very acid) to 14 (very alkaline). Waters with pH value below 7 are acid while those above this value are alkaline.

Primitive Tent Site - An undeveloped camping site providing space for not more than three tents, which may have an associated pit privy and fire ring, designed to accommodate a maximum of eight people.

Qualified Abandoned Town Road - The appellation describes roads for which a town decides to suspend maintenance, but does not relinquish ownership of the right-of-way to the surrounding landowners. According to Section 205 of the Highway Law, the town has the right to resume jurisdiction over such roads for any purpose, and the title to such roads remains with the town. In contrast, see "Abandoned Town Road".

Reclamation - A management technique involving the application of a fish toxicant such as "rotenone" to eliminate undesirable fish populations.

Road - An improved way designed for travel by motor vehicles and either, (a) maintained by a State agency or a local government and open to the general public; or (b) 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 (d) maintained by the Department of Environmental Conservation for its administrative use only.

Small Ponds - Ponds of less than one surface acre which are generally considered too small for management purposes or to provide significant angling opportunities.

Small Streams - Streams less than one mile long and less than 0.5 cfs summer flow. Too small to be considered for management purposes.

Special Angling Regulations - Departures from the statewide angling regulations. These are currently expressed as options in the fishing guide. May be more liberal or more restrictive than the statewide regulations.

State Environmental Quality Review - Is a process which requires all levels of State and local government to assess the environmental significance of actions which they have discretion to approve, fund or directly undertake.

Trailhead - A point of entrance to State land which may contain some or all of the following: vehicle parking, trail signs, and visitor registration structures.

Two-Story Ponds and Lakes - Waters which simultaneously support and are managed for populations of coldwater and warmwater game fishes. The bulk of the lake trout and rainbow trout resource fall within this class of waters.

Unit Management Plan - a document that identifies the natural resources, man-made facilities, public use, and past management within a described geographic unit of State land. The plan covers all aspects of the environment and is the basis for all future activities on State lands for a period of five years.

Unknown Ponds and Lakes - Waters which could not be assigned to the subprogram categories specifically

addressed in this document due to a lack of or paucity of survey information. These waters usually contain native and nonnative non-game fishes which will be managed for their intrinsic ecological value without any new species introductions.

Warmwater Ponds and Lakes - Waters which support and are managed for populations of warmwater game fishes and lack significant populations of salmonid fishes.

APPENDIX 9: Interagency Guidelines for Implementing Best Management Practices for the Control of Terrestrial and Aquatic Invasive Species on Forest Preserve Lands in the Adirondack Park

2010

Prepared By
NYS Department of Environmental Conservation
and the
Adirondack Park Agency

I. Introduction

The negative impacts of invasive species on natural forest and aquatic communities are well documented (Appendix F). 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. Terrestrial and aquatic invasive species have been identified at increasing rates of colonization along roadsides in campgrounds, and in water bodies of the Forest Preserve within the past 10 years. Some of these species have the potential to colonize backcountry lands, lakes and ponds and degrade natural resources of the Forest Preserve.

These guidelines apply to Adirondack Forest Preserve lands, which are protected by Article XIV, Section 1 of the New York State Constitution. This Constitutional provision, which became effective on January 1, 1895 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, or shall the timber thereon be sold, removed or destroyed."*

The New York State Department of Environmental Conservation (DEC or Department) has jurisdiction over the Forest Preserve, and its management of these lands must be in keeping with this Constitutional provision.

Furthermore, DEC's management of the Adirondack Forest Preserve is governed by the Adirondack Park State Land Master Plan (Master Plan), which was initially adopted in 1972 by the Adirondack Park Agency (Agency or APA), with advice from and in consultation with the Department, pursuant to Executive Law §807 (recodified as Executive Law §816). The Master Plan provides the overall general framework for the development and management of State lands in the Adirondack Park. The Master Plan sets forth the following classifications for State land within the Adirondack Park: Wilderness, Primitive, Canoe, Wild Forest, Intensive Use, Historic, State Administrative, Wild, Scenic and Recreational Rivers, and Travel Corridors, and sets forth management guidelines for each of these major land classifications.

Executive Law §816 requires the Department to develop, in consultation with the Agency, individual unit management plans (UMPs) for each unit of land under the Department's jurisdiction which is classified in one of the nine classifications set forth in the Master Plan. The UMPs must conform to the guidelines and criteria set forth in the Master Plan. Thus, UMPs implement and apply the Master Plan's general guidelines for particular classifications of State Land within the Adirondack Park.

Executive Law §816(1) provides in part that "(u)ntil amended, the master plan for management of state lands and the individual management plans shall guide the development and management of state lands in the Adirondack Park.

Article XIV, Section 1 of the New York State Constitution does not specifically address the issue of invasive species. However, since Article XIV directs that Forest Preserve lands be "forever kept as wild forest lands" and prohibits the removal or destruction of timber, care must be taken to ensure that decisions to eradicate invasive species do not result in a material cutting of Forest Preserve timber or adversely impact the wild forest character of Forest Preserve lands.

Although there are no explicit references to active invasive species management on Forest Preserve lands in the Master Plan, the Master Plan provisions are consistent with the concept of actively managing invasive species to protect the "wild forest" character of the Forest Preserve. For instance, page 1 of the Master Plan (2001 Update) states that, "If there is a unifying theme to the Master Plan, it is that the *protection and preservation* of the natural resources of the state lands within the Park must be paramount" (emphasis added). Surveys of Forest Preserve lands document the continued importation and expansion of invasive plants into and throughout the Adirondack Park (see Section II below). Given that models indicate that eradication of an invasive species becomes progressively more difficult, more expensive, and less effective the longer the species is allowed to grow without intervention (Chippendale 1991; Hobbs and Humphries 1995), it is critical for the Department and APA to address this problem in an expeditious manner.

The goal of these guidelines is to establish parameters known as best management practices (BMPs) for the control of terrestrial and aquatic invasive species while ensuring that such management activities do not alter the "forever wild" character of Forest Preserve lands. These guidelines are intended to harmonize the Constitution's "forever wild" provisions with the Master Plan's overriding directive to manage forest preserve lands for their protection and preservation. They have been developed pursuant to, and are consistent with, relevant provisions of the New York State Constitution, the Environmental Conservation Law (ECL), the Executive Law, the State Environmental Quality and Review Act (SEQRA), the Master Plan, and all other applicable rules and regulations, policies and procedures.

It is also important to determine if any regulatory jurisdictions or permits are triggered by a proposed management activity. For example, any management activities than may involve wetlands on private or public lands may require a permit from APA.

II. Present Extent of Terrestrial and Aquatic Invasive Species on Forest Preserve Lands

An inventory of invasive species that are present and a measure of the extent of the invasive species populations is essential to determining the correct course of action. The Department conducts ongoing regular, systematic surveys to identify and quantify the extent of terrestrial and aquatic invasive species on Forest Preserve units in the Adirondack Park. The results of this continued survey have been included in Appendix E of these Guidelines and documented in UMPs. Appendix E and UMPs should be updated at the

end of each calendar year to reflect the survey data from the previous growing season. DEC will present an annual report on the survey data from the previous growing season. The tabular information will include Forest Preserve land unit name, species name, total number of populations and area affected, and other pertinent information as identified by the Office of Invasive Species Coordination (OISC). Detailed location and population information shall be provided to the Regional Land Manager for each Region and be included in the iMap Invasive Species Database.

The Department shall seek to develop and foster a relationship with private landowners adjacent to or connecting Forest Preserve land units to share information regarding existing and potential invasive species populations or threats.

III. BMPs for the Control of Terrestrial and Aquatic Invasive Species and Procedure for Implementation
The general parameters or BMPs for the control of invasive species that apply regardless of the targeted species are set forth below. Specific control methods for select terrestrial and aquatic invasive species are attached as Appendix B. These BMPs will be implemented through site specific work plans with corresponding SEQRA compliance, which must be approved by the Department's Central Office Bureau of Forest Preserve. Adopt-A-Natural Resource (AANR) Agreements with outside parties to conduct invasive species management must incorporate site specific work plans with corresponding SEQRA compliance. It is anticipated that if the proposed activities conform to these guidelines, they will be consistent with constitutional directives and authorized pursuant to the APA/DEC MOU, and will not require approval through the UMP process. However, if the Department determines during its review of a proposed site specific work plan that proposed management activities may potentially have a material effect on the character or use of the land or the vegetation thereon, DEC and APA staff will then consult to determine if the activity should be reviewed and approved as part of an individual UMP or UMP Amendment. Furthermore, application of these guidelines to all such management activities on Forest Preserve lands throughout the Adirondack Park will ensure that cumulative impacts will be avoided due to the fact that the BMPs being implemented through these guidelines avoid and mitigate impacts to native ecological communities.

The following BMPs apply to the control and management of invasive species.

1. **Prevent the introduction of invasive plants and animals to uninfested sites.**
   Invasive species can be introduced to a site by moving infested equipment, sand, gravel, borrow, fill and other off-site material. Monitoring disturbed areas and proper sanitation of equipment will help prevent new infestations. BMPs to prevent the introduction of invasive species include:
   - Clean all clothing, boots, and equipment prior to visiting site.
   - Begin activities in uninfested areas before operating in infested areas.
   - Use native plants and weed-free seed and mulch (straw, wood fiber).
   - Use fill that does not have invasive plant seeds or material.
   - Keep equipment on site during the entire project.
   - Incorporate invasive plant prevention into road work layout, design, and decisions. Use uninfested areas for staging, parking and cleaning equipment. Avoid or minimize all types of travel through infested areas, or restrict to those periods when spread of seed or propagules are least likely.
   - When possible, to suppress growth of invasive plants and prevent their establishment, retain relatively closed canopies.

2. **Contain and treat new invasive plants and animals or those not yet well established.**
Controlling small infestations is more effective and economical than trying to control well-established, rapidly spreading infestations. Selected control measures need to be based on species biology and the individual characteristics of an infestation.

3. **Minimize transport of invasive plants and animals from infested to uninfested areas.**
Invasive species can be spread by moving infested materials and equipment. Cleaning vehicles and equipment (usually with steam or hot water) is the most effective method of preventing an introduction. BMPs involving the transport of off-site material and equipment include:
    - Determine the need and identify sites where equipment can be cleaned. Seeds and plant parts need to be collected when practical and effectively disposed of (e.g., burned, dried, bagged and taken to landfill, etc.). Remove mud, dirt, and plant parts from project equipment before moving it into a project area and clean all equipment before leaving the project site, if operating in infested areas.
    - Check, clean, and, when appropriate, dry all clothing, boots, and equipment (e.g., boats, trailers, nets, etc.) prior to visiting site.
    - Don't move firewood. All cut tree material should be either chipped or dispersed onsite.
    - Inspect material sources at site of origin to ensure that they are free of invasive plant material before use and transport. Treat infested sources for eradication, and strip and stockpile contaminated material before any use.
    - Inspect and document the area where material from treated infested sources is used annually for at least three years after project completion to ensure that any invasive plants transported to the site are promptly detected and controlled.
    - Minimize roadside sources of seed that could be transported to other areas.
    - Periodically inspect roads and rights-of-way for invasion. Inventory and mark infestations and schedule them for treatment.
    - Avoid working in infested areas if possible. Postpone such work until invasive plants have been eliminated from the site.
    - Perform road maintenance such as road grading, brushing, and ditch cleaning from uninfested to infested areas to help prevent moving seeds and plant material from infested areas into adjacent uninfested areas.
    - Clean road graders and other equipment immediately after operating in infested areas.
    - Clean all dirt and plant parts from the top and underside of mower decks.

4. **Minimize soil disturbance.**
Invasive plants prefer and often thrive under disturbed conditions. Do not disturb the soil unless absolutely necessary. BMPs for activities involving soil disturbance include:
    - Before starting ground-disturbing activities, inventory invasive plant infestations both on-site and in the adjacent area.
    - Minimize soil disturbance and retain desirable vegetation in and around area to the maximum extent possible.
    - Monitor infested areas for at least three growing seasons following completion of activities. Provide for follow-up treatments based on inspection results.
    - Do not blade roads or pull ditches where new invaders are found, if possible.
    - When it is necessary to conduct soil work in infested roadsides or ditches, schedule activity when seeds or propagules are least likely to be viable and to be spread.
    - Do not move soil from infested area to prevent off-site spread.

5. **Maintain desirable species.**
   Establishing and maintaining competitive, desirable plants along roadsides and disturbed areas prevents or slows establishment of invasive plants. BMPs for re-vegetating disturbed areas include:
   - Re-vegetate all disturbed soil, except on surfaced roads, in a manner that optimizes plant establishment for that specific site, unless ongoing disturbance at the site will prevent establishment of invasive plants.
   - Use native material where appropriate and available. Re-vegetation may include planting, seeding, fertilizing, and mulching.
   - Monitor and evaluate success of re-vegetation in relation to project plan.
   - When re-vegetating areas that were previously dominated by invasive plants, try to achieve at least 90% control of the invasive before attempting restoration.

IV. General Practices

1. **Minimum Tool Approach** – State land stewardship involving invasive species management practices should always incorporate the principles of the Minimum Tool Approach. Any group or individual implementing such practices on State land should only use the minimum tools, equipment, devices, force, actions or practices that will effectively reach the desired management goals. Implicit in this document is the stricture to implement a hierarchy of management practices based upon the target species and site conditions starting with the least intrusive and disruptive methods. <u>For the management of aquatic invasive species, hand harvesting and benthic matting are to be used unless a different approach has been reviewed and approved by the Department and the Agency.</u>

2. **Erosion Control** - Some of the species specific methods described in Appendix B require digging or pulling of plants from the soil. Where vegetation is to be removed, it must be determined if the proposed control method and extent of the action will destabilize soils to the point where erosion is threatened. Generally if more than 25 square feet of soil surface is cleared or plant removal occurs on steep slopes, staked silt fencing should be installed and maintained as a temporary erosion control practice. In some cases seeding and organic, non-hay mulching may be required.

3. **Re-vegetation** - Although not required, replanting or reseeding with native species may sometimes be necessary. All of the species specific control methods described in Appendix B are aimed at reducing or eliminating invasive species so that natives are encouraged to grow and re-establish stable conditions that are not conducive to invasive colonization. In most cases, removal or reduction of invasive populations will be enough to release native species and re-establish their dominance on a site. The site specific work plan for treatment of invasive species should include monitoring provisions and contingency plans for revegetating the site.

4. **Composting** - Because of the extremely robust nature of invasive species, composting terrestrial invasive plants in a typical backyard compost pile or composting bin is not appropriate. However, methods can be used whereby sun-generated heat can be used to destroy the harvested plant materials, such as storage in a sealed 3 mil thickness (minimum) black plastic garbage bags on blacktop in the sun until the plant materials liquefy. If a larger section of blacktop is available, make a black plastic (4 mil thickness minimum) envelope sealed on the edges with sand bags. The plant material left exposed to the sun will liquefy in the sealed envelope without danger of dispersal by wind. The bags or envelopes must be monitored to make sure the plants do not escape through rips, tears or seams in the plastic. **When composting is suggested later in the text it is understood**

that liquefying the plant material in or under plastic is the desired action; not disposal in backyard composters or open landfill composting piles.

5. **Material Collection and Transportation** – While on the control site, place all cut plant material in heavy duty, 3 mil or thicker, black contractor quality plastic clean-up bags. Securely tie the bags and transport from the site in a covered vehicle in order to prevent spread or loss of the plant material during transport from the control work site to the appropriate staging or disposal location. The main root structure, root fragments and/or horizontal rhizomes from harvested controlled Japanese, giant or bohemian knotweed infestation should be bagged only to facilitate transport to an appropriate staging area. All knotweed root structure, root fragments and rhizome propagules should be separately bagged from any cut, aerial canes and crowns. Over an open bag, remove as much adherent soil as possible from the root/rhizome structure prior to spreading the root/rhizome parts out onto a secure, impervious surface. Once completely dried out, the root/rhizome structure may be burned or disposed of in an approved landfill.

   The mature, upright stems and canes of common reed and the knotweeds can be cut, formed into bundles and securely bound with rope or twine. The bundles may then be transported to an appropriate staging or disposal location that has an impervious or near-impervious surfaced area. After the bundles have completely dried out they may be burned at an approved incinerator or burn pit with an appropriate permit.

V. Management Protocols

a. All Department personnel whose duties involve outdoor field work on State land (e.g., UMP Planners and State Land Managers, Forest Rangers, ECOs, Operations, etc.) will report the location of suspected terrestrial and aquatic invasive species encountered during the course of their ordinary work and to implement BMPs when conducting or supervising work to remove invasive species from State land. Terrestrial and aquatic invasive species identification and management training will be provided as needed.

b. All site specific work plans must include a site map, an inventory of target and non-target species, an estimate of the size and age of the infestation, target species impacts and concerns, a Natural Heritage review, adjoining land uses and nearby State land units, a proposed treatment method and probability of success, treatment impacts and concerns, an assessment of treatment alternatives, a history of past treatment methods used on site, a timeframe by which the work will be undertaken and completed, a schedule of anticipated future work, and monitoring provisions to determine the effectiveness of the management action.

c. All work on State land will be conducted using the BMPs and species specific control methods listed in Appendix B, pursuant to the DEC – APA Memorandum of Understanding.

d. Any individual or group demonstrating an interest and appropriate expertise in implementing the species specific control methods may apply for an AANR agreement to manage terrestrial and aquatic invasive species.

e. The treatment of invasive species by Department personnel or any other party will only be undertaken pursuant to a site specific plan for the treatment of invasive species and pursuant to all applicable State, federal and local regulations regarding pesticide use, residue removal and disposal.

f. An AANR and a site specific work plan for treatment of invasive species are required for all non-Department personnel to implement species specific control methods and BMPs on State land.

g. All site specific work plans and applications for AANRs for the treatment of invasive species will be noticed in the Environmental Notice Bulletin for a 15 day public comment period prior to final approval by the Department.

h. Appropriate certification (NYS pesticide applicator certification) is required for pesticide applications. The only pesticide application allowed under these guidelines is spot treatment to individual plants using a back pack or hand sprayer, wick applicator, cloth glove applicator, stem injection or herbicide clippers. **No broadcast herbicide applications using, for example, a truck-mounted sprayer, are allowed. In all cases, all herbicide directions for use and restrictions found on the label shall be followed by a New York State Certified Applicator or Technician in an appropriate category.** The application methods described and allowed are designed to reduce or eliminate the possibility that non-target species will be impacted by the pesticide use. All pesticide treatments require follow-up inspection later in the growing season and/or the following year to assess and document effects and possibly re-treat any plants that were missed. The following guidelines apply with respect to the application of herbicides, which must be applied according to respective labels under federal and state law:

    - In wetlands with standing water, only the RODEO® glyphosate formulation may be used. If the standing water is greater than one acre in size and/or has an outlet to surface waters, an aquatic pesticides permit is required pursuant to ECL 15-0313(4) and (6) NYCRR327.1 in which case application can only be made by a Certified Applicator or Technician or supervised Apprentice licensed in "Category 5 – Aquatic Vegetation Control". In wetlands with no standing water, either the RODEO®, ROUNDUP ® or the AQUAMASTER® formulation may be used.
    - In uplands either ROUNDUP®, AQUAMASTER® or GLYPRO® may be used.
    - The propose use of herbicides must be detailed in a work plan.

i. All appropriate and applicable signage and public notification required for pesticide application by or on behalf of the Department shall be used, including adjacent landowner notification, newspaper notice, and temporary on and off-site signs.

j. These Guidelines do not authorize the use of motor vehicles, motorized equipment or aircraft. All use of motorized equipment on State lands under the jurisdiction of the Department within the Adirondack Park shall be in compliance with Commissioner's Policy Number 17 (CP-17), and other pertinent Department policy regarding the use of motorized equipment on Forest Preserve Lands.

k. A UMP or UMP Amendment may be required if the proposed implementation of an activity identified in these Guidelines is considered to cause a potential material change to the use of the land or the vegetation thereon due to its extent, intensity or duration.

l. Invasive species management materials and methods evolve; any deviation from the BMPs and species specific control methods must be approved by the Department after consultation with the Agency.

m. Any invasive species management action proposal that involves tree cutting for control or access must comply with constitutional requirements and will be carried out pursuant to LF-91 and a site specific work plan.

n. Appendix A of these Guidelines contains a list of species that are considered terrestrial or aquatic invasive species. Other species may be added over time recognizing the constant threat of new invasive species. Note that to be eligible for management actions under these Guidelines, species specific control methods must be accepted by the Department after consultation with the Agency. New or revised control methods may be developed by other entities, but also must be reviewed and accepted by the Department after consultation with the Agency.

o. Those individuals or groups applying for an AANR to manage any invasive species without an approved species specific control method must develop and submit a control method for the species of concern. The submitted control methods will be reviewed and must be approved by the Department and the Agency before the approval of a site specific work plan or issuance of the AANR agreement. Those individuals or groups applying for an AANR to manage aquatic plants identified in Appendix A are limited to hand-harvesting or benthic matting as described in a site specific work plan describing the full course of work.

VI. Potential Environmental Impacts

The control methods and BMPs contained in these Guidelines restrict the use of herbicides so that adverse impacts to non-target species are avoided and native plant communities are restored. Aquatic invasive species will be managed using non-mechanical harvesting techniques (hand-pulling) and temporary benthic matting as described in the Guidelines. Use of pesticides for aquatics is not a part of this guidance.

The removal of these species reduces the potential for disruption and harm to the native ecosystem. It is expected that by using the Guidelines invasive species populations will be managed, and hopefully eradicated, in a timely manner before significant impact to the Forest Preserve resource occurs. Successful implementation of these control methods and BMPs or other recommended control methods will allow natural processes to take place undisturbed by the impacts of invasive species colonization and proliferation.

Any of the control actions described in the Guidelines has the potential for environmental impact. For example, the use of pesticides may cause mortality to non-target species and cutting tress may have both visual and ecological impacts on the landscape. It is recognized that although the BMPs and species specific control methods seek to mitigate these impacts, the potential for impact is real and must carefully be weighed against all other possible actions, including the no-action alternative. It is believed that the protection, preservation, and restoration of native flora and fauna in the Adirondacks is an action that is worth reasonable associated risk. These Guidelines represent a tool for land managers to reduce the potential for disruption and harm to Forest Preserve lands from terrestrial and aquatic invasive species. It is expected that these actions will lead to the preservation and restoration of native ecological communities on State lands within the Adirondack Park.

VII. Effect of This Action

The Guidelines seek to lay the ground rules for managing terrestrial and aquatic invasive species on Forest Preserve lands. It identifies certain species that, if left untreated, have the potential for colonizing backcountry land and water bodies causing severe disruption and degradation of natural systems. The

Guidelines set out a protocol for action and recommend a set of comprehensive BMPs and specific control methods for dealing with invasive species of concern, and sets out a process for developing and incorporating new control methods for additional species. The control methods provide detailed guidance on the use of several techniques for managing terrestrial and aquatic invasive species including hand pulling, cutting, digging, matting and pesticides. Finally, the Guidelines identify a host of additional terrestrial and aquatic invasive species that require surveillance, early detection and, after appropriate consultation with the Regional Supervisor of Natural Resources a rapid response to protect Forest Preserve lands.

Adoption of the Guidelines and implementation through the UMP and site specific work planning process, gives the Department the basic tools needed to preserve, protect and restore the natural native ecosystems of the Forest Preserve.

VIII. Definitions

a. AANR – An Adopt-A-Natural-Resource Agreement is a stewardship agreement entered into between the Department and an individual or group pursuant to ECL section 9-0113 to preserve, maintain, or enhance state-owned resources. AANRs entered into pursuant to these Guidelines allow the implementation of these Guidelines and specify the responsibilities and limitations associated with the management activity. AANRs extend for a designated period of time and can be terminated by either party upon notification.

b. Adirondack Park Invasive Plant Program (APIPP) – A partnership including the Department, the Agency, Department of Transportation, and the Adirondack Nature Conservancy whose goals are:

    1. to coordinate a regional early detection and monitoring program in cooperation with staff, volunteers and the public;

    2. to facilitate invasive species management and control with public and private landowners; and,

    3. to increase public awareness and involvement to prevent the spread of invasive species through education and outreach.

c. Agency – The New York State Adirondack Park Agency (APA), its officers and employees.

d. Aquatic Invasive Plant Species – A plant that is typically found in wetland or riparian settings (including lakes, ponds, rivers or streams) that is capable of rapid reproduction and displacement of native species.

e. Area – Lands under the jurisdiction of the Department.

f. Best Management Practice (BMP) – Best management practices are state-of-the-art mitigation measures applied on a site specific basis to reduce, prevent, or avoid adverse environmental or social impacts.

g. Biological Control – A method of controlling pests (including insects, mites, weeds and plant diseases) that relies on predation, parasitism, herbivory, or other natural mechanisms. It can be an important component of integrated pest management (IPM) programs.

h. Certified Applicator – An individual who has successfully completed the course of training and licensing and who holds a valid, appropriate pesticide applicators certificate in New York State.

i. Control Method – A field tested recommendation for the most effective control of invasive species. Species specific control methods for terrestrial invasive species are attached in Appendix B. As of this writing, only hand harvesting and/or benthic matting are approved control methods for aquatic invasive species.

j. Department – The New York State Department of Environmental Conservation (DEC), its officers and employees.

k. Herbicide – A pesticide that is registered in New York State that kills plants. Due to the sensitive nature of Forest Preserve lands, only selected herbicides are included for use under these Guidelines. Glyphosate in the Roundup®, Rodeo®, Aquamaster ®, and Glypro® formulations are the herbicides of choice. In wetlands with standing water only the RODEO® formulation may be used. In wetlands with no standing water either the RODEO®, ROUNDUP ® or the AQUAMASTER® formulation may be used. In uplands either ROUNDUP®, AQUAMASTER® or GLYPRO® may be used. In all cases herbicides will be used in strict compliance with label precautions and the species specific control methods found in Appendix B.

l. Herbicide Application Method – The method of herbicide application will be by backpack sprayer, wick applicator, handheld spray or dropper bottle applicator, stem injection, or cloth glove applicator. No application will be allowed by broadcast sprays or by equipment permanently mounted on a vehicle.

m. Inter-Agency Guidelines ("Guidelines") – The document agreed to by the Adirondack Park Agency and the Department of Environmental Conservation that outlines regulated management of terrestrial and aquatic invasive species on State land.

n. Invasive Species – "invasive species" means a species that is:

   (a) nonnative to the ecosystem under consideration; and

   (b) whose introduction causes or is likely to cause economic or environmental harm or harm to human health. For the purposes of this paragraph, the harm must significantly outweigh any benefits.

o. Pest – "Pest" means (1) any insect, rodent, fungus, weed, or (2) any other form of terrestrial or aquatic plant or animal life or virus, bacteria or other micro-organism (except viruses, bacteria or other micro-organisms on or in living man or other animals) which the Department Commissioner declares to be a pest.

p. Pesticide – Any substance or mixture of substances that is registered in New York State to kill pests. A pesticide may be a chemical substance, biological agent (such as a virus or bacterium), antimicrobial, disinfectant, plant regulator, defoliant, or other device used against a pest.

q. Site Specific Work Plan – A detailed description of work to be performed at a specific site, the Best Management Practices that will be used to perform the work and the desired final condition of the site once the work is complete.

r. Terrestrial Invasive Plant Species – A plant that is typically found in upland settings that is capable of rapid reproduction and displacement of native species.

IX. Goal of the Guidelines

The goal of the Guidelines is to restore and protect the native ecological communities on Forest Preserve lands in the Adirondack Park through **e**arly detection and rapid response efforts to eradicate or control existing or newly identified invasive species populations.

X. Objectives of the Guidelines

These Guidelines provide a template for the process through which comprehensive active terrestrial and aquatic invasive species management will take place on Forest Preserve lands in the Adirondack Park. The Guidelines provide protocols for implementing BMPs on Forest Preserve land. The protocols describe what management practices are allowed and when they can be implemented, who can be authorized to implement the management practices, and which terrestrial and aquatic invasive species are targeted. The Guidelines are a living document and should be revisited and revised periodically to reflect the dynamic nature of invasive species and the state of knowledge of best management practices.

Reference to these Guidelines will be included in UMPs as they are drafted or revised. UMPs will also include available inventory information on the distribution of invasive terrestrial and aquatic species on or in close proximity to the Unit. The Guidelines will guide invasive terrestrial and aquatic species management activities on Forest Preserve units. The site specific plan for treatment of invasive species will contain up-to-date invasive species inventory data, specific location information, and specific management recommendations for each species on each site including control actions, materials and methods, monitoring, contingencies and restoration actions.

The Guidelines also describe a process by which the Department may enter into AANR Agreements with and facilitate individuals or groups to manage terrestrial and aquatic invasive species on Forest Preserve lands using the listed best management practices, including pesticide use, in the appropriate circumstances. The AANR will be accompanied with a site specific plan for treatment of invasive species based on the BMPs in the Guidelines and include provision for monitoring and additional actions to restore natural communities. As noted above, the site specific plan for treatment of invasive species will provide the detail regarding the selected management options on a site specific basis.

XI. Responsibilities

The responsibility for interpretation and update of these Guidelines and overall management shall reside with the cooperating agencies. The Department shall be responsible for management of terrestrial and aquatic invasive species on Forest Preserve lands while the Agency will be responsible for providing review of, and advice on, the management activities contained in the Guidelines and the assessment of materiality of proposed actions and the management recommendations in UMPs.

Appendix A. Invasive Species

The 92 species included here are non-native organisms that either occur in New York State or are found in adjacent states. They have a proven record of being invasive and disrupting native ecosystems. Asterisked species have recommended control methods that are included in Appendix B. This appendix should be reviewed and updated annually.

Trees

- Black locust (*Robinia pseudoacacia*)
- Norway and sycamore-leaved maple (*Acer platanoides, A. pseudoplatanus*)
- Tree-of-Heaven (*Ailanthus altissima*)
- Japanese tree lilac (*Syringa reticulata*)
- Princess tree (*Paulownia tomentosa*)
- Crack willow (*Salix fragilis*)
- European gray willow (*Salix cinerea*)

Shrubs

- Japanese, Morrow's, tatarian, Amur, Bell's and dwarf honeysuckles* (*Lonicera japonica, L. morrowii, L. tatarica, L. maackii, L. x. bella, L. xylosteum*)
- Autumn and Russian olive (*Eleagnus umbellata, E. angustifolia*)
- Cherry eleagnus (*Eleagnus multiflora*)
- Common and smooth buckthorn (*Rhamnus cathartica, R. frangula*)
- False Spiraea (*Sorbaria sorbifolia*)
- Multiflora and rugosa rose (*Rosa multiflora, R. rugosa*)
- Japanese and European barberry (*Berberis thunbergii, B. vulgare*)
- False indigo (*Amorpha fruticosa*)
- Winged euonymus (*Euonymus alata*)
- Butterfly bush (*Budleja davidii*)
- Blunt-leaved and common privet (*Ligustrum obtusifolium, L. vulgare*)

Vines

- Oriental bittersweet (*Celastrus orbiculata*)
- Porcelain-berry (*Ampelopsis brevipedunculata*)
- Mile-a-minute vine (*Polygonum perfoliatum*)
- Kudzu (*Pueraria montana var. lobata*)
- Common periwinkle (*Vinca minor*)

Herbs

- Purple loosestrife* (*Lythrum salicaria*)
- Japanese, giant and bohemian knotweed* (*Fallopia japonica var. japonica, F. sachalinensis, F. x bohemica*)
- Common reed* (*Phragmites australis ssp australis*)
- Garlic mustard* (*Alliaria petiolata*)
- Yellow iris* (*Iris pseudacorus*)
- Cypress and leafy spurge (*Euphorbia cyparissias, E. esula*)
- Giant Hogweed (*Heracleum mantegazzianum*)
- White and yellow sweet-clover (*Melilotus alba, M. officinalis*)

- Wild parsnip (*Pastinaca sativa*)
- Wild chervil (*Anthriscus sylvestris*)
- Reed canary-grass (*Phalaris arundinacea*)
- Black and Pale Swallowwort (*Cynanchum louiseae, C. rossicum*)
- Cup Plant (*Silphium perfoliatum*)
- Japanese stiltgrass (*Microstegium vimineum*)
- Flowering rush (*Butomus umbellatus*)
- Spotted and brown knapweed (*Centaurea stoebe ssp. micranthos, C. jacea*)
- Canada and bull thistle (*Cirsium arvense, C. vulgare*)
- Goutweed (*Aegopodium podagraria*)
- Lesser celandine (*Ranunculus ficaria*)
- Common and yellow foxglove (*Digitalis purpurea, D. grandiflora*)

Aquatics

- Eurasian and variable-leaf watermilfoil, and parrotfeather (*Myriophyllum spicatum, M. heterophyllum, M. aquaticum*)
- Fanwort (*Cabomba caroliniana*)
- Curlyleaf pondweed (*Potamogetion crispus*)
- Waterchestnut (*Trapa natans*)
- Common frog-bit (*Hydrocharis morsus-ranae*)
- Yellow floating-heart (*Nymphoides peltata*)
- Brazilian elodea (*Egeria densa*)
- Hydrilla (*Hydrilla verticillata*)
- Brittle naiad (*Najas minor*)
- Water-lettuce (*Pistia stratiotes*)
- Pacific mosquitofern (*Azolla filliculoides*)
- Didymo (*Didymosphenia geminata*)
- Starry stonewort (*Eichhornia crassipes*)
- Water hyacinth (*Pistia stratiotes*)
- Water primrose (*Ludwigia peploides*)
- Pond water starwort (*Callitriche stagnalis*)
- Three-stamen waterwort (*Elatine triandra*)
- European water fern (*Marsilea quadrifolia*)
- Water spangles (*Salvinia minima*)
- Giant salvinia (*Salvinia molesta*)
- Water soldier (*Stratiotes aloides*)

Insects

- Emerald ash borer (*Agrilus planipennis*)
- Asian long-horned beetle (*Anaplophora glabripennis*)
- Hemlock wooly adelgid (*Adelges tsugae*)
- Sirex woodwasp (*Sirex noctilio*)
- Asian gypsy moth (*Lymantria dispar*)
- Balsam wooly adelgid (*Adelges piceae*)
- Elongate hemlock scale (*Fiorinia externa*)

Appendix B. Species Specific Control Methods

CONTROL METHODS FOR PURPLE LOOSESTRIFE (*Lythrum salicaria*)

PLANT DESCRIPTION

Purple loosestrife is a wetland perennial native to Eurasia that forms large, monotypic stands throughout the temperate regions of the U.S. and Canada. It has a vigorous rootstock that serves as a storage organ, providing resources for growth in spring and re-growth if the plant has been damaged from cuttings. New stems emerge from the perennial roots enabling the plant to establish dense stands within a few years. Seedling densities can approach 10,000 - 20,000 plants/m² with growth rates exceeding 1 cm/day. A single, mature plant can produce more than 2.5 million seeds annually which can remain viable after 20 months of submergence in water. In addition, plant fragments produced by animals and mechanical clipping can contribute to the spread of purple loosestrife through rivers and lakes.

MANAGEMENT OPTIONS

1. Digging/pulling

Effectiveness:

Can be effective in small stands (i.e., <100 plants), low-med density (1-75% area), and <3 acres, especially on younger plants.

Methods:

Hand-pull plants <2 years old. Use mini-tiller for plants >2 years - gets most of roots with minimum soil disturbance, has 3 heavy duty prongs on 1 side that are pushed under base of plant, then pry back on handle to leverage plant out of ground. Tamp down all disturbed soil surfaces. Use weed wrench for plants > 2 years old - good with minimal soil disturbance. In mucky conditions, put base of wrench on small piece of wood (e.g., piece of 2x4) to keep wrench from sinking into mud. Use shovel for plants > 2 years old - dig up plant, then replace soil and any existing cover.

Cautions:

May increase habitat disturbance and increase spread of loosestrife. Requires follow-up treatments of sites for 3 years to eliminate re-sprouting from rhizome fragments left behind. Must pull/dig ENTIRE rootstock or re-rooting will occur. Must pull/dig before the plants begin setting seed or must remove flower/seed heads first (cut and place into bags) to prevent spread of seeds. Also remove previous year's dry seed heads. Erosion control may be necessary if greater than 25 square feet of soil surface is disturbed.

Disposal:

Bag all plant parts and remove from site. Compost* at DOT Residency, dispose of in approved landfill or incinerate with appropriate permits.

Sanitation:

Clean all clothing, boots, tools, equipment and transport vehicle to prevent spread of seed.

2. Cutting

Effectiveness:

* see item #4 "Composting" in General Practices section.

Can be effective in small stands (i.e., <100 plants), low-med density (1-75% area), and <3 acres, especially on younger plants.

Methods:
Remove flower heads before they go to seed so seed isn't spread during the cutting or mowing activity. Must do repeated cutting and mulching to permit growth of grasses.

Cautions:
Need to repeat for several years to reduce spread of plants. Doesn't affect rootstalk and thus, cut pieces can be spread that will re-sprout. Once severed, stems are buoyant and may disperse to other areas and re-sprout. Removal of seed heads should be done as late in the growing season as possible yet before seed set. Early cutting without additional seed head harvest could allow re-sprouting with greater subsequent seed production.

Disposal:
Bag all plant parts and remove from site (compost* at DOT Residency, dispose of in approved landfill or incinerate with appropriate permits).

Sanitation:
Clean all clothing, boots, and equipment to prevent spread of seed.

3. Herbicide
Effectiveness:
Use when >100 plants and <3-4 acres in size.

Methods:
Use glyphosate formulations only. If possible spray seedlings before they reach 12" in height. Cut and bag flower heads before applying herbicide. Apply prior to or when in flower (late July/Aug) so plants are actively growing.

For spot application use:
- sponge tip applicator with wick.
- injection into stem(with large gauge needle).
- 32 oz. commercial-grade spray bottle with adjustable nozzle.

Cautions:
This herbicide is not selective (kills both monocots and dicots), thus should be applied carefully to prevent killing of non-target species. All treatment mixes should be mixed with clean (ideally distilled) water because glyphosate binds tightly to sediments, which reduces toxicity to plants.
Do not apply in windy conditions because spray will drift and kill other plants. Do not apply if rain is forecast within 12 hours because herbicide will be washed away before it can act. Choose Rodeo® formulation for applications in standing water or along a shoreline.

4. Biocontrol
Two species of leaf-feeding beetle, *Galerucella calmariensis* and *G. pusilla*, have been shown to be effective in controlling purple loosestrife. Over 5 million of these beetles have been released in 30 states including

* see item #4 "Composting" in General Practices section.

New York, the northeastern and midwestern states as well as all of the Canadian Provinces. The beetles have shown dramatic decreases in purple loosestrife populations with subsequent increases in populations of native species. The scientific literature indicates that the beetles are very specific to purple loosestrife with only minor "spillover" effects that do not compromise non-target plant populations.

Effectiveness:
Use if site has at least a half acre of purple loosestrife of medium to thick density.
Best type of control for large patches of loosestrife >3-4 acres.

Methods:
The number of beetles released per site should be based on the size of the site, the density of loosestrife and the economics of purchase. More beetles are generally better than fewer.

Cautions:
Use only if mowing, pesticide and herbicide use are not active practices on the site. The site must not be permanently flooded and should be sunny. Use only if winged loosestrife, *(Lythrum alatum)* and waterwillow *(Decodon verticillatus)* are not major components of the plant community on the release site.

CONTROL METHODS FOR COMMON REED (*Phragmites australis ssp. australis*)

PLANT DESCRIPTION
Phragmites is a perennial grass that can grow to 14 feet in height. Flowering and seed set occur between July and September, resulting in a large feathery inflorescence, purple-hued turning to tan. Phragmites is capable of vigorous vegetative reproduction and often forms dense, virtually monospecific stands. It is unclear what proportion of the many seeds that Phragmites produces are viable. **Please note that identification of phragmites should be done by a professional botanist prior to treatment to distinguish the invasive non-native race from the non-invasive native.**

MANAGEMENT OPTIONS
1. Cutting / Mulching
Effectiveness:
Need to repeat annually for several years to reduce spread of plants. Hand-pulling, though labor intensive, is an effective technique for controlling common reed in small areas with sandy soils.
Can be effective in small stands (i.e., <100 plants), low-med density (1-75% area) and <3 acres. The cutting of larger stands having high stem densities is not an effective control method unless coupled with an immediate application of glyphosate to the freshly-cut, stem cross sections or with a cut-stem injection of glyphosate.

Methods:
The best time to cut common reed is when most of food reserves are in aerial portion of plant when close to tassel stage, e.g., at end of July/early August to decrease plant's vigor. Some patches may be too large to cut by hand, but repeated cutting of the perimeter of a stand can prevent vegetative expansion. Common reed stems should be cut below the lowest leaf, leaving a 6" or shorter stump. Hand-held cutters and gas-powered hedge trimmers work well. Weed whackers with a circular blade were found to be particularly efficient, though dangerous.

Cut and mulch dead stems in winter to remove them and promote germination of other species. Repeat in second year and then every 3-5 years.

Cautions:
Since common reed is a grass, cutting several times during a season, at the wrong times, may increase stand density. However, if cut in late July/early August, most of the food reserves produced that season are removed with the aerial portion of the plant, reducing the plant's vigor. This cutting regime may eliminate smaller colonies if carried out annually for several years. Manual or mechanical cuttings of larger, high density, monospecific common reed stands without the application of glyphosate, is not recommended.

Disposal:
Cut material should be removed from the site and composted* or allowed to decay on the upland to prevent sprouting and formation of rhizomes. Do not attempt to compost rhizomes.

Sanitation:
Clean all clothing, boots, and equipment to prevent spread of seed.

2. Herbicide
Effectiveness:
Herbicide use is a 2 year, 2 step process because the plants may need a "touch-up" application, especially in dense stands since subdominant plants are protected by thick canopy and may not receive adequate herbicide in the first application.

Methods:
Use glyphosate formulations only. Apply after tasseling stage when nutrients going back to rhizome and will translocate herbicide into roots. After 2 to 3 weeks following application of glyphosate, cut or mow down the stalks to stimulate the emergence and growth of other plants previously suppressed. If the plants are too tall to spray, cut back in mid summer and apply glyphosate using a spray bottle for individual foliar spot treatments or swab, syringe w/large gauge needle or Nalgene wide-mouth, Unitary wash bottle to apply 1-2 drops of 50% glyphosate solution directly into each cut stem.

Cautions:
This herbicide is not selective (kills both monocots and dicots), thus should be applied carefully to prevent killing of non-target species. All tank mixes should be mixed with clean (ideally distilled) water because glyphosate binds tightly to sediments, which reduces toxicity to plants.
Do not apply in windy conditions because spray will drift and kill other plants. Do not apply if rain is forecast w/in 12 hours because herbicide will be washed away before it can act. Choose Rodeo® formulation for applications in standing water or along a shoreline.

3. Black Plastic
Effectiveness:
Can be effective in small stands (i.e., <100 plants), low-med density(1-75% area). Plants die off within 3-10 days, depending on sun exposure.

* see item #4 "Composting" in General Practices section.

Methods:
Cut plants first to 6-8" (hand-pushed bush hog or weed whacker w/blade). After cutting a stand of common reed, anchor a sheet of black plastic or dark tarp over the cut area using sand bags or rocks. High temperatures under the plastic will eventually kill off the plants. This technique works best when the treated area is in direct sunlight. Plastic should be at least 6 millimeters thick. Hold plastic in place with sandbags, rocks, biodegradable stakes, etc. Can treat runners along the plastic edges with a spot application of Rodeo® or Roundup®. The plastic can be removed the following year when the covered plants have been killed. A few common reed shoots may return. These can be cut, hand-pulled or re-treated with appropriate herbicide.

Cautions:
Must monitor to determine if shoots are extending out from under the plastic.

Disposal:
Can leave cut material under plastic or bag all plant parts and remove from site (compost* at DOT Residency, dispose of in approved landfill or incinerate with appropriate permits.

Sanitation:
Clean all clothing, boots, and equipment to prevent spread of seed.

4. Pulling
Effectiveness:
Can be effective in small stands (i.e., <100 plants). Very labor intensive control method, best results when infestation occurs in sandy soils.

Methods:
Hand-pull plants <2 years old. Use shovel for plants >2 years old - dig up plant, then replace soil and any existing cover.

Disposal:
Bag and remove all plant parts from site (compost* at DOT Residency, dispose of in approved landfill or incinerate with appropriate permits).

Sanitation:
Clean all clothing, boots, and equipment to prevent spread of seed.

6. Excavation
Effectiveness:
Can be effective for patches up to ½ acre in size. Cost is the limiting factor.

Methods:
When working in wetlands only tracked equipment shall be used. Rubber-tired excavators can operate from adjacent pavement or upland areas.

* see item #4 “Composting” in General Practices section.

Cautions:
The patch should be excavated to below the depth of rhizome development. Follow-ups later in the season or the following year must be conducted to verify that all the plants have been removed

Disposal:
Bag and remove all plant parts from site (compost at DOT Residency, dispose of in approved landfill or incinerate with appropriate permits).

Sanitation:
Clean all clothing, boots, and equipment to prevent spread of seed.

CONTROL METHODS FOR GARLIC MUSTARD (*Alliaria petiolata*)

PLANT DESCRIPTION
Garlic mustard is a naturalized European biennial herb that typically invades partially shaded forested and roadside areas. It is capable of dominating the ground layer and excluding other herbaceous species. Its seeds germinate in early spring and develops a basal rosette of leaves during the first year. Garlic mustard produces white, cross-shaped flowers between late April and June of the following spring. Plants die after producing seeds, which typically mature and disperse in August. Normally its seeds are dormant for 20 months and germinate the second spring after being formed. Seeds remain viable for up to 7 years.

MANAGEMENT OPTIONS
1. Pulling.
Effectiveness:
Hand pulling is an effective method for removing small populations of garlic mustard, since plants pull up easily in most forested habitats. It is best to pull plants when seed pods are not yet mature, but they can be pulled during most of the year.

Methods:
Soil should be tamped down firmly after removing the plant. Soil disturbance can bring existing garlic mustard seed bank to the surface, thus creating a favorable environment for additional germination within the control site.

Cautions:
Care should be taken to minimize soil disturbance but to remove all root tissues. Re-sprouting may occur from mature plants root systems if not entirely removed. Cutting is preferred to pulling when garlic mustard infestations are interspersed amongst native grasses/forbs or other sensitive or rare flora.

Disposal:
If plants have capsules present, they should be bagged and disposed of to prevent seed dispersal. Bag and remove all plant parts from site (compost* at DOT Residency, dispose of in approved landfill or incinerate with appropriate permits).

* see item #4 “Composting” in General Practices section.

Sanitation:
Clean all clothing, boots, and equipment to prevent spread of seed.

2. Cutting
Effectiveness:
Cutting is effective for medium to large sized populations depending on available time and labor resources. Dormant seeds in the soil seed bank are unaffected by this technique due to minimal disturbance of the soil.

Methods:
Cut stems when in flower (late spring/early summer) at ground level either manually (with clippers or a scythe) or with a motorized string trimmer. This technique will result in almost total mortality of existing plants and will minimize re-sprouting.

Cautions:
Cuttings should be conducted annually for 5 to 7 years or until the seed bank is depleted.

Disposal:
Cut stems should be removed from the site when possible since they may produce viable seed even when cut. Bag and remove all plant parts from site (compost* at DOT Residency, dispose in approved landfill or incinerate with appropriate permits).

Sanitation:
Clean all clothing, boots, and equipment to prevent spread of seed.

3. Herbicide
Effectiveness:
Roundup will not affect subsequent seedling emergence of garlic mustard or other plants.

Methods:
Use glyphosate formulations only. Product should be applied after seedlings have emerged, but prior to flowering of second-year plants. Application should be by spray bottle or wick applicator for individual spot treatments.

Cautions:
This herbicide is not selective (kills both monocots and dicots), thus should be applied carefully to prevent killing of non-target species. All tank mixes should be mixed with clean (ideally distilled) water because glyphosate binds tightly to sediments, which reduces toxicity to plants.
Do not apply in windy conditions because spray will drift and kill other plants. Do not apply if rain is forecast w/in 12 hours because herbicide will be washed away before it can act. Choose Rodeo® formulation for applications in standing water or along a shoreline.

* see item #4 “Composting” in General Practices section.

CONTROL METHODS FOR JAPANESE, GIANT AND BOHEMIAN KNOTWEED (*Fallopia japonica ssp. japonica, F. sachalinensis, and F. x. bohemica*)

PLANT DESCRIPTION

The knotweeds are herbaceous perennials which forms dense clumps 1-3 meters (3-10 feet) high. Its broad leaves are somewhat triangular and pointed at the tip. Clusters of tiny greenish-white flowers are borne in upper leaf axils during August and September. The fruit is a small, brown triangular achene. Knotweed reproduces via seed and by vegetative growth through stout, aggressive rhizomes. It spreads rapidly to form dense thickets that can alter natural ecosystems. Japanese knotweed can tolerate a variety of adverse conditions including full shade, high temperatures, high salinity, and drought. It is found near water sources, in low-lying areas, waste places, and utility rights of way. It poses a significant threat to riparian areas, where it can survive severe floods.

MANAGEMENT OPTIONS

1. Digging

Effectiveness:

This method is appropriate for very small populations.

Methods:

Remove the entire plant including all roots and runners using a digging tool. Juvenile plants can be hand-pulled depending on soil conditions and root development.

Cautions:

Care must be taken not to spread rhizome or stem fragments. Any portions of the root system or the plant stem not removed will potentially re-sprout.

Disposal:

All plant parts, including mature fruit, should be bagged and disposed of in the trash to prevent re-establishment (stockpile* at DOT Residency, dispose of in an approved landfill or incinerate with appropriate permits).

Sanitation:

Clean all clothing, boots, and equipment to prevent spread of seed.

2. Cutting

Effectiveness:

Repeated cutting may be effective in eliminating Japanese knotweed. Manual control is labor intensive, but is a good option where populations are small and isolated or in environmentally sensitive areas.

Methods:

Cut the knotweed close to the ground at least 3 times a year. Plant native species to act as competitors as an alternative to continued treatment.

* Stockpiling implies temporary storage prior to transfer to a permanent treatment facility.

Cautions:
This strategy must be carried out for several years to obtain success. Both mechanical and herbicidal control methods require continued treatment to prevent reestablishment of knotweed.

Disposal:
Bag all plant parts and remove from site (stockpile at DOT Residency, dispose of in an approved landfill or incinerate with appropriate permits).

Sanitation:
Clean all clothing, boots, and equipment to prevent spread of seed.

3. Herbicide
Effectiveness:
Glyphosate treatments in late summer or early fall are much more effective in preventing re-growth of Japanese knotweed the following year.

Methods:
Use glyphosate formulations only. In late June/early July cleanly cut or mow down existing stalks/canes. Allow the knotweed to re-grow. After August 1, spray knotweed all re-growth with ROUNDUP®, RODEO®.

A cut-stem treatment utilizing glyphosate formulations can be an effective control for smaller colonies of knotweed. In early to mid-July cut the existing stems just below the 2nd or 3rd node above the soil surface. Immediately after cutting apply by swab or small spray bottle a 50% solution of glyphosate to the freshly-cut cross section and into the internodal cavity of each stalk/cane. Monitor treatment area by early to mid-August and repeat cut-stem treatment to any residual stems.

Stem injection is another promising control method for smaller colonies of knotweeds. Currently, a supplemental label for AQUAMASTER® (glyphosate) herbicide exists for this stem injection method. In late June/early July inject 5 mLs of AQUAMASTER® below the 2nd node above the ground of each stem in the clump. Use suitable equipment that must penetrate into the internodal region. JKInternational manufactures a stem injection tool that is suitable and recommended for this control method.

Cautions:
Established stands of Japanese knotweed are difficult to eradicate even with repeated herbicide treatments. However, herbicide treatments will greatly weaken the plant and prevent it from dominating a site. Adequate control is usually not possible unless the entire stand of knotweed is treated (otherwise, it will re-invade via creeping rootstocks from untreated areas).

These herbicides are not selective (kills both monocots and dicots), thus should be applied carefully to prevent killing of non-target species. All tank mixes should be mixed with clean (ideally distilled) water because glyphosate binds tightly to sediments, which reduces toxicity to plants.

Do not apply in windy conditions because spray will drift and kill other plants. Do not apply if rain is forecast w/in 12 hours because herbicide will be washed away before it can act. Choose Rodeo® formulation for applications in standing water or along a shoreline.

CONTROL METHODS FOR JAPANESE, MORROW'S, TATARIAN, AMUR AND BELL'S HONEYSUCKLES

(Lonicera morrowii, L. tatarica, L. japonica, L. maackii, L. x. bella)

PLANT DESCRIPTION – JAPANESE HONEYSUCKLE

Japanese honeysuckle *(Lonicera japonica)* is a perennial trailing or climbing woody vine of the honeysuckle family (Caprifoliaceae) that spreads by seeds, underground rhizomes, and aboveground runners. It has opposite leaves that are ovate, entire (young leaves often lobed), 4-8 cm long, with a short petiole, and variable pubescence. In the southern part of the range the leaves are evergreen, while in more northern locales the leaves are semi-evergreen and fall off in midwinter. Young stems are reddish brown to light brown, usually pubescent, and about 3 mm in diameter. Older stems are glabrous, hollow, with brownish bark that peels in long strips. The woody stems are usually 2-3 m long, (less often to 10 m). *Lonicera japonica* creates dense tangled thickets by a combination of stem branching, nodal rooting, and vegetative spread from rhizomes.

Lonicera japonica (including the varieties) is easily distinguished from native honeysuckle vines by its upper leaves and by its berries. The uppermost pairs of leaves of *Lonicera japonica* are distinctly separate, while those of native honeysuckle vines are connate, or fused to form a single leaf through which the stem grows. *Lonicera japonica* has black berries, in contrast to the red to orange berries of native honeysuckle vines. The fruits are produced September through November. Each contains 2-3 ovate to oblong seeds that are 2-3 mm long, dark-brown to black, ridged on one side and flat to concave on the other.

The fragrant white (fading to yellow) flowers of *Lonicera japonica* are borne in pairs on solitary, axillary peduncles 5-10 mm long, supported by leaflike bracts. The species has white flowers tinged with pink and purple. Individual flowers are tubular, with a fused two-lipped corolla 3-4 (-5) cm long, pubescent on the outside. Flowers are produced late April through July, and sometimes through October.

MANAGEMENT OPTIONS

1. Mowing and Pulling

Effectiveness

Removing the above ground portion of *Lonicera japonica* reduces current year growth but does not kill the plant, and generally stimulates dense regrowth. Cut material can take root and should therefore be removed from the site (not practical with most infestations).

Methods

Hand pulling is highly effective. Pull out Japanese honeysuckle by the roots in winter wherever it climbs, aim the roots upward and tie them in place. The absence of light energy causes the trailing vines to decline precipitously next year. This method greatly reduces spraying requirements.

Disposal:

All plant parts, including mature fruit, should be bagged and disposed of in the trash to prevent re-establishment (stockpile* at DOT Residency, dispose of in an approved landfill or incinerate with appropriate permits).

* Stockpiling implies temporary storage prior to transfer to a permanent treatment facility.

Cautions
Mowing is an ineffective control method, stimulating growth and encouraging formation of dense, albeit shorter, mats. Bush-hogging is an ineffective control, as *Lonicera japonica* re-invades within one growing season.

2. Herbicide
Effectiveness
In northern states, *Lonicera japonica* retains some leaves through all or most of the winter (semi-evergreen or evergreen), when most native plants have dropped their leaves. This provides a window of opportunity from mid-autumn through early spring when it is easier to spot and treat with herbicides, fire or other methods without damaging native species.

Controls
A foliar application of 1.5% glyphosate shortly after the first frost appears to be the most effective treatment, applied after native vegetation is dormant and when temperatures are near and preferably above freezing. Applications within 2 days of the first killing frost are more effective than applications later in the winter. *Lonicera japonica* is less susceptible to herbicides after the first hard frost (-4^{o}C).

Cautions
Soil disturbance should be avoided in infested areas to minimize germination of seed in the seedbank. Treated plants should be re-examined at the end of the second growing season, as plants can recover from herbicide application.

These herbicides are not selective (kills both monocots and dicots), thus should be applied carefully to prevent killing of non-target species. All tank mixes should be mixed with clean (ideally distilled) water because glyphosate binds tightly to sediments, which reduces toxicity to plants.

Do not apply in windy conditions because spray will drift and kill other plants. Do not apply if rain is forecast w/in 12 hours because herbicide will be washed away before it can act.

PLANT DESCRIPTIONS – BUSH HONEYSUCKLES
Exotic bush honeysuckles (Morrow's, Bell's, Amur and tatarian) are upright, multi-stemmed, oppositely branched, deciduous shrubs that range in height from 2 m to 6 m. The opposite leaves are simple and entire, and paired, axillary flowers are showy with white, pink, or yellow corollas. The fruits of *Lonicera spp.* are red, or rarely yellow, fleshy berries (Gleason and Cronquist 1991).

In flower, exotic bush honeysuckles can be distinguished from all native bush honeysuckles except swamp fly-honeysuckle (*L. oblongifolia*) by their hirsute (hairy) styles. In fruit, the red or rarely yellow berries of the exotics separate them from the blue- or black-berried natives waterberry (*L. caerulea*) and bearberry honeysuckle (*L. involucrata*). The exotic bush honeysuckles also generally leaf-out earlier and retain their leaves longer than the native shrub honeysuckles.

Within the exotic bush honeysuckles, *L. maackii* alone has acuminate, lightly pubescent leaves that range in size from 3.5 to 8.5 cm long and peduncles generally shorter than 6 mm. Its flowers are white to pink, fading to yellow, 15-20 mm long. Its berries are red or with an orange cast. Height ranges to 6 m.

In North America, there has been considerable confusion regarding the correct identification of *L. morrowii*, *L. tatarica*, and *L*. x *bella*, their hybrid. The literature contains a number of references to plants called by the

name of one of the parents, but described as having characters more like those of the hybrid. *L.* x *bella*. The hybrid therefore, may be more common than the literature would indicate, and accurate field identification may be similarly problematic.

The two parent species of *L.* x *bella*, however, are dissimilar. *L. morrowii* has leaves that are elliptic to oblong gray-green, soft-pubescent beneath, and are 3-6 cm long. Its flowers are pubescent, white fading to yellow, 1.5-2 cm long, on densely hairy peduncles 5-15 mm long. The fruits are red. The height ranges to 2 m. *L. tatarica* has leaves that are ovate to oblong, glabrous, and are 3-6 cm long. Its flowers are glabrous, white to pink, 1.5-2 cm long, on peduncles 15-25 mm long. The fruits are red or rarely yellow. Height ranges to 3 m.

L. x *bella* has intermediate characteristics. The leaves are slightly hairy beneath. Flowers are pink fading to yellow, on sparsely hairy peduncles 5-15 mm. long. Fruits are red or rarely yellow. Height ranges to 6 m.

MANAGEMENT OPTIONS

1. Grubbing, Pulling, Cutting

Effectiveness

Mechanical controls include grubbing or pulling seedlings and mature shrubs, and repeated clipping of shrubs. Effective mechanical management requires a commitment to cut or pull plants at least once a year for a period of three to five years.

Methods

Grubbing or pulling by hand (using a Weed Wrench or a similar tool) is appropriate for small populations or where herbicides cannot be used. Mature *L. maackii* shrubs growing in shaded forest settings can be eradicated by clipping once a year, during the growing season, until control is achieved. Other bush honeysuckles growing in more open settings can be managed by clipping twice yearly, once in early spring and again in late summer or early autumn.

Disposal:

All plant parts, including mature fruit, should be bagged and disposed of in the trash to prevent re-establishment (stockpile[*] at DOT Residency, dispose of in an approved landfill or incinerate with appropriate permits).

Cautions

Any portions of the root system not removed can resprout. Because open soil can support rapid re-invasion, managers must monitor their efforts at least once per year and repeat control measures as needed. Winter clipping should be avoided as it encourages vigorous re-sprouting.

2. Herbicides

Effectiveness

Most managers report that treatment with herbicides is necessary for the control of *L. maackii* populations growing in full sun and may be necessary for all large bush honeysuckle populations.

Controls

Use formulations of glyphosate (brand names Roundup, and for use near water bodies, Rodeo) as foliar sprays or cut stump sprays and paints with varying degrees of success. Glyphosate is a non-selective

[*] Stockpiling implies temporary storage prior to transfer to a permanent treatment facility.

herbicide which kills both grasses and broad-leaved plants. For cut stump treatments, 20-25% solutions of glyphosate can be applied to the outer ring (phloem) of the cut stem. 2% solutions of glyphosate can be used for foliar treatments. Glyphosate should be applied to the foliage late in the growing season, and to the cut stumps from late summer through the dormant season.

Cautions
The subsequent flush of seedlings following all herbicide treatments must also be controlled.
These herbicides are not selective (kills both monocots and dicots), thus should be applied carefully to prevent killing of non-target species. All tank mixes should be mixed with clean (ideally distilled) water because glyphosate binds tightly to sediments, which reduces toxicity to plants.

Do not apply in windy conditions because spray will drift and kill other plants. Do not apply if rain is forecast within 12 hours because herbicide will be washed away before it can act.

CONTROL METHODS FOR YELLOW IRIS
(Iris pseudacorus)

Plant Description
Yellow iris *(Iris pseudacorus)* is a robust, clumping perennial herb in the Iridaceae (Iris family). *Iris pseudacorus* is easy to identify in flower, since it is the only totally yellow-flowered *Iris* in wild lands in the United States. At maturity, *I. pseudacorus* grows to a height of 0.40-1.5 meters (1.3-4.9 ft) tall. Its thick fleshy rhizomes often form dense horizontal mats, with each rhizome measuring 1 to 4 cm in diameter with roots that may extend vertically 10-20 (30) cm deep. The stiff, sword-like leaves are glaucous, number approximately 10 per ramet, are about 50-100 cm long by 10-30 mm wide, have raised midribs, and are arranged with sheathing and overlapping leaf bases.

Flowers of *I. pseudacorus* are borne on tall erect peduncles. Each inflorescence may have one to several large, showy flowers. The flowers measure 8-10 cm in diameter and vary from pale yellow to almost orange in color. The flowers are bisexual. The perianth segments (3 sepals and 3 petals) are fused at the base, and form a flaring tube with the sepals spreading and reflexed. The 3 stamens are each individually fused by their filaments to the sepals, and the showy tongue-shaped sepals are often adorned with brown spots or purple veins, and are generally less than 6 cm long. The petals are erect and less conspicuous, and are narrower than the sepals. The 3 style branches are petal-like with two-lobed lips, are mostly < 25 mm long, and are opposite and curved over the sepals. *I. pseudacorus* has an inferior, 3-chambered ovary. Fruits are elongated capsules.

Seeds of *I. pseudacorus* are pitted, pale brown, disc-shaped (roughly circular and flattened), and measure approximately 2.0-5.0 mm in diameter and 0.5-3.0 mm tall. Seeds are arranged in three densely packed vertical rows within the seed pod or capsule. These erect capsules at maturity are a glossy green color and measure 4-8 cm in length, 5.0-8.0 mm in width, and are 3-angled and cylindrical.

1. Digging, Pulling, Cutting

Effectiveness

Manual or mechanical methods that remove the entire *I. pseudacorus* rhizome mass can successfully control small, isolated patches.

Methods

Pulling or cutting *I. pseudacorus* plants may provide adequate control, but only if it is repeated every year for several years to weaken and eventually kill the plant. Dead-heading (removing the flowers and/or fruits) from plants every year can prevent seed development and seed dispersal, but will not kill those plants.

Cutting the foliage, followed by a herbicide application (see below for details), can provide good control with minimal off-target effects.

Disposal:

If plants have capsules present, they should be bagged and disposed of to prevent seed dispersal. Bag all plant parts and remove from site (compost* at DOT Residency, dispose of in approved landfill or incinerate with appropriate permits).

Cautions

These methods, however, are very time and labor-intensive, since even small rhizome fragments can resprout. Additionally, digging disturbs the soil, may fragment rhizomes, and promote germination of *I. pseudacorus* and other undesirable species from the soil seed bank.

Care should be taken when pulling, cutting, or digging *I. pseudacorus*, since resinous substances in the leaves and rhizomes can cause skin irritation.

2. Herbicide

Effectiveness

Iris pseudacorus can be effectively controlled by herbicides. Since it usually grows in or adjacent to water, an aquatic-labeled herbicide and adjuvant must be used. Glyphosate (for example, trade names Rodeo®, Aquamaster® or Glypro®) applied in a 25% solution (13% a.i.) using a dripless wick/wiper applicator, or applied in a 5 to 8% solution if sprayed, when used with the appropriate non-ionic surfactant adjuvant, can effectively kill *I. pseudacorus*. *I. pseudacorus* can be effectively controlled by stem injection utilizing Aquamaster® applied at .5 to .7 mL. of product per flowering stem.

Controls

The timing and choice of application technique will determine control efficacy and should work to minimize off-target effects. *Iris pseudacorus* can be controlled by either directly applying the herbicide to foliage, or by immediately applying herbicide to freshly cut leaf and stem surfaces. Herbicides can be directly applied to *I. pseudacorus* foliage or cut stems by a dripless wick system or using a backpack sprayer.

Cautions

These herbicides are not selective (kills both monocots and dicots), thus should be applied carefully to prevent killing of non-target species. All tank mixes should be mixed with clean (ideally distilled) water because glyphosate binds tightly to sediments, which reduces toxicity to plants. Do not apply in windy

* see item #4 “Composting” in General Practices section.

conditions because spray will drift and kill other plants. Do not apply if rain is forecast within 12 hours because herbicide will be washed away before it can act.
Be sure to always take appropriate precautions and wear suitable clothing and equipment, and follow all instructions on the herbicide label. Use a biodegradable tracer dye in the herbicide mix so you can watch for accidental contact or spill of the herbicide.

Appendix C. Herbicide Labels and Material Safety Data Sheets (MSDS)

Appendix D. NYSDEC Steps for Using Herbicides to Control Invasive Plants

Appendix E. State Land Terrestrial and Aquatic Invasive Plant Inventory

In 2004 and again in 2005 Adirondack Nature Conservancy/Adirondack Park Invasive Plant Program staff and Student Conservation Association/AmeriCorps Environmental Steward staff in cooperation with the Department undertook a systematic effort to identify and quantify the extent of terrestrial invasive species on Forest Preserve units in the Adirondack Park. Documented priority invasive threats included garlic mustard (*Alliaria petiolata*), Japanese knotweed (*Fallopia japonica ssp. japonica*), common reed (*Phragmites australis ssp. australis*), purple loosestrife (*Lythrum salicaria*), and Japanese barberry (*Berberis thunbergii*). Other invasive species found included black locust (*Robinia pseudoacacia*), Japanese, Morrow's, tatarian, Amur and Bell's honeysuckles (*Lonicera japonica, L. morrowii, L. tatarica, L. maackii, L. x. bella*), Canada and/or bull thistle (*Cirsium arvense, C. vulgare*) and wild parsnip (*Pastinaca sativa*). The following summary table documents the 2005 field work. Detailed location and population information has been provided to the Regional Land Manager.

State Land Unit	**Terrestrial Invasive Species Present**	**Total Number of Populations**	**Total Area Affected in Square Feet (acres)**
Moose River Wild Forest	garlic mustard, honeysuckle, wild parsnip	12	3620 (.08)
Sargent Ponds Wild Forest	garlic mustard, Canada thistle	6	1210 (.03)
Blue Mountain Wild Forest	Japanese knotweed, wild parsnip	4	3950 (.09)
Vanderwhacker Mountain Wild Forest	purple loosestrife, Japanese knotweed, honeysuckle, Canada thistle	27	14310 (.33)

State Land Unit	Terrestrial Invasive Species Present	Total Number of Populations	Total Area Affected in Square Feet (acres)
Shaker Mountain Wild Forest	garlic mustard Japanese knotweed, purple loosestrife, black locust, honeysuckle, common reed	33	38870 (.89)
High Peaks Wilderness	Japanese knotweed	1	13500 (.31)
Ferris Lake Wild Forest	garlic mustard, Japanese knotweed, purple loosestrife, common reed, Japanese barberry, honeysuckle	48	33780 (.78)
West Canada Lake Wilderness	garlic mustard, Japanese knotweed	3	420 (.01)
Black River Wild Forest	garlic mustard, common reed, Japanese knotweed, honeysuckle	14	11950 (.27)
Saranac Lakes Wild Forest	Japanese knotweed, Japanese barberry, Canada thistle, honeysuckle	12	6130 (.14)
Total		**160**	**127740 (2.93)**

In addition to the formal survey of the above nine Wild Forest units and one Wilderness unit, the survey team kept track of other invasive species occurrences on Forest Preserve lands noted during their ordinary course of work. Below is a summary table for several additional sites.

Location	Terrestrial Invasive Species Present	Total Number of Populations	Total Area Affected in Square Feet (acres)
Pepperbox Wilderness/Stillwater Dam	Japanese knotweed	2	700 (.02)
Cascade/Porter Mountain Trailhead and trail	garlic mustard	1	50 (.001)
Barnum Pond Boat Launch	purple loosestrife	1	1500 (.034)
Second Pond Boat Launch	Japanese knotweed	1	550 (.013)
Camp Santanoni	Japanese knotweed	2	1200 (.03)
Mt. Arab Trailhead Parking Area	Japanese knotweed	4	2000 (.05)
Grass River/Special Trout Area Parking Area	Japanese knotweed	2	1050 (.024)
Schroon Lake Boat Launch	purple loosestrife	1	100 (.002)

Location	Terrestrial Invasive Species Present	Total Number of Populations	Total Area Affected in Square Feet (acres)
Region 6 Boonville Field HQ	giant knotweed	1	300 (.007)
Lake Colby Boat Launch and Public Beach	purple loosestrife	2	400 (.01)
Total		**17**	**7850 (.18)**

There are approximately 81 Wilderness, Wild Forest, Canoe and Primitive State Areas in the Park that comprise 51 land management units. A straight extrapolation of the above data to all State land units would indicate 752 terrestrial invasive species populations occupying 600,378 square feet (13.8 acres). Of course, a straight extrapolation will not yield numbers as accurate as a comprehensive survey. Also it should be noted that the ten units were all Wild Forest areas and therefore have a higher level and more varied type of use than would be expected in Wilderness areas and potentially higher levels of terrestrial invasive species infestations. Furthermore, the numbers should be placed in context. There are approximately 2.4 million acres in Wilderness, Wild Forest, Canoe and Primitive classification. If there were 13.8 acres of terrestrial invasive species infestation it represents a very minute portion of the whole. This level of invasion is an indication that invasives are at very low population levels and the chance of eradication is high. It's also a sobering wake-up reminding us that *early detection and rapid response are key ingredients to protecting the natural systems on our State lands*. Experience in other parts of New York State and other states proves that if the infestation is allowed to consolidate it will be impossible to eradicate and will create an expensive, never-ending management effort merely to keep population levels low enough to limit environmental degradation.

The survey team also visited 28 of the 47 Department campgrounds in the Adirondack Park during summer 2005. Of the 28, 16 had minor to severe infestations of terrestrial invasive plants. The most common problem species was garlic mustard, followed by Japanese knotweed, purple loosestrife, and honeysuckle. The following table summarizes the extent of invasives knowledge on Forest Preserve campgrounds.

Campground	Terrestrial Invasive Species Present	Number of Populations
Paradox Lake Campground	garlic mustard, wild chervil	2
Lewey Lake Campground	garlic mustard	3
Limekiln Lake Campground	garlic mustard, honeysuckle	13
Carry Falls Camp Sites and Boat Launch	garlic mustard	several/many
Cranberry Lake Campground	garlic mustard	21+
Nick's Lake Campground	garlic mustard	49
Eighth Lake Campground	garlic mustard	33
Golden Beach Campground	garlic mustard	101+
Brown Tract Pond Campground	garlic mustard, honeysuckle	4
Lake Durant Campground	garlic mustard	6
Lake Eaton Campground	garlic mustard	6

Campground	Terrestrial Invasive Species Present	Number of Populations
Fish Creek-Rollins Pond Campground	garlic mustard	2
Meadowbrook Campground	garlic mustard	1
Moffitt Beach Campground	garlic mustard	14
Sacandaga River Campground	Japanese knotweed	5
Taylor Pond Campground	purple loosestrife	1
Total		**261+**

The inventory provides a preliminary indication that the following Department campgrounds appear to be free of target terrestrial invasive plant species: Wilmington Notch, Jones Pond, Buck Pond, Meacham Lake, Sharp Bridge, Au Sable Point, Putnam Pond, Little Sand Point, Point Comfort, Poplar Point, Forked Lake and Fourth Lake Picnic Area.

The following campgrounds and day-use areas have not been inventoried: Alger Island, Caroga Lake, Crown Point Reservation, Eagle Point, Hearthstone Point, Hinckley Reservoir Picnic Area, Lake George Battlefield Picnic Area, Lake George Battlefield, Lake George Beach, Lake George Islands, Lake Harris, Lincoln Pond, Luzerne, Moffitt Beach, Northampton Beach, Poke-O-Moonshine, Roger Rock and Tioga Point.

It is noted that not all terrestrial invasive species infestations require the use of herbicides. The protocols in section VI and the best management practices attached in Appendix B provide clear guidance as to which actions are best and allowed. In addition, all pesticide use will be approved by the Regional Supervisor of Natural Resources through an AANR agreement and based on a site specific plan for treatment of invasive plants.

2007 Field Inventory Data
Following is the update from Steven Flint based on 2007 field work. The survey team visited 40 of the 45 Department campgrounds in the Adirondack Park during summer 2007. Of the 40, 16 had minor to severe infestations of terrestrial invasive plants. The most common problem species was garlic mustard, followed by Japanese knotweed, purple loosestrife, and honeysuckle. The following table summarizes the extent of invasives knowledge on Forest Preserve campgrounds.

Campground	Terrestrial Invasive Species Present	Number of Populations
Paradox Lake Campground	garlic mustard, wild chervil, purple loosestrife	3
Lewey Lake Campground	garlic mustard, purple loosestrife	6
Limekiln Lake Campground	garlic mustard, honeysuckle	13
Carry Falls Camp Sites and Boat Launch	garlic mustard	several/many
Cranberry Lake Campground	garlic mustard	80+
Nick's Lake Campground	garlic mustard, honeysuckle	49
Eighth Lake Campground	garlic mustard, honeysuckle	33
Golden Beach Campground	garlic mustard	101+

Brown Tract Pond Campground	garlic mustard, honeysuckle, crown vetch	4
Lake Durant Campground	garlic mustard	6
Lake Eaton Campground	garlic mustard	6
Fish Creek-Rollins Pond Campground	garlic mustard at Rollins Pond, Fish Creek clean	2
Meadowbrook Campground	garlic mustard	1
Moffitt Beach Campground	garlic mustard, purple loosestrife	14
Sacandaga River Campground	Japanese knotweed	5
Taylor Pond Campground	purple loosestrife	3
Total		**326+**

The inventory provides a preliminary indication that the following Department campgrounds appear to be free of target terrestrial invasive plant species: Wilmington Notch, Buck Pond, Sharp Bridge, Point Comfort, Poplar Point, Eagle Point, Alger Island, Lincoln Pond and Fourth Lake Picnic Area.

The following campgrounds and day-use areas have not been inventoried: Hinckley Reservoir Picnic Area, Lake George Battlefield Picnic Area, Lake George Islands, Tioga Point, Indian Lake Islands and Lower Saranac Lake Islands.

Appendix F. Bibliography and References

Chippendate, J.F. 1991. Potential returns to research on rubber vine (*Cryptostegia grandiflora*). M.S. Thesis University of Queensland, Brisbane.

Elton, Charles S. 2000. *The ecology of invasions by animals and plants*. Chicago, IL: University of Chicago Press.

Hobbs, Richard J. and Stella E. Humphries. 1995. An integrated approach to the ecology and management of plant invasions. *Conservation Biology* 9(4): 761-770.

Huxel, Gary R. 1998. Rapid displacement of native species by invasive species: effects of hybridization. *Biological Conservation* 4(Nov): 143-52.

Kurdila, Julianne. 1995. The introduction of exotic species into the United States: there goes the neighborhood. *Boston College Environmental Affairs Law Review* 16: 95-118.

Pimental, David *et al*. 1999. Environmental and economic costs of nonindigenous species in the United States. *Bioscience* 50: 53-65.

Roberts, L. 1990. Zebra mussel invasion threatens U.S. waters. *Science* 249: 1370-1372.

The Nature Conservancy. 1996. America's Least Wanted: Alien Species Invasions of U.S. Ecosystems. Arlington, VA: The Nature Conservancy.

Williams, Mark H. and Bryan Griffiths. 1997. *Biological invasions*. Norwell, MA: Kluwer Academic Publishers.

APPENDIX 10: SUMMARY OF PUBLIC COMMENT

The following are comments received during the public comment period for the Draft UMP, followed by the DEC responses to those comments.

TRAILS

-Suggests changing proposed North Country National Scenic Trail (NCNST) to a marked trail that goes south of current proposed route.

1. Existing trails would be a preferable location on which to site the NCNST. The Department will be looking closely at existing trails, historic and current that lie within the outlined corridor the NCNST will take through the Hoffman Unit and will choose portions of these existing trails where appropriate.

-Fully supportive of NCNST, and a ski loop around Big Pond. New trail plans should evaluate whether existing or long forgotten trails can be used to minimize cost and fragmentation.

2. See #1 above.

-Would like a trail constructed to top of Hoffman Mountain.

3. The focus of management in the Hoffman Notch Wilderness is to maintain the existing trail structure, improve access to the periphery and maintain interior portions of the unit as trail-less areas. The proposed trail in the southeast corner of the unit will allow for a shorter bushwhack path to Hoffman Mountain.

-Proposed NCNST location is best (most feasible route)

4. The proposed NCNST location will minimize intrusion into the core of the unit but will provide an interesting route through the Hoffman Notch Unit.

-Former North Pond trail was at one time a snowmobile trail that connected to Severance Hill trail, which could be utilized once again.

5. These historic and currently used trails are in the process of being inventoried and will be utilized where possible for new trail layout.

-In favor of Big Pond loop trail. Hoffman Notch trail is nice but challenging for transportation. There are other options for trail location around Big Pond.

6. A loop trail is a convenient type of trail for recreational users with one vehicle. This plan calls for construction of a bridge and new trail segment should rights to cross private property not be obtained or if rights are lost in the future.

-Would like to see easement secured for private land trail.

7. The private section of trail needed to complete the loop trail is a relatively short segment. A secured easement to use this trail location would be preferable to construction of a longer trail segment.

-A shorter version of trail should be included.

8. Existing and proposed trails in this unit include a wide variety of trail combinations and lengths.

-Hoffman mountain would be challenging to get to.

9. See # 3 above. Trail construction to the top of Hoffman Mountain would be a significant undertaking and would place a new trail into a relatively trail-less area. With the number of mountains throughout the Adirondacks which have trails it may be appropriate to identify some without established trials. This plan proposes no trail construction to Hoffman Mountain keeping it a bushwhack and unique challenge.

-Should mark the trail to Marion Pond, I do not approve of DEC stocking fish in ponds and keeping the trails to them secret except to fishermen. Fishermen are going to tie flagging on trail so you might as well mark the trail. I would like to see a trail up to a ledge with a view on Hayes Mt. too, or Washburn. Foot trails belong in Wilderness and there are so few miles now that most of us cannot use the forest preserve as it could be, without any overuse problems. The vast difference between wilderness that has almost no trails and wild forest with 850 miles of motor vehicle trails with no regulation at all is rather hard to understand.

10. The trail to Marion Pond provides a unique experience while not proving too challenging for most. Fortunately maps, word of mouth and even this UMP make this trail evident to any individuals who care to look into it and explore on their own. Washburn, within the core of Hoffman, will remain trail-less. Hayes, a generally domed and forested mountain, does provide a few views to the east which can be reached by bushwhack, a fairly easy bushwhack that affords views of Bailey Pond can be found from the forested ridge top found directly between Marion and Bailey Ponds.

-Leave Marion Pond alone, no trail marking etc. There are many Adirondack ponds that are easy to get to, leave this one a little bit of a challenge / exploration.

11. See #10 above.

-Support the proposals to establish new trails in the vicinity of Big Pond

12. These new trails will provide unique loop and through trail possibilities.

- support the proposal to route the North Country Trail through the Hoffman Notch Wilderness

13. The NCNST appears to have much support. The portion through the Hoffman Notch Wilderness should provide an enjoyable experience.

-suggest that the UMP contain a more detailed inventory of existing unmarked trails and campsites in the unit; (paths that I am familiar with include: path to North Pond originating from the Big Pond trail, path to Marion Pond originating from Bailey Pond, a dead-end path leading generally toward Bailey Pond from the Minerva Stream snowmobile trail. Should old snowmobile trail between North Pond and Platt Brook be included in inventory as a Class I path? There is at least one established site on Marion Pond that the UMP has overlooked.

14. The inventory of existing unmarked trails and campsites in this plan is somewhat lacking, however we are currently updating these unmarked trails and campsite locations and plan to continue updating them

into the future. While it may be difficult to get all these old trails and campsites inventoried it is understood there are a large number of them present in the unit and future management actions will take this fact into consideration when planning individual projects and siting new trails. Maps will be added to this plan which show some of the various unmarked trails.

- The formal designation of the herd path south of Big Pond. This is an old trail which needs to be re-signed and taken care of; I for one use this trail often in my guiding and personal use. It does make a great "loop" trail, as we have used it for a snowshoe race in the past.

15. This trail is a popular trail and has received much public support for its existence. Formal adoption of this trail is proposed for in this plan.

- Rerouting trail near Big Marsh is a good idea

16. Rerouting the Notch Trail to the north of Big Marsh will eliminate the need for two large stream crossings, reducing the need for maintenance and should provide a favorable alternative to the current trail location.

- I strongly endorse the proposal to route the NCNST through the HNWA and I am pleased that the HNWA UMP includes a discussion of this proposed trail, even though the exact route has yet to be defined. In exploring the proposed route of the NCNST "corridor of opportunity" we have found a number of unmarked trails or paths that are not listed or discussed in the UMP, but which could provide current or future public access through the area. Some of these unmarked paths could also be used in the future as parts of the proposed NCNST, since the use of existing paths would minimize the need to build new trails that could impact the Adirondack's wilderness character.

17. The proposed NCNST route will indeed be looked at very closely and will use appropriate existing trails where possible to reduce the redundancy of trails in the unit, reduce the impact to the unit and to simplify the process of opening such a trail.

- Severance trail is in good shape even with the high use it gets, though because a stream floods the bottom part in early spring, a few more rocks would help prevent the trail from widening. The roar of traffic from the Northway follows a hiker all the way up the trail, a short walk west from the top will bring you the sounds of wilderness. A marked trail should be created to some appropriate place for those who need no motor noise to feel they are in a wilderness, so they can "listen to the silence".

18. The Mt. Severance Trail does see a lot of use and is in need of some maintenance. The current trail ends at the scenic vista, a common destination for most. If recreational users of this area wish to bushwhack further to the west of this trail they are welcome to do so. There are many other opportunities in this unit and nearby units for hiking marked trails which would provide greater opportunities for solitude.

- Big Pond – The loop trail around the pond when completed will be a fine addition to the present trail to the pond. It would make canoeing on the beaver flow, then carrying on to Big Pond, easier for boat trippers. The lake is perfect for lightweight solo canoes and rich in wildlife and natural beauty.

19. This loop trail will provide direct access to the southern edge of Big Pond for those who wish to carry in lightweight boats.

- Illegal trails- Near Big Pond, one of which is blazed and painted bright orange on 66 trees in 1/3 of a mile, as well as illegal developed campsites nearby, need to be restored as much as possible.

20. The trail in question is a prime example of an eye sore and an inappropriate and poorly sited trail. Regulations called for in this plan will "prohibit the marking of trails with plastic ribbons, paint, blazes or other devices". This illegally marked trail will be restored to natural conditions as much as possible.

- There is a fisherman's trail going south from the Blue Ridge Rd. near the Boreas River which would be an easy but spectacular trail because of the dense layer of moss covering the ground by the acre. There is even parking across the road but only fishermen know about this and probably many other trails. These trails should not be improved to more than a primitive level, just be marked and follow-able by the average hiker. The narrow windiness of bushwhack trails are part of their attractiveness.

21. There are a number of bushwhack trails in the unit. Bushwhack trails provide access to various parts of this wilderness area and are not marked.

- The North Country National Scenic Trail would be an acceptable use of the southern HNW if it uses one of the existing tunnels under the Northway.

22. It is planned that the NCNST use the large access tunnel beneath the Northway approximately 1.6 miles north of the I-87 interchange # 28.

- The trail to Bailey Pond is through an extended seepage area at the beginning. Corduroy or boardwalk should be added to prevent "snake bellies" when more people use the area. One steep dip could be bridged with three logs, making it easy for skiers and snowshoers in winter, and old people the rest of the year. These improvements would cost very little, protect the land, and make using the forest preserve much easier for average people.

23. The beginning of the Bailey Pond Trail is wet and could use a short re-route to avoid problem areas. The parking lot in this location could also use improvements due to excess moisture. Both problem areas will be addressed in this plan. Drainages along the old road which leads to Bailey Pond will also be assessed and addressed with either stone or logs to prevent erosion from foot traffic and facilitate cross country ski use.

- Hoffman Mountain should be left to be a challenge to the energetic and able bushwhacking mountain climber.

24. See #3 above.

- Better trail routing in the Big Marsh through trail and better bridges everywhere, though as small and natural-looking as possible, will make the original purposes of healthy, safe and natural exercise of NY citizens in the wild forests of the state possible for the vast majority of citizens who are willing to work for the privilege. A short slow hike in a wild place can be just as satisfying for a very young or less able person than a long, fast one that is a "green blur", but **stream crossings need to be made possible**, especially in winter. Skiers especially need decent bridges in late winter when water can wash out stream channels through deep snow leaving steep banks impassable to many people.

25. It is the vision of this plan to maintain the laid out trail system and associated structures in a manner which supports protection of the environment and safe passage to the user. Bridges will be constructed in

such a way to blend with the surroundings as much as possible. In instances where bridges are not used this plan proposes to armor trails and stream crossings and install stepping stones to facilitate stable and safe all-season trail use and stream crossings while preventing trail degradation.

Protect the Adirondacks is in favor of ways to support DEC science financially by initiating a **"non-consumptive" patch** or button with a substantial cost ($25?) which is well advertised and can be bought easily at a number of sites. We understand that hunting, fishing and trapping fees and taxes help pay for associated wildlife personnel activities. We "non-consumptives" would be glad to have a way to visibly help fund non-game activities that would increase long-term viability of all feasible native species and restore populations of some species such as spruce grouse to historic areas. An excise tax on equipment used in muscle-powered sports would be happily paid too, if the money were used for interpretation and wildlife viewing, study and photographing opportunities.

26. This proposal is outside the scope of this UMP.

All visitors should have to **sign registers** as is noted in this UMP, or pay for their rescue if they are lost or injured. It is the very least citizens can do to help plan for management objectives and conserve forest preserve money for needed management activities, not emergencies. Some fishermen and hunters are known to be resistant to signing their names so enforcement is necessary. Perhaps name and phone number could be the only required information if they want to keep their destination secret.

27. Signing registers has many benefits. Safety is the main purpose of Trail Registers- names, destinations and contact information can help Forest Rangers locate Wilderness users if there is a problem. Another way in which Trail Registers are used is to tabulate use data which an area receives. A record of use data is critical for management and maintenance of the area.

In summary, the Hoffman Notch Wilderness UMP generally treats the unit as the unique wild area it is; but it is so lightly used now that a few more marked trails would give us all more places to experience the natural world in an appropriate way, on foot. Given the heavy motorized use of roads and snowmobile trails in the Wild Forest parts of the Adirondack Park and the too frequent and often too low disturbance caused by airplanes, Wilderness needs to be a peaceful refuge from modern urban-type noise available for all levels of athletic ability.

28. New trails and access points to the unit have been outlined in this plan and will hopefully provide improved access to the unit while maintaining a core trail less area where aspects of solitude can be enjoyed by those seeking it.

-All of the trail upgrades, bridge construction, tail rerouting, improved parking and proposed tent sites described in the proposed UMP should be encouraged.

29. Upon approval of this UMP, DEC will begin to implement the changes and improvements outlined in the plan.

- Of utmost importance to this area is the proposed location of the North Country National Scenic Trail. This trail will become the backbone of this wilderness area by joining the Bailey Pond, North Pond – Big Pond areas with the Northway underpass near Schroon Falls. Hopefully the DEC will be able to begin work in the very near future in order to make this trail a reality.

30. Yes, see #29

- The trail that is now known as the "Snowshoe Race" loop needs to be recognized and events such as the Snowshoe Race should be permitted for low environmental impact events in the Hoffman Notch Wilderness Area. The DEC needs to continue in its efforts to establish a permanent easement on a small parcel of private property in the Big Pond area for this loop.
In the Adirondack Park State Land Master Plan for the Hoffman Notch it states Hoffman Mountain was selected as a potential ski development but defeated in the referendum of 1967. Subsequent studies by independent experts have revealed that the mountain is not basically suited for a major ski center." I request that the DEC make any of these subsequent studies available to the public and if such studies cannot be found, that the State Land Master Plan be amended accordingly.

31. -The loop trail is recognized and this plan calls for formally adopting and marking this trail. -This plan calls for provisions to permit low impact environmental events and manage them through the Temporary Revocable Permit process.
-If an easement or agreement cannot be reached to locate a trail segment across a portion of private property, this plan calls to construct a short trail and bridge on state land to make this loop trail possible.
-The DEC does not make final changes to descriptions in the State Land Master Plan, however, due to this comment a recommendation was sent to the APA to remove this description from the State Land Master Plan at the next update, as the subsequent studies mentioned in the Master Plan could not be located or provided to the DEC at the time of preparation of this plan.

-All existing unmarked trails should be included in the trail inventory listed on page 38 of the draft UMP including:

1) Trail south and west of Big Pond mentioned on page 76 that is to be marked (I support this trail marking).
2) Trail to Marion Pond
3) Trail to North Pond
4) Trail toward Bailey Pond from the Minerva Snowmobile trail
5) Trail going north-south east of Hedgehog Hill
6) Trail and road system in the area of Platt Brook, Smith Hill and Dirgylot Hill
7) Trail heading north between Bailey Hill and Washburn Ridge

32. see #14

I support the building of the North Country National Scenic Trail through the HNWA.

33. see #13

To establish another point of interest for the public a trail up Jones Hill from the NE would be a relatively easy way to get a spectacular view of the Hoffman Notch Wilderness Area interior and Hoffman Mountain. This trail would be about three miles long and would need a bridge across Platt Brook. The existing unmarked trail system could be used for more than half of the route. The climb would be about 1300 feet. This route could be used by the NCNST but even if the NCNST never happened this trail to Jones Hill would be a nice destination hike.

34. This area will be looked into more closely before the construction of the trail and possible future portion of the NCNST called for in this plan. Incorporating scenic vistas, interesting features and existing trails where possible are all objectives used when siting a hiking trail.

- I would like to support the North Country National Scenic Trail conceptual route across the southern edge Hoffman Notch Wilderness Area as noted in the Hoffman Notch Wilderness UMP and the NYS DEC *North Country National Scenic Trail, Final Adirondack Park Trail Plan and Generic Environmental Impact Statement* July 2008. The NCNST at 4600 miles, crosses the 7 northern states and is a foot trail of national significance. It is constructed to blend lightly with the land with minimal environmental impact. Hoffman Notch helps the route avoid the High Peaks Wilderness as it crosses the Adirondack Park from Black River Wild Forest to Crown Point.

35. See #13

- strongly supports proposals to establish new trails in the vicinity of Big Pond, and the proposed route of the North Country National Scenic Trail through the Hoffman Notch Wilderness.

36. See #12 and #13

- One concern broached by our members was a lack of Class I paths in the inventory of foot trails. A comprehensive list will assist future land managers make well informed decisions if they are able to analyze all trails being utilized by hikers. Existing paths that were not included in the inventory include a path to North Pond originating from the Big Pond Trail; there is also a path to Marion Pond originating from Bailey Pond, and lastly a dead-end path leading generally toward Bailey Pond from the Minerva Stream snowmobile trail.

37. See #14

TENTSITES

- Detail was lacking compared to campsite inventories established by other Adirondack Forest Preserve Unit Management Plans with regard to the inventory of campsites in the Hoffman Notch Wilderness. In addition to an overall lack of detail, this UMP has overlooked at least one campsite on Marion Pond our members use.

38. The inventory of existing trails and campsites is ongoing. Historically used campsites are scattered throughout this wilderness and have been dealt with for years through camping permits issued by the local Forest Ranger. This plan proposes identifying some appropriate locations for formally designating new and historically used primitive tent sites. The Marion Pond campsite will be added to the inventory.

BETTER ACCESS TO UNIT

-Interested in access from Schroon Falls with well marked registered access. Parking area should be signed as well.

39. This plan calls for improvement of this access, marking of trail to pedestrian underpass and installation of trailhead signage.

-The sportsmen request designated routes to the fishing ponds be opened for off-road vehicles. Roads already exist to these ponds; Bailey, Marion, Big and North. DEC policy of denying boats left at these ponds, forcing anglers to cary-in and carry-out each day greatly reduces their time to fish. Early morning and late afternoon fishing will not be allowed as time must be spent lugging prams, rowboats, etc. back and forth, in and out daily. The establishing of a designated corridor for off-road-vehicles will allow the anglers to spend more time enjoying their sport.

The Hoffman area is crisscrossed with roads from past settlements and logging. The ponds in this area were favorite fishing places before DEC banned boats being located on state land during the fishing season. This denial of access and discrimination against anglers and sportsmen is unnecessary as roads already exist that are capable of supporting off-road vehicles, especially those trailering / transporting boats in and out of the area. Snowmobile trails cross these lands that connect Schroon Lake to Minerva, North Hudson, and Newcomb. The Hoffman area was once considered a candidate for a ski resort to rival Gore and Whiteface. All these past uses show that this area is a perfect fit for a designated route for off-road vehicles to these ponds on existing roads.

Additionally, reopening these roads as a designated corridor will allow the DEC to comply with the Americans with Disabilities Law. The law is very clear that no discrimination is allowed and that power-driven mobility devices are allowed every place that is open to any one user group (i.e. Hikers). Our Disabled Veterans, handicapped, elderly, and other less than physically fit would now have a chance to enjoy the outdoors environment, go fishing, or just enjoy nature and the solitude. It would end DEC's discrimination at least in this one area of the state owned land. DEC compliance with the Americans with Disabilities Law is long overdue, especially for our Disabled Veterans.

40. The classification of Wilderness areas is not an attempt to discriminate against anglers or sportsmen rather the recognition of a unique area and an attempt to protect its resources. Hunting, fishing and trapping have long been recognized as an important form of recreation and management tool. Use of motor vehicles and motors in general are not permitted in Wilderness areas. Designation of motor vehicle routes into the Hoffman Notch Wilderness would not coincide with the principles of wilderness management and the APA has determined that a UMP cannot contain recommendations to reclassify state lands. Sportsmen are welcome to hike to Hoffman Notch water bodies and bring with them a lightweight boat or utilize a non motorized wheeled boat carrier in order to access these ponds. Camping up to three days without a camping permit is allowed in Hoffman Notch Wilderness either at sites that will be designated as a result of this UMP or at any location which is at least 150 feet from a water body, trail or road. Storage of a boat in your campsite during your stay is also permitted. The DEC is in compliance with the Americans with Disabilities Act and will decide on a case by case basis how best to accommodate the needs of people with disabilities.

-Trails are concentrated in south end of unit. Severance Hill popularity is because of view and accessibility. Other viewpoints aren't near existing trails. Northern section of unit was used more prior to Northway construction, especially by hunters. $250,000 was spent in 1964, yet DEC has not finished providing access to the east side of the unit. If hunting is to be feasible in all of unit, better access must be provided. Northway underpasses should be better utilized.

41. Improved access is needed for this unit especially along the north and east boundaries. This UMP calls for improvement of the trailhead located approximately 1.6 miles north of I-87 Interchange 28 near the gravel pit. This plan also calls for the location of a bridge and development of a trail on adjacent Hammond Pond Wild Forest leading from the vicinity of the fish weir to the pedestrian underpass located just north

and west of the weir location. The pedestrian underpass in this location has not been able to be used by most due to the difficulty of the Schroon River crossing. Development of this area would provide users much improved access to the northeast quadrant of Hoffman Notch Wilderness. A short unmarked trail segment is proposed heading south into the unit from the Blue Ridge Rd. near the western boundary of the unit. This trail will follow the state land boundary into the old access road to the Durgin Farm and should significantly improve access to the northwest quadrant of the Hoffman Notch Wilderness. This UMP calls for the boundaries of the unit to be better signed and painted in general which should better clarify boundaries for private land owners, administrative purposes and for public users. Clearly defined boundaries may also help improve access to the unit.

-Underpasses should be better utilized.

42. See #41 above.

-Eastern/n.eastern areas need easier access, including water crossings.

43. See #41 above.

- A foot bridge is sorely needed over the main inlet to Big Pond on the north side for rescue purposes, if nothing else.

44. This crossing will be assessed during future management of this area to determine the most appropriate form of crossing structure if necessary.

-Improving the parking lot on Blue Ridge Rd. is a good idea.

45. Improvement of this parking area will accommodate more vehicles and will allow for easier winter maintenance.

- A beautiful campsite on the north shore of Big Pond and another great spot in a cove along the east shore, about 75 to 100 yards off the main trail would make great primitive camp spots. Would it be possible to also include one primitive camp spot on North Pond as well?

46. A campsite has been proposed for North Pond. Two appropriate campsites will be identified and designated on Big Pond however; they will need to meet the separation guidelines of ¼ mile.

- A sign is needed at the parking area of the Big Pond Trailhead. The parking lot, trail and access tunnel located north of I-87 exit 28 needs to be signed and plainly marked to improve access. Need a bigger parking area on Blue Ridge Rd. as well as a sign.

47. The final plan has been modified to address these issues.

- Education of visitors about the forest preserve and its wild components should be a major purpose of DEC management. We should have at least a bare minimum of information to help people appreciate the area. Every kiosk should have a display of information about the Park, forest preserve, and natural history of the specific unit to challenge / educate the visitors to the area. Local naturalists might create the display for their own areas. To get visitors to look at the natural features, they need the information right on the trail. We are wasting the wild uniqueness of the forest preserve by not helping people look at natural features of

all kinds with opened eyes and ears. The website information proposed in the UMP for the unit would be useful for residents but not necessarily for the many visitors who will not know about it or be able to access it. It could include much additional natural and cultural history and many maps for different destinations.

48. Trailheads as opposed to the interior would be an appropriate location for any additional information about the unit. Perhaps as kiosks are updated and added to the unit some additional information can be added as well as a reference to the internet accessible data called for in this plan. Given that this is a Wilderness area, however, one of DEC's management goals for Hoffman Notch, as required by the Adirondack Park State Land Master Plan (APSLMP), is to make the "imprint of man's work substantially unnoticeable". While parking areas and trailhead registers help provide a safe recreational experience, excessive signage and interpretive opportunities are generally not provided in Wilderness areas.

- A campsite on North Pond would be appropriate. The trail should be maintained well enough for winter use because a snowshoe trip across it to Johnson Pond is an easy bushwhack to a beautiful wilderness pond with a striking view of Hoffman Mt.

49. See # 46 above

- As there is not a single one in this wilderness, a lean-to should be built somewhere on the east side of the unit so that new visitors are able to see this iconic traditional Adirondack shelter. This should be in a spot that is not going to be overused because of too easy accessibility or visibility, possibly on North Pond or near a large stream.

50. A lean-to to replace the campsite proposed along the new 4-mile trail segment has been called for in this plan.

- Hiking trails proposed in south east corner of unit which may utilize old snowmobile trails should have small bridges constructed of native materials and be suitable for snowshoers and skiers with high railings for when there is deep snow.

51. Where small bridges are necessary they will be constructed of native materials and with all season use in mind.

Marion Pond - The last part of the road to the Hoffman Notch trail from Loch Muller needs maintenance to allow normal fuel-efficient cars to use it. It is not fair to the general public to allow use of large four wheel drive trucks or jeeps on roads in spring if they will be destroyed for use by most drivers.

52. This access road and parking lot need to be improved and maintenance of this area is called for in this plan.

- The outlet and inlet crossings of Bailey Pond have cables for high water and that is all that can be expected, though many people could not handle them. Rock hopping is easy at average water levels. The old road going on north to the Marion Pond bushwhack trail includes a long raised esker-like feature, but straight, flat on top and with steep sides maybe 75 feet down to the stream, and goes through beautiful hardwoods rich with wildflowers in spring. The bushwhack trail to Marion Pond should have the orange ribbons taken down and marked to make following it easy, but that is about all it needs. Hikers will quickly make routes around the inevitable blowdowns.

53. Cables are not considered a natural material in the Adirondack Park State Land Master Plan and therefore are not permitted in Wilderness areas. The trail to Marion pond is not called to be marked but will remain an unmarked trail. Occasional blow down removal may occur on this trail only to define an appropriate route.

-Historically the Hoffman Notch Wilderness contained a large number of trails that appear on older topo maps. With the loss of snowmobiling, this area has been an underutilized asset and unfortunately many of these trails are no longer maintained and are in jeopardy of being lost. This UMP process is critical for recognizing these trails so that they can once again be opened, used and become a positive economic factor in this region's struggling economy.

54. Numerous historic trails exist in this unit. This plan clearly defines the location of the marked and unmarked routes that will be managed within this unit. The interesting historic network of trails in Hoffman Notch Wilderness will continue to be identified and will also be looked at when planning the new routes described in this plan in order to minimize redundancy and find the most appropriate route. The historic network of trails may continue to be used by the public but will not be recognized as developed trails mentioned in this plan. An inventory of these trails will be kept as they are discovered and will be available as options in future revisions of this plan if additional trail segments are recommended at that time.

- I go on record "Leave it alone". Forest preserve becomes desecrated by afforded and easy access. I suggest you keep the trails long and tight.

55. Your comment is a Wilderness sentiment held by many. The goal of this plan is to find a balance between providing appropriate Wilderness access while protecting the natural resources of the area.

- If we are serious about encouraging more use of this great resource we need to start by improving the access. This means spending money first on the entrances, including the SW entrance on Cheney Pond Road Minerva. This Minerva trailhead is not mentioned in the draft UMP. There is an unmarked parking area probably on private land.

56. Access points to be improved have been described in this plan. The western boundary of the Hoffman Notch Wilderness is along a snowmobile trail which separates this unit from Vanderwhacker Mt. Wild Forest. Hoffman Notch Wilderness can be accessed from many points along this trail. The northern terminus of this trail is Cheney Pond which can be accessed from The Blue Ridge Rd. by motor vehicle. A small parking lot exists along the Blue Ridge Rd. at the access road to Cheney Pond.

- All trailheads should be marked with a sign visible from the public road, clear marking of formal parking area and a register with a map showing the part of the HNWA accessible from that trailhead.

57. These are all excellent points and hopefully can be carried out during the implementation of this plan.

- Interior improvements are needed but less importantly than properly informing the public about access points at trailheads.

58. Improving access to the Hoffman Unit while protecting its resources is a main focus of this plan.

- This unit could be improved with added emphasis on access. Small investments would go a long way restoring and marking entrances, including the SW entrance on Cheney Pond Road Minerva. The Minerva

trailhead not mentioned in the draft UMP already has an unmarked parking lot. All trailheads should be marked with a sign visible from the public road, clear marking of a formal parking area and a register with a map showing the part of the HNWA accessible from that trailhead.

59. Improved access to the Hoffman Notch Wilderness while also protecting the wilderness character of the area is a goal of the Department. This UMP seeks to recognize where the public has access to the unit and provide a method for identifying these locations on the ground. If the Minerva trailhead mentioned here is the small lot on the east side of Cheney Pond Rd. .6 miles north of Irishtown Rd.. It is not located on State Land.

INVASIVE PLANTS

-All efforts should be made to reduce invasive species introduction. At recent APIP conference, Vanderwhacker Mountain Wild Forest was mentioned as one of least invaded areas. Biological controls, if not already used, should be used to prevent any further spreading from Hoffman into Vanderwhacker. Hopefully eradication of purple loosestrife within Hoffman Notch will be possible. Care must be taken when building parking lots not to introduce invasive species into the unit.

60. Invasive plants are a major planning consideration and source of concern. The DEC will continue to work with partners to stop the spread of invasive plants into and from the unit.

CONFLICTING USES

-Concerned about potential hunter / hiker / skier conflicts which may occur.

61. Conflicts between recreational users are almost unavoidable. Hiking and skiing will continue to occur during the hunting season. No single use takes precedent over another use in this case, however, users must recognize and respect other users. The DEC attempts to educate users of state lands about what uses occur on those lands, when various uses occur, how to be prepared and how to avoid or respect other uses.

- There are two spring houses located in the southern portion of the HNWA which appear to be in good repair. Are these on NYS land?

62. Multiple spring houses are located along the southern and eastern portions of the unit and have varying degrees of rights of way to maintain and use these spring houses. A more detailed account of these is being added to this plan, including a map in the appendix.

ORGANIZED EVENTS

-Competitive events - page 60 in plan outlines a management principle stating competitive events are not appropriate for Wilderness areas. Also, page 83-84 note that group size, even with a permit should be limited to 15 for day use and 8 for overnight camping. Though this is sound guidance for maintaining a wilderness setting, we ask that this policy be reconciled with the fact that an annual competitive snowshoe event is held on the southern trails in the Hoffman Wilderness. We support DEC's management policy of deferring competitive events to wild forest, but we also recognize the fragile winter economy of some communities. Because of the high value of habitat in Hoffman Notch, we suggest limiting the competitive event to the trails where it is traditionally held.

63. This traditional use snowshoe race event has occurred in the Hoffman Notch Wilderness in the past and was considered an appropriate use for this area. The race was managed through the issuance of a

Temporary Revocable Permit, a process that will continue to be used to handle events that the Department feels are compatible with wilderness principles.

-Snowshoe loop trail needs to be recognized; snowshoe races should be allowed as they are low impact.

64. See #62 above

-Supports snowshoe race.

65. See #62 above

-concerned that the document does not discuss competitive events (UMP should discuss Hoffman Notch snowshoe race in historical terms, DEC's concerns assumptions etc. were lessons learned? What will permitting criteria be for future events in other organizers request the use of wilderness facilities?

66. This important information was added to the plan.

- This loop trail was used for a snowshoe race last year run by the people of Schroon Lake. Snowshoe racing, a non-destructive use of a basically flat trail (snow protecting the substrate, unlike running races), should be allowed in wilderness with a detailed Temporary Revocable Permit (TRP).

67. See #62 above

REGULATIONS

-question the proposal to restrict camping above 3000 feet in elevation; (Current regulations in High Peaks Wilderness limits camping between 3500 and 4000 feet to designated sites only, and this is the standard that is being proposed for other wilderness areas as well. I suggest it would be more appropriate to simply extend the provisions of the existing regulations to include Hoffman Notch)

68. Existing Wilderness camping regulations, including no camping above 3,500 feet, will be extended to include Hoffman Notch and will therefore,result in protection of the peak of Hoffman Mt. but would not include the other peaks in this wilderness. Should future conditions of peaks within the unit show negative impacts as a result of camping, a regulation will be drafted for Hoffman Notch Wilderness that will restrict camping above 3000 feet in elevation to designated sites.

- Marion Pond is a jewel now used almost only by fishermen, some of whom leave too much debris when they camp for others to carry out. If everyone signed the registers, maybe there would be less of a trash problem. The two aluminum rowboats there make fishing easy, but unlike the oldtime wooden boats which eventually rotted away when they sprang too many leaks, aluminum does not disappear when the owners get too old to get them out again or they become unusable.

69. Storage of personal property on State land is not allowed. As the Department is made aware of personal or discarded materials being stored on state land, they will be dealt with as soon as possible and as resources permit.

-ADK supports NYCRR 190.13(d)(3) which limits camping in the High Peaks Wilderness between 3500 and 4000 feet to designated sites only. This standard is being proposed for other Wilderness areas as well. While the Natural Heritage Maps do not indicate any rare, threatened or endangered plant species, a Bird

Conservation Area has been identified within the unit at altitudes above 2800 feet. ADK will support whatever measures necessary to protect special habitats, however for consistency sake, we should keep regulations as uniform as possible to prevent confusion amongst campers.

70. See # 68 above

ENCOURAGEMENT

-Very excited about this plan as well as Scaroon Manor

71. Hopefully this plan will help to protect this unique area and provide Wilderness compatible opportunities for recreation.

-Support resolution passed by town in favor of plan.

72. Support from the public and from local towns will certainly aid in management of the Hoffman Notch Unit.

- In closing we would like reiterate our strong support of the department's proposals, and appreciation for your attention on this important issue. We are delighted that the unique character and history of the area will be preserved for future generations to enjoy.

73. Thanks for your support.

WILDERNESS

-suggest that the DEC review and consider federal wilderness monitoring techniques for tracking quality trends in all Adirondack wilderness areas. Often the issues and concerns that we have in New York parallel issues in the National Wilderness Preservation System and state land managers often duplicate efforts of federal land managers. I recommend that DEC personnel read and consider adopting certain federal policies and guidelines regarding wilderness management. A particularly useful document is entitled "Keeping It Wild: An Interagency Strategy to Monitor Trends in Wilderness Character Across the National Wilderness Preservation System".

74. DEC staff are aware of "Keeping It Wild" and have begun to develop strategies for monitoring wilderness qualities in the Adirondacks and Catskills, similar to the federal program.

-In the adjacent Vanderwhacker Wild Forest unit to the west of HNW, Stony Pond is a beautiful, wild, peaceful pond and bog complex where loons breed every year and the area is generally teeming with wildlife. It deserves to have Wilderness status summer and winter. It is pristine in summer, but in winter it is a snowmobile trail and is slated to be a major "community connector" despite major problems with the route. If that impractical hope is abandoned (and a connector made that doesn't cross the busy 28N highway two times or climb and descend 1000 feet in a few miles), the main problem would be that there would have to be a three mile Primitive Corridor leading to three camps deep in the forest adjoining Hoffman Notch Wilderness. The route into the camps has a deeded right of way, though it is deeply wallowed and eroded to the point that ATVs have trouble getting in there. Stony Pond would be an excellent addition to Hoffman Notch which has very little ponded water, partly because it is one of the few places on forest preserve in the whole area where truck traffic noise from the 1000 foot climb from Minerva to the crest **cannot be heard.**

75. Many people feel that Forest Preserve land classifications should be different from what they are (some in one direction and some in the opposite direction). Unit Management Plans cannot contain recommendations to reclassify state lands.

- The Hoffman Notch had once been the core of the Town of Schroon's snowmobile trails. The Wilderness classification prohibits motorized vehicles in this area. However, it is not just urban legend that back in the1970's there were promises of compensation for the loss of the many miles of snowmobile trails with the implementation of the Adirondack Park State Land Master Plan. We are still patiently waiting.

76. The creation and/or designation of snowmobile trails occurs during the unit management planning process for Wild Forest areas. The Department performs an extensive analysis of the area, and engages in discussions with local officials, snowmobile clubs, and the general public regarding the future of snowmobiling within a given unit. Any future snowmobile trail designations will continue to utilize the same process.

WILDLIFE

-Tradition should not be a reason for using leg hold traps, a practice no longer acceptable to the majority of owners of our wildlife, all New Yorkers, not just sportsmen. Killing an animal is now the only way a person can take ownership of a wild animal that otherwise belongs to none and all of us, an odd situation.

77. Foot hold traps are a legal and efficient means to restrain and harvest furbearers in New York, including some species like coyotes and fox that are very difficult to harvest using other methods. Moreover, the Department has participated in scientific studies to evaluate the use of a variety of traps, including foot hold traps. These studies result in recommendations or "Best Management Practices (BMPs)" for trappers to use the best, most efficient, and most humane traps on the market. The Department promotes these BMPs and strictly regulates all aspects of furbearer trapping to ensure that harvests are sustainable over time.

- Because a host of native mammals and predatory birds depend on hares and grouse for their winter survival, and even hares do not ever reach "overpopulation" levels in the Adirondacks, hunters should be encouraged to voluntarily leave them for the wildlife, starting with the Hoffman Notch Wilderness UMP.

78. Populations of hares and grouse in the Adirondacks are not limited by hunting mortality, rather, by habitat quality. Both of these species require young, regenerating forest that is limiting within the Forest Preserve.

- Wildlife corridors should be planned for, somehow connecting units that are now separated by high speed highways. Lower speed limits at night and in other low visibility conditions could lower the devastation of wildlife caused by high speed as well as lower the amount of fossil fuel we burn and hence our contribution to global weather and climate changes.

79. Wildlife corridors that allow animal movements across fragmented landscapes are very important for a number of species. However, you are confusing corridors with wildlife passages that allow movements across highways (for example, underpasses and overpasses). While it is unfortunate that some animals are killed along highways, this form of mortality does not limit wildlife populations in the Adirondacks. Moreover, simply constructing these passages does not guarantee that wildlife will necessarily use them.

-Wildlife - Instead of focusing on what sportsmen want in the way of hunting, fishing and trapping "opportunities", might we begin to think more of what prehistoric conditions were like for native animals and try to maximize those conditions and population numbers **for the wildlife rather than the desires of sportsmen**?

80. The Department does not attempt to manage for "prehistoric conditions." The Department manages the wildlife resource in a scientific and sustainable manner for consumptive and non-consumptive uses.

- **American martens** are just now becoming fairly widespread again in the Adirondacks. Even many native Adirondackers do not know they exist, let alone in their backyards. We think trapping them in Wilderness generally should be discouraged until they are common in their previous ranges throughout the Adirondacks. What is the need for knowing their numbers (which trappers provide for DEC) except for knowing how many can be trapped without too much damage to the population? Any trapping at all will slow down their increase in range, and how can that be a good thing?

81. Martens are not "just" becoming fairly common. Martens have been expanding their range throughout the Adirondacks since the 1940s and currently occupy most of Adirondack Park. Understanding the distribution and trends of the marten population is important for conserving this species on the Adirondack landscape (for example, habitat conservation) and monitoring efforts as part of a scientifically-rigorous means of ensuring sustainable harvests of marten. Since 1978 New York State has had an open marten trapping season under a highly regulated harvest system involving permits and bag limits. At the same time, our marten population has expanded throughout the Adirondacks, indicating that trapping has not limited population growth. Lastly, because much of the Adirondacks are remote and inaccessible by sportsmen, there are large areas that are not trapped. These areas, combined with the highly regulated nature of our marten trapping season, ensure that harvests do not negatively impact marten populations.

- Concerning reintroducing extirpated species: DEC boiler plate says it can be done "where their existence is compatible with other elements of the ecosystem". How can a native animal not be compatible with the rest of its natural habitat? DEC has been given the mandate to reintroduce extirpated native animals "wherever feasible".

82. Implicit in this comment is the assumption that the ecosystem has not changed since the species was extirpated. For example, Canada lynx are a native species and reintroduction is not likely feasible given current conditions within Adirondack Park. Recent habitat suitability models suggest that snowfall and hare populations are limiting in this area, resulting in only a small portion of the High Peaks being considered suitable lynx habitat. In fact, an attempted reintroduction of lynx in the Adirondacks failed, likely due to limitations in habitat and prey populations. To suggest that native species be reintroduced simply because they are "native" does not take into consideration the conditions or suitability of the current ecosystem to support those species.

FISHERIES

-"Reclaiming" Marion Pond means poisoning (with rotenone, maybe the least obnoxious piscicide available but highly toxic to fish) almost every aquatic animal in the water. The goal is to restore native brook trout, but how long before fishermen foul the waters again? There needs to be much stricter enforcement and stiffer penalties (permanent loss of fishing rights?) to prevent trash fish being introduced over and over to scores of water bodies all over the Park. Stocking waters with non-native fish, no matter how "historical", for put and take fishing, seems an expensive luxury for one small interest group, and stocking non-native brown trout is given as a possibility for Marion Pond. This is to "promote angler use". Why promote an

activity which often results in degradation of the natural conditions--in Wilderness? Permit fishing, but don't promote it, and Protect does not support ever introducing non-native fish in Wilderness.

83. For pond reclamation, DEC treats with rotenone concentrations of 1.0 ppm (parts per million). That concentration has proven to have minimal impacts to amphibians and aquatic invertebrates. Such "non-target" species are tolerant of rotenone at treatment concentrations, can avoid the pesticide and/or have life stages are available to repopulate the pond. In past reclamations, DEC compared post-treatment invertebrate samples with pre-treatment collections, and the comparisons showed that invertebrate diversity after reclamation is equal to or greater than it was prior to removal of non-native fish populations. Post-treatment mortality and survival observations led DEC to conclude that odonates (damselflies and dragonflies) are virtually not impacted in ponds treated with rotenone at concentrations used in New York. Concerning amphibians, post-treatment sampling was conducted at several treated waters where limited amphibian mortality had been documented. At each pond, field personnel were able to collect all species that had experienced mortality. In most cases, other amphibian species that had not shown up in the mortality collections were also documented. Marion Pond is proposed to be restocked with Adirondack strain heritage brook trout after the non-native fishes are removed. While brown trout may be stocked in some wilderness ponds where there is not potential for native species to persist due to abundance on non-native and competing fish species, and where reclamation of the waterbody would not be feasible. Thus the intent and expectation is that brown trout will not be stocked following the reclamation of Marion Pond.

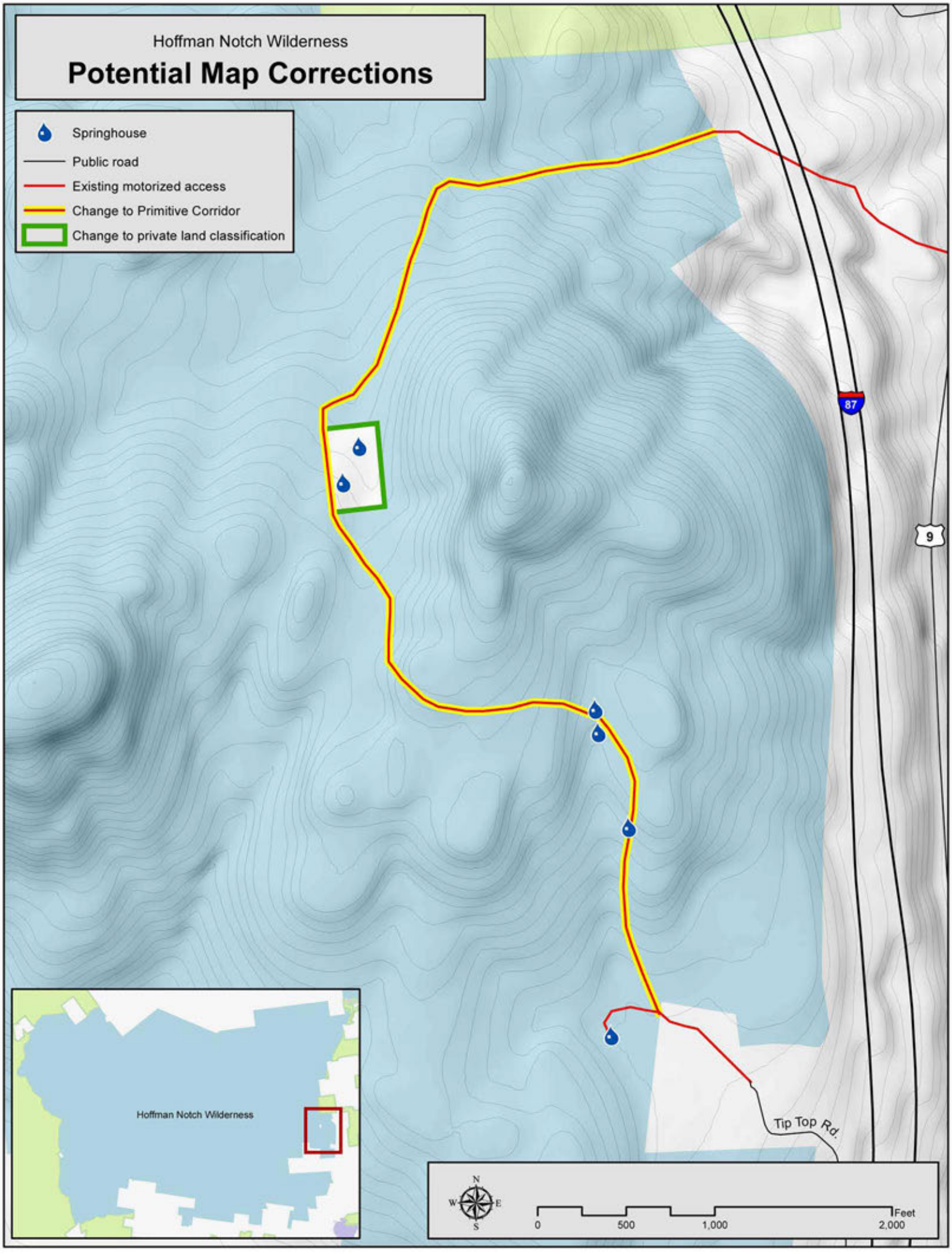
-Fish, native and not, are raised and stocked in an industrial fashion, a very questionable practice in Wilderness, to accommodate fishermen. Hunting and trapping regulations should be more concerned with natural native animal populations rather than with keeping them at a certain level in response to the desires of recreational sportsmen

84. Fishing is one of many activities which are especially appropriate for wilderness areas, and DEC is responsible for promoting fishing and other forms of recreation where appropriate. DEC is also responsible for managing fisheries through regulations, stocking, and habitat management, and providing diverse angling experiences for a wide variety of interest groups. Stocking is just one of the tools we use, and it is a necessary tool to ensure persistence of native fish species as part of the natural aquatic ecosystems appropriate in wilderness and other areas.

The Department supports and manages for the consumptive and non-consumptive use of wildlife species and the conservation of healthy ecosystems. Our hunting and trapping regulations are designed to ensure that wildlife harvests are sustainable over time.

This page intentionally left blank

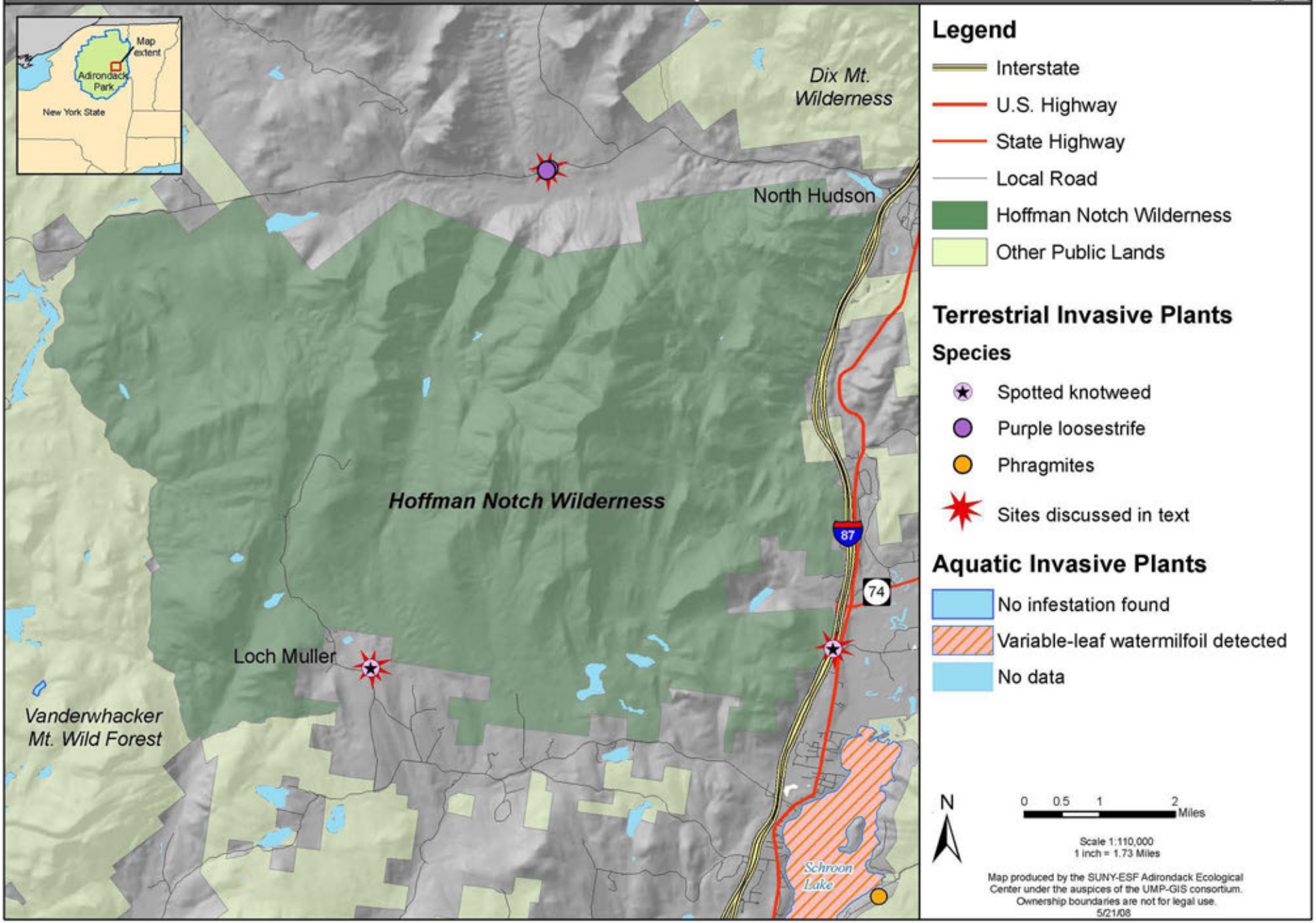
APPENDIX 11: MAPS


Hoffman Notch Wilderness
Potential Map Corrections
Springhouse
Public road
Existing motorized access
Change to Primitive Corridor
Change to private land classification
87
9
Tip Top Rd.
Hoffman Notch Wilderness
N
W
E
S
0
500
1,000
2,000
Feet

Hoffman Notch Wilderness

Documented Terrestrial & Aquatic Invasive Plant Species

New York State Department of Environmental Conservation



Legend

- Interstate
- U.S. Highway
- State Highway
- Local Road
- Hoffman Notch Wilderness
- Other Public Lands

Terrestrial Invasive Plants

Species

- Spotted knotweed
- Purple loosestrife
- Phragmites
- Sites discussed in text

Aquatic Invasive Plants

- No infestation found
- Variable-leaf watermilfoil detected
- No data

N

0 0.5 1 2 Miles

Scale 1:110,000
1 inch = 1.73 Miles

Map produced by the SUNY-ESF Adirondack Ecological Center under the auspices of the UMP-GIS consortium.
Ownership boundaries are not for legal use.
5/21/08

HOFFMAN NOTCH WILDERNESS AREA

DRAFT MAP 9/27/11 Revised 11/03/11

HOFFMAN NOTCH POTENTIAL DEER YARD HABITAT

LAND CLASSIFICATION

- Wilderness
- Wild Forest
- Intensive Use
- Pending Classification

DEER YARD HABITAT

- Potential Deer Yard Habitat Adirondack GIS Consortium 2005

TRAILS

- ----- Proposed
- ------ Existing

1 0.5 0 1 2 3 Miles

HOFFMAN NOTCH FOREST COVER TYPE

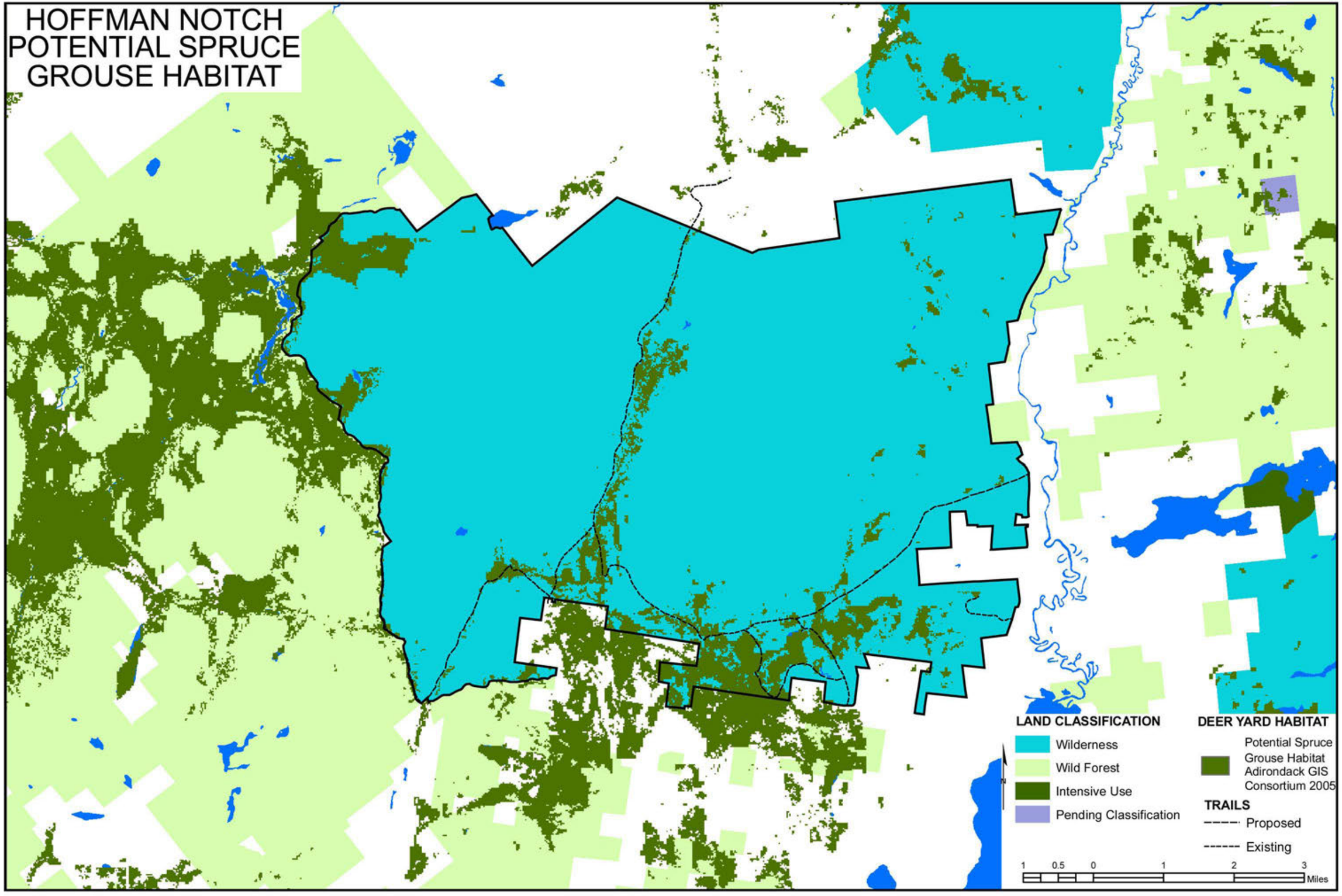
FOREST COVERTYPE

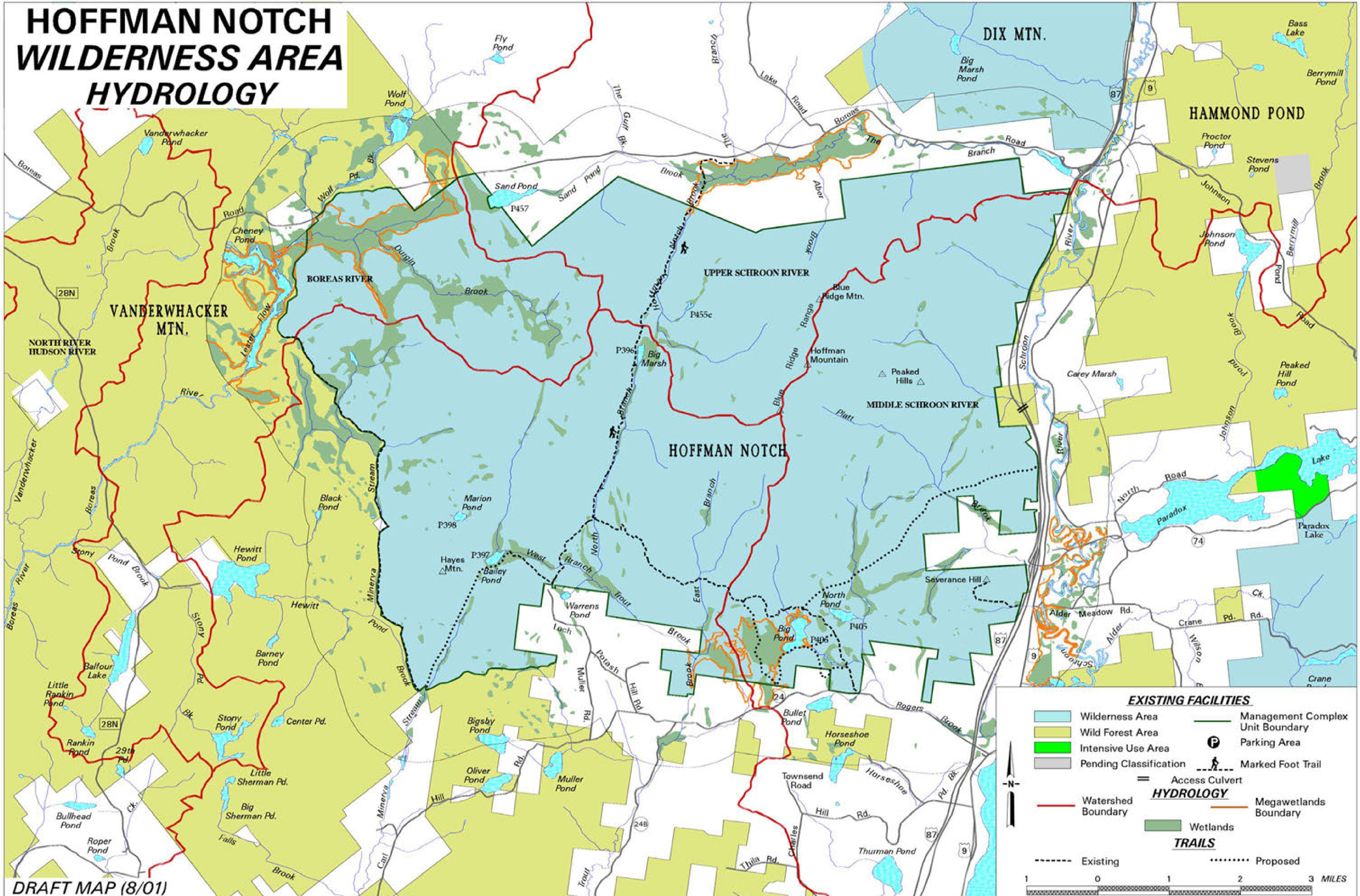
Covertype name

- Cropland
- Deciduous wetland
- Emergent marsh/open fen/wet meadow
- Evergreen plantation
- Evergreen wetland
- Evergreen-northern hardwood
- Golf course/park/lawn
- Old field/pasture
- Open water
- Roads
- Shrub swamp
- Spruce-fir
- Successional hardwoods
- Sugar maple mesic
- Urban

1 0.5 0 1 2 3 Miles

HOFFMAN NOTCH POTENTIAL SPRUCE GROUSE HABITAT




HOFFMAN NOTCH
WILDERNESS AREA
HYDROLOGY
DIX MTN.
HAMMOND POND
VANDERWHACKER MTN.
HOFFMAN NOTCH
BOREAS RIVER
UPPER SCHROON RIVER
MIDDLE SCHROON RIVER
NORTH RIVER HUDSON RIVER
Fly Pond
Wolf Pond
Vanderwhacker Pond
Cheney Pond
Sand Pond
Big Marsh Pond
Bass Lake
Berrymill Pond
Proctor Pond
Stevens Pond
Johnson Pond
Peaked Hill Pond
Paradox Lake
Carey Marsh
Blue Ridge Mtn.
Hoffman Mountain
Peaked Hills
Big Marsh
Marion Pond
Black Pond
Hewitt Pond
Hayes Mtn.
Bailey Pond
Warrens Pond
Severance Hill
North Pond
Big Pond
Barney Pond
Balfour Lake
Little Rankin Pond
Rankin Pond
Stony Pond
Center Pd.
Little Sherman Pd.
Big Sherman Pd.
Bullhead Pond
Roper Pond
Bigsby Pond
Oliver Pond
Muller Pond
Bullet Pond
Horseshoe Pond
Townsend Road
Thurman Pond
P457
P455c
P396
P398
P397
P405
DRAFT MAP (8/01)
EXISTING FACILITIES
Wilderness Area
Wild Forest Area
Intensive Use Area
Pending Classification
Management Complex Unit Boundary
Parking Area
Marked Foot Trail
Access Culvert
HYDROLOGY
Watershed Boundary
Megawetlands Boundary
Wetlands
TRAILS
Existing
Proposed
1 0 1 2 3 MILES