NEW YORK STATE

Department of Environmental Conservation

DIVISION OF LANDS & FORESTS

Jay Mountain Wilderness

Unit Management Plan

Towns of Jay and Lewis

Essex County

DAVID A. PATERSON
Governor

ALEXANDER B. GRANNIS
Commissioner

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August 2010

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DAVID A. PATERSON
GOVERNOR

ALEXANDER B. GRANNIS
COMMISSIONER

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

MEMORANDUM

AUG 02 2010

TO: The Record

FROM: Alexander B. Grannis ABG

SUBJECT: Jay Mountain Wilderness Area

The Final Unit Management Plan (UMP) for the Jay Mountain Wilderness has been completed. The UMP is consistent with guidelines and criteria for the Adirondack Park State Land Master Plan, the State Constitution, Environmental Conservation Law, and Department Rules, Regulations and Policies. The UMP includes management objectives and a five year budget and is hereby approved.

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RESOLUTION ADOPTED BY
THE ADIRONDACK PARK AGENCY
WITH RESPECT TO JAY MOUNTAIN WILDERNESS AREA
UNIT MANAGEMENT PLAN

June 10, 2010

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 Jay Mountain Wilderness Area in the Towns of Jay and Lewis, Essex County, and includes proposed management actions for the Jay Mountain Wilderness dated May, 2010; and

WHEREAS, the Department has filed a SEQR Negative Declaration and published a notice in the Environmental Notice Bulletin on May 20, 2010; and

WHEREAS, the Department of Environmental Conservation is the lead agency, and the Adirondack Park Agency is an involved agency whose staff have been consulted in the preparation of the proposed plan; and

WHEREAS, the Agency is requested to determine whether the final Jay Mountain Wilderness Area Unit Management Plan, dated May, 2010, 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 Jay Mountain Wilderness Unit Management Plan; and

WHEREAS, the Plan recognizes the need to improve public use and enjoyment of the area, avoid user conflicts and prevent overuse of the area according to the guidelines and criteria of the State Land Master Plan; and

WHEREAS, the Plan's objectives include providing reasonable public access where appropriate in order to provide visitors with recreational opportunities while minimizing resource impacts; and

WHEREAS, the Plan calls to formally adopt the Jay Mountain trail and to reroute the trail to minimize resource impacts; and

WHEREAS, the Plan proposes the establishment of a new trailhead and parking area for the Jay Mountain trail; and

WHEREAS, the Plan proposes the promulgation of a new regulation to limit the maximum group size to 15 for day users and 8 for overnight users as has been adopted in other neighboring Wilderness and Primitive units; and

WHEREAS, the Plan identifies the need to restrict trail construction and maintenance within the Subalpine Forest Bird Conservation Area (lands greater than 2,800 feet in elevation) by not scheduling trail construction between May 15 and August 1 of each year and by prohibiting work with the use of motorized equipment and aircraft during that same time period; and

WHEREAS, the Plan proposes DEC will develop Limits of Acceptable Change indicators for riparian areas, monitor the location and extent of key invasive plant species, train Department staff to identify and document the extent of invasive plants, and work with the Adirondack Park Invasive Plant Program to effectively manage and eradicate invasive plants; and

WHEREAS, the Plan identifies a management priority of increasing the understanding of the occurrence and distribution of wildlife species and their habitat as well as to monitor and inventory wildlife populations and their habitat; and

NOW, THEREFORE, BE IT RESOLVED, that pursuant to Section 816 of the Adirondack Park Agency Act, the Adirondack Park Agency finds the Jay Mountain Unit Management Plan, dated May, 2010, conforms with the general guidelines and criteria of the Adirondack Park State Land Master Plan; 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, A. Lussi, F. Mezzano, C. Stiles, L. Ulrich, F. W. Valentino, C. Wray, J. Fayle (DED), E. Lowe (DEC), R. Morgiewicz (DOS)

NAYS: None

ABSTENTIONS: None

ABSENT: W. Thomas

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PREFACE

The Jay Mountain Wilderness Area 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 (Department) rules and regulations, Department policies and procedures and the State Environmental Quality and Review Act.

Most of 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 Jay Mountain 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 re-codified as Executive Law §816. The Master Plan 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 Master Plan 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 Master Plan classifies the lands which are the subject of this UMP as part of the Jay Mountain Wilderness Area.

The Master Plan 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 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 areas of 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.

Need for a Plan

Without a UMP, the management of the public lands that comprise the Jay Mountain Wilderness Area can easily become a series of uncoordinated reactions to immediate problems. The UMP provides a proactive and unified strategy for protecting the natural resources of the unit while allowing for public recreation. Since no facility construction, designation or major rehabilitation can be undertaken until a UMP is completed and approved, management is limited to routine maintenance and emergency actions. A written plan stabilizes management during changes in personnel and integrates applicable statutes, rules and regulations, policies, and area specific information into a single reference document. Other benefits of the planning process that are valuable to the public include the development of area maps, and a greater awareness of recreational opportunities and needs within specific areas of the Adirondack Park. In view of tight budgets and competition for monetary resources, plans that clearly identify area needs have greater potential for securing funding, legislative support, and public acceptance.

This document provides a comprehensive inventory of natural resources, and existing facilities and uses, while identifying the special values which justify the protection of this area in perpetuity for future generations. The planning process involved the gathering and analysis of existing uses and conditions, the identification of important issues, and the projection of future trends. All management considerations were developed within a regional context, including lands adjacent to the unit. Ordinarily, the plan will be revised on a five-year cycle, but may be amended when necessary in response to changing resource conditions or administrative needs. Completion of the various management actions within this UMP will be dependent upon adequate manpower and funding. Where possible, DEC will work with volunteer groups, local communities, and town and county governments, to accomplish some of the proposed projects or maintenance. Likewise, alternative funding sources may be sought to cover the expenses of proposed projects

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ACKNOWLEDGMENTS

The development of this plan is part of an ongoing initiative to complete all remaining Unit Management Plans (UMPs) for forest preserve lands in the Adirondack and Catskill Parks. Opportunities for public involvement were provided through a mailing—requesting written comments on planning issues—followed by an information meeting and finally the review of a draft unit management plan. Some of the individuals and organizations that actively participated in the planning process are listed below:

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SECTION I: INTRODUCTION

A. Planning Area Overview

The Jay Mountain Wilderness Area (JMWA) is located in the northeast portion of the Adirondack Park within the Towns of Jay and Lewis in Essex County. The unit is comprised of one Forest Preserve parcel covering 7,951 acres in area and has approximately 21.08 miles of boundary line. The unit is located within the Lake Champlain watershed and the lesser watersheds of the Ausable and Boquet Rivers.

The Planning Area is bounded on the north and west by private lands, on the east by the Taylor Pond Wild Forest Planning Area, and on the south by the Hurricane Mountain Primitive Area. Other nearby Forest Preserve units include the Sentinel Range Wilderness Area and the Wilmington Wild Forest.

At 7,951 acres, the JMWA is the smallest Wilderness Area in the Adirondack Park. The unit was originally designated as Primitive because it did not meet the 10,000 acre threshold established for Wilderness Areas by the APA. However, in 1985 the area was reclassified to Wilderness in recognition of its remote and wild character.

The namesake of the unit, Jay Mountain, is the one of the highest and most conspicuous peaks in the unit. The mountain provides a beautiful backdrop for the village of Jay, and can be seen from many other nearby towns. The only trail in the unit is a well worn herdpath that leads to the summit of Jay Mountain, which is the most popular destination in this lightly used area.

B. Unit Geographic Information

The unit boundary follows public roads and individual property lines. Property lines, where surveyed, are blazed, painted yellow, and marked with Forest Preserve signs.

The JMWA comprises a 7,951 acre block of Forest Preserve, made up of the following parcels:

<u>Essex Tract, Henry's Survey</u>

Lots 83, 87, 125, 126, 141, 142, 143, 144, 145, and 146
Portions of Lots 84, 86, 115, 118, 127, 147, and 148

<u>South Tract</u>

Lots 7, 8, 10, 13, 14,15, 17, 18, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30, 31, 32, and 33
Portions of Lots 6, 16, and 23

Old Military Tract, Township One, Thorn's Survey

Portions of Lots 37 and 43

The unit is covered by the Lewis 7½ x 15 minute USGS quadrangle map.

C. General Access

Access to the periphery of the JMWA is gained mainly via the following locations:

1. Along the Jay Mountain Road, near the junction with Upland Meadows Road in the town of Jay. Location of the Jay Mountain Herdpath.

2. Along the Jay Mountain Road in the town of Jay, also called the Wells Hill Road in the town of Lewis, where this road forms the common boundary between the JMWA and the Hurricane Mountain Primitive Area.

3. Along the Seventy Road in Lewis, where this road forms the common boundary between the JMWA and the Taylor Pond Wild Forest.

Hamlets nearby the JMWA include Lewis, Jay and Upper Jay. The entire unit lies within one day's drive of over 70 million people in the northeast states and Canada. Nearby population centers include Albany, New York (130 miles), New York City (280 miles), and Montreal, Quebec (100 miles).

D. General History

The lands now comprising the JMWA were originally part of the "Old Military Tract" (Township One). The Old Military Tract was land that was set aside by the State in 1786 as a "memorial of public gratitude" to compensate Revolutionary War veterans for their service. Unfortunately, this land was too remote to be of immediate value to the veterans, and none are known to have settled there (Plunz, 1999). Not long after this, however, settlement began to occur in the Jay Mountain area, and by the turn of the 19th century, villages had been established at Jay (originally known as Mallory's Bush), Keene, and Lewis.

Native American use of the area is known from historical records and archeological evidence, but no permanent settlements have been documented.

The road that forms the southern boundary of the unit is one of the earliest roads into the northern Adirondack region. The current Jay Mountain Road (also called the Well's Hill Road in the town of Lewis) was in use as early as 1790 and was part of a route which lead from Essex, on Lake Champlain, through Lewis and Jay, and on to points westward. This road was a vital link to the newly forming communities in the area. It provided a means for new settlers to enter the area, and for local products to be transported to markets on Lake Champlain and beyond.

The earliest industries in the Jay mountain area included lumber, iron and farming. Timber was cut for local sawmills, and for charcoal and potash production. As the available timber was removed from the valley in the vicinity of Jay and upper Jay, logging operations moved to the surrounding hillsides, and eventually up into the mountains. According to the Sargent Commission map of 1884, most of the lands that now comprise the JMWA were logged for softwood sawtimber by this time. Likewise, much of the hardwood timber was removed from the area to make charcoal and potash. Charcoal was used at the numerous iron forges in the region including the early forges located in Jay, Upper Jay and Ausable Forks. Farming took place in the Glen, which is a broad, elevated valley in the upper Styles Brook, drainage. Remnants of rock walls attest to the use of the western portions of the JMWA as pastures.

Much of the logging and charcoal production that took place in the JMWA was done by the J. and J. Rogers Company of Ausable Forks. Started in the 1830s, the Rogers Company quickly grew to be the one of the largest producers of iron in the country. By the 1860s, they were producing over 6000 tons of iron and iron products a year (Unidentified Newspaper Article [Adirondack History Center archives]). In order to sustain this level of output, the company had to consume large amounts of local resources. They had vast land holdings throughout the Ausable Valley Region, including much of the land now contained in the JMWA, and timber was cut from 1000 acres of this land per year to supply the 1,600,000 bushels of charcoal needed to fire their forges (McMartin, 1994). There was a large charcoal operation in the upper Glen, which utilized hardwoods from the JMWA and the nearby Hurricane Mountain Primitive Area.

In the 1890s the J. and J. Rogers Company reorganized its industry from iron to wood pulp products, and began cutting softwoods in the Ausable Valley and High Peaks Region. At this time a large lumbering operation was started in the upper reaches of the Glen including portions of the JMWA and the nearby Hurricane Mountain Primitive Area. A flume was constructed to transport pulp logs from the upper Glen to the East Branch of the Ausable River where they could be floated to the Company mill in Ausable Forks. This flume was approximately eight miles long (Reveille, 1957), and may be one of the longest ever constructed in the Adirondack Region.

During the early part of the 20th century, devastating fires swept through much of the Adirondacks. Roughly 15 % of the lands now in the Adirondack Park were burned during this period (Smith, 1990). Severe forest fires swept through the lands belonging to the JMWA in 1908. The fire started on East Hill in Keene and spread north and east consuming much of the forest in the JMWA and the nearby Hurricane Mountain Primitive Area (Reveille, 1957). A 1916 Conservation Department map of the Adirondacks shows that most of the lands now contained in the JMWA burned in these fires. The numerous rock outcrops and stands of white birch that are common in the unit are a result of these fires.

In 1998, a massive ice storm struck northern New York and adjacent provinces in Canada. The storm deposited from two to four inches of ice in the Northern Adirondacks and left a lasting impact on the forests in the region. Many areas of the JMWA were affected by the storm with large limbs and entire tops being broken out of trees. The forest component that shows the greatest damage from the storm are the paper birch stands that are common throughout the unit.

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SECTION II: INVENTORY, USE AND CAPACITY TO WITHSTAND USE

A. Natural Resources

1. Physical

a. Geology

Although the JMWA does not contain any of the so called "High Peaks" of the Adirondacks, it is part of the High Peaks region by virtue of its bedrock geology and topography, which are similar.

The High Peaks region appears as part of a mountainous dome covering an area approximately 60 miles in diameter. The region, referred to as the "Central Highlands", is part of the Grenville Province, a large area of bedrock extending into Canada. The high peaks are a remnant of a mountain region existing 1 – 1.3 billion years ago. Once flat, the Adirondacks were covered by sedimentary rock, the same sedimentary rock that surrounds the region today. During more recent geologic time, the region was uplifted, creating a central dome with its sedimentary covering removed by erosion. The dome is characterized by three prominent geologic features: (1) long straight valleys running north-northeast, (2) gently curved ridges and valleys, and (3) radial drainage patterns flowing outward from the dome. Elevations rapidly fall off to the north and east in the central highlands, and decline more gradually south and west.

Much of the bedrock in the High Peaks is metanorthosite, a metamorphic rock that has been subject to extremely high temperatures and pressures. Metanorthosite is very hard, extremely dense, and resists weathering and erosion. It was left towering over the countryside as sedimentary rock wore away. Rock color ranges from white to bluish gray. Plagioclase feldspar is its major component. The largest area of such rock is the Marcy massif which underlies most of the high peaks. The massif contains numerous "dikes" or intrusions of igneous rock that penetrate the anorthosite. Chemically less stable and less resistant to erosion than the base rock, many of these dikes eroded to form stream channels. Where the dike rock in stream beds is fractured and broken, waterfalls and stream rapids occur.

The bedrock in the JMWA belongs to a complex of metamorphosed sedimentary rocks that directly overlie the metanorthosite dome in the area of Jay, Lewis, and Chesterfield. This group of rocks, known as the Rocky Branch Complex, is distinct from much of the surrounding high peaks region. The two major rock types underlying the JMWA are olivine metagabro, and metanorthosite. Olivine metagabro underlies the southern half of the unit with representative exposures on Saddleback Mountain and the western ridgeline of Jay Mountain. The metanorthosite, underlying the northern portion of the unit, is distinct from the metanorthosite found throughout the region due to a lack of large crystals (megacrysts) which are common elsewhere (Whitney and Olmsted, 1993). Representative exposures of this rock can be found on Arnold and Slip Mountains, and on the eastern ridge (true summit) of Jay Mountain.

Rocks in the High Peaks region have also been altered by folding and faulting of the crust, which serves to relieve internal pressures. Valleys form along and within the fault zones. These valleys tend to be long and straight and generally follow a north-northeast direction; they divide the High Peaks into its characteristic mountain ranges. The valleys forming the headwaters of Derby and Hale Brooks are examples of such fault zones.

Even resistant rocks eventually succumb to the pull of gravity and slabs are torn from craggy peaks, leaving cliffs with piles of broken rock at their bases. (Kendall, 1987). Referred to as "mass wasting," this down slope movement of weathered, disintegrated rock is evident along all cliffs and steep slopes. Rock falls and slides are encountered on Jay Mtn, Slip Mtn and Saddleback Mtn.

Despite the cumulative effects of running water, weathering, mass wasting, and other agents of change, glacial erosion and deposition have had dramatic effects on high peaks landscapes. During the Pleistocene Epoch, 1.6 million years ago, huge ice sheets advanced and retreated several times across the Adirondacks. The last major ice sheet, the Wisconsian, reached its maximum advance across the area over 21,000 years ago. The ice was thick enough to cover the ridge of Jay Mountain as evidenced by sandstone (not a native rock in this area) cobbles on the ridgeline (Jaffe, 1986). Ten thousand years later in retreat, this glacier accomplished spectacular erosion; plucked rock fragments in its path, scoured mountaintops, scraped away soil and loose sediments, wore away bedrock, and gouged river valleys into deep troughs. Melting ice sheets released huge volumes of melt water.

A notable mineral that is found in the area is wollastonite. Wollastonite is formed from silica and calcite, and is used in the manufacture of plastics and ceramics. It is a common mineral, but deposits large enough and pure enough for commercial exploitation are unusual (NYCO, 2005). Large deposits of wollastonite have been discovered at two locations in the northeastern Adirondacks; one of which is located in Lewis adjacent to the JMWA. NYCO Minerals, Inc. currently operates an open pit mine at this location from which they have been extracting wollastonite since the 1980s.

b. Soils

Soils are formed by the chemical and physical breakdown of parent material. The soils in the JMWA are mostly derived from glacial deposits called till. Glacial tills are a mixture of clay, silt, sand, and stone and are deposited in several different ways. Basal till is deposited beneath an active glacier as the ice melts from contact with the earth, or as material in the ice gets lodged on the underlying rock. Ablation till is the material deposited (left behind) as retreating glaciers melt away.

Although soil characteristics are quite variable and fluctuate widely from location to location, the soils characteristics found in the JMWA can be described as follows: Soil depth and richness (productivity) is generally greater at the base of the mountains and on terraces, and decreases with elevation. Mid-slope soils are still somewhat deep and rich, and are generally well drained. The upper slopes and mountain tops of the unit are characterized by thin soils with many rock outcrops. These thin soils and rock outcrops are due in part to severe wildfires that swept through the unit early in the 20th century. These fires were so

hot in places that they burned the organic soil layer along with the vegetation (and its associated root mat). With the loss of the organic layer and vegetation, there was nothing to protect the mineral soils from the erosive power of the wind and rain.

Detailed soil survey maps for the JMWA are not available. Broad soil types, accurate to an area about 40 acres in size, were delineated using aerial photographs. These soil type interpretations are general and have not been completed.

The following soil series, and associations of series, are located in the JMWA as per APA GIS information. Soil series descriptions are taken from: National Resources Conservation Service (NRCS) official Soil Series Descriptions - http://soils.usda.gov/technical/classification/osd/index.html.

- Becket:
  The Becket series consists of very deep, well drained soils that formed in a loamy mantle overlying dense, sandy till on drumlins and glaciated uplands. They are moderately deep to a densic contact.

- Hermon:
  The Hermon series consists of very deep, somewhat excessively drained soils on upland till plains, hills and ridges. These soils formed in glacial till.

- Lyman:
  The Lyman series consists of shallow, somewhat excessively drained soils formed in glacial till. They are found on rocky hills, mountains and high plateaus.

- Pittsfield:
  The Pittsfield series consists of very deep well drained soils formed in calcareous till. They are nearly level to very steep soils on uplands.

Soil associations found within the unit:

- Becket-Lyman:
  The Becket series consists of very deep, well drained soils that formed in a loamy mantle overlying dense, sandy till on drumlins and glaciated uplands. They are moderately deep to a densic contact.

  The Lyman series consists of shallow, somewhat excessively drained soils formed in glacial till. They are found on rocky hills, mountains and high plateaus.

- Becket-skerry:
  The Becket series consists of very deep, well drained soils that formed in a loamy mantle overlying dense, sandy till on drumlins and glaciated uplands. They are moderately deep to a densic contact.

  The Skerry series consists of very deep, moderately well drained soils that formed in a loamy mantle overlying dense, sandy glacial till on drumlins and glaciated uplands. They are shallow or moderately deep to a densic contact.

- Pillsbury-Tug hill:
  The Pillsbury series consists of very deep, poorly and somewhat poorly drained soils that formed in compact, loamy glacial till on glaciated uplands. They are shallow or moderately deep to a densic contact and very deep to bedrock.

  The Tughill series consists of very deep, very poorly drained soils formed in till derived from acid siliceous rocks. They are in depressional areas on till plains.

- Skerry-Pillsbury:
  The Skerry series consists of very deep, moderately well drained soils that formed in a loamy mantle overlying dense, sandy glacial till on drumlins and glaciated uplands. They are shallow or moderately deep to a densic contact

  The Pillsbury series consists of very deep, poorly and somewhat poorly drained soils that formed in compact, loamy glacial till on glaciated uplands. They are shallow or moderately deep to a densic contact and very deep to bedrock.

c. Terrain/Topography

The topography in the JMWA ranges from the relatively low-lying areas along the Jay Mountain Road and Seventy Road to the top of Saddleback Mountain. Although there is variation in the terrain, the unit is predominately mountainous upland.

Jay Mountain (3,600 ft), Saddleback Mountain (3,615 ft), and Slip Mountain (3,314 ft) dominate the center of the unit. From these mountains the elevation gradually slopes down to between 1,500 - 2,000 feet at the unit boundaries. Lesser peaks within the unit include Arnold Mountain, Lawler Mountain, and Death Mountain

Maximum relief (change in elevation) across the unit is 2,165 feet from the top of Saddleback Mountain (3,615 ft.) down to the area along the Jay Mountain Road (1,450 ft. elev).

The unit is covered by the Lewis 7½ x 15 minute USGS quadrangle map.

d. Water

The JMWA lies within the Lake Champlain watershed. The unit is drained by small, high gradient, headwater streams. These streams flow east to the Boquet River or west to the Ausable River, and ultimately to Lake Champlain.

Ponded waters in the JMWA are limited. The NYS Biological Survey lists no ponds within the unit; however, several small beaver flows, including Merriam Swamp, exist. These beaver ponds are most likely fishless.

e. Wetlands

Wetlands possess great ecological, aesthetic, recreational, and educational value. In their capacity to receive, store, and slowly release rainwater and meltwater, wetlands protect water resources by stabilizing water flow and minimizing erosion and sedimentation. Many natural and man-made pollutants are removed from water entering wetland areas. Also, because they constitute one of the most productive habitats for fish and wildlife, wetlands afford abundant opportunities for fishing, hunting, trapping, and wildlife observation. The wetlands of the unit serve as important habitats for a number of wildlife species listed as threatened or species of special concern which may be present in the unit. For visitors, the expanses of open space that wetlands provide offer a visual contrast to the heavily forested character prevalent in most of the JMWA.

APA GIS data identifies 41 wetlands in the JMWA with a total area of 82 acres (approximately 1% of the unit). Merriam Swamp, at 11 acres, is one of the larger wetlands in the unit. Other large wetlands are located in the upper reaches of Spruce Mill Brook, Derby Brook, Hale Brook, and Rocky Branch. Many of these wetlands are associated with beaver activity.

f. Air Resources and Atmospheric Deposition

The effects of various activities on JMWA 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. However, the summits are often obscured by haze caused by air pollutants when a large number of small diameter particles exist in the air. Mountain visibility is reduced considerably on high sulphate days (O'Neil 1990). Air quality may be more affected by particulate matter blown in from outside sources rather than from activities within the unit.

The adverse effects of atmospheric deposition on the Adirondack environment has been documented by many researchers over the last two decades. While permanent monitoring sites have not been established in the HMPA general observations of the effects of acidic deposition on the regional ecosystem are numerous and well documented.

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.

- Decrease supplies of certain nutrients in soils to levels at or below those required for healthy growth.

Nitrogen deposition is now recognized with sulfur as an important contributor to effects on forests in some ecosystems, which occurs 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. It is also a potential contributor to adverse impacts in some low-elevation forests.

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. Recently, studies suggest 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 of current-year foliage during the period 1960-1985. 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 forest of the Adirondacks and Northern New England are identified as one 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 6 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, 2002). 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. Additionally, EPA reported that 19% of these lakes were acidic in 1984, based on their surveys of waters larger than 10 acres. A 1990 report by the ALSC (which included lakes of less than 10 acres) in an extensive survey of 1,469 lakes in the Adirondacks, found that 24% of Adirondack lakes had summer pH values below 5.0 a level of critical concern to biota. Moreover, approximately half of the waters in the Adirondacks surveyed had ANC values below 50 making theme susceptible to episodes of acidification. Confirming that, EPA's Environmental Monitoring and Assessment Program (EMAP) sampling in 1991-1994 revealed that 41% of the Adirondack lakes were chronically acidic or susceptible to episodic acidification, demonstrating that a high percentage of watersheds in the Adirondacks are unable to neutralize current levels of acid rain.

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. This adverse effect will continue unless further limits are placed on emissions of acid rain precursors.

Monitoring

In the 1980s, the ALSC surveyed waters near this unit, but none within it. Summaries of those data can be found at http://www.adirondacklakessurvey.org see: ALS Pond Data. Since that time 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. While none of these waters are located directly within the boundaries

of the unit, one LTM water (Owen Pond) is located in relatively close (within 10 miles) proximity to the west of JMWA. Annual summaries of 22 chemical parameters are downloadable from the ALSC website.

g. Climate

The region's climate, in general terms, is best described as cool and moist. Climatic conditions can vary considerably throughout the unit and are influenced by such factors as slope aspect, elevation, seasonal temperatures, precipitation, prevailing winds, and the location of natural barriers.

Summers tend to be warm with cool nights. Maximum day-time temperatures seldom exceed 90 degrees F. Frost can occur any month of the year and occasional freezing temperatures are recorded in July and August. Winters are long and extremely cold. Temperatures of -40 degrees F are common, often accompanied by high winds. Arctic-like conditions may be encountered at high elevations. Daily temperature variations of 20-30 degrees F are common between peripheral entry points and interior locations. Annual precipitation, in rainfall, is between 35 and 45 inches per year; snowfall ranges from 100 to 150 inches per year.

Due to the availability of direct sunlight, southern slopes are drier than northern slopes. The latter tend to retain more moisture. Prevailing winds are generally westerly, but may be modified by topography. Eastern slopes, leeward of prevailing winds, tend to be drier than western slopes. Extensive damaging winds (hurricane force) are rare, but do occur when coastal storms move inland. The resulting influence of climate on local flora and fauna, in particular, is profound.

2. Biological

a. Vegetation

The JMWA occupies a transition zone between the boreal forests to the north and the mixed forests of the south. Its forests represent a mosaic of plant communities that correspond to local variations in soil, temperature, moisture and elevation. Past events such as fire, wind, land clearing, and logging have exerted a strong influence on present day conditions. These disturbances have contributed to a great diversity of forest cover types which support a vast variety of animal and plant species.

Severe wildfires in the early 20th century have altered the composition of JMWA forests dramatically. Much of the forest in the unit burned at this time, and charred wood can still be found in the organic soil horizon (where soils persist) on the ridge of Jay Mountain. Sun-bleached stumps from fairly large trees are found sitting on areas of bare rock along the ridge, indicating that these rocks were once covered with soil and other vegetation. These soils were washed away after the vegetation and organic matter that held them in place were burned in the fires. Like the ridge of Jay Mountain, it is not uncommon to find charred wood in the organic soil horizon and fire scarred stumps throughout the rest of the unit. The aftermath of

these fires can also be seen in the stands of white birch (a pioneer species that seeds in after fire) that blanket much of the unit.

The Ice Storm of 1998 also had an effect on plant communities in the unit. Damage from the storm ranged from mild to heavy, and most stands in the unit were affected. Examples of this damage can be seen throughout the affected areas, where many of the trees have numerous broken branches, missing tops, or are permanently bent over as is the case with many paper birches.

All plants on state land are protected by General State Land Use Regulations (6 NYCRR §190.8) which state 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, excepting under permit from the Commissioner of Environmental Conservation and the Assistant Commissioner for State Museum and Science Service..."*

Forest communities of the JMWA can be categorized using *Ecological Communities of New York State* (Edinger *et al*., 2002). Although numerous ecological communities are present at varying scales and degrees within the unit, the most prominent are:

- <u>Successional northern hardwoods</u>

  A hardwood or mixed forest that occurs on sites that have been cleared or otherwise disturbed. In the JMWA, the dominant trees are usually white birch (*Betula papyrifera*), often in pure stands, with scattered quaking aspen (*Populus tremuloides*) and red maple (*Acer rubrum*). A characteristic of successional forests is the lack of reproduction of the canopy species. Most of the tree seedlings and saplings in these forests are species such as balsam fir (*Abies balsamea*) and red spruce (*Picea rubens*) that are more shade-tolerant than the canopy species. This is a common forest type in the JMWA, largely the result of wildfires in the early twentieth century. Examples can be seen in Gelina Basin, the Hale Brook drainage, and in the upper reaches of the Derby Brook drainage.

- <u>Pine-northern hardwood forest</u>

  A mixed forest that usually occurs on gravelly outwash plains, delta sands, eskers, and dry lake sands in the Adirondacks. In the JMWA, pine-northern hardwood forests occur on excessively drained soils and are composed of red pine (*Pinus resinosa*) and white pine (*Pinus strobus*) with red oak (*Acer rubrum*) and northern hardwood species codominant. Examples of this forest type can be found on lower to mid-slopes on the western flank of Jay Mountain.

- <u>Beech-maple mesic forest</u>

  A hardwood forest with sugar maple (*Acer saccharum*) and American beech (*Fagus grandifolia*) codominant. These forests occur on moist, well-drained, usually acid soils. Common associates

are basswood (*Tilia americana*), American elm (*Ulmus americana*), white ash (*Fraxinus americana*), yellow birch (*Betula alleghaniensis*), Eastern hop hornbeam (*Ostrya virginiana*), and red maple (*Acer rubrum*). There are relatively few shrubs and herbs. Eastern hemlock (*Tsuga canadensis*) and red spruce (*Picea rubens*) may also be present at low densities. Examples of this forest type can be found in areas that were not greatly affected by the fires in the early 20th century, such as the eastern slopes of Bald Peak and Slip Mountain.

- Spruce-northern hardwood forest

  A mixed forest that occurs on lower mountain slopes, and upper margins of flats on glacial tills. Codominant trees are red spruce (*Picea rubens*), sugar maple (*Acer saccharum*), beech (*Fagus grandifolia*), yellow birch (*Betula alleghaniensis*), and red maple (*Acer rubrum*), with scattered balsam fir (*Abies balsamea*). Striped maple (*Acer pensylvanicum*) and mountain maple (*Acer spicatum*) are common subcanopy trees. Characteristic shrubs include hobblebush (*Viburnum lantanoides*). Examples of this forest type can be found on the mid to upper slopes of Jay Mountain.

- Mountain spruce-fir forest

  A conifer forest that usually occurs at elevations ranging from 3,000 to 4,000 ft. This forest occurs on upper slopes that are somewhat protected from the prevailing westerly winds, usually at elevations above spruce-northern hardwood forests, and below mountain fir forests. The dominant trees are red spruce (*Picea rubens*), and balsam fir (*Abies balsamea*). Common associates are mountain paper birch (*Betula cordifolia*) and yellow birch (*Betula alleghaniensis*). Subcanopy trees that are usually present at a low density include mountain ash (*Sorbus americana*), mountain maple (*Acer spicatum*), pin cherry (*Prunus pennsylanica*), and striped maple (*Acer pensylvanicum*). Examples of this forest type can be seen on Slip and Jay Mountains.

Unique Plant communities

- Spruce-fir rocky summit

  A community that occurs on cool, dry, rocky ridgetops and summits where the bedrock is non-calcareous (such as anorthosite, quartzite, or sandstone), and the soils are more or less acidic. The vegetation may be sparse or patchy, with numerous rock outcrops. The species have predominantly boreal distributions. Characteristic species include red spruce (*Picea rubens*), balsam fir (*Abies balsamea*), mountain ash (*Sorbus americana*), harebell (*Campenula rotundifolia)*, and three-toothed cinquefoil (*Potentilla tridentata*). There are usually many mosses and lichens growing on rock outcrops. Examples of this forest type can be seen along the eastern ridgeline of Jay Mountain.

- Red pine rocky summit

  A community that occurs on cool, dry, rocky ridgetops and summits where the bedrock is non-calcareous (such as anorthosite, quartzite, or sandstone), and the soils are more or less acidic. Red pine (*Pinus resinosa*) is typically dominant , but may also be codominant with red oak (*Quercus rubra*) and/or white pine (*Pinus Strobus*). Characteristic shrubs include blueberry (*Vaccinium angustifolium*) and bearberry (*Arctostaphylos uvaursi*). Characteristic herbs include trailing arbutus (*Epigaea repens*), wintergreen (*Gaultheria procumbens*), tufted hairgrass (*Deschampsia flexuosa*), poverty-grass (*Danthonia spicata*), and Pennsylvania sedge (*Carex pensylvanica*). There are usually many mosses and lichens growing on rock outcrops. Pure natural red pine is considered a unique forest type due to the fact that red pine is almost always associated with seedling establishment following a fire. Examples of these stands can be found on the western flank of Jay Mountain on steep, south to southwestern slopes.

- Jack pine

  Small communities, and scattered individuals, of jack pine (*Pinus banksiana*) exist on several mountains in JMWA. Jack pine is considered uncommon in New York State, but it is even more uncommon at higher elevations such as the ridgelines of Jay and US mountains where it is found in the unit (Miller, 2001). Jack pine is generally a fire dependant species, and the trees have serotinous cones which require high heat to open and release the seeds within them. Once seedlings are established, jack pine requires full sunlight (which is usually present on a burned-over site) to compete successfully with other vegetation. Jack pine is uncommon in New York State due in part to the infrequency of wildfires.

Rare and Endangered Plants

A review of the New York Natural Heritage Program (NYNHP)database for threatened and endangered plant species indicates that northern running-pine (*Diphasiastrum complanatum*) and pink wintergreen (*Pyrola asarifolia ssp. asarifolia*) may occur within the unit or adjacent areas in the appropriate habitat.

- Northern running-pine - Northern running-pine (*Diphasiastrum complanatum*) is classified as endangered in New York State. It is a native club moss.

- Pink wintergreen - pink wintergreen (*Pyrola asarifolia ssp. asarifolia*) is classified as threatened in New York State. It is a native evergreen perennial herb.

Rare communities and species that have been identified by the NYNHP are listed in Appendix C.

All plant species that are classified as endangered, threatened, or exploitable are protected by the New York Protected Native Plants Regulations (6 NYCRR §193.3) and the Environmental Conservation Law (Section 9-1503). The sites of any proposed facilities or improvements will be surveyed for the presence of protected plant species prior to construction. Likewise, any existing facilities or improvements that have

the potential to directly impact a protected plant species will be closed or relocated.

Invasive Plants

General Overview

Nonnative, invasive species directly threaten biological diversity and the high quality natural areas in the Adirondack Park. Invasive plant species can alter native plant assemblages, often forming monospecific stands of very low quality forage for native wildlife, and drastically impacting the ecological functions and services of natural systems. Not yet predominant across the Park, invasive plants have the potential to spread - undermining the ecological, recreational, and economic value of the Park's natural resources.

Because of the Adirondack Park's continuous forested nature and isolation from the normal "commerce" found in other parts of the State, its systems are largely functionally intact. In fact, there is no better opportunity in the global temperate forested ecosystem to forestall and possibly prevent the alteration of natural habitats by invasive plant species.

Prevention of nonnative plant invasions, Early Detection/Rapid Response (ED/RR) of existing infestations, and monitoring are primary objectives in a national strategy for invasive plant management and necessitates a well-coordinated, area-wide approach. A unique opportunity exists in the Adirondacks to work proactively and collaboratively to detect, contain, or eradicate infestations of invasive plants before they become well established, and to prevent further importation and distribution of invasive species, thus maintaining a high quality natural landscape. The Department shares an inherent obligation to minimize or abate existing threats in order to prevent widespread and costly infestations.

The Department has entered into a partnership agreement with the Adirondack Park Invasive Plant Program (APIPP). The mission of APIPP is to document invasive plant distributions and to advance measures to protect and restore native ecosystems in the Park through partnerships with Adirondack residents and institutions. Partner organizations operating under a Memorandum of Understanding are the Adirondack Nature Conservancy, the Department, APA, Department of Transportation, and the Invasive Plant Council of NYS. The APIPP summarizes known distributions of invasive plants in the Adirondack Park and provides this information to residents and professionals alike. Specific products include a geographic database for invasive plant species distribution; a central internet website for invasive plant species information and distribution maps; a list-serve discussion group to promote community organization and communication regarding invasive species issues; and a compendium of educational materials and best management practices for management.

Terrestrial Invasive Plant Inventory

In 1998 the Adirondack Nature Conservancy's Invasive Plant Project initiated 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 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 ED/RR and management efforts.

Terrestrial Invasive Plant Locations are listed in Appendix G.

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, 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 (*Hydrocharus 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*), 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.

Management Recommendations

The Department will enter into cooperative partnerships through Adopt-A-Natural-Resource Stewardship Agreements (AANR) and Temporary Revocable Permits (TRP) to facilitate containment and eradication of the invasive plant occurrences within the unit. Any eradication work involving the use of herbicides will be carried out under an Inter-Agency Work Plan for Management of Terrestrial Invasive Plant Species on State Land in the Adirondack Park (Invasive Plant Work Plan), developed by the Department and APA. This Invasive Plant Work Plan will provide a template for the process through which comprehensive active terrestrial invasive plant management will take place on state lands in the Adirondack Park. The Work Plan will provide protocols for implementing Best Management Practices (BMPs) on state land. The protocols will describe what management practices are acceptable and when they can be implemented, who can be authorized to implement the management practices, and which terrestrial invasive plant species are targeted. The Work Plan will also describe a process by which the Department may enter into AANRs to facilitate individuals or groups seeking to manage terrestrial invasive plant species on state lands using the listed BMPs, including herbicide use, in the appropriate circumstances. The Invasive Plant Work Plan will be subject to SEQRA and serve as the mechanism for assessing the impacts and suitability of eradication BMPs and actions.

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 BMPs 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

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 should be implemented in probable locations of invasive plant introductions:

- Public Day Use Areas
- Parking Areas
- Campgrounds
- Boat Launches
- Dedicated Snowmobile Trails
- Horse Trails

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.

Campground Maintenance

Forest Preserve Campgrounds will be inventoried for invasive plant establishment on a yearly basis. Staging areas of spring clean-up debris and soils within the Campground will be closely monitored for

invasive plant establishment. Campgrounds already infested with priority invasive plant species will incorporate ED/RR protocols into that respective Campground's yearly plan of work and Unit Management Plan. (Example: DEC's Lake Eaton, Eighth Lake, Golden Beach and Limekiln Lake Public Campgrounds are all documented having multiple Garlic mustard infestations at each facility.) Sanitization protocols for clothing, boots, tools and motorized equipment utilized at Campgrounds will be established.

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 should 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 should 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 should 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 should 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.

Forest Health

A combination of many factors can influence the health of a plant community. Physical factors tend to be weather related with notable examples being lightning, fires, ice damage, severe winds, flooding and drought.

Biological factors are variable and include the effects of disease, insects, and wildlife on the forest environment. Three major forest insects and one major disease described below have had an effect on this area (DEC-Forest Health Reports, NYS Forest Health: Summary Report of Conditions for 2003). The effects of acidic deposition have been discussed previously in the Air Resources section of this plan.

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

- Eastern Spruce Budworm - The Eastern spruce budworm (*Choristoneura fumiferana*) is considered to be one of the most destructive conifer defoliators in North America. Host species include balsam fir in addition to red, white, and black spruce. The last significant incidence of this pest within the Adirondack Park occurred in the mid 1970s. Populations of this insect, while currently not a problem, are being monitored throughout the northeast.

- Forest Tent Caterpillar - The forest tent caterpillar (*Malacosoma disstria*) a native insect, may be found wherever hardwoods grow. Outbreaks have occurred at 10 to 15 year intervals with the last widespread outbreak in the late 1970s. While portions of St. Lawrence County were moderately to severely defoliated in 2002, 2003, 2004 and 2005, no widespread outbreaks were reported for Essex County. Given the proximity of Essex County to St. Lawrence County, An outbreak of forest tent caterpillars is possible in the Hurricane Mountain region within the next five years. Favored hosts of forest tent caterpillars are sugar maple and aspen with birch, cherry, and ash also being utilized.

- Balsam Woolly Adelgid - The balsam woolly adelgid (*Adelgaes piceae*), a pest of true firs, was introduced into the United States from Europe or Asia around the turn of the 20th century. Since that time it has spread throughout the United States and Canada.

In addition, several insect pests have been recently introduced to this country and have the potential to negatively impact the forests in the Adirondack Park, including the JMWA. These include the emerald ash borer (*Agrilus planipennis*), sirex wood wasp (*Sirex noctilio*), and Asian longhorned beetle. As a result of these recent infestations, state and federal agencies have enacted quarantines, and taken other measures to limit the spread of these damaging insect species. New York has adopted a regulation that prohibits the import of firewood into the state unless it has been heat treated to kill pests. The regulation also limits the transportation of untreated firewood to less than 50 miles from its source. To learn more about this new regulation, or the threat from invasive insects, please visit the following DEC web page: http://www.dec.ny.gov/animals/28722.html

- Emerald Ash Borer (*Agrilus planipennis*) This Asian beetle, discovered in 2002 in southeastern Michigan and nearby Windsor, Ontario, infests and kills North American ash species (*Fraxinus* sp.) including green, white, black and blue ash. Thus, all native ash trees are susceptible. Damage is caused by the larvae, which feed in tunnels (called galleries) in the phloem just below the bark. The serpentine galleries disrupt water and nutrient transport, causing branches, and eventually the entire tree, to die. Adult beetles leave distinctive D-shaped exit holes in the outer bark of the branches and the trunk. Adults are roughly 3/8 to 5/8 inch long with metallic green wing covers and a coppery red or purple abdomen. They may be present from late May through early September but are most common in June and July. Signs of infection include tree canopy dieback, yellowing, and browning of leaves. Most trees die within 1 to 4 years of becoming infested, unless treated.

  The infestation of emerald ash borer has spread from Michigan into nearby portions of Ohio and Indiana, and from Windsor, Ontario eastward towards New York killing millions of ash trees. An emerald ash borer infestation was discovered within New York state in Cattaraugus County in June of 2009. In response to this discovery DEC and DAM have enacted a quarantine encompassing Cattaraugus and Chautauqua counties that will restrict the movement of ash trees, ash products, and firewood from all wood species to limit the potential spread of emerald ash borer to other parts of the state. For more information on this invasive species, or the quarantine, visit the following DEC web page: http://www.dec.ny.gov/animals/6986.html.

  Ash trees represent a fairly small component of the forests of the JMWA; however, loss of these trees could limit the diversity of plant life and wildlife in the unit.

- Sirex Wood Wasp (*Sirex noctilio*) - Sirex wood wasps are a member of the horntail wasp family, Siricidae. The native range of Sirex includes Europe, Asia, and north Africa, where it is a minor pest. But it is a serious pest of pine plantations in Brazil, New Zealand, Australia, South Africa, Argentina, Uruguay, and Chile. Sirex is considered one of the top 10 most serious forest insect pest invaders, worldwide. In New York, red pine, Scots pine, Eastern white pine, Austrian pine, jack pine and pitch pine are all confirmed or very likely susceptible hosts, with a much larger likely host range among North American pines.

  Sirex causes damage and tree mortality in three ways: tunneling during larval development and emergence, and introduction of a toxic mucus and a symbiotic decay fungus, *Amylostereum areolatum*, during oviposition. The fungus and toxins working together can kill trees in a short period of time, creating a suitable environment for larval development. Sirex is capable of attacking and killing stressed or healthy host trees, though stressed trees seem to be initially preferred. This has been the case in infested stands observed in New York as well as in the global literature.

  In September 2004, an adult Sirex was trapped unintentionally in a trap set for exotic wood boring insects in Fulton, New York. This was the first North American discovery of the Sirex. Additional delimiting trapping surveys, and aerial and ground surveys for potentially infested trees were

conducted around Fulton and Oswego NY; as a result, there were additional finds of Sirex. Because positive trap detections continued to increase in the survey areas, the survey radius expanded 30 to 70 miles from Oswego during the summer and early fall of 2005. The most distant positive find occurred approximately 50 miles southwest of Oswego. In 2006, an expanded trapping program combining the efforts of multiple agencies (USDA Forest Service, USDA Aninal and Plant Health Inspection Service, NYS Department of Agriculture and Markets, and the Department) has resulted in even further expansion of the known infested area. As of August 21, 2006, 20 New York Counties (mostly in the western part of the state) and one Pennsylvania County have had at least one positive Sirex trap catch. Sirex has also been found in several locations in southern Ontario, Canada.

State and Federal Regulations on the transportation of pine wood products from areas of known or potential infestation are being proposed to help limit the spread of Sirex.

White pine trees represent a significant component of Adirondack forests, making Sirex wood wasps a serious threat in the area. The natural red pine stands that are considered a unique plant community in the JMWA are likewise at risk.

In addition to the major insect and disease problems listed above, various forest declines, have impacted the vegetation within the unit and the surrounding areas.

To provide a factual basis for public policy and private ownership decisions, permanent forest inventory and analysis plots have been established by the United States Forest Service (USFS) statewide, including forest preserve and private lands within the Adirondacks. These plots, and the evaluation of the data collected at them, document and provide information on forest changes that might be caused by atmospheric deposition, soil nutrient loss, global warming, and/or various insect and disease factors. From 1985 to the present, significant research efforts have been underway to study the effects of atmospheric deposition on forest species, with support from federal and state agencies, forest industry, and other institutions. Data are still being evaluated to determine the link between air pollution and forest health.

b. Wildlife

Wildlife communities in the unit reflect those species commonly associated with 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 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, Swainson's Thrush, Blackpoll Warbler, Winter Wren, and American marten). Terrestrial fauna are represented by a variety of bird, mammal, and invertebrate species. Amphibians and reptiles also occur on the unit, although 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 on and adjacent to, the unit). 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 JMWA.

With the exception of NYNHP surveys, comprehensive field inventories of wildlife species have not focused specifically on the JMWA or Forest Preserve units in general. Statewide wildlife survey efforts conducted by the Department have included two Breeding Bird Atlas projects (1980-1985 and 2000-2005) 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 (i.e., 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 character of the unit's vegetation has a significant effect in determining 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 28 species of reptiles and amphibians in USGS Quadrangles within, or partially within JMWA (See Table 1. Below). It is important to note that quadrangles (the survey sample unit) overlap and extend beyond the boundaries of these units. Therefore, recorded species do not necessarily reflect what was found on the units, but on the quadrangles. Some species may have been found on private lands adjacent to JMWA. However, these data should provide a good indication of the species found throughout these units. Documented amphibians and reptiles included 3 species of turtles, 8 species of snakes, 9 species of frogs and toads, and 8 species of salamanders on JMWA (Table 1). These species are classified as protected wildlife and some may be harvested during open hunting seasons. Of these species, 2 were classified as special concern and none were classified as endangered or threatened. Of the special concern species, Jefferson salamander and wood turtle were documented on the unit.

Table 1. Amphibian and reptile species recorded in USGS Quadrangles within, or partially within, the Jay Mountain Wilderness Area (JMWA) 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*
Allegheny Dusky Salamander	*Desmognathus ochrophaeus*
Northern Redback Salamander	*Plethodon cinereus*
Northern Spring Salamander	*Gyrinophilus p. porphyriticus*
Northern Two-lined Salamander	*Eurycea bislineata*
Jefferson Salamander[1]	*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*
Wood Turtle[1]	*Clemmys insculpta*
Painted Turtle	*Chrysemys picta*
Northern Water Snake	*Nerodia s. sipedon*
Northern Brown Snake	*Storeroom d. dekayi*
Northern Redbelly Snake	*Storeria o. occiptomaculata*
Northern Ringneck Snake	*Diadophis punctatus edwardsii*
Common Garter Snake	*Thamnophis sirtalis*
Smooth Green Snake	*Liochlorophis vernalis*
Black Rat Snake	*Elaphe o. obsoleta*
Eastern Milk Snake	*Lampropeltis t. triangulum*

[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).

- Allegheny Dusky Salamander (*Desmognathus ochrophaeus*) – The Allegheny Dusky Salamander is more terrestrial than its congener, the Northern Dusky Salamander, being found under rocks and woodland debris in moist forests usually near a seep or stream.

- 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 or 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 streambanks 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 semipermanent 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).

- Wood Turtle (*Clemmys insculpta*) – The Wood Turtle is a semiaquatic turtle that inhabits both the terrestrial and aquatic environment. It favors streams with sandy-pebbly substrates that are deep enough so that they do not freeze during hibernation, are well-oxygenated, and have good water quality. Terrestrial habitat includes a variety of wetlands, upland successional fields, and deciduous woodlands with open areas for basking (Tuttle and Carroll, 1997).

- 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 Water Snake (*Nerodia s. sipedon*) – This species is found in many aquatic habitats including lakes, ponds, rivers, and wetlands. Northern Water Snakes prefer fish and amphibians as their primary food source (Mitchell, 1994).

- Northern Brown Snake (*Storeria d. dekayi*) – Northern Brown Snakes are found in the soil-humus layer of hardwood forests, mixed hardwood-pine forests, pine woods, grasslands, early successional agricultural land, and urban areas where they are frequently found in gardens (Mitchell, 1994).

- 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).

- Northern Ringneck Snake (*Diadophis punctatus edwardsi*) – The Northern Ringneck Snake is a secretive woodland snake and is usually more common where abundant hiding structure exists, including stones, logs, and other rotting wood. Rocky, wooded hillsides are favored.

- 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).

- Smooth Green Snake (*Liochlorophis vernalis*) – The Smooth Green Snake is a snake of moist, grassy areas of wetland edges, meadows and old fields, and of deciduous and coniferous woods and woodland ecotones where they feed on insects, their forage of choice (Harding, 1997).

- Black Rat Snake (*Elaphe o. obsoleta*) – The Black Rat Snake uses a variety of habitats, including woodlands, field edges, farmlands, rocky hillsides and mountaintops. This species can be found in dry oak, oak-hickory, and mesic bottomland forests. Small mammals (primarily rodents) account for the majority of its diet. Black Rat Snakes may use talus slopes for hibernation during the winter (DeGraaf and Rudis, 1986).

- Eastern Milk Snake (*Lampropeltis triangulum*) – The Milk Snake is the snake of farm outbuildings and barns, taking cover under rocks, logs, firewood, or building materials. Natural habitat includes open woodlands, wetlands, old fields and pastures (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 109 and 72 species, respectively, in atlas blocks within, or partially within the JMWA (Appendix D). It is important to note that atlas blocks overlap, and extend beyond, the boundaries of these units. 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. Breeding Bird Atlas data should provide a good indication of the species found throughout the unit and adjacent region, however, many factors can influence survey results (e.g., weather, survey effort). Therefore, these 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 between the two atlas periods.

Birds Associated with Boreal Forest

The JMWA contains high elevation boreal forest that is significant for a variety of birds. In total, these boreal habitats comprise approximately 1,724 acres within JMWA.

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. Bicknell's Thrush was documented on JMWA during the 1980-1985 BBA, but not during the 2000-2005 BBA (See Tables 2., and 4. Below).

In an effort designed to protect birds associated with high elevation boreal forest and their habitats, New York State designated the Adirondack mountain summits above 2,800 feet in Essex, Franklin, and Hamilton

counties as the Adirondack Subalpine Forest Bird Conservation Area (BCA) in November 2001 (See Appendix E for a complete description of this particular conservation area). The New York State Bird Conservation Area Program was established in September 1997, under section §§11-2001 of the Environmental Conservation Law. The program is designed to safeguard and enhance bird populations and their habitats on selected state lands and waters.

Of 27 bird species associated with boreal forest that occur in New York (Tim Post, NYSDEC, personal communication), 14 (52%) have been documented in BBA survey blocks within, or partially within, JMWA (See Table 2. below). During the two BBA projects, 6 species of lowland boreal forest birds, 4 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; Boreal Chickadee, Bicknell's Thrush, Blackpoll Warbler, Blackburnian Warbler, and Tennessee Warbler were documented in the first atlas project but not the second, and Pine Sisken was 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 Jay Mountain Wilderness Area (JMWA).

		Breeding Bird Atlas Project	
Common Name	**Scientific Name**	1980-1985	2000-2005
Lowland Boreal Forest Species			
Boreal Chickadee	*Poecile hudsonicus*	X	
Ruby-crowned Kinglet	*Regulus calendula*	X	X
White-throated Sparrow	*Zonotrichia albicollis*	X	X
Pine Sisken	*Carduelis pinus*		X
White-winged Crossbill	*Loxia leucoptera*	X	X
Red Crossbill	*Loxia curvirostra*	X	X
High Elevation Boreal Forest Species			
Bicknell's Thrush	*Catharus bicknelli*	X	
Blackpoll Warbler	*Dendroica striata*	X	
Winter Wren	*Troglodytes troglodytes*	X	X
Swainson's Thrush	*Catharus ustulatus*	X	X
Species Commonly Associated with Boreal Forest			
Evening Grosbeak	*Coccothraustes vespertinus*	X	X
Blackburnian Warbler	*Dendroica fusca*	X	
Magnolia Warbler	*Dendroica magnolia*	X	X
Tennessee Warbler	*Vermivora peregrine*	X	

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. Habitat for these species is, and will be, very limited within JMWA.

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 JMWA 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 the Department, and the department'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 JMWA. From early spring (April) to late fall (November), deer are distributed generally 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.

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 Department 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 Department 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 cwdmaponei.html from ongoing sampling efforts, and current CWD regulations are available on the Department website: *http://www.dec.ny.gov/animals/33220.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, the Department 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 1860s. There is once again a breeding moose population in New York State that is estimated to be approximately 400-600 animals (Ed Reed, NYSDEC, 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 JMWA (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 (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	*Clethrionomys gapperi*	32
Meadow vole	*Microtus pennsylvanicus*	31
Yellow nose 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 the protective status of some vertebrates that may be in the unit:

- 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.

The following section describes those species that are classified as endangered, threatened, or special concern within JMWA (Table 4.) and briefly summarizes the habitat requirements of these species.

Table 4. Endangered, threatened, and special concern species documented in survey blocks within, or partially within, Jay Mountain Wilderness Area (JMWA). Bird data were collected during the 1980-1985 and 2000-2005 Breeding Bird Atlas projects. 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			
Peregrine Falcon	*Falco peregrinus*	X	
Special Concern			
Bicknell's Thrush	*Catharus Bicknell*	X	
Northern Goshawk	*Accipiter gentilis*	X	
Red-headed Woodpecker	*Melanerpes erythrocephalus*	X	
Sharp-shinned Hawk	*Accipiter striatus*	X	
Red-shouldered Hawk	*Buteo lineatus*		X
Whip-poor-will	*Caprimulgus vociferus*	X	
Amphibians and Reptiles[1]			
Special Concern			
Wood Turtle	*Clemmys insculpta*		
Jefferson Salamander	*Ambystoma jeffersonianum*		

Habitat Associations

Endangered Species

Birds

- Peregrine Falcon (*Falco peregrinus*) -- Three basic habitat requirements are necessary for nesting Peregrine Falcons, including open country in which to hunt, sufficient food resources (i.e., other avian species), and steep, rocky cliff faces for nesting (Ratcliffe, 1993). The falcons typically nest 50 to 200 feet off the ground and often near a river, stream, or other water body. Nesting sites for Peregrines usually include a partially-vegetated ledge (with both herbaceous and woody species) that is large enough for at least several young to move about during the pre-fledging period. The nest is a well-rounded scrape that is sometimes lined with grass. Ideally, the eyrie ledge also is sheltered by an overhang that protects the chicks from inclement weather. Occasionally, Peregrines may nest in old Common Raven nests. Suitable nest sites (e.g., snags, live trees, ledges) are located on the cliff face near the eyrie, on more distant sections of the cliff, and on the cliff rim.

Special Concern Species

Birds

- Bicknell's Thrush (Catharus bicknelli) – Throughout the range of Bicknell's Thrush, montane forest dominated by stunted balsam fir and red spruce is the primary habitat. Bicknell's Thrush utilizes fir waves and natural disturbances as well as the dense regenerated ecotones along the edges of ski slopes. The breeding habitat of Bicknell's Thrush is located in the Adirondacks at elevations > 2800 ft. 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.

- Northern Goshawk (*Accipiter gentilis*) – Important habitat characteristics for Northern Goshawk include a combination of tall trees with a partial canopy closure for nesting and woodlands with small, open areas for foraging (Johnsgard, 1990). In New York State, goshawks prefer dense, mature, continuous coniferous or mixed woods where they typically place their nest 30-40 ft. off the ground in the crotch of a tree (Andrle and Carroll, 1988).

- Red-headed Woodpecker (*Melanerpes erythrocephalus*) – Both wetlands (forested and riverine wetlands, beaver impoundments, dead tree swamps) and uplands (grasslands with scattered trees, golf courses, pastures, roadsides) are used by nesting Red-headed Woodpeckers (Bull, 1974). Red-headed Woodpeckers also are attracted to old burns and recent clearings. Nests are usually located in snags or dead limbs of live trees, or in the absence of trees, poles, fences, or roofs (Erlich, 1988).

- 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).

- 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.

- 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).

Amphibians and Reptiles

(See Habitat Associations of Amphibians and Reptiles listed above)

Extirpated and Formerly Extirpated Species

The moose, elk, wolf, eastern cougar, Canada lynx, bald eagle, golden eagle, and peregrine falcon all 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. Unregulated harvest also leads to the decline of some species, such as moose, wolf, elk, beaver, American marten, and fisher. More recently, some birds fell victim to the widespread use of DDT.

Projects to re-establish the peregrine falcon, bald eagle, and Canada lynx have been implemented. A total of 83 Canada lynx were released into the Adirondack Park from 1989 to 1991 by the SUNY College of Environmental Science and Forestry as part of their Adirondack Wildlife Program. 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. 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, and Peregrines are recovering. Both species are now found in portions of

the Adirondacks and are believed to be common residents within JMWA. Golden Eagles are generally considered to have always been rare breeders within the state.

The wolf and eastern cougar are still generally considered to be extirpated form NYS. Periodic sightings of cougars are reported from the Adirondacks, but the source of these individuals is believed to be from released captive individuals. Reports of timber wolves are generally considered to be misidentified coyotes, although there is some evidence to suggest that the Eastern coyote found in the Adirondacks may be a hybrid between the red wolf and coyote.

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.

c. Fisheries

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 glaciers. Such species presumably had access to most Adirondack waters. Additional species gained access about 13,000 years BP (before present) when glacial Lake Albany, with a surface elevation of 350' above sea level, provided a colonizing route for Atlantean and eastern boreal species to southern and eastern portions of the Adirondacks. Barriers above that elevation would have excluded those species from interior portions of the Adirondacks.

By about 12,300 years 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.

Brook trout were particularly successful at colonizing the Adirondack region and thrived in the relative absence of competing and predacious fishes. George (1980) states: "Under primeval conditions, the brook trout was nearly ubiquitous in the Adirondacks. Its agility, great range in size and facility in rapidly flowing water allowed it to spread widely, perhaps even concurrently with the demise of the glaciers, thus explaining its presence in unstocked waters above currently impassable waterfalls." Brook trout were reported to be native to nearly all Adirondack waters according to Calvins's Report to the Commissioners of Fisheries, Game and Forests, 1902-1903. The 1932 Biological Survey of the Upper Hudson Watershed Report reiterated that "Above the 1000 foot contour line most Adirondack waters are naturally suited and were originally inhabited by brook trout."

Many Adirondack waters were originally inhabited by brook trout or brook trout in combination with only one or two other species as indicated by the following passage, also from the 1932 Biological Survey: "In the survey of the Upper Hudson drainage, 51 trout ponds were studied where the trout is found in company with only a few other species" (page 36). Ponds located upstream of natural fish barriers are likely to have historically contained very simple fish communities. In these circumstances brook trout would have been capable of maintaining themselves by natural spawning. Waters located downstream of natural barriers are likely to have had additional species of fish present. Many fishes that are "native" to the Adirondacks historically had relatively restricted ranges, limited to lower elevations below natural fish barriers. Those fishes have been widely introduced to portions of the Adirondacks where they were not native. Such species are referred to as native but widely introduced (NBWI) fishes.

Watershed morphometry probably severely limited the diversity of fishes in the JMWA. The unit includes extreme headwater portions of the Lake Champlain Watershed and fish diversity is normally low in such headwater portions of watersheds (Hynes 1972). Topography would have made that lack of diversity particularly prominent. The single pond in the unit is at an elevation of about 860 m, and natural barriers to upstream fish migration (e.g. waterfalls) exist between the unit's waters and waters peripheral to the park. Barriers to upstream fish movement include Rainbow and Alice Falls on the Ausable River, and Split Rock and Wadhams Falls on the Boquet River. Other falls and extremely high gradient stream sections restrict fish movement up to the unit from both rivers.

Its headwater nature and the extreme gradients of streams draining the area would have caused low fish diversities in the JMWA relative to much of the Adirondacks. Furthermore, the Adirondacks in general had low fish diversities relative to surrounding lowland regions. Consequently, the unit historically supported particularly low diversities on a region-wide basis. Brook trout are very adept at colonizing such head water areas and would probably have been in the unit historically. Also historic brook trout monocultures were most likely to have occurred in such headwater areas.

Approximately 300 years ago the influence of human cultures from the Old World initiated a period of rapid manipulation of the natural environment. Slightly more than 150 years ago, canal construction opened new migration routes for fishes into peripheral Adirondack areas. Commercial lumbering precipitated substantial impacts to natural ecosystems. Railroads and eventually roads were developed to support the tanning, lumbering and mining industries (George 1980). By the late 1880'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.

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 non-natives. 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 stream section 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 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. Appendix F presents information on species known to be native, 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 Adirondack Lakes Survey Corporation 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 glaciers 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 acidic 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).

While acid deposition has affected all areas of the Adirondack Park, the available data indicates that it has had a minimal impact on the fisheries resources in the JMWA. The pH ranged from 6.93 to 7.06 on the single pond in the unit, well within the range considered desirable for most native aquatic species.

Present status of fish communities in the JMWA

<u>Streams</u>

Small, high gradient, headwater streams dominate the flowing waters of the JMWA. Those streams generally flow south and east to the Boquet River, or west to the East Branch Ausable River. Both rivers are tributary to Lake Champlain. Based on stream sampling conducted on some of the unit's tributaries (though not necessarily within unit itself), these streams support coldwater communities of fishes

including: brown trout, brook trout, rainbow trout, landlocked Atlantic salmon, cutlips minnows, common shiners, blacknose dace, longnose dace, northern redbelly dace, creek chub, white sucker, slimy sculpin, pumpkinseed, fantail darter, tessellated darter, pearl dace, brown bullhead and brook stickleback. Two of the unit's streams (Otis and Spruce Mill brooks) are stocked, but only in stream sections well outside the unit's boundaries. An exception is that landlocked Atlantic salmon fry are stocked in some of the unit's Boquet River and East Branch Ausable tributaries such as Styles Brook, Spruce Mill Brook, Derby Brook and Rocky Branch. Most of these stockings occur in stream sections located outside the unit, although some certainly occurs within the periphery of the unit's boundaries. After about two years in the streams, the salmon emigrate to Lake Champlain where they spend their adult lives. Waterfalls prevent salmon from returning from Lake Champlain to the streams in the unit.

Ponds

With the exception of several small beaver flows, no ponds exist in the JMWA.

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. Distribution of other natives, and non-natives, have increased due to stocking. Within the JMWA, brook trout and other native species are maintained by natural reproduction that occurs in the unit's streams.

3. Visual/Scenic Resources/Land Protection

The JMWA is comprised primarily of mountainous uplands that are visible from the nearby hamlets of Jay, Lewis and Elizabethtown; along with many other communities within the northern Champlain valley. The most prominent feature in the unit is the rocky ridgeline of Jay Mountain which towers over the hamlet of Jay. Saddleback Mountain, the tallest Mountain in the unit, is also a prominent mountain when viewed from the Glen or from the east in Elizabethtown and Lewis.

Most of the summits in the JMWA provide vantage points ranging from small openings and rock outcrops (Slip Mtn.) to 360 degree panoramas (Jay). The viewshed from the JMWA includes the Hurricane Mountain primitive area and the Giant, Dix, and High Peaks Wilderness Areas to the south; the Sentinel Range Wilderness Area and Whiteface Mountain to the west; The Chazy Highlands to the north; and the Champlain valley and the Green Mountains of Vermont to the east. The viewshed also includes the large open pit wollastonite mine adjacent to the unit in Lewis. Although the view of this mine detracts from the wilderness character of the unit, it can only be seen from Slip Mountain, which has no trail and apparently receives little recreational use.

4. Critical Habitat

Deer Wintering Areas

There are no historical deer yards in JMWA (E. Reed, NYSDEC, unpublished data). A GIS model of potential deer wintering habitat was recently developed for the Adirondacks (S. McNulty, SUNY-ESF Adirondack Ecological Center, unpublished data). While this model is a working draft, initial results suggest very limited areas of potential deer wintering habitat within the unit.

Peregrine Falcon Nesting Areas

Peregrine falcons, an endangered species in New York State, nest on cliffs in the Adirondack region. While Peregrine Falcons were documented in JMWA during the 1980-1985 Breeding Bird Atlas Project (Table 6), there are no known nest sites in the unit. However, based on the spacing of known nest sites in the area adjacent to JMWA, the potential exists that a nest site occurs in the unit (J. Racette, NYSDEC, unpublished data).

The population of Peregrine Falcons has steadily grown in the state due to a successful hacking program initiated by the Department in this region in the late 1970s. Peregrines first mate when they are 1 to 3 years old, building nests on high cliff ledges 20 to 200 feet off the ground. The same nesting ledge, called an eyrie, may be used year after year. The female lays 3 to 5 eggs in a nest, called a scrape, which consists of a shallow depression in the gravel found on the ledge. These eyries are aggressively protected against predators, and humans, by both the male and female peregrine. The young hatch after a 28 to 33 day incubation period. Each chick will stay in and about the nest until it fledges at 35 to 45 days of age. Young will stay with the parents for a few more weeks to perfect their flying and hunting skills. As cooler weather approaches, peregrines begin to migrate south. In the spring, peregrines have a tendency to return to the same region from which they fledged.

Peregrine Falcons and Rock Climbers

Human disturbances, such as rock climbing on cliffs containing eyries, can be a potential problem to nesting Peregrines. Human disturbance within the territory of a breeding pair may result in nest abandonment and/or death of any young. Rock climbing routes with known peregrine falcon nesting sites are monitored by the Department annually throughout the Adirondacks. Rock climbing routes with active nest sites are temporarily closed to prevent any disturbances that might interfere with the successful raising of the young peregrine falcons. The closure of climbing routes is based on a number of factors, including the route's proximity to a nesting site, observations of alarm behavior by the nesting falcons, and professional judgement by Department staff. The specific areas of the cliff that are closed to rock climbing represent a balance between the recreational interests of climbers and the need to protect the breeding and nesting activities of this endangered species. The department's priority is protecting an endangered species; however, attempts are made to maximize the opportunities for climbing at the same time. This is

the reason why individual rock climbing routes are closed rather than entire cliffs. While there are currently no conflicts with rock climbers and Peregrine Falcons in JMWA, the Department can implement appropriate management actions in the future if necessary.

In summary, the Department stresses the following points to Adirondack rock climbers:

- Peregrine Falcons are an endangered species and are protected under state and federal law,
- Human disturbance within the territory of a breeding pair may result in nest abandonment and/or death of any young,
- Certain rock climbing routes are closed and illegal to climb during the breeding season, and
- Falcons are very territorial and will utilize their razor sharp talons in defense of their domain, including attacks on humans.

Rare communities and species that have been identified by the Natural Heritage Program are identified in Appendix C.

B. Man-made Facilities

There are currently no maintained facilities or improvements within this unit. The 2.8 mile Jay Mountain herdpath is the only trail in the unit. This path is unmarked and receives no official maintenance. Management proposals affecting the Jay Mountain herdpath are discussed in Section IV of this plan.

C. Past Influences

1. Cultural

The Adirondack region has been an important part of the cultural heritage of New York State. The area has a pristine beauty due to its deep forests, abundant lakes, streams and waterfalls, majestic mountains and the assortment of fish, wildlife and plant communities that abound within its borders. Although use in some portions of the Adirondacks has been a problem, this area in general continues to reflect a wilderness quality. This quality provides the unique opportunity for visitors to better appreciate the delicate ecological balance of life. Preservation of this wilderness was a major contribution to the conservation movement of our country. The Adirondacks have also provided a spiritual uplift for many

generations of New Yorkers and countless others by allowing its visitors to experience tranquility and solitude in such a magnificent natural setting.

The rugged and undeveloped landscape of the JMWA is characteristic of the wild conditions that originally drew so many to the Adirondack region.

2. Archeological and Historic Resources

The term 'cultural resources' encompasses a number of categories of human created resources including structures, archaeological sites and related artifacts. The Department is required by the New York State Historic Preservation Act (SHPA) (PRHPL Article 14) and 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 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 Euroamerican 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 Department arranged for the archaeological site inventories maintained by the New York State Museum and the Office of Parks, Recreation and Historic Preservation 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.

The quality of the site inventory information varies a great deal in all respects. Very little systematic archaeological survey has been undertaken in New York State and especially in the Adirondack region. Therefore all current inventories must be considered incomplete. Even fewer sites have been investigated to any degree that would permit their significance to be evaluated. Many reported site locations result from 19th century antiquarian information, artifact collector reports that have not been field verified. Often very little is known about the age, function or size of these sites. This means that reported site locations can be unreliable or be polygons that encompass a large area. Should systematic archaeological inventory be undertaken at some point in the future it is very likely that additional resources will be identified.

As a result of these site file checks, no archeological resources were located within or near the JMWA.

D. Public Use

1. Land Resources

Public access to the JMWA is free and relatively unregulated. 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 (e.g., promulgating regulations).

Known uses of the JMWA include hiking, hunting, and trapping, but user numbers have never been recorded in the unit. Therefore, recreational use can only be estimated from personal observations by department staff, local residents, and recreational users who frequent the area. According to all of these sources, use of the unit by hikers is low, relative to other nearby Forest Preserve units, but it has been increasing in recent years. The number of hunters and trappers is also believed to be low. Negative resource impacts, often associated with overuse, are virtually non-existent in the unit. This supports the assumption that recreational use is low. As discussed below (see Capacity to Withstand Use, this section; and the Trails portion of Section IV) erosion is becoming a problem on the Jay Mountain herdpath, but this has been attributed to improper trail layout, not overuse.

Use of the JMWA is believed to be low in part because there are no developed facilities such as trails, or campsites, which many recreational users prefer to bush-whacking or camping in the rough. Limited access to the unit also contributes to low recreational use, as does the lack of an established trailhead (or signage) to let potential users now where access points are.

The small geographic area of the JMWA lends itself predominantly to day use. Overnight use in the unit is believed to be very low. No designated campsites have been established in the unit and no unofficial campsites are known to exist.

Projecting future use of the JMWA is difficult. Economic, social and political changes can all affect use patterns in the Adirondacks. Economic changes have the potential to affect annual use of the area as much as weather patterns. When the national or regional economy takes a down turn people tend to take less expensive vacations closer to home. The proximity of the Adirondack region to major eastern metropolitan centers makes primitive camping an attractive alternative. However, if the price of gasoline continues to increase, people may be less likely to drive to the Adirondacks from areas such as New York City. Also, tougher border crossing restrictions may decrease the number of Canadian visitors to the region. Other factors, such as the aging of the baby-boomer generation may reduce the overall population interested in primitive backcountry recreation activities.

Other trends such as the shift in user activities may change use patterns independently from user numbers. Uncertainty in the future underscores the importance of monitoring use and health of the Forest Preserve so that adverse impacts can be identified and addressed early.

2. Wildlife

Data regarding the amount of public use of the wildlife resource within JMWA 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 the Department 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., Glen 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 the Department. These species are identified in the ECL, Sections 11-0903 and 11-0908. The Department 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 muzzleloading and archery seasons. 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 the Department 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 JMWA have not been determined.

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:

<u>Non-game Species</u>

Peregrine Falcon: See Critical Habitat section.

Game Species

Impacts appear to be minimal for those game species that are monitored. The Department's 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 Department's 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 Department 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.

3. Fisheries

Quantitative angler use estimates and their economic impact for the JMWA are not available. Fishing pressure on the unit's streams is probably very light.

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 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.

4. Water Resources

The predominant recreational use of the water resources in the JMWA is for aesthetic purposes and a source of water for camping. There are no large ponds, lakes and navigable waterways in the unit.

E. Recreational Opportunities for Persons with Disabilities

The Federal Americans with Disabilities Act of 1990 (ADA) along with the Architectural Barriers Act of 1968 (ABA) and the Rehabilitation Act of 1973, have important implications for the management of all public lands, including the JMWA. An explanation of the ADA and its influence on management actions is provided in the Management Guidelines, under Section III.

Past management of the JMWA has not focused on provision of access for people with disabilities. Slopes and other terrain constraints make most of the unit difficult to access. Exposed roots, rocks and other natural barriers may limit access for people who use wheelchairs for mobility. 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.

There are two seasonally maintained town roads that form portions of the unit boundary that offer opportunities for wildlife and nature viewing from a vehicle.

- **Jay Mountain/Wells Hill Road:** The road that forms the common boundary between the JMWA and the Hurricane Mountain Primitive Area provides an opportunity for individuals to observe nature from their vehicle. This little used forest road allows individuals to be very close to nature while still in their vehicles. Views from the road include heavily forested areas, beaver meadows and some mountains. High clearance, 4-wheel drive vehicles are recommended for travel on this road. This road is not maintained in winter but is open to snowmobiling.

- **Seventy Road:** The Seventy Road in the town of Lewis, which forms the common boundary between the JMWA and the Taylor Pond Wild Forest, offers similar opportunities to the Jay Mountain/Wells Hill Road mentioned above. This road is passable by most cars, up to a small parking area on Forest Preserve land. This road is not maintained in the winter.

F. Education, Interpretation and Research

Education, interpretation or research projects on state owned lands require a temporary revocable permit (TRP) pursuant to ECL §9-0105(15), unless the project is carried out by the DEC. Each request or application for such a permit is considered separately giving consideration to the limitations of the area and consistency with the management goals and objectives for the lands involved. Permits will not be issued for any project or purpose that is inconsistent with Article XIV, Section 1, any statute or rules and regulations, or the APSLMP guidelines which are applicable for wilderness or primitive areas. Such permits may be denied, revoked, or suspended by the Department at any time.

Research activities that are occurring in or adjacent to the JMWA include:

- Adirondack Park Invasive Plant Program (APIPP) - The mission of this program is to document invasive plant distributions and to advance measures to protect and restore native ecosystems in the Park through partnerships with Adirondack residents and institutions. Partner organizations operating under a Memorandum of Understanding (MOU) are the Adirondack Nature Conservancy, Department of Environmental Conservation, Adirondack Park Agency, Department of Transportation, and Invasive Plant Council of NYS. The APIPP summarizes known distributions of invasive plants in the Adirondack Park and provides this information to residents and professionals alike.

- USDA Forest Service, Forest Inventory and Analysis Program - This program is the nation's forest census. It reports on status and trends in forest area and location; in the species, size, and health of trees; in total tree growth, mortality, and removals by harvest (on private land); in wood production and utilization rates by various products; and in forest land ownership. The program includes information relating to tree crown condition, lichen community composition, soils, ozone indicator plants, complete vegetative diversity, and coarse woody debris. Additional information on the program can be found at http://www.fia.fs.fed.us.

- Adirondack Lakes Survey Corporation (ALSC) - The ALSC is a not-for-profit corporation established through a cooperative agreement between the Empire State Electric Energy Research Corporation and the NYS DEC. The ALSCs mission is to determine the extent and magnitude of acidification of lakes and ponds in the Adirondack region. http://www.adirondacklakessurvey.org/index.html .

G. Relationship between Public and Private Land

The JMWA is surrounded primarily by forested private lands and by other Forest Preserve units. The lack of development on these adjoining lands helps to maintain the wilderness character of the unit. Large industrial timberlands can be found directly north and northeast of the property. Due east of the unit, the Seventy Road forms a common boundary with the Mount Fay Tract of the Taylor pond Wild Forest for approximately one half mile. To the southwest, the unit is bordered by lands owned by NYCO Minerals Incorporated. The NYCO holdings are primarily forested with the exception of their open pit wollastonite mine that adjoins the JMWA in Lot 5 of Township One (Old Military Tract). To the south, the Jay Mountain/Well's Hill Road forms the common boundary between the JMWA and the Hurricane Mountain Primitive Area for approximately two and a half miles, and many smaller, forested holdings border the property to the west.

The Constitutionally protected wildlands of the JMWA help to preserve the wild character of the area which is the viewshed for many surrounding towns, especially the town of Jay. Having views of the mountains and forests of the JMWA can increase property values. Many homes for sale in the area boast of having views of the Jay Mountain Range.

The JMWA, along with the Dix Mountain and Giant Mountain Wilderness Areas; and the Hurricane Mountain Primitive Area, forms a 27 mile long corridor of wilderness that is crossed by only three roads. This north south corridor runs along the eastern edge of the high peaks region, and covers approximately 90,000 acres

Table 1. provides an estimate of the real property taxes that were paid by New York State based on the 2007 Assessment Roll for the towns of Jay, and Lewis. These values are calculated by the Office of Real Property Services using the 2007 approved assessments, and that year's tax rates. Note that these values are for all Forest Preserve lands in the towns listed, this includes Forest Preserve units other than the JMWA.

Table 1: Tax payments for all Forest Preserve lands in the Towns of Jay and Lewis, 2007

Town	Forest Preserve Acreage	County Taxes Paid	Town/Village Taxes Paid	School Taxes Paid	Special District Taxes	Total Taxes Paid
Jay	7,657.68	$8,867	$26,217	$63,648	$7,863	$106,595
Lewis	10,937.36	$10,878	$23,381	$65,060	$3,571	$102,890
Totals	18595	$19,745	$49,598	$128,708	$11,434	$209,485

H. Capacity to Withstand Use

In general, the level of human use of the JMWA does not appear to significantly impact the natural resources of the unit beyond its capacity to withstand recreational use. The unit exhibits virtually none of the overuse parameters experienced in the nearby and highly overused, Eastern Management Zone of the High Peaks Wilderness Area. This is likely due, in large part, to the smaller geographic area of the unit, lack of facilities, and the lesser number of access and primary attraction points (summits, lakes ponds, interior structures). Much of the visitor use appears to be either day trips or short-term overnights. Moderate levels of soil erosion and compaction are evident only on the Jay Mountain herdpath. Use levels are low enough throughout the year to provide solitude for individual users with the possible exception of summer weekends and holidays. Hunting pressure in the unit appears stable. Hunting is not expected to impact overall numbers of any species population.

Carrying Capacity

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 vegetation or related resources (Arthur Carhart National Wilderness Training Center, 1994). The concept has been modified to address recreational uses as well; however, its basic assumptions proved to be false.

After many years of study, basic research showed that there was no linear relationship between the amount of use and the resultant amount of impact (Krumpe and Stokes, 1993). For many types of impacts, most of the impact occurs with only low levels of use. In some cases, such as trail erosion, once the soil starts to wash away, additional foot travel on the trail does not cause the amount of impact to increase proportionately. This research revealed that visitor behavior, site resistance/resiliency, and type of use may be more important in determining the amount of impact than the amount of use, although the total amount of use is still a factor (Hammit and Cole, 1987).

The shortcomings of the carrying capacity approach, as applied to wilderness management, soon became apparent. It became clear that searching for one single carrying capacity was probably next to impossible, since it is dependent on many variables as noted above. By focusing on determining how many visitors an area could accommodate, it was found that managers often lost sight of basic wilderness goals and objectives – the very things they were trying to achieve. This changed the question from "How many is too many?" to "How much change is acceptable?"

Viewed in this context, carrying capacity can be used to prescribe what kind of resource and social conditions are acceptable, compare them to on-the-ground conditions, and identify the management policies and actions needed to maintain or restore the desired wilderness condition.

Establishing appropriate conditions is dependent on clearly stated management objectives. They are based on value judgments derived from experience, research, inventory data, public input (dialogue with

users), careful analysis, and common sense. The objectives dictate how much change will be allowed to occur, where it occurs, and what management actions are needed to control it. Once in place and functioning, limits of acceptable change (LAC) are used as measuring tools to alert the Department to unacceptable changes before it is too late to react.

Carrying capacity does not always require use limitations; rather use limitations are viewed as one of many management actions that can be taken in response to a specific problem. When past efforts have proved ineffective, a use limit may be the only option available when standards are exceeded. Monitoring provides the feedback necessary to periodically modify management actions, standards or objectives.

Defining carrying capacity in terms of limits of acceptable change requires a decision on what kinds of wilderness conditions are acceptable, then prescribing actions to protect or achieve those desired conditions. They are applied through a planning framework that expresses management objectives based on careful considerations of resource conditions, inherent constraints, and the needs and wants of its users. An important objective of this management plan is to carefully document the limits of acceptable change and improve our current inventory of existing resource and social conditions. This is a critical step to knowing where and what future management actions will be needed beyond the five year life of this plan.

Strategy

The long-term strategy for managing the JMWA uses a combination of three generally accepted planning methods: (1) the goal-achievement process; (2) the Limits of Acceptable Change (LAC) model employed by the U.S. Forest Service; and (3) the Visitor Experience and Resource Protection (VERP) model employed by the National Park Service. Given the distinctly different, yet important purposes of these methods (particularly between the first method and the second two), there are clear benefits offered by employing a blend of these approaches here.

Goal-Achievement Process

The goal-achievement process provides a framework for proposed management by means of the careful, stepwise development of key objectives and actions that serve to prescribe the Wilderness conditions (goals) outlined by APSLMP guidelines. The Department is mandated by law to devise and employ practices that will attain these goals. For each management activity category included in Section IV of this plan, a written assessment of the current management situation and a set of assumptions about future trends has been described. All management proposals listed in Section IV have been determined using this information.

Limits of Acceptable Change (LAC) and Visitor Experience and Resources Protection (VERP) Models

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

Establishing and maintaining acceptable conditions depends on well-crafted management objectives which are explicit and which draw on managerial experience, research, inventory data, assessments and projections, public input, and common sense. When devised in this manner, objectives founded in the LAC and VERP models essentially dictate how much change will be allowed (or encouraged) to occur and where, as well as how management will respond to changes. Indicators (measurable variables that reflect conditions) are chosen, and standards (representing the bounds of acceptable conditions) are set, all so that management efforts can be effective in addressing unacceptable changes. A particular standard may be chosen so as to act as a simple trigger for management action (as in VERP), or it may be chosen to act as a kind of boundary which - given certain assessments - allows for management action before conditions deteriorate to the point of no longer meeting the standard (as in LAC).

Even well-conceived and executed efforts can prove ineffective, but when this is the case, management responses must be adjusted. Monitoring of resource and social conditions is absolutely critical. Both the LAC and VERP models rely on monitoring to provide systematic and periodic feedback to managers concerning specific conditions. However, since the VERP model was developed to apply only to impacts from visitor use, some management issues in the JMWA (for instance, the impacts of acid deposition) call for an approach that is properly in the LAC vein.

Since differences between LAC and VERP are not significant, choices are left up to managers. These choices are as evident as they need to be wherever this plan, in Section IV, calls for sets of management actions which incorporate them.

In outline, the Department's approach applies four factors in identifying potential management actions for an area: The identification of acceptable resource and social conditions as defined by measurable indicators;

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

These four factors can be achieved by using the following 10 steps created for the LAC process:

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 the levels of human impact within the JMWA are relatively low, a number of management issues could develop within the unit 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) 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 JMWA:

Physical capacity

- Extent of air and water quality degradation caused by fossil fuel combustion[1]

Biological capacity

- Extent of bare soil in riparian areas near streams
- Diversity and distribution of plant and animal species

These indicators form the basis for the proposed management actions presented in Section IV. This approach will require flexibility, determination and patience. It may not be possible to complete all inventories and assessments called for by this strategy - and by the APSLMP - in this plan's five-year time frame. It will be important to show progress in achieving APSLMP goals and in gaining initial managerial experience and knowledge in applying this strategy to some carrying capacity questions and issues. Knowledge gained as a result of the implementation of this first JMWA unit management plan will be useful to: 1) revising and refining management actions if evaluation shows that desired conditions are not being attained or sustained; and 2) creating a foundation upon which this strategy can eventually be built into a fully-developed, science-based approach to protecting and managing the unique resources of the unit.

1. Land Resources

Evidence of pre-Forest Preserve human impact to the JMWA can be seen in many areas of the unit. Traces of old logging roads, rock walls, fire scars, and early successional forest types, attest to the impact that humans have had in the area in the past. However, current human impacts to the unit are minimal and natural forces are operating freely. The JMWA offers the user a sense of solitude and wildness that can be hard to find in more popular Wilderness Areas, such as the High Peaks. This is due in part to the absence of improved trails and campsites within the unit. The most popular destination in the unit is the ridgeline of Jay Mountain which is accessed via a herdpath from Jay Mountain Road (see map, Appendix K). The herdpath is approximately 10 years old and has become well worn in this time. Signs of recreational use are apparent on the other major peaks in the unit. However, this use appears minimal, and negative resource impacts are virtually non-existent. The herdpath up Jay Mountain has been identified as the only major resource concern in the unit at this time. Based on current and historical use levels in the unit (derived mainly from site conditions), no other areas appear to be at risk of overuse.

The establishment of an official trail up Jay Mountain, and a corresponding trailhead, are being proposed in Section IV of this plan to address identified negative resource impacts. The establishment of these

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

facilities may attract more users to the unit; especially to Jay Mountain. Increased use of the Jay Mountain Trail could lead to damage of the fragile soils and plant communities found along the ridgeline of the Mountain. However, not establishing the trail will allow serious erosion to occur on the current herdpath. To avoid potential damage to the ridgeline of Jay Mountain, appropriate signage is being proposed at the trailhead, and just before the ridge, to alert hikers to the fragile nature of the plants and soils, and to encourage them to stay on the trail or bare rock surfaces. Additional trail markers (rock cairns) are also being proposed along the ridgeline to help keep hikers on the trail.

2. Wildlife Resources

Current levels of consumptive (i.e., hunting and trapping) and non-consumptive wildlife uses are not expected to significantly impact wildlife populations in JMWA. 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.

Areas within JMWA that should receive careful consideration during planning efforts include high-elevation boreal forests that are important to a number of wildlife species and potential Peregrine Falcon nesting sites.

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SECTION III: MANAGEMENT AND POLICY

A. 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.

1. Land Management

Land management in the JMWA has consisted mainly of fire detection and suppression, law enforcement, and boundary maintenance. Streams in the unit have been treated with Bacillus thuringiensis (Bti) by local towns in an effort to limit the population of Black Flies in the area. These treatments are authorized under a permit from DEC for the use of pesticides to control or eliminate aquatic insects. Such permits require that treatments with Bti be conducted by licensed applicators, and limited to specified times, areas, and pesticide levels.

2. Wildlife Management

Past and present wildlife management activities on JMWA 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.

3. Fisheries Management

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 (Pieffer 1979). In the year 1891, the state purchased its own wooden railroad car specially designed for transporting fish, and 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 respectfully 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 smallmouthed 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 (shiners, dace, etc.) 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 piscivorous. 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.

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.

Recent Management Activities

Fish management in the JMWA has been limited because of the lack of ponded water. Little active fishery management has been conducted on streams within the unit because of their remoteness and small size. However, portions of several tributaries of the Ausable and Boquet river systems have been stocked with landlocked Atlantic salmon fry. Most of these stockings occur in stream sections located outside the unit, although some certainly occurs within the periphery of the unit's boundaries. After about two years in the streams, the salmon emigrate to Lake Champlain where they spend their adult lives. Waterfalls prevent salmon from returning from Lake Champlain to the streams in the unit. The objective of the stocking is to restore native landlocked Atlantic salmon populations in the Lake Champlain basin.

All unit waters are subject to statewide angling regulations.

B. 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, the APSLMP, and established Department policy.

Article XIV of the State Constitution provides in part that, "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" by establishing basic guidelines. APSLMP management guidelines for Wilderness Areas are outlined in Appendix H.

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 Department of Environmental Conservation 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 (MOU) concerning the implementation of the APSLMP. 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.

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.

The Department 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 have been reviewed and significant environmental impacts were identified. Based on this review, the management activities were found to have no significant impact on the natural resources of the unit and a Negative Declaration was issued (see Appendix I).

2. Applications 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 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,* dated December 1979.

All pond reclamation projects will be undertaken 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 June 1980 and the *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 Pesticides Management*, dated March 1981.

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.

The Americans with Disabilities Act (ADA) and Its Influence on Management Actions for Recreation and Related Facilities in the Forest Preserve

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 applies to the Department and requires, in part, that reasonable modifications must be made to its services and programs, 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 to the Department. Since recreation is an acknowledged public accommodation program of the Department, and there are services and activities associated with that program, the Department has the mandated obligation to comply with the ADA, Title II and ADA Accessibility Guidelines, as well as Section 504 of the Rehabilitation Act.

The ADA requires a public entity to thoroughly examine each of its programs and services to determine the level of accessibility provided. The examination involves the identification of all existing programs and services and an assessment to determine the degree of accessibility provided to each. The assessment includes the use of the standards established by Federal Department of Justice Rule as delineated by the Americans with Disabilities Act Accessibility Guidelines (ADAAG) and/or the New York State Uniform Fire Prevention and Building Codes, as appropriate. The development of an inventory of all the recreational facilities or assets supporting the programs and services available on the unit was conducted during the UMP planning process. The assessment established the need for new or upgraded facilities or assets necessary to meet ADA mandates, in compliance with the guidelines and criteria set forth in the Master Plans of the Adirondack and Catskill Forest Preserves. The Department is not required to make each of its existing facilities and assets accessible. New facilities, assets and accessibility improvements to existing facilities or assets proposed in this UMP are identified in the "Proposed Management Recommendations" section.

The Americans with Disabilities Act Accessibility Guidelines

The Americans with Disabilities Act (ADA) requires public agencies to employ specific guidelines which ensure that buildings, facilities, programs and vehicles as addressed by the ADA are accessible in terms of architecture and design, transportation and communication to individuals with disabilities. A federal agency known as the Access Board has issued the ADAAG for this purpose. The Department of Justice Rule provides authority to these guidelines.

Currently adopted ADAAG address the built environment: buildings, ramps, sidewalks, and rooms within buildings. Boating and fishing facilities are addressed under ADA/ABA amendments of 2004. The Access Board has proposed guidelines to expand the ABA to cover outdoor developed facilities: trails, campgrounds, picnic areas and beaches on Federal lands. The proposed guidelines are contained in the October 19, 2009 Draft Final Accessibility Guidelines for Outdoor Developed Areas.

ADAAG apply to newly constructed structures and facilities and alterations to existing structures and facilities. Furthermore, it applies to fixed structures or facilities, i.e., those that are attached to the earth or another structure that is attached to the earth. Therefore, when the Department is planning the construction of new recreational facilities, assets that support recreational facilities, or is considering an alteration of existing recreational facilities or the assets supporting them, it must also consider providing access to the facilities or elements for people with disabilities. The standards which exist in ADAAG and the ADA/ABA or are contained in the proposed federal guidelines also provide guidance to achieve modifications to trails, picnic areas, campgrounds, campsites and beaches in order to obtain programmatic compliance with the ADA.

ADAAG Application

Current ADAAG and ADA/ABA for the built environment and proposed federal guidelines for outdoor developed areas will be used in assessing existing facilities to determine accessibility compliance. Management recommendations in each UMP will be proposed in accordance with the ADAAG and ADA/ABA for the built environment, the draft guidelines for outdoor developed areas, the New York State Uniform Fire Prevention and Building Codes, and other appropriate guiding documents. Until such time as the proposed guidelines for federal lands apply to state governments, the Department is required to use the best information available to comply with the ADA; this information includes, among other things, the proposed guidelines.

Historic and Archeological Site Protection

Historic and archaeological sites that may exist within the JMWA are protected by the provisions of the New York State Historic Preservation Act (SHPA - Article 14 PRHPL), 6 NYCRR § 190.8 (g) and Section 233 of the Education Law. No actions that would impact these resources are proposed in this Unit Management Plan. Should any such actions be proposed in the future they will be reviewed in accordance with the requirements of SHPA. Unauthorized excavation and removal of materials from any of these sites is prohibited by Article 9 of the ECL and Section 233 of the Education Law. In some cases additional protection may be afforded these resources by the federal Archaeological Resources Protection Act (ARPA).

Archaeological sites may be made available for appropriate research. Any future archaeological research to be conducted on the property will be accomplished under the auspices of all appropriate permits. Research permits will be issued only after approval by the New York State Museum and consultation with

OPRHP and APA. Extensive excavations are not contemplated as part of any research program in order to assure that the sites are available to future researchers who are likely to have more advanced tools and techniques as well as more fully developed research questions.

3. Deed Restrictions

Mineral rights are held by private parties in the following parcels of land now belonging to the JMWA:

Essex Tract, Henry's Survey:

Lot 147

Old Military Tract, Township One, Thorn's Survey:

Lots 37 and 43.

South Tract:

Lots 14

Power line right-of-ways are held by private parties in the following parcels of land now belonging to the JMWA:

Essex Tract, Henry's Survey:

Lot 147

Old Military Tract, Township One, Thorn's Survey:

Lots 37 and 43

C. Administration and Management Principles

1. Administration

The administration of the JMWA is shared by several programs in DEC. The following DEC programs perform the indicated 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, licenses fishing, hunting and trapping, protects and restores habitat, and provides public fishing, hunting and trapping access.

- The Natural Heritage Program enables and enhances conservation of New York's rare animals, rare plants, and significant ecosystems. Field inventories, scientific analyses, expert interpretation, result in the most comprehensive database on New York's distinctive biodiversity which provides quality information for natural resources planning, protection, and management.

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

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

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

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

- The Division of Law Enforcement is responsible for enforcing all of New York's Environmental Conservation Laws relating to hunting, fishing, trapping, license requirements, endangered species, possession, transportation and sale of fish and wildlife, trespass, and damage to property by hunters and fishermen.

- The Division of Forest Protection and Fire Management 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 JMWA 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.

2. Management Principles

General Forest Preserve Principles

The primary goal of Forest Preserve management is the perpetuation of Forest Preserve lands as "forever wild forest lands" consistent with New York State Constitution, Article XIV, Section 1. In conformance with

the constitutional and legal constraints that embody this goal, DEC manages the Forest Preserve to protect and preserve the natural resources of the unit and to provide opportunities for a variety of recreational activities for people of all abilities where those activities are permissible under the APSLMP, Department regulations and policies, and will not compromise the natural resource. Through partnerships with local governments, organizations, and individuals, DEC provides for the use and enjoyment of the Forest Preserve in a manner that is supportive of the economy of the region while protecting the wild forest character of the area.

The Department allows and promotes recreational use of the Forest Preserve to the extent that it does not degrade the character of the area. To achieve this, the DEC uses use the "minimum tool" necessary to obtain specific objectives, employing indirect methods (limiting parking, etc.) whenever possible, and developing regulations only where necessary and as a final resort. Existing programs that promote backcountry use and etiquette will be utilized where appropriate and feasible. Examples of successful programs and messages used in other management units include, Leave No Trace™ and the International Mountain Biking Association's "Rules of the Trail™."

Public use controls are not limited to assessing and matching types and levels of use to physical and biological resource impacts. Social issues, such as user preferences, are also considered. This presents a unique challenge in managing the Forest Preserve, as access is free and use is relatively unregulated.

Management Principles specific to Wilderness Areas

The following principles, first adopted in the High Peaks Wilderness Area (HPWA) UMP, attempt to introduce professional wilderness management guidelines in writing long-term policy and day-to-day problem solving for wilderness managers. As with the HPWA UMP, these principles will also guide managers in addressing management problems of the JMWA.

- <u>Manage Wilderness as a Composite Resource, Not as Separate Parts</u>
  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.

- <u>Manage the Use of Other Resources and Activities Within Wilderness in a Manner Compatible with the Wilderness Resource Itself</u>
  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 unit's wilderness character, including opportunities for solitude or a primitive

and unconfined type of recreation emphasizing a quality visitor experience (APSLMP, 2001; Hendee et.al, 1990).

- Allow Natural Processes to Operate Freely in Wilderness
  This principle is derived in part from the APSLMP 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 (APSLMP, 2001, Page 20). It means 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 and 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 domestic 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 directs that "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" (APSLMP, 2001, Page 1). This is especially true for wilderness.

- Preserve Outstanding Opportunities for Solitude or Primitive and Unconfined Types of Recreation
  This principle comes directly from the APSLMP definition of wilderness (APSLMP, 2001, Page 21). Levels of solitude within any given wilderness will vary; sometimes substantially. 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 (Hendee et.al, 1990).

- 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 (Hendee et.al, 1990).

- 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. A Department management goal is to refer these activities to Wild Forest Areas.

- 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, page 20). Except for those conforming structures, uses, and administrative actions specifically identified by the APSLMP, the Department is mandated to remove all non-conforming structures and uses not compatible with a wilderness environment as soon as possible (APSLMP 2001, page 20).

- 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. The Department has established guidelines and policies for many administrative activities in classified Wilderness Areas, including, but not limited to, trail construction, boundary line marking, use of motorized equipment and vehicles, cutting and removal of trees, and fisheries management in Wilderness Areas. Its goal is to have the least possible impact on the environment and the visitor experience (Hendee and others, 1990).

- 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 (APSLMP, 2001; DEC policy 1972-present; Hendee et.al, 1990).

- 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 in decision-making.

- Manage Special Exceptions Provided by The APSLMP With The Minimum Impact on The Wilderness Resource
  The APSLMP (2001) authorizes certain uses and structures in wilderness areas. These exceptions include such structures as interior outposts, existing dams on established impoundments, existing or new fish barrier dams, trails, bridges, signs, trail shelters (lean-tos), etc. (See generally APSLMP 2001, Pages 21-26). 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.

D. Management Issues, Needs and Desires

Public comment has been obtained by way of an Open House, held on November 22, 2002 at The Keene Central School, Keene Valley; and by mail and email. Several issues have received multiple comments and are of concern to DEC and the public in the development of this plan.

A complete list of public comment received to date can be found in Appendix J.

Jay Mountain Herd Path

There is an unmarked and un-maintained herdpath from the Jay Mountain Road (in the town of Jay) to the ridgeline of Jay Mountain. Like many other user created trails, the path takes the shortest route from the bottom of the mountain to the top, and essentially follows a straight line directly up the mountain. The trail is approximately 10 years old and is already exhibiting signs of erosion due its informal/improper layout. Many sections of the trail are three to four times steeper than the recommended grade, making further erosion inevitable.

A number of comments have been received regarding the Jay Mountain Herdpath. Most were in favor of improving and rerouting the trail as necessary, while some stated that the trail was in good enough condition for the low use levels that it received. Concern was also expressed that a new trail up the mountain would attract more users, and thereby diminish the Wilderness character of the unit. After careful consideration, The Department has determined that rehabilitating the trail is necessary to address existing problems and to alleviate further resource degradation. There are many older trails in the

Adirondacks that have been laid out the same way the Jay herdpath was, and most of these trails now have serious drainage and erosion issues. These older trails serve as a good example of what the Jay herdpath will look like if action is not taken now. Appropriate steps are being proposed to rehabilitate the Jay Mountain Herdpath, while protecting the Wilderness character of the trail corridor and the rest of the unit as well. See Section V. for proposed management actions affecting the herdpath.

Develop recreational facilities in the Unit

The JMWA currently has no official recreational facilities. With the exception of the Jay Mountain Herdpath (mentioned above), no trails or campsites exist in the unit. There have been several comments in favor of establishing trails, lean-tos, and designated campsites to promote use of the unit and draw users out of the more heavily used High Peaks Wilderness Area.

According to the APSLMP, a Wilderness area is defined as: “an area where the earth and its community of life are untrammeled by man.” Further defining factors include: “an area of state land or water having a primeval character without significant improvement” and “Having outstanding opportunities for solitude or a primitive and unconfined type of recreation” The JMWA currently exhibits all of these qualities, due in large part to a lack of recreational facilities. Adding such facilities will not enhance the Wilderness character of the unit, but could easily compromise it. New facilities may also serve to attract the overuse problems encountered in the High Peaks. Therefore, no new trails or campsites are being proposed in order to preserve the opportunities for solitude and primitive, unconfined recreation that characterize the unit at present. See Section V. for a further discussion of this topic.

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SECTION IV: PROPOSED MANAGEMENT ACTIONS

This section of the plan breaks down the various resources of the unit into the following categories; bio-physical resources, land protection, man-made facilities and public use and access. Each category is further broken down into component units where the present conditions are assessed, management objectives developed and management actions proposed. All recommended actions are consistent with the management guidelines and principles outlined above, and are based on information gathered during the inventory process, through public input and in consultation with the Planning Team.

A. Bio-physical Resources

1. Water

Present Conditions

The Adirondack Lakes Survey Corporation (ALSC) has conducted water quality studies researching the effects of acid deposition on aquatic ecosystems. The Department's Bureau of Fisheries routinely conducts biological surveys to assess and monitor the fish populations in area waters. No studies have specifically focused on the effects of recreational use on water quality. Being major attractions, streams, lake, ponds, and wetlands are on the receiving end of high levels of human disturbance. With continued use, the potential for further deterioration of water quality must be anticipated. At a minimum, visitors must be educated about the impacts of recreational use on water quality and their role in protecting it. Visitors must also be advised that water should not be considered potable and must be properly treated before consumption.

Objectives

- To maintain or improve all riparian habitats.
- To stabilize current water conditions and improve long-term water quality.
- To reduce the risk of pathogenic contamination and any other potential impacts on water quality.

Management Actions

- Develop LAC indicators and standards for vegetation in riparian areas near streams.
- Monitor vegetation in riparian areas near streams. Take action when LAC standards are exceeded, correct undesirable conditions by rehabilitating the area or relocating use to more durable sites.

- Close or rehabilitate streamside areas should they become severely impacted by bank erosion from recreation use.
- Incorporate all biological survey work done by DEC, ALSC or other institutions into any future water-related planning activities.
- Advise the public through DEC information and education programs about the effects and impacts of recreation use on water quality and their role in preserving water quality. Encourage the public to treat all water prior to consumption.
- Train DEC staff working within the unit to identify and document the location of key invasive plant species.
- A comprehensive inventory of the presence and extent of invasive plants in the unit should be undertaken. Such an inventory should updated periodically.
- Management of identified populations of invasive plant species should be undertaken by either the DEC, APIPP or by volunteers under DEC supervision through an Adopt a Natural Resource Agreement.
- Periodic monitoring and further management of identified invasive plant populations will be undertaken.

2. Soils

Present Conditions

Detailed soil maps are not available for the JMWA. Broad soil types (accurate to an area about 40 acres in size) were delineated on aerial photographs by the USDA Soil Conservation Service.

Interpretations have not been completed for each soil type. Little information has been documented on wide-spread soil loss and deposition, with the exception of the Jay Mountain Herdpath where soil disturbance requires rehabilitative actions (see Trails section for more on this).

Objectives

- Keep soil erosion caused by recreation use within acceptable limits that closely approximate the natural erosion process.
- Minimize the amount of soil compaction from human activity on undeveloped areas where natural plant communities exist.

Management Action

- Relocate portions of Jay Mountain Trail to suitable areas where soil erosion is unlikely.

3. Wetlands

Present Conditions

The APA regulates all wetlands within the Park under the NYS Freshwater Wetlands Act (1975) and the Adirondack Park Agency Act (1971). All wetlands that are one acre in size and larger, or any size wetlands adjacent to open water are regulated, and an APA permit is required for any material alteration. Wetland inventories and maps for the entire Park are incomplete, but official maps are available for the JMWA.

Objective

- To preserve and protect wetland community vegetation and associated plant species.

Management Actions

- Assist in developing a system that makes wetland information more readily available to resource managers and the general public.

4. 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 (ratings are from Class I to IV, with 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 polluting 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.

5. Vegetation

Present Conditions

Much of the JMWA's vegetated landscape has been altered by wind, fire, insects and disease, pre-Forest Preserve logging, and recreational use. Despite these influences, the unit has several unique ecosystems requiring special attention. These areas include the spruce-fir rocky summit of Jay Mountain, wetland communities, and potential areas not yet identified through the unit management planning process.

In the summer of 2005, Terrestrial invasive plant species were identified within the unit (common buckthorn). Eradication and monitoring efforts are being formulated at this time. Additional invasive plant species populations are known to exist on the periphery of the unit and in nearby communities. There has been no official inventory of invasive plant species in the unit to date. However, most interior portions of the unit are believed to be free from infestation.

Objectives

- Allow natural processes to continue their role in determining the succession of plant communities.
- Preserve and protect any threatened or endangered plant species or communities.
- Comply with the constitutional directive that the lands of the unit "shall be forever kept as wild forest lands."
- Monitor for the location and extent of terrestrial invasive plant species found within the unit.
- Reduce or eliminate terrestrial invasive plant species found within the unit, and protect the area from the introduction, establishment and spread of invasive species.
- Continue and expand the programs that identify and map ecological communities and sensitive, rare, threatened and endangered plant species or communities.

Management Actions

- Maintain existing plant databases and support efforts to inventory plant communities, with an emphasis on sensitive, rare, threatened, or endangered plant species or communities.

- Use native trees, shrubs, and grasses to restore areas to natural conditions. Non-native species may be used if necessary to provide temporary cover until native species can become established.

- 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 or object of archaeological or paleontological interest found or growing on State land, except for personal consumption or under permit from the Commissioner of Environmental Conservation and the Commissioner of Education, pursuant to section 233 of the Education Law. " 6 NYCRR §190.1(c) further provides that "No wood, except from dead and down trees or from supplies furnished by the department, shall be used for fuel."

- Educate the public on their role in protecting and sustaining natural plant communities and the vegetative impacts associated with various recreational activities.

- Encourage and support any research to determine the long-term effects of acid deposition on native plant species and communities.

- Train DEC staff working within the unit to identify and document the location of key invasive plant species.

- Work towards a comprehensive inventory of the presence and extent of invasive plants in the unit.

- Eliminate any identified populations of invasive plant species that are discovered in the unit using best management practices outlined in the Interagency Guidelines for the control of Terrestrial Invasive Plant Species on Forest Preserve Lands in the Adirondack Park (APA, DEC, 2007). 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.
- Continue periodic monitoring and further management of identified invasive plant populations.

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 JMWA. This priority is reflected under the list of potential management action projects (denoted by letters) outlined below.

Guidelines for Protection of the Adirondack Subalpine Forest Bird Conservation Area

Adirondack mountain summits above 2800' are part of the Adirondack Subalpine Forest Bird Conservation Area (ASFBCA). This BCA was established to provide protection for a distinctive bird community, which includes Bicknell's Thrush (species of special concern), Blackpoll Warbler, and Swainson's Thrush. According to the DEC report *Adirondack Subalpine Forest Bird Conservation Area: Management Guidance Summary* (see Appendix E for full report) trail construction and maintenance activities, especially those involving motorized equipment, have the potential to disturb the nesting activities of upper-elevation birds such as Bicknell's thrush. Whenever possible, routine maintenance should be planned so that it can be completed outside of the normal nesting season for Bicknell's thrush. Should maintenance be needed during this period, the use of non-motorized equipment would help to minimize impacts.

The use of motorized equipment, in accordance with Department policy, is allowed from April 1, through May 24 in wilderness areas. However, pertinent studies by the Vermont Institute of Natural Science (Rimmer et. al. 2004, 2005) recommend that construction activities within Bicknell's Thrush breeding habitat (e.g. ASFBC) occur before May 15 or after August 1. Authors of the reports confirmed that the timing of breeding behavior in the Adirondacks is almost identical to that observed in Vermont (Rimmer, McFarland, personal communication.). Therefore, blowdown removal using chainsaws will be prohibited from May 15 through August 1 within the ASFBCA; construction activities will occur during off-peak seasons and outside the breeding season for Bicknell's thrush, with the written approval of the Commissioner, as required by the APSLMP; and the use of helicopters will occur after September 15 and before May 15, except in emergencies, in keeping with current Department policy.

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 non-game 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.
- 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.

    1. Conduct targeted surveys for endangered and special concern bird species that were documented in the first Breeding Bird Atlas Project, but not the second. These species include Peregrine Falcon, Bicknell's Thrush, Northern Goshawk, Red-headed Woodpecker, Sharp-shinned Hawk, Red-shouldered Hawk, and Whip-poor-will.
    2. Where harvest information is lacking, conduct surveys for American marten to better understand distribution and habitat use.
    3. Conduct surveys for bird species associated with 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 survey project. These species include Boreal Chickadee, Bicknell's Thrush, Blackpoll Warbler, Blackburnian Warbler, Tennessee Warbler, Connecticut Warbler, and Northern Parula.
    4. Continue to support statewide survey efforts that increase our understanding of the occurrence and distribution of flora, fauna, and significant ecological communities (e.g., Breeding Bird Atlas, New York Natural Heritage Program surveys).
    5. Continue to support ongoing wildlife research and survey projects in the Adirondacks. Examples include research on American marten and black bear ecology and surveys for moose, Peregrine Falcon, Bald Eagle, and Osprey.

- Blowdown removal using chainsaws, or construction activities within the Subalpine Forest Bird Conservation Area, will occur after August 1 and before May 15.

- Active management of wildlife populations will be accomplished primarily through hunting and trapping regulations developed by the Department's Bureau of Wildlife for individual or aggregate Wildlife Management Units. 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.

- 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.

    1. Provide information to user groups on avoiding problems associated with black bears. Encourage the use of bear-resistant food canisters.

    2. 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

Fish management in the JMWA has been limited because of the lack of ponded water. Little active fishery management has been conducted on streams within the unit because of their remoteness and small size. However, portions of several tributaries of the Ausable and Boquet Rivers have been stocked with landlocked Atlantic salmon fry. Most of these stockings occur in stream sections located outside the unit, although some certainly occurs within the periphery of the unit's boundaries. After about two years in the streams, the salmon emigrate to Lake Champlain where they spend their adult lives. Water falls prevent salmon from returning from Lake Champlain to the streams in the unit. The objective of the stocking is to restore native landlocked Atlantic salmon populations in the Lake Champlain basin.

All area waters are subject to statewide angling regulations.

The 1993 Organizational and Delegation Memorandum regarding "Fishery Management Policy 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.

Objectives

- 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 APSLMP. 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

- Maintain and enforce general angling regulations in the unit.
- 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 JMWA along with other waters that provide similar fish resources; they will not highlight the JMWA waters over other waters.
- Enhance partially effective natural fish barriers, and construct fish barrier dams as needed to prevent the spread of non-natives and NBWI fishes. The APSLMP 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."
- Conduct biological surveys of waters within the unit as required.

B. Land Protection

1. Open Space/Land Acquisition

Present Conditions

The overall framework for land protection in New York State is identified in the State Open Space Conservation Plan. The plan is built from the bottom up from the work of nine regional committees, representing the spectrum of open space advocates, natural resource and recreation professionals, local government, and concerned citizens. This plan ensures that the State of New York conserves its cherished open space resources as a critical part of efforts to improve the economy, and the quality of life in New York communities.

Objective

- Acquire suitable private lands, by fee title and/or conservation easement that adjoin the JMWA through negotiated sale with willing sellers.

C. Man-made Facilities

1. Boundary Line Management

Present Conditions

Aside from public roads, the JMWA has approximately 21 miles of boundary lines that must be maintained on a regular basis. The proper maintenance of these lines is important to help reduce trespass, eliminate the need for resurvey work, familiarize field staff with an area, reduce the cost of regular inspections, and facilitate public use of the area. Boundary line maintenance needs to be given a high priority when annual work plans are developed and funding requests are made.

Mark boundary along Jay Mountain Trail well. Also, clearly mark corner and southerly running boundary so users know where state land ends and Private Property begins. Put up informational sign/map at trailhead alerting users to adjacent private property and urging them to stay on state land.

Boundary line maintenance should be prioritized; with areas most susceptible to incursion maintained first.

Objectives

- Locate, post, and maintain all unit boundary lines.

- Identify and address all access, land title, and trespass issues.
- Identify APSLMP unit designations on the ground for administrative and public use.

Management Actions

- Physically inspect all boundary lines to determine maintenance needs and assign a priority to each identified need. 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 as per DEC Boundary Line Maintenance Policy NR-95-1. Mark boundaries where they cross any trail, road, or stream.
- Monitor boundaries and pursue strict enforcement for unauthorized activities, such as illegal motor vehicle and mountain bike entry and timber trespass.
- Sign unit boundaries with boundary signs identifying the land classification of the Unit.
- Clearly mark and sign Unit Boundary in vicinity of Jay Mountain Trail so users know where state land ends and Private Property begins.
- Boundary line maintenance should be prioritized; with areas most susceptible to incursion maintained first.

2. Trails

Present Conditions

An inventory of JMWA trails was completed in 2005 and has been incorporated into a trails classification system, patterned after the U.S. Forest Service's Nationwide Trails Program as endorsed by the U.S. General Accounting Offices, 1989 (Appendix A). DEC has incorporated this system into its JMWA trails program and each trail has been assigned a classification based on its present condition and level of use. Five trail classifications are used ranging from unmarked footpaths (Class I) on through to intensively maintained trunk trails (Class V). Trail standards and maintenance prescriptions, reflecting different types and levels of use, are defined for each class in Appendix A. The classification system acknowledges the fact that all trails do not require the same degree nor frequency of maintenance.

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.

There are no official trails in the JMWA; however, there is a well worn herdpath up Jay Mountain. This herdpath leads from the Jay Mountain Road (in the town of Jay) to the ridgeline of Jay Mountain. The trail

is approximately 10 years old and is already exhibiting signs of erosion due its informal/improper layout. Many sections of the trail are three to four times steeper than the recommended grade, making remediation efforts difficult and of questionable success. Therefore, it is recommended that the trail be rerouted to a location that is more suitable to proper trail layout. The primitive character of the current herdpath will be retained in all rerouted sections, and trail marking and brushing will be kept to the minimum amount necessary.

Due to limited access and prohibitive topography, there are few reasonable options for rerouting the current herdpath up Jay Mountain. After thorough reconnaissance, a suitable reroute has been located and included in this UMP for formal adoption (see map, Appendix K).

According to the APSLMP, a Wilderness area is defined as:

> *"an area where the earth and its community of life are untrammeled by man."*

Further defining factors include:

> *"an area of state land or water having a primeval character without significant improvement...Having outstanding opportunities for solitude...having at least 10,000 acres of contiguous land and water or is of sufficient size and character as to make practicable its preservation and use in an unimpaired condition..."*

Due to the small size of the JMWA, 7,951 acres, the Wilderness character of the unit could easily be compromised by too many improvements such as trails. Therefore, no new trails are being proposed (with the exception of the Jay Mountain Trail) in order to preserve the opportunities for solitude and primitive, unconfined recreation that characterize the unit at present. In future revisions of this plan, new trails should only be proposed if necessary for resource protection.

Objectives

- Keep the number and mileage of trails in the unit to an absolute minimum to maintain the wild character of the unit, and provide opportunities for solitude and unconfined recreation.
- Maintain trails to appropriate Wilderness standards.
- Identify need for trail relocations and/or need for new trails based on resource protection.
- Provide a unified system of trail signage and markers on Forest Preserve lands.

Management Actions

- Reroute portions of the Jay Mountain Trail below the ridge to alleviate erosion problems caused by improper trail layout (See proposed map in Appendix K). Trail will begin at proposed parking area described in Trailheads section (below).
- Close existing sections of Jay Mountain herdpath that have been bypassed by reroutes once these reroutes have been established.
- Collect baseline soil and vegetation data at site of trail relocations for use in LAC process.
- Monitor existing section of Jay Trail along the ridgeline to identify any maintenance needs.
- Maintain lower section of the trail to Class III standards. Marking and trail brushing will be kept to the minimum necessary.
- Maintain upper section of trail (along ridgeline) to Class II standards. Mark upper section of trail with rock cairns, using plastic markers only where necessary (avoid use of paint).

3. Trailheads

Present Conditions

A trailhead is defined as the starting or termination point of one or more designated trails at a point of entrance to state land which may contain some or all of the following: vehicle parking, trail signs, and peripheral registration structures (Van Valkenburg, 1986). A trailhead classification system was adopted in 1986 to provide for consistency in their location and development. Class I trailheads are the most developed and are found at the major entrances to the backcountry. Class II and Class III are encountered at lesser used trails with correspondingly less development.

There are currently no official trailheads in the JMWA. Users of the Jay Mountain herdpath currently park on the side of the road near where the trail begins. In the winter, snow banks can effectively block users from parking off of the road and lead to vehicles being parked unsafely. Vehicles parked in the road create additional problems by interfering with snow removal crews.

An official trailhead is recommended for the Jay Mountain Trail that is proposed in the Trails section of this UMP. The trailhead would be maintained to Class II Standards. A small parking area, able to accommodate 3-5 vehicles, is planned for the trailhead near the junction of the trail and Jay Mountain Road.

Where the Jay Mountain herdpath currently starts along the Jay Mountain Road, there is an unstable gravel bank that is being eroded by hiker use. Due to local topography and drainage, there is no reasonable area for the relocation of the Jay Mountain Trail. Therefore, the gravel bank at the start of the

trail will have to be stabilized with either cedar cribbing, stonework or some similar structure made of native materials.

Objectives

- Provide and manage adequate trailhead facilities to protect resource values and to accommodate visitor needs.
- Indirectly manage interior use by balancing parking lot capacities to interior visitor capacities.
- Mitigate parking problems in cooperation with affected parties.

Management Actions

- Create official trailhead near junction of Prestonia and Jay Mountain Roads. This trailhead would provide parking for the Jay Mountain Trail identified in the trails section above. The trailhead would be established as a Class II trailhead.
- Create roadside parking area at Jay Mountain Trailhead to accommodate 3-5 vehicles.
- Stabilize gravel bank along Jay Mountain Road where Jay Mountain trail is located.
- Erect sign alerting motorists to Jay Mountain Trailhead.
- Install Class II trail register/Kiosk at Jay Mountain Trailhead with all pertinent information.
- Schedule routine maintenance of trailheads and litter removal.
- Develop partnerships with local governments and outside volunteers to maintain and snowplow roadside trailhead parking facilities.

4. Campsites/Lean-tos

Present Conditions

There are currently no designated campsites or lean-tos in the unit. Very little camping is known to occur in the unit and camping related negative resource impacts are not apparent. The need for designated campsites or lean-tos does not exist at this time, and none are being proposed. The primary management goal in the JMWA is to keep the area as natural as possible to protect the Wilderness character of the unit. Designated campsites or lean-tos will only be proposed if absolutely necessary for resource protection.

Objectives

- Prohibit camping in fragile environments to limit adverse impacts on the resource.
- Keep area wild/undeveloped.

Management Action

- "At-large" camping will be prohibited above 3,000 feet in elevation to protect the fragile soils and vegetation on Jay, Saddleback, and slip Mountains.

5. Signs

Present Conditions

Signs are used to welcome users, mark trails, and provide regulatory, interpretive, and safety information. Proper signing can educate users and help minimize user impacts on the resource. In wilderness areas, signs may be erected at trail junctures that show directions with arrows and use the minimal necessary wording. With the exception of DEC "Wilderness Area" signs along the boundary of the unit, no informational signs are currently used in the JMWA.

Objectives

- Provide for the minimal use of signs necessary to manage and protect the wilderness resource and user safety.
- Adequately identify the unit, major access points, and resources.
- Place appropriate signage at trailheads to inform users of DEC rules and regulations, the location of facilities, proper safety and sanitary measures, and recommended backcountry etiquette.

Management Actions

- Develop a comprehensive sign inventory that is maintained and updated annually.
- Coordinate and review all signs through a single area manager.
- Place sign at the Jay Mountain Trailhead identifying the unit and the trail.

- Place all appropriate signage at the Jay Mountain Trail Register, including such information as a map of the area, DEC rules and regulations, and a statement about the fragile plants and soils along the ridgeline of Jay Mountain encouraging hikers to stay on the trail or bare rock.

- Place sign along proposed Jay Mountain Trail, just before trail reaches the ridgeline, reiterating the fragility of the plants and soils along the ridgeline of Jay Mountain, and encouraging hikers to stay on the trail or bare rock.

D. Public Use and Access

1. Public Use

Present Conditions

Public access to the JMWA is free and relatively unregulated. 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 JMWA. 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.

There are only a few areas where the public can gain access to the JMWA. The Jay Mountain/ Wells Hill road provides good access to the southern portion of the unit, while limited access to western and eastern portions of the unit can be gained from the Jay Mountain and Seventy Roads (respectively), However, no direct access to northern portion of the unit exists at this time. There is an old road that leads from the Nugent Road in Jay and enters the northern portion of the unit. Members of the public have commented that a public right of way exists over this road into the JMWA pursuant to New York State Highway Law 205-b which states that abandoned town highways that provide access to state forest lands shall remain public right-of-ways indefinitely. However, it is not clear whether the section of road that leads from the end of the current Nugent Road to the JMWA was ever an official town highway. Research will have to be conducted to determine the legal status of this road, and until then no public right-of-way is recognized.

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. DEC will develop a brochure and map of the JMWA in conjunction with other nearby Forest Preserve units that focuses on the area's history, natural resource values, recreational opportunities, use guidelines, and linkages with local communities. The development of a comprehensive user education strategy outside the UMP initiative is also being undertaken by the DEC.

Objectives

- Manage visitor use to keep impacts on the resource and experiences of all visitor at an acceptable level 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.
- Increase visitor self-sufficiency and knowledge of personal protection through educational efforts.
- Determine all legal access points to the unit, and inform the public of such access points.

Management Actions

- 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.

- Continue to collect public use data from the trail register to determine average number of yearly users and groups sizes.
- Develop uniform method of collecting use data across the unit.
- Develop a brochure and map of the JMWA in conjunction with other nearby Forest Preserve units that focuses on the area's history, natural resource values, recreational opportunities, use guidelines, and linkages with local communities.
- Promote "Leave-No-Trace" ethics and techniques with all users, particularly with hikers.
- Determine if any legal public access to northern portion of the unit exists.

2. Access for Persons with Disabilities

Present Conditions

Past management of the JMWA has not focused on provision of access for people with disabilities. Slopes and other terrain constraints make most 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 road that forms the common boundary between the JMWA and the Hurricane Mountain Primitive Area, known as Well's Hill Road in the town of Lewis, and the Jay Mountain Road in the town of Jay, provides an opportunity for individuals to observe nature from their vehicle. High clearance, 4-wheel drive vehicles are recommended for this road. Also, the road is not maintained in winter. The Seventy Road in Lewis provides similar opportunities and is maintained to the same standards.

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 at trailhead access points.
- Identify potential opportunities for accessible facilities in the unit.
- Provide trail access information, gathered from Universal Trail Assessment Process, at trailhead.

E. Non-conforming Uses

1. Roads

Present Conditions

There is a dirt road leading from the Nugent Road in the town of Jay that crosses the unit for roughly 0.5 miles through Lot 86, and leads to a private dwelling that is adjacent to the unit. This is the same road that was discussed earlier under Public Use in this section. The road effectively cuts off the northeastern portion of the unit in Lot 86 from the rest of the unit.

Preliminary research has yet to determine the legal status of the road. Once the status of the road is determined, management actions can be formulated.

Objective

- Determine legal status of road through JMWA and develop management proposals based on findings.

F. 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 JMWA:

- 190.13(c) Group size restrictions: which prohibit day use groups of sixteen or more people, prohibit camping groups of nine or more people on or after July 1, 2010, 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(d) Camping restrictions which prohibit tent platforms or camp structures other than tents, tarps, lean-tos, or those composed of snow; prohibit camping above 3,000 feet in elevation.

- 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.

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SECTION V: SCHEDULE FOR IMPLEMENTATION AND ESTIMATED BUDGET

The following tables outline a schedule for implementation of the proposed management actions and their estimated costs. Accomplishments are contingent upon sufficient staffing levels and available funding. The estimated costs of implementing these projects are based on historical costs incurred by the Department for similar projects. Values for some projects are based on projected costs for service contracting. These cost estimates do not include capital expenditures for items such as equipment, nor do they include the value of program staff salaries.

Annual Maintenance and other Activities	Estimated Cost
Boundary Line Maintenance (Approximately 4 Miles/year @ $500/mile).	$2,000
Routine maintenance of trails and associated facilities.	$2000 5 person-day
Monitor public use and visitor impacts on natural resources and related facilities.	5 person-days
Train DEC staff to identify and eliminate invasive plant species.	5 person-days
Monitor unit for Invasive plant Infestations.	6 person-days
Eliminate Identified Populations of Invasive Plants.	As needed
Conduct Biological and chemical surveys of selected waters to assess fisheries management needs, and to determine progress towards management objectives.	As needed
Total Cost - Annual Maintenance and other Activities	**$4,000** **21 person- days**

Year 1	Estimated Cost
Reroute of Jay Mountain Trail.	$18,750 7 person-days
Promote an active educational program stressing the proper use of public lands, including the development of a unit brochure and map.	$7,000 10 person-days
Promulgate regulations, as identified.	20 person-days
Identify potential access opportunities in the unit for persons with disabilities.	8 person-days
Total Cost - Year 1	**$25,750** **45 person-days**

Years 2	Estimated Cost
Reroute of Jay Mountain Trail.	$18,750 7 person-days
Stabilize Gravel bank at beginning of Jay Mountain Trail	$3,000 2 person-day
Total Cost - Year 2	**$21,750** **9 person-days**

Year 3	Estimated Cost
Mark Ridge Section of Jay Trail with appropriate markers (rock cairns).	4 Person-days
Collect baseline soil and vegetation data at site of trail relocations for use in LAC process.	5 person-days
Place necessary signage along Jay Mountain Trail.	3 person-day
Upgrade Trailhead at the beginning of the Jay Mountain Trail to Class II standards.	$11,000 3 person-days
Total Cost - Year 3	**$11,000** **15 person-days**

Year 4	Estimated Cost
Conduct assessment of Jay Mountain Trail using the Universal Trail Assessment Process (UTAP).	12 person-days
Total Cost - Year 4	**12 person-days**

Year 5	Estimated Cost
Initiate UMP review, and 5-year update.	130 person-days
Total Cost - Year 5	**130 person-days**

Cost Summary

Total Annual Maintenance Costs:	$20,000
	105 person-days
Total Yearly Project Costs:	$58,500
	201 person-days
Total Cost of Implementation:	**$78,500**
	316 person-days

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APPENDICES

Appendix A - Facilities

Appendix B - Acronyms

Appendix C - Rare Communities and Species

Appendix D - Birds

Appendix E - Adirondack Sub-alpine Fir Forest Bird Conservation Area

Appendix F - Classification of Common Adirondack Upland Fish Fauna

Appendix G - Invasive Plant Inventory

Appendix H - Wilderness Areas: Guidelines for Management and Use

Appendix I - State Environmental Quality Review Act Requirements (SEQR)

Appendix J - Public Comment

Appendix K - Unit Maps

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APPENDIX A: FACILITIES

Trails – Listed by class

Location/Name	Length (mi.)	Marker	Maintenance Provided by:	Notes:
Class II Hiking Trails – Paths	2.8 total			
Jay Mountain Herdpath	2.8			Herdpath

JMWA Trails – Summary (miles)

	Class II (unmarked	Class III	Class IV (marked trails)	Class V	Total
Trails in JMWA	2.8	0.0	0.0	0.0	2.8
Total	2.8	0.0	0.0	0.0	2.8

TRAIL CLASSIFICATION SYSTEM – JAY MOUNTAIN WILDERNESS AREA

TITLE	EXAMPLE	MARKING	TREAD	BARRIERS	USE LEVEL	ACCEPTABLE MAINTENANCE
I Unmarked Route		None	Intermittently apparent, relatively undisturbed organic soil horizon	Natural obstructions present, Logs and water courses	Occasional	None
II Path	Jay Mountain Herdpath	Intermittent	Intermittently apparent, compaction of duff, mineral soils occasionally exposed	Same as unmarked route	Low, varies by location	Intermittent marking with consideration given to appropriate layout based on drainage, occasional barrier removal only to define appropriate route.
III. Primitive		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		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.
V Trunk or Primary Trail		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		Heavily marked, detailed interpretive signing	Groomed	None	Very High	Extensive grooming, some paving, bark chips, wheelchair accessible. This is to be implemented within 500' of wilderness boundary.
VII Horse Trail		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		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.

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APPENDIX B - ACRONYMS

ADA	American with Disabilities Act
ADAAG	American with Disabilities Act Accessibility Guidelines
ADK	Adirondack Mountain Club
ALSC	Adirondack Lakes Survey Corporation
ANC	Acid neutralizing capacity
APA	Adirondack Park Agency
APLUDP	Adirondack Park Land Use Development Plan
APIPP	Adirondack Park Invasive Plant Program
APSLMP	Adirondack Park State Land Master Plan
ATV	All Terrain Vehicle
BP	Years Before Present
BMP	Best Management Practices
DAM	New York State Department of Agriculture and Markets
DEC	New York State Department of Environmental Conservation
DMU	Deer Management Unit
DOT	New York State Department of Transportation
ECL	Environmental Conservation Law
EIS	Environmental Impact Statement
EPA	Environmental Protection Agency
EQBA	Environmental Quality Bond Act
HPWA	High Peaks Wilderness Area
JMWA	Jay Mountain Wilderness Area
LAC	Limits of Acceptable Change
NBWI	Native-But-Widely-Introduced
NHPC	Natural Heritage Plant Community
NPS	National Park Service
NYCRR	New York Code of Rules and Regulations
NYS	New York State
OSP	Open Space Plan
SEQRA	State Environmental Quality Review Act

SUNY-ESF	State University of New York, College of Environmental Science and Forestry
TNC	The Nature Conservancy
UFAS	Uniform Accessibility Standards
USGS	United States Geologic Survey
UMP	Unit Management Plan
USDA	United States Department of Agriculture
USFS	United States Forest Service
UTAP	Universal Trail Assessment Process
WMU	Wildlife Management Unit

APPENDIX C: RARE COMMUNITIES AND SPECIES

Rare Communities and Species Documented by the Natural Heritage Program,

Jay Mountain Wilderness Area

Quality of Occurrence	Quad Map	Scientific Name	Common Name	Global Rank	State Rank	Most Recent Observation
Vascular Plants						
H	**Lewis**	***Pyrola asarifolia ssp. Asarifolia***	**pink wintergreen**	**G5T5**	**S2**	**1954**
H	**Lewis**	***Diphasiastrum complanatum***	**northern running-pine**	**G5**	**S1**	**1954**

Source: New York Natural Heritage Program Database

Young (2001) and Regan (2001)

Technical Reference: Mitchell and Tucker (1997)

Quality of Occurrence:

A = excellent	F = failed to find based on a limited search
B = good	X = extirpated
C = marginal	H = historical with no recent information
D = poor	? = unknown
E = extant with insufficient Info.	I = introduced

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APPENDIX D: BIRDS

Bird species documented in atlas blocks within, or partially within, Jay Mountain Wilderness Area (JMWA) during the New York State Breeding Bird Atlas Project, 1980-1985.

Common Name	Scientific Name	Federal[1]	New York State[2]
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
Bicknell's Thrush	*Catharus bicknelli*	MBTA	Protected-SC
Black-and-white Warbler	*Mniotilta varia*	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

Common Name	Scientific Name	Federal[1]	New York State[2]
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 Raven	*Corvus corax*	MBTA	Protected
Common Snipe	*Gallinago gallinago*	MBTA	Game Species
Common Yellowthroat	*Geothlypis trichas*	MBTA	Protected
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

Common Name	Scientific Name	Federal[1]	New York State[2]
Eastern Wood-Pewee	*Contopus virens*	MBTA	Protected
European Starling	*Sturnus vulgaris*	Unprotected	Unprotected
Evening Grosbeak	*Coccothraustes vespertinus*	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
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
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
Northern Cardinal	*Cardinalis cardinalis*	MBTA	Protected
Northern Flicker	*Colaptes auratus*	MBTA	Protected
Northern Goshawk	*Accipiter gentilis*	MBTA	Protected-SC
Northern Saw-whet Owl	*Aegolius acadicus*	MBTA	Protected

Common Name	Scientific Name	Federal[1]	New York State[2]
Ovenbird	*Seiurus aurocapillus*	MBTA	Protected
Peregrine Falcon	*Falco peregrinus*	MBTA-Endangered	Endangered
Philadelphia Vireo	*Vireo philadelphicus*	MBTA	Protected
Pileated Woodpecker	*Dryocopus pileatus*	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-headed Woodpecker	*Melanerpes erythrocephalus*	MBTA	Protected-SC
Red-tailed Hawk	*Buteo jamaicensis*	MBTA	Protected
Red-winged Blackbird	*Agelaius phoeniceus*	MBTA	Protected
Ring-necked Pheasant	*Phasianus colchicus*	Unprotected	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
Savannah Sparrow	*Passerculus sandwichensis*	MBTA	Protected
Scarlet Tanager	*Piranga olivacea*	MBTA	Protected
Sharp-shinned Hawk	*Accipiter striatus*	MBTA	Protected-SC
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
Tennessee Warbler	*Vermivora peregrina*	MBTA	Protected

Common Name	Scientific Name	Federal[1]	New York State[2]
Tree Swallow	*Tachycineta bicolor*	MBTA	Protected
Turkey Vulture	*Cathartes aura*	MBTA	Protected
Veery	*Catharus fuscescens*	MBTA	Protected
Warbling Vireo	*Vireo gilvus*	MBTA	Protected
Whip-poor-will	*Caprimulgus vociferus*	MBTA	Protected-SC
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 Sapsucker	*Sphyrapicus varius*	MBTA	Protected
Yellow-rumped Warbler	*Dendroica coronata*	MBTA	Protected

[1]Federal Classification: Migratory Bird Treaty Act (MBTA)

[2]New York State Classification: Protected-SC (Special Concern Species

Bird species documented in atlas blocks within, or partially within, Jay Mountain Wilderness Area (JMWA) during the New York State Breeding Bird Atlas 2000 Project, 2000-2005.

Common Name	Scientific Name	Federal[1]	New York State[2]
Alder Flycatcher	*Empidonax alnorum*	MBTA	Protected
American Goldfinch	*Carduelis tristis*	MBTA	Protected
American Kestrel	*Falco sparverius*	MBTA	Protected
American Robin	*Turdus migratorius*	MBTA	Protected
American Woodcock	*Scolopax minor*	MBTA	Game Species
Barred Owl	*Strix varia*	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
Broad-winged Hawk	*Buteo platypterus*	MBTA	Protected
Brown Creeper	*Certhia americana*	MBTA	Protected
Brown-headed Cowbird	*Molothrus ater*	MBTA	Protected
Canada Goose	*Branta canadensis*	MBTA	Game Species
Canada Warbler	*Wilsonia canadensis*	MBTA	Protected
Chestnut-sided Warbler	*Dendroica pensylvanica*	MBTA	Protected
Chipping Sparrow	*Spizella passerina*	MBTA	Protected
Cliff Swallow	*Petrochelidon pyrrhonota*	MBTA	Protected
Common Grackle	*Quiscalus quiscula*	MBTA	Protected
Common Merganser	*Mergus merganser*	MBTA	Game Species
Common Raven	*Corvus corax*	MBTA	Protected
Common Snipe	*Gallinago gallinago*	MBTA	Game Species
Downy Woodpecker	*Picoides pubescens*	MBTA	Protected

Common Name	Scientific Name	Federal[1]	New York State[2]
Eastern Bluebird	*Sialia sialis*	MBTA	Protected
Eastern Kingbird	*Tyrannus tyrannus*	MBTA	Protected
Eastern Phoebe	*Sayornis phoebe*	MBTA	Protected
Evening Grosbeak	*Coccothraustes vespertinus*	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
Hairy Woodpecker	*Picoides villosus*	MBTA	Protected
Hermit Thrush	*Catharus guttatus*	MBTA	Protected
Hooded Merganser	*Lophodytes cucullatus*	MBTA	Game Species
House Wren	*Troglodytes aedon*	MBTA	Protected
Indigo Bunting	*Passerina cyanea*	MBTA	Protected
Least Flycatcher	*Empidonax minimus*	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
Northern Waterthrush	*Seiurus noveboracensis*	MBTA	Protected
Ovenbird	*Seiurus aurocapillus*	MBTA	Protected
Philadelphia Vireo	*Vireo philadelphicus*	MBTA	Protected
Pileated Woodpecker	*Dryocopus pileatus*	MBTA	Protected
Pine Siskin	*Carduelis pinus*	MBTA	Protected
Purple Finch	*Carpodacus purpureus*	MBTA	Protected

Common Name	Scientific Name	Federal[1]	New York State[2]
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-SC
Red-tailed Hawk	*Buteo jamaicensis*	MBTA	Protected
Red-winged Blackbird	*Agelaius phoeniceus*	MBTA	Protected
Rose-breasted Grosbeak	*Pheucticus ludovicianus*	MBTA	Protected
Ruby-crowned Kinglet	*Regulus calendula*	MBTA	Protected
Ruffed Grouse	*Bonasa umbellus*	Unprotected	Game Species
Scarlet Tanager	*Piranga olivacea*	MBTA	Protected
Song Sparrow	*Melospiza melodia*	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
Virginia Rail	*Rallus limicola*	MBTA	Game Species
Whip-poor-will	*Caprimulgus vociferus*	MBTA	Protected-SC
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-bellied Sapsucker	*Sphyrapicus varius*	MBTA	Protected

APPENDIX E: ADIRONDACK SUB-ALPINE FOREST BIRD CONSERVATION AREA MANAGEMENT GUIDANCE SUMMARY

Management Guidance Summary

Site Name: Adirondack Sub-alpine Forest Bird Conservation Area

State Ownership and Managing Agency: Department of Environmental Conservation

Location: Adirondack Mountain summits above 2,800 feet in Clinton, Essex, Franklin, Hamilton and Warren counties. Surveyed and confirmed nesting locations for Bicknell's Thrush (Atwood and Rimmer, et al. 1996) include: Mount Marcy, Algonquin Peak, Blue Mountain, Cascade Mountain, Giant Mountain, Kilburn Mountain, Hurricane Mountain, Lower Wolfjaw Mountain, Lyon Mountain, Mount Haystack, Phelps Mountain, Porter Mountain, Rocky Ridge Peak, Santanoni Peak, Snowy Mountain, Vanderwhacker Mountain, Wakely Mountain, Whiteface Mountain, Wright Peak.

Size of Area: Approximately 69,000 acres

DEC Region: 5

General Site Information: Adirondack Mountain summits over 2,800 feet in elevation, more specifically, those with dense subalpine coniferous forests favored by Bicknell's Thrush. Bicknell's Thrush prefer dense thickets of stunted or young growth of balsam fir and red spruce. Found less frequently in other young or stunted conifers, and heavy second growth of fir, cherry, birch.

Vision Statement: 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.

Key BCA Criteria: Diverse species concentration site; individual species concentration site; species at risk site (ECL 11-2001, 3.f, g, and h). Peaks over 2,800 feet with dense subalpine thickets provide habitat for a distinctive bird community, which includes Bicknell's Thrush (special concern), Blackpoll Warbler, Swainson's Thrush.

Critical Habitat Types: Dense subalpine coniferous thickets. To a lesser degree, young or stunted and heavy second growth of cherry or birch.

Operation and Management Considerations:
Identify habitat management activities needed to maintain site as a BCA.

None identified for certain, although human access and acid rain could be impacting.

Identify seasonal sensitivities; adjust routine operations accordingly.

The BCA is comprised of lands that are within the Adirondack High Peaks Wilderness Area, and other lands within the broader Adirondack Forest Preserve. The Adirondack High Peaks Wilderness Area portion is subject to relatively stringent regulations and use limitations. Portions of the BCA that are not within the High Peaks Wilderness Area may have less stringent use limitations. Access to wilderness areas is completely limited to foot trails and non-motorized access, including horse trails. Access in wild forest and intensive use areas may include motorized forms of access. Examples include a road up Blue Mountain to transmitters, and a road up Whiteface. The road up Blue Mountain is used largely for administrative access to the transmitter towers. Whenever possible, routine maintenance on these towers or the access road should be scheduled outside the nesting season for Bicknell's Thrush (May through July). The road up Whiteface sees considerable use by the public. Trail and road maintenance activities have the potential to disturb nesting activities of high altitude birds (in particular, Bicknell's Thrush). Whenever possible, routine maintenance should be planned so that it can be completed outside of the normal nesting season. Should maintenance be needed during the nesting season, the use of non-motorized equipment would help to minimize the impacts.

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

Ensure that bird conservation concerns are addressed in the Adirondack Park State Land Master Plan, individual unit management plans, and other planning efforts. For those areas where plans have already been completed, incorporate concerns for subalpine bird communities at the earliest opportunity. On May 18, 2000, Emergency Regulations were adopted for the High Peaks Wilderness Area, which comprises part of the BCA. These regulations prohibit camping above 4,000 feet; limit camping between 3,500 and 4,000 feet to designated areas; prohibit campfires above 4,000 feet, and require the leashing of pets above 4,000 feet.

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

There has been little research on what effect normal use of hiking trails has on nesting birds. Recreational use in some areas of the BCA is relatively high. More research is needed on whether there is a significant impact to bird populations from the current level of human visitation. The Adirondack High Peaks Wilderness portions of the BCA are remote locations and access is largely limited to foot trails. Motorized vehicles are not normally allowed. Those areas of the BCA outside of the High Peaks Wilderness Area allow the use of motorized vehicles and have fewer restrictions on other uses. The Unit Management Planning process for these areas should assess the effects of current levels of recreational use, and the need for new trails (including placement, timing, and construction method) on subalpine bird species (in particular, Bicknell's Thrush). Consideration should be given to prohibiting motorized vehicle access to subalpine forests above 2,800 feet.

Education, Outreach, and Research Considerations:

Assess current access; recommend enhanced access, if feasible.

Recreational use in some areas of the BCA is relatively high. Further study or research would help to assess impacts of recreational activities on nesting high altitude species. The need for protective measures will be discussed and incorporated as part of the planning process for the Adirondack Forest Preserve and Wilderness Areas that form the BCA, or at the earliest opportunity.

Determine education and outreach needs; recommend strategies and materials.

There is a need to identify to the public the distinctive bird community present in subalpine forests over 2,800 feet. The potential impacts of human intrusion need to be portrayed to the public, and a "please stay on the trails" approach may be beneficial. Continue partnerships with the National Audubon Society, High Peaks Audubon Society, Adirondack Mountain Club and other groups involved in education and conservation of birds of the Adirondack High Peaks.

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

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 is needed on this. 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. The impact of the current levels of human use on nesting success needs to be assessed.

Contacts:

Ken Kogut, DEC Region 5 Wildlife Manager, 518-897-1291

Thomas Martin, DEC Region 5 Regional Forester, 518-897-1276

Sources:

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(4):650-661.

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State of New York Endangered Species Working Group. 1996. Species Dossier for Bicknell's Thrush. New York State Department of Environmental Conservation.

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Date BCA Designated: 11/16/01

Date MGS Prepared: 12/6/01

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APPENDIX F: CLASSIFICATION OF COMMON ADIRONDACK UPLAND FISH FAUNA

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	slimy sculpin
white sucker	finescale dace	lake chub
longnose sucker	creek chubsucker	common shiner
northern redbelly dace	longnose dace	round whitefish
Native Species Widely Introduced within the Adirondack Upland[2]		
brook trout	pumpkinseed	lake trout
brown bullhead	cisco	creek chub
Nonnative to Adirondack Upland		
golden shiner	northern pike	Atlantic salmon
chain pickerel	rock bass	walleye
largemouth bass	bluntnose minnow[3]	central mudminnow
brown trout	pearl dace	redhorse suckers (spp.)
Splake	smallmouth bass	black crappie
lake whitefish	yellow perch	fallfish[4]
rainbow smelt	fathead minnow[5]	banded killifish[6]

[2] 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 species listed above as native have been moved from water to water in the Adirondack Upland, but the historical record is less distinct.

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

[4] Adventive through stocking.

bluegill	**rainbow trout**	**Johnny darter**

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

[6] Early collections strongly suggest dispersal as a bait form.

APPENDIX G: INVASIVE PLANTS

JAY MOUNTAIN WILDERNESS AREA

Because of the intermingled nature of private and public lands and embedded transport vectors, State Lands are, and are likely to be, affected by infestations of invasive species and subsequent degradation of natural system function. This report is prepared as a supplement to the invasive species recommendations submitted to the Unit management plan to provide NYS DEC staff with current inventory and management information on documented invasive plant species infestations that threaten exemplary communities and conservation targets within the Adirondack Park.

Terrestrial Invasive Plant Inventory

During the inventory process invasive plant infestations will be assessed as a High, Medium or Low priority threat with regard to geophysical setting, management and invasive ownership.

High Priority assessments will be applicable to all terrestrial infestations occurring on state lands, especially where aquatic resources, naturally flowing waters, or human-influenced surface or storm water d istribution will likely transport and spread seed, plant propagules or rhizomes away from the infestation. Infestations may also be assessed as a High Priority that occur in an area in proximity to state land, such as on State, County, Town or seasonal road right-of-ways, and have multiple transport vectors that will likely expand the infestation onto state lands.

Medium Priority assessments may be applicable to infestations that are completely within maintained right-of-ways in proximity to state land and have moderate transport vectors. Infestations may also be assessed as a Medium Priority that have been managed and are now displaying marked reductions in biomass or density, or when an infestation of an invasive species is in low abundance, has limited distribution, and does not have the likelihood of aggressively spreading and displacing native flora or fauna in the Adirondack Park.

Low Priority assessments may be applicable to contained infestations occurring entirely on cultivated, residential or private lands in proximity to Unit boundaries, to infestations where the private land owner or caretaker will be educated about the necessary management controls, or, to isolated, singular occurrences of invasive plant, tree, or shrub species that have minimal transport vectors and display a reduced risk of expansion or distribution.

Terrestrial invasive plant infestations within DOT State Route ROW (right-of-way) are referenced by the green Reference Markers (RM) positioned every 0.2 mile along State Routes within the Park. Example: State Route RM 86-1202-1172.

Terrestrial infestations occurring beyond NYS DOT ROW, along County, Town or back roads, private land settings, and on State Lands or DEC facilities are geo-referenced via a hand-held GPS unit utilizing UTM NAD 83 Program for Zone 18. Example: 4911698North (N) 590545East (E).

Terrestrial invasive plant species documented within, or in proximity to, the Unit include the following: common buckthorn (Rhamnus cathartica) and Japanese barberry (Berberis thunbergii).

For species specific information regarding natural history, ecology, and reproduction, please refer to the Element Stewardship Abstracts (Addendum).

Terrestrial Locations

There is one (1) medium priority common buckthorn infestation within the Unit.

At waypoints 602157 longitute, 4907723 latitude, are established just below the lower slope of Jay Mountain, approximately 400 feet east of Jay Mountain Road.

Terrestrial Invasive Management Actions

The Department will enter into cooperative partnerships through Adopt-A-Natural-Resource Stewardship Agreements (AANR) and Temporary Revocable Permits (TRP) to facilitate containment and eradication of the invasive plant occurrences within the unit. Any eradication work involving the use of herbicides will be carried out under an Inter-Agency Guidelines for Implementing Best Management Practices (BMPs) for the Control of Terrestrial Invasive Plant Species on Forest Preserve Lands in the Adirondack Park (Invasive Plant Work Plan), developed by DEC and APA. This Invasive Plant Work Plan will provide a template for the process through which comprehensive active terrestrial invasive plant management will take place on state lands in the Adirondack Park. The Work Plan will provide protocols for implementing BMP's on state land. The protocols will describe what management practices are acceptable and when they can be implemented, who can be authorized to implement the management practices, and which terrestrial invasive plant species are targeted. The Work Plan will also describe a process by which the Department may enter into AANR's to facilitate individuals or groups seeking to manage terrestrial invasive plant species on state lands using the listed Best Management Practices, including herbicide use, in the appropriate circumstances. The Invasive Plant Work Plan will be subject to SEQRA and serve as the mechanism for assessing the impacts and suitability of eradication BMP's and actions.

APIPP staff will continue to work with the Unit Planner to eradicate the documented common buckthorn infestation affecting this Unit. Cultural controls, cut stump treatments, or a combination of these controls, is recommended to the Department. Cultural controls include cutting, mowing, girdling, excavation and under-planting. Cut stump applications utilizing 20% glyphosate from late summer through the dormant season are known to b effective against buckthorn. Small Japanese barberry plants can be hand pulled any time of the year. Foliar sprays with a 2% solution of glyphosate or triclopyr are effective. Cut stump treatments utilizing 25% glyphosate or triclopyr in water can be implemented at any time except when the ground is frozen.

Aquatic Plant Inventory

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.

Longitude and latitude coordinates are used to indicate a lake with a documented infestation. Infestations may range from an isolated population to a lake-wide invasion. Knowledge of locations and coordinates of specific infestations within the lake is limited and variable and will be provided as available.

Eurasian watermilfoil is confirmed in the following lakes in the adjacent Taylor Pond Wild Forest:

Taylor Pond442935N 0734926W

Union Falls Pond442910N 0735618W

Augur Lake442730N 0733006W

Long Pond442309N 0732711W

Eurasian watermilfoil and curlyleaf pondweed are confirmed in the following lake:

Franklin Falls Pond442615N 0735822W

Eurasian watermilfoil, water chestnut, curlyleaf pondweed, European frog-bit, and Yellow floating-heart are confirmed in the following lake:

Lake Champlain 443237N 0732031W

Eurasian watermilfoil is confirmed in the following lakes in the adjacent Hammond Pond Wild Forest:

Schroon Lake434649N 0734642W

Lincoln Pond440953N 0733320W

Bartlett Pond440604N 0733039W

Eagle Lake435253N 0733458W

Please see the Protect Your Waters website for complete information on prevention procedures for specific recreational users http://www.protectyourwaters.net/prevention/.

For species specific information regarding natural history, ecology, and reproduction, please refer to the Invasive Plant Atlas of New England program website http://webapps.lib.uconn.edu/ipane/search.cfm.

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APPENDIX H: WILDERNESS AREAS - GUIDELINES FOR MANAGEMENT AND USE (APSLMP)

Basic guidelines

1. The primary wilderness management guideline will be to achieve and perpetuate a natural plant and animal community where man's influence is not apparent.

2. In wilderness areas:

   a) no additions or expansions of non-conforming uses will be permitted;

   b) any remaining non-conforming uses that were not removed by the December 31, 1975 deadline provided for in the original version of the master plan will be removed by March 31, l987;

   c) non-conforming uses resulting from newly-classified wilderness areas will be removed as rapidly as possible and in any case by the end of the third year following classification; and,

   d) primitive tent sites that do not conform to the separation distance guidelines will be brought into compliance on a phased basis and in any case by the end of the third year following adoption of a unit management plan for the area.

3. No new non-conforming uses will be permitted in any designated wilderness area.

4. Construction of additional conforming structures and improvements will be restrained to comply with wilderness standards for primitive and unconfined types of recreation and to permit better maintenance and rehabilitation of existing structures and improvements.

5. No new structures or improvements in any wilderness area will be constructed except in conformity with finally adopted unit management plans. This guideline will not prevent ordinary maintenance or rehabilitation of conforming structures or improvements, minor trail relocation, or the removal of non-conforming uses.

6. All conforming structures and improvements will be designed and located so as to blend with the surrounding environment and to require only minimal maintenance.

7. All management and administrative action and interior facilities in wilderness areas will be designed to emphasize the self-sufficiency of the user to assume a high degree of responsibility for environmentally-sound use of such areas and for his or her own health, safety and welfare.

8. Any new, reconstructed or relocated lean-tos or primitive tent sites planned for shorelines of lakes, ponds, rivers or major streams will be located so as to be reasonably screened from view from the water body to avoid intruding on the natural character of the

shoreline and public enjoyment and use thereof. Any such lean-tos will be set back a minimum of 100 feet from the mean high water mark of lakes, ponds, rivers or major streams.

9. All pit privies will be located a minimum of 150 feet from the mean high water mark of any lake, pond, river, or stream or wetland.

Structures and improvements

1. The structures and improvements listed below will be considered as conforming to wilderness standards and their maintenance, rehabilitation and construction permitted:

-- scattered Adirondack lean-tos, not including lean-to clusters, below 3,500 feet in elevation;

-- primitive tent sites below 3,500 feet in elevation that are out of sight and sound and generally one-quarter mile from any other primitive tent site or lean-to:

(I) where physical and biological conditions are favorable, individual unit management plans may permit the establishment, on a site-specific basis, of primitive tent sites between 3,500 and 4,000 feet in elevation, and,

(ii) where severe terrain constraints prevent the attainment of the guideline for a separation distance of generally one-quarter mile between primitive tent sites, individual unit management plans may provide, on a site- specific basis, for lesser separation distances, provided such sites remain out of sight and sound from each other, be consistent with the carrying capacity of the affected area and are generally not less than 500 feet from any other primitive tent site;

-- pit privies;

-- foot trails;

-- cross country ski trails;

-- foot trail and cross country ski trail bridges constructed of natural materials and, where absolutely necessary, ladders constructed of natural materials;

-- horse trails, except that any new horse trails will be limited to those that can be developed by conversion of appropriate abandoned roads, snowmobile trails, or state truck trails;

-- horse trail bridges constructed of natural materials;

-- horse hitching posts and rails;

-- existing or new fish barrier dams, constructed of natural materials wherever possible;

-- existing dams on established impoundments, except that, in the reconstruction or rehabilitation of such dams, natural materials will be used wherever possible and no new dams will be constructed;

-- directional, informational and interpretive signs of rustic materials and in limited numbers;

-- peripheral visitor registration structures; and,

-- wildlife management structures on a temporary basis where essential to the preservation of wilderness wildlife values and resources.

2. All other structures and improvements, except for interior ranger stations themselves (guidelines for which are specified below), will be considered nonconforming. Any remaining non-conforming structures that were to have been removed by the December 31, 1975 deadline but have not yet been removed, will be removed by March 31, 1987. These include but are not limited to:

-- lean-to clusters;

-- tent platforms;

-- horse barns;

-- boat docks;

-- storage sheds and other buildings;

-- fire towers and observer cabins;

-- telephone and electrical lines;

-- snowmobile trails;

-- roads and state truck trails;

-- helicopter platforms; and,

-- buoys.

Ranger stations

1. No new interior stations will be constructed and all remaining interior stations, other than Lake Colden, will be phased out on a scheduled basis determined by the Department of Environmental Conservation, in favor of stations or other facilities at the periphery of the wilderness areas at major points of access to provide needed supervision of public use. This phase-out should be accomplished as soon as feasible, as specified in the individual unit management plans.

2. New methods of communication and supply, complying with wilderness guidelines, will be employed with respect to all ranger stations maintained by the Department of Environmental Conservation after December 31, 1975.

3. Due to the heavy existing and projected winter use in the Eastern High Peak area and the presence of the most rugged terrain in the Adirondacks, the Lake Colden station together with an associated on-ground line (i.e., a line laid on or just under the ground surface which rapidly becomes covered by leaves) for telephone communication may be retained indefinitely but their status will be periodically reviewed to determine if their eventual removal is feasible.

Motor vehicles, motorized equipment and aircraft

1. Public use of motor vehicles, motorized equipment and aircraft will be prohibited.

2. Administrative personnel will not use motor vehicles, motorized equipment or aircraft for day-to-day administration, maintenance or research.

3. Use of motorized equipment or aircraft, but not motor vehicles, by administrative personnel may be permitted for a specific major administrative, maintenance, rehabilitation, or construction project if that project involves conforming structures or improvements, or the removal of non-conforming structures or improvements, upon the written approval of the Commissioner of Environmental Conservation.

4. Such use of motorized equipment or aircraft will be confined to off-peak seasons for the area in question and normally will be undertaken at periodic intervals of three to five years, unless extraordinary conditions, such as a fire, major blow-down or flood mandate more frequent work or work during peak periods.

5. Irrespective of the above guidelines, use of motorized equipment or aircraft, but not motor vehicles, for a specific major research project conducted by or under the supervision of a state agency will be permitted if such project is for purposes essential to the preservation of wilderness values and resources, no feasible alternative exists for conducting such research on other state or private lands, such use is minimized, and the project has been specifically approved in writing by the Commissioner of Environmental Conservation after consultation with the Agency.

6. Irrespective of the above or any other guidelines in this master plan, use of motor vehicles, motorized equipment and aircraft will be permitted, by or under the supervision of appropriate officials, in cases of sudden, actual and ongoing emergencies involving the protection or preservation of human life or intrinsic resource values -- for example, search and rescue operations, forest fires, or oil spills or similar, large-scale contamination of water bodies.

7. In light of the special circumstances involving Whitney Lake in the West Canada Lake Wilderness Area, seasonal float plane use from spring ice-out to and including June l5 and from October 15 to fall or winter ice-in may be allowed on that lake, by, and subject to permit from the Department of Environmental Conservation for an interim period ending no later than December 31, l993. Such permits shall require annual reporting of all flights and the number of

passengers to and from Whitney Lake. During the winter of l988-89 the Department shall determine, from the use trends indicated, whether Whitney Lake should then be closed to float plane use for either or both seasonal periods or whether such use should be allowed to continue until the final deadline of December 31, l993.

8. Written logs will be kept by the Department of Environmental Conservation recording use of motorized vehicles, motorized equipment and aircraft. The Department will prepare an annual report providing details of such motorized uses and the reasons therefor and file it with the Agency.

Roads, snowmobile trails and state truck trails

1. No new roads, snowmobile or state truck trails will be allowed.

2. Existing roads and state truck trails that were to have been closed by the December 31, 1975 deadline but have not yet been removed will be closed by no later than March 3l, l987. Any non-conforming roads, snowmobile trails or state truck trails resulting from newly classified wilderness areas will also be phased out as rapidly as possible and in any case will be closed by the end of the third calendar year following classification. In each case the Department of Environmental Conservation will:

-- close such roads and snowmobile trails to motor vehicles as may be open to the public;

-- prohibit all administrative use of such roads and trails by motor vehicles; and,

-- block such roads and trails by logs, boulders or similar means other than gates.

3. During the phase-out period:

-- the use of motorized vehicles by administrative personnel for transportation of materials and personnel will be limited to the minimum required for proper interim administration and the removal of non-conforming uses; and,

-- maintenance of such roads and trails will be curtailed and efforts made to encourage revegetation with lower forms of vegetation to permit their conversion to foot trails and, where appropriate, horse trails.

All terrain bicycles

l. Public use of all terrain bicycles will be prohibited.

2. Administrative personnel will not use all terrain bicycles for day-to-day administration but use of such vehicles may be permitted for specific major administrative research,

maintenance, rehabilitation or construction projects involving conforming structures or improvements, or the removal of non-conforming structures in the discretion of the Department of Environmental Conservation.

Flora and fauna

There will be no intentional introduction in wilderness areas of species of flora or fauna that are not historically associated with the Adirondack environment, except: (I) species which have already been established in the Adirondack environment, or (ii) as necessary to protect the integrity of established native flora and fauna. Efforts will be made to restore extirpated native species where such restoration appears feasible.

Recreational use and overuse

1. The following types of recreational use are compatible with wilderness and should be encouraged as long as the degree and intensity of such use does not endanger the wilderness resource itself:

-- hiking, mountaineering, tenting, hunting, fishing, trapping, snowshoeing, ski touring, birding, nature study, and other forms of primitive and unconfined recreation.

-- Access by horses, including horse and wagon, while permitted in wilderness, will be strictly controlled and limited to suitable locations and trail conditions to prevent adverse environmental damage.

2. Each individual unit management plan will seek to determine the physical, biological and social carrying capacity of the wilderness resource. Where the degree and intensity of permitted recreational uses threaten the wilderness resource, appropriate administrative and regulatory measures will be taken to limit such use to the capability of the resource. Such administrative and regulatory measures may include, but need not be limited to:

-- the limitation by permit or other appropriate means of the total number of persons permitted to have access to or remain in a wilderness area or portion thereof during a specified period;

-- the temporary closure of all or portions of wilderness areas to permit rehabilitative measures.

3. An intensified educational program to improve public understanding of backcountry use, including an anti-litter and pack-in, pack-out campaign, should be undertaken.

Boundary structures and improvements and boundary marking

1. Where a wilderness boundary abuts a public highway, the Department of Environmental Conservation will be permitted, in conformity with a duly adopted unit management plan, to locate within 500 feet from a public highway right-of-way, on a site-specific basis, trailheads, parking areas, fishing and waterway access sites, picnic areas, ranger stations or other facilities for peripheral control of public use, and, in limited instances, snowmobile trails.

2. Where a wilderness boundary abuts a water body accessible to the public by motorboat, the Department of Environmental Conservation will be permitted, in conformity with a duly adopted unit management plan, to provide, on a site-specific basis, for ranger stations or other facilities for peripheral control of public use or for the location of small, unobtrusive docks made of natural materials on such shorelines in limited instances where access to trailheads or the potential for resource degradation may make this desirable.

3. Special wilderness area boundary markers will be designed and installed at major access points to enhance public recognition of wilderness boundaries and wilderness restrictions.

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APPENDIX I: STATE ENVIRONMENTAL QUALITY REVIEW ACT REQUIREMENTS (SEQR)

State Environmental Quality Review

NEGATIVE DECLARATION

Notice of Determination of Non-Significance

Identifying # 2010-FMP-5-72

Date May 18, 2010

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 of the Jay Mountain Wilderness Area Unit Management Plan

SEQR Status: **Type 1** X

Unlisted

Conditioned Negative Declaration: ___ **Yes**

X **No**

Description of Action: The Jay Mountain Wilderness Area Unit Management Plan is a comprehensive plan addressing use of and preservation of public lands. Actions include trail relocation and parking area construction, boundary line marking and maintenance, search and rescue operations, maintenance of existing facilities, public information and education and public use controls. Trail relocation at certain locations is necessary to alleviate erosion problems associated with the existing trail which is a steep herd path.

Location: (Include street address and the name of the municipality/county. A location map of appropriate scale is also recommended.)

Adirondack Forest Preserve, Towns of Jay and Lewis in Essex County

Reasons Supporting This Determination:

(See 617.7(a)-(c) for requirements of this determination; see 617.7(d) for Conditioned Negative Declaration) The entire purpose of the unit management plan for the Jay Mountain Wilderness Area is to manage this resource as a Wilderness Area, pursuant to the management guidelines for Wilderness Areas in the APSLMP.

This UMP sets forth management goals and objectives to protect, preserve and where necessary restore the Jay Mountain Wilderness Area by monitoring and regulating the area so that user impacts are virtually nonexistent. For example, one of the plan's management objectives is to indirectly manage interior use by balancing parking lot capacities to interior visitor capacities. Proposed regulations include limiting group sizes for day and overnight users to help limit and disperse use; likewise, at-large camping will be prohibited above 3,000 feet in elevation in order to protect fragile

soils and plant communities. Rather than having adverse impacts to the environment, this UMP will have beneficial impacts.

Specifically, this plan proposes to maintain, reconstruct or relocate facilities to appropriate wilderness standards (see Appendix II). These wilderness standards emphasize resource protection rather than user convenience or comfort. For example, approximately 1.7 miles of trail are proposed to be relocated to alleviate erosion to areas where erosion is unlikely or easily mitigated. Trails will be maintained to improve drainage, using native materials, where necessary to minimize erosion.

Some existing sections of trail will be utilized in the relocation of the Jay Mountain trial. Other sections of the trail that will be bypassed will be closed once the reroutes are established. Marking and brushing of trails will be kept to a minimum.

An upgrade will be made at the trailhead at the beginning of the Jay Mountain Trail. A small parking area to accommodate 3-5 cars is planned for the trailhead near the junction of the trail and Jay Mountain Road. This will improve safety by eliminating the need for users to park unsafely off the road in the winter.

The APA will be consulted in any management activities in and 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 tree cutting activities will be in compliance with the Commissioner's Delegation Memorandum #84-06 on Tree Cutting in the Forest Preserve and LF-91-2 Policy on Cutting, Removal or Destruction of Trees on Forest Preserve Lands. Whenever possible, routine maintenance should be planned so that it can be completed outside of the normal nesting season for Brickell's thrush. Should maintenance be needed during this period, the use of non-motorized equipment would help to minimize impacts. Sites where threatened plants are located will be avoided.

The following Best Management Practices will be followed for the relocation of the Jay Mountain Trail and the trailhead parking area:

- Minimize necessary cut and fill
- Wherever possible, lay out trail/parking area on cleared or partially cleared areas
- Locate trail/parking area away from streams, wetlands and unstable slopes
- Use proper drainage control devices such as water bars and broad-based dips
- Locate trail/parking area to minimize grade
- Avoid areas where habitats of threatened and endangered species are known to exist

- Use natural materials to blend structures into the natural surroundings
- Locate trail/parking area on flat, stable, well-drained sites using gravel for surfacing or other appropriate material to avoid storm water runoff and erosion
- Locate in areas that require minimum amount of tree cutting
- Limit construction to periods of low or normal rainfall
- Wherever possible, use wooded buffers to screen parking area from roads
- Limit the size of parking area to the minimum necessary to address the intended use

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: Robert Daley, Forester 1

Address: NYS DEC

PO Box 296, Route 86

Ray Brook, NY 12977

Telephone Number: (518) 897-1369

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

Other involved agencies (if any)

Applicant (if any)

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

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APPENDIX J: PUBLIC COMMENT

Public Comment received during public comment period 2/11/2010 – 3/26/2010

JMWA - Support proposals to reroute Jay Mountain herdpath, stabilize bank at beginning of trail, establish official trailhead/parking area, and include signage regarding fragile nature of plants on summit (ridge) of Jay Mountain.

Oppose marking the portion of the Jay Tail along the ridgeline. This will detract from the wilderness experience.

Marking the trail along the ridge of Jay Mountain has been proposed to keep hikers on one trail and avoid the development of multiple herd paths. The use of cairns to mark this trail has been recommended to retain the wilderness character of the area as much as possible.

Support emphasis on maintaining JMWA as wild as possible.

Consider access at southern end of JMWA off of Jay Mtn. Road. Consider Public parking on the portion of the Jay Mountain/Wells Hill Road that crosses state land

Although there are no formal trails, trailheads, or parking areas proposed for this area, there is approximately 2.3 miles of road frontage along Jay Mountain/Wells Hill Road that provides access to the southern portion of the unit.

The Department has considered the possibility of providing formal parking facilities along the portion of The Jay Mountain/Wells Hill Road that forms the boundary of the JMWA and the Hurricane Mountain Primitive Area. Although no parking area is being proposed at this time the department will further evaluate this issue. If a parking area is determined necessary, an amendment to this UMP, or the Hurricane Mountain Primitive Area UMP will be made.

Jay Mountain Wilderness does not meet 10,000 acre threshold for wilderness in Adirondack Park.

Classification of state land within the Adirondack Park is the responsibility of the APA. The APA has apparently determined that the JMWA is "of sufficient size and character" to be managed as a wilderness area as per the following APSLMP wilderness guideline "…has at least 10,000 acres of contiguous land and water or is of sufficient size and character as to make practicable its preservation and use in an unimpaired condition…"

The Jay Mountain Road is not included in the JMWA, and is not on the unit map.

The Jay Mountain Road forms the boundary between the JMWA and the Hurricane Mountain Primitive Area.

Unauthorized public parking and hiking across private property to access Jay Mountain Wilderness needs to be addressed.

The Department has met with concerned land owners regarding this issue, and will continue to offer support in alleviating unwanted trespass.

Trails and bridges in the area should be widened to allow for safer use by cross-country and back-country skiers.

The proposed trail classification for the JMWA was developed to accommodate current use levels and patterns while maintaining a high degree of wilderness character. Wilderness resources, in general, are managed to encourage self sufficiency and a high degree of responsibility for personal health, safety, and welfare; not for user convenience.

Public parking should be provided on the portion of the Jay Mountain/Wells Hill Road that crosses state land (.

The Department has considered the possibility of providing formal parking facilities along the portion of The Jay Mountain/Wells Hill Road that forms the boundary of the JMWA and the Hurricane Mountain Primitive Area. No parking area is being proposed at this time. The department will further evaluate this possibility, and if a parking area is determined

The value of Jay Mountain/Wells Hill Road for wildland fire suppression should be addressed in the UMP.

The Jay Mountain/Wells Hill Road could certainly be valuable as a means of access, or as a fire line if a wildfire ever broke out in the JMWA or the Hurricane Mountain Primitive Area. This is also true of any other roads adjacent to these units.

DEC, APA, and the towns of Jay and Lewis should explore options for closing Jay Mountain (Wells Hill) Road past the last houses and combine the JMWA with the neighboring Hurricane Mountain Primitive Area. These roads could be kept open to foot traffic, or mountain bikes (via a primitive corridor) at much less cost than current maintenance for motor vehicles.

The Jay Mountain/Wells Hill Road is recognized as a town road maintained by the towns of Jay and Lewis where it travels through each municipality. If either, or both, towns formally abandon the respective portions of the road between the JMWA and the Hurricane Mountain Primitive Area, the abandoned portions will be managed in the manner that is appropriate based on state highway law, state environmental conservation law, and the APSLMP.

Lands adjacent to the JMWA should be considered high priorities for state fee acquisition or conservation easements.

New York State acquires land according to the provisions of its Open Space Conservation Plan.

The APSLMP is severely outdated and needs revision before any UMPs are adopted or amended. Last comprehensive revision was 1985.

Revision of the APSLMP is the responsibility of the APA…

Where possible, trails should be kept away from streams, rivers, lakes, ponds, wetlands, or any other ecologically sensitive sites.

The Department manages its lands according to current best management practices. These include locating trails away from streams, wetlands, and unstable slopes wherever possible; and avoiding areas where habitats of threatened and endangered species are known to exist.

In light of anthropogenic climate disruption, present policies and limits on trapping and shooting of carnivore species may be too lax. For example, pine marten could by [*sic*] an early casualty of an overheating climate, acting synergistically with habitat fragmentation and excessive trapping.

The department recognizes that marten have the potential to be overharvested by trappers, therefore, we employ a conservative approach to managing marten harvests in the Adirondacks. We accomplish this primarily through a bag limit system that limits the number of marten that a single trapper can harvest (currently 6 marten per season). Moreover, we closely monitor the harvest of this species through a trapping permit system that allows us to collect trapper effort and biological data that are vital to making inferences regarding harvest trends. Lastly, much of the marten harvest in the Adirondacks occurs next to roads and trails, effectively leaving large, remote areas as trapping refugia for these and other carnivores. The trapping refugia concept is widely regarded among furbearer biologists as an effective means for ensuring sustainable harvests of these species. Current marten harvests in the Adirondacks can hardly be considered "excessive." While you are correct that climate change and the possibility of habitat fragmentation may negatively influence marten populations in the future, there is much that we do not know concerning interactions of snow, competing fisher populations, habitat suitability, and prey populations and their influence on marten populations. Therefore, making predictions about additive population-level impacts of trapping are premature.

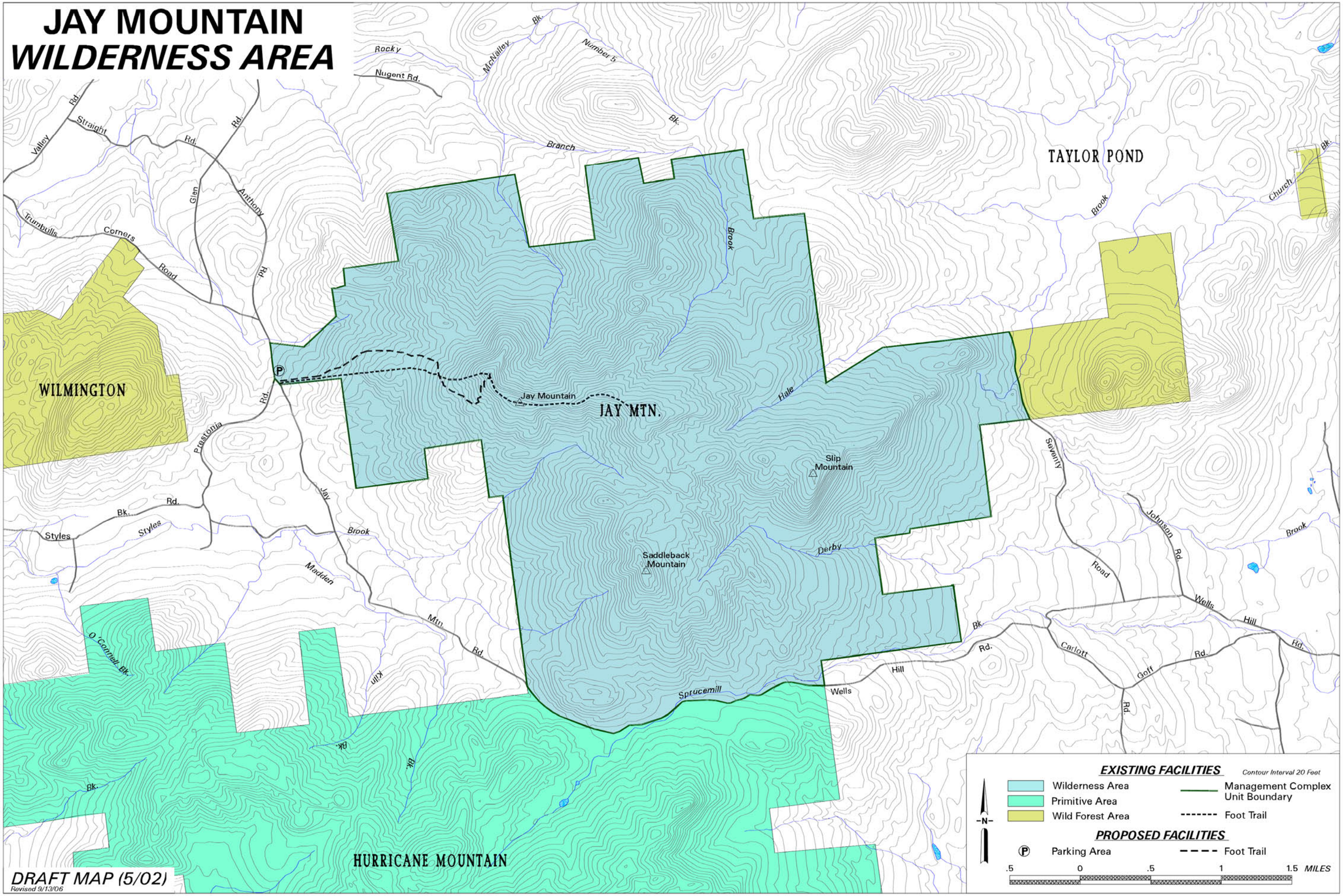
The JMWA and Hurricane Mountain Primitive Area UMPs should be combined into one document. Because these units are adjacent to each other and very similar, there is much

redundant background information that could be consolidated. This would also be in keeping with APSLMP language that contemplates combining these units in the future.

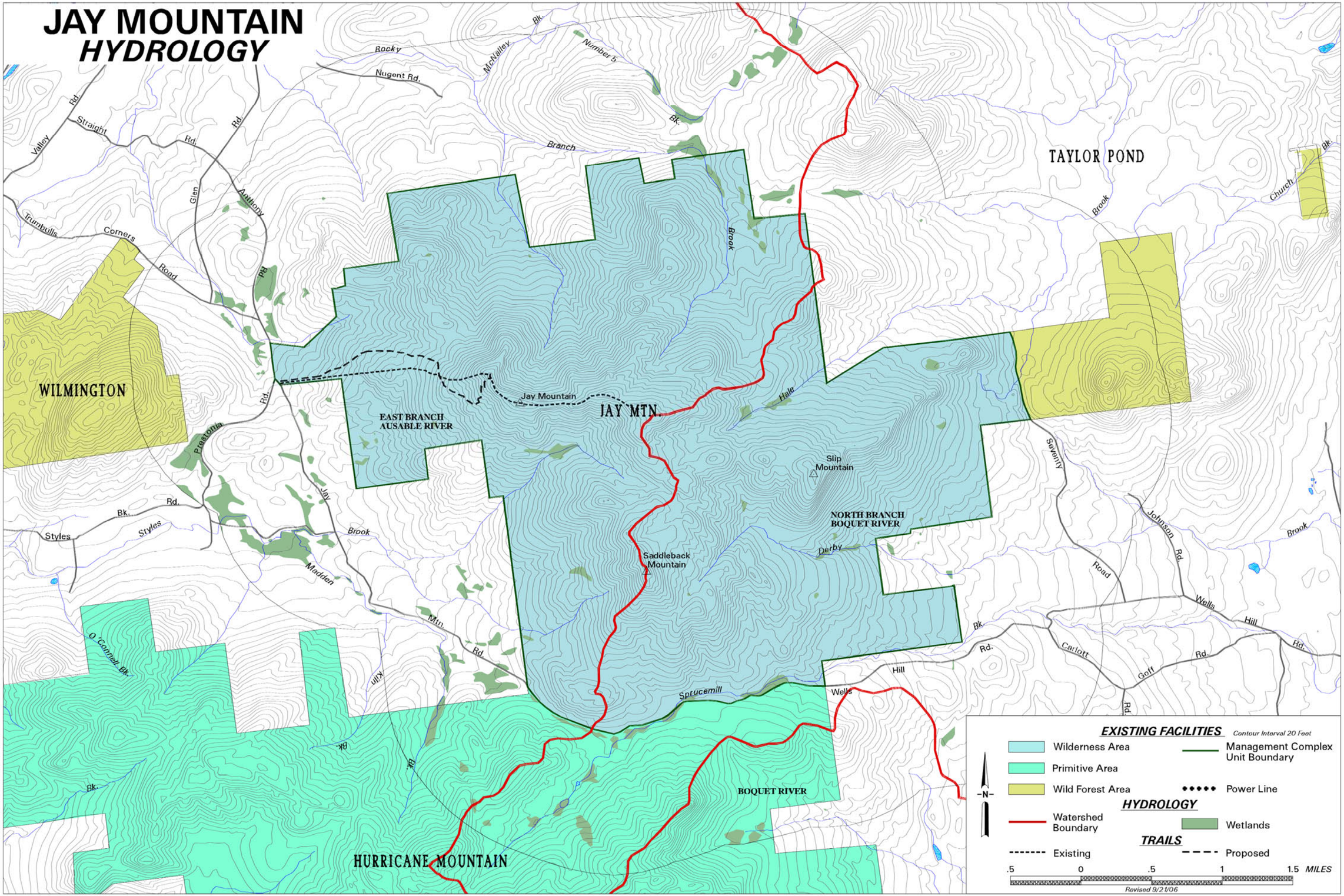
> *The JMWA and Hurricane Mountain Primitive Area UMPs could be combined, and the department will give due consideration to this suggestion when revising these plans in the future.*

APPENDIX K – UNIT MAPS

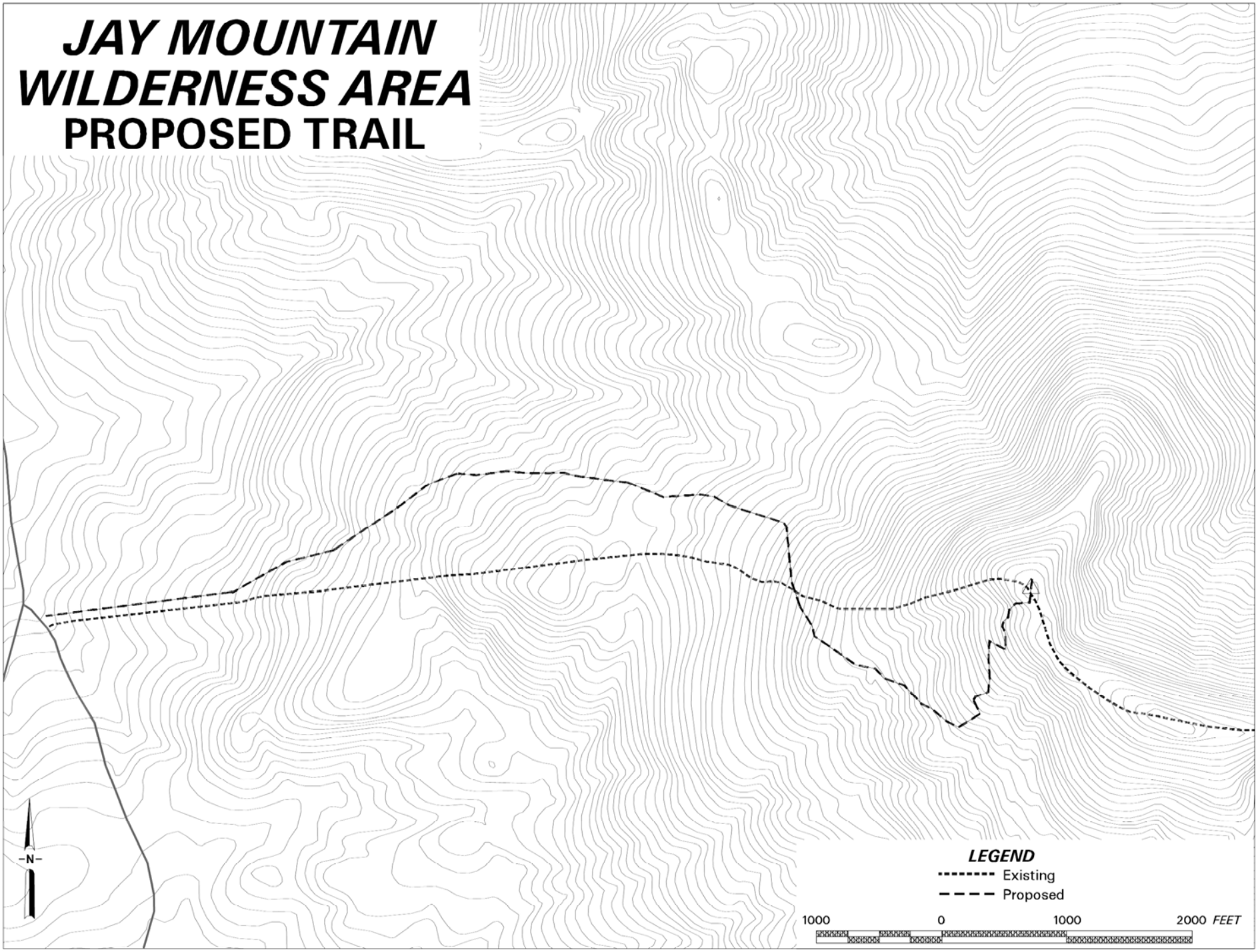
JAY MOUNTAIN
WILDERNESS AREA



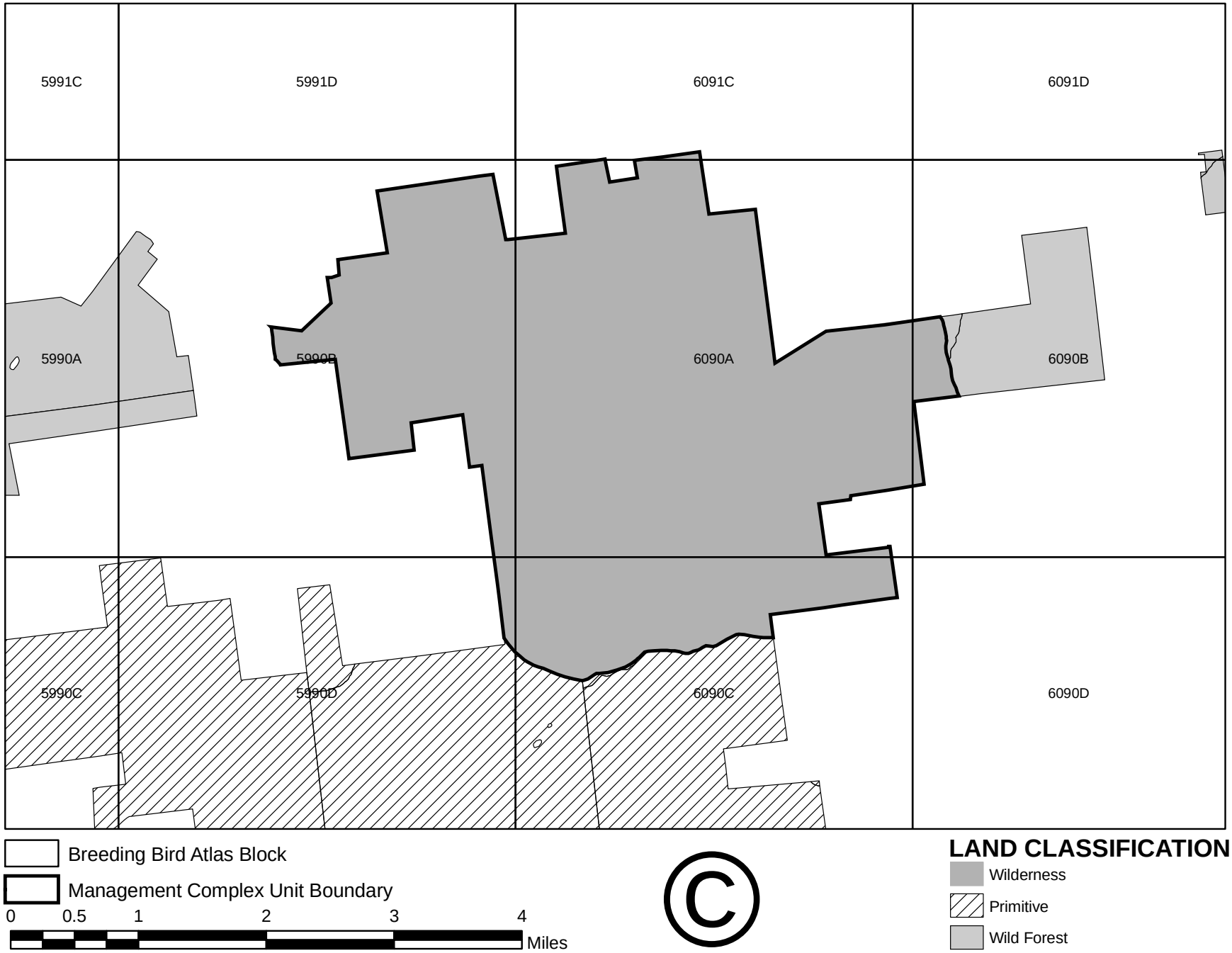
JAY MOUNTAIN
HYDROLOGY

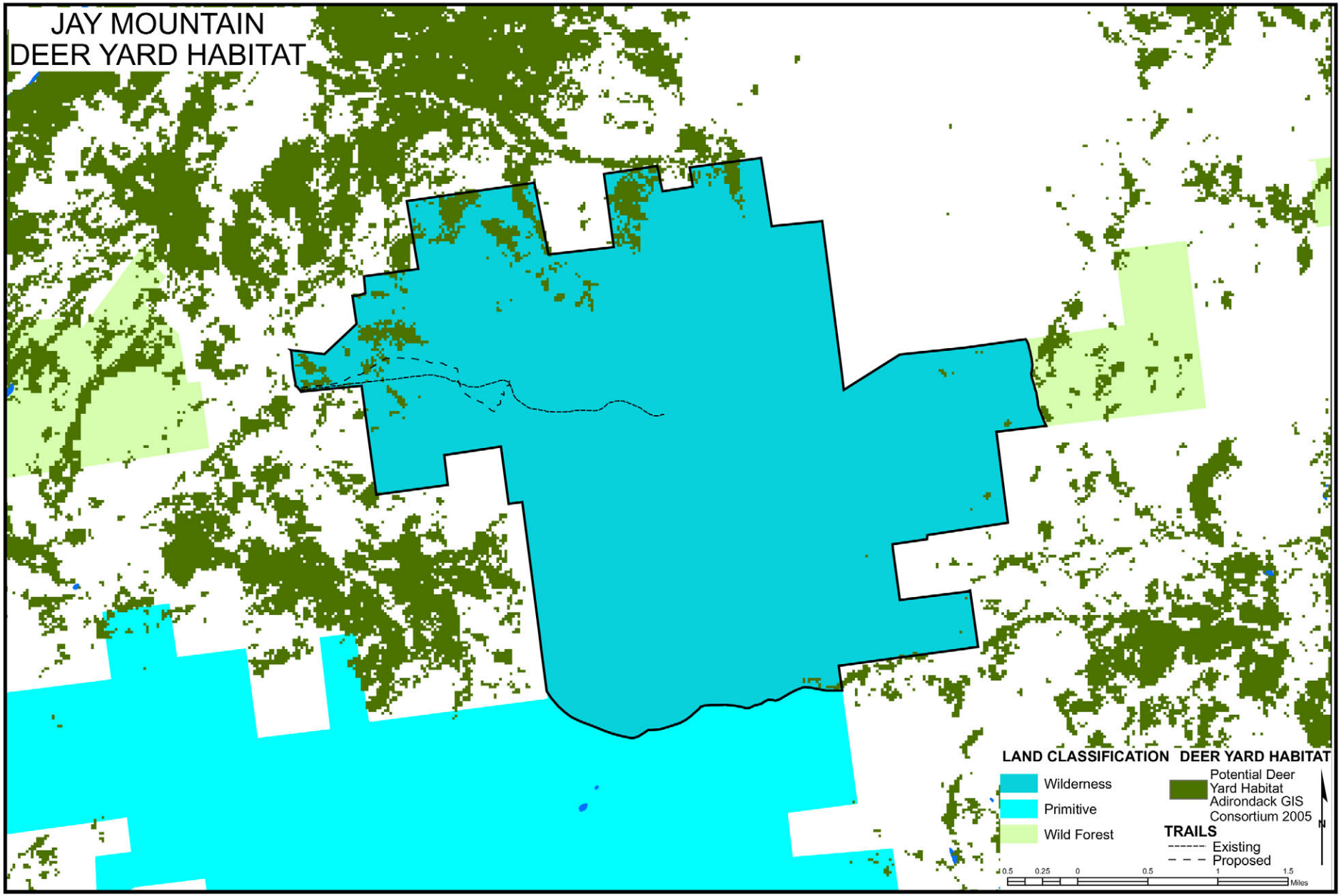


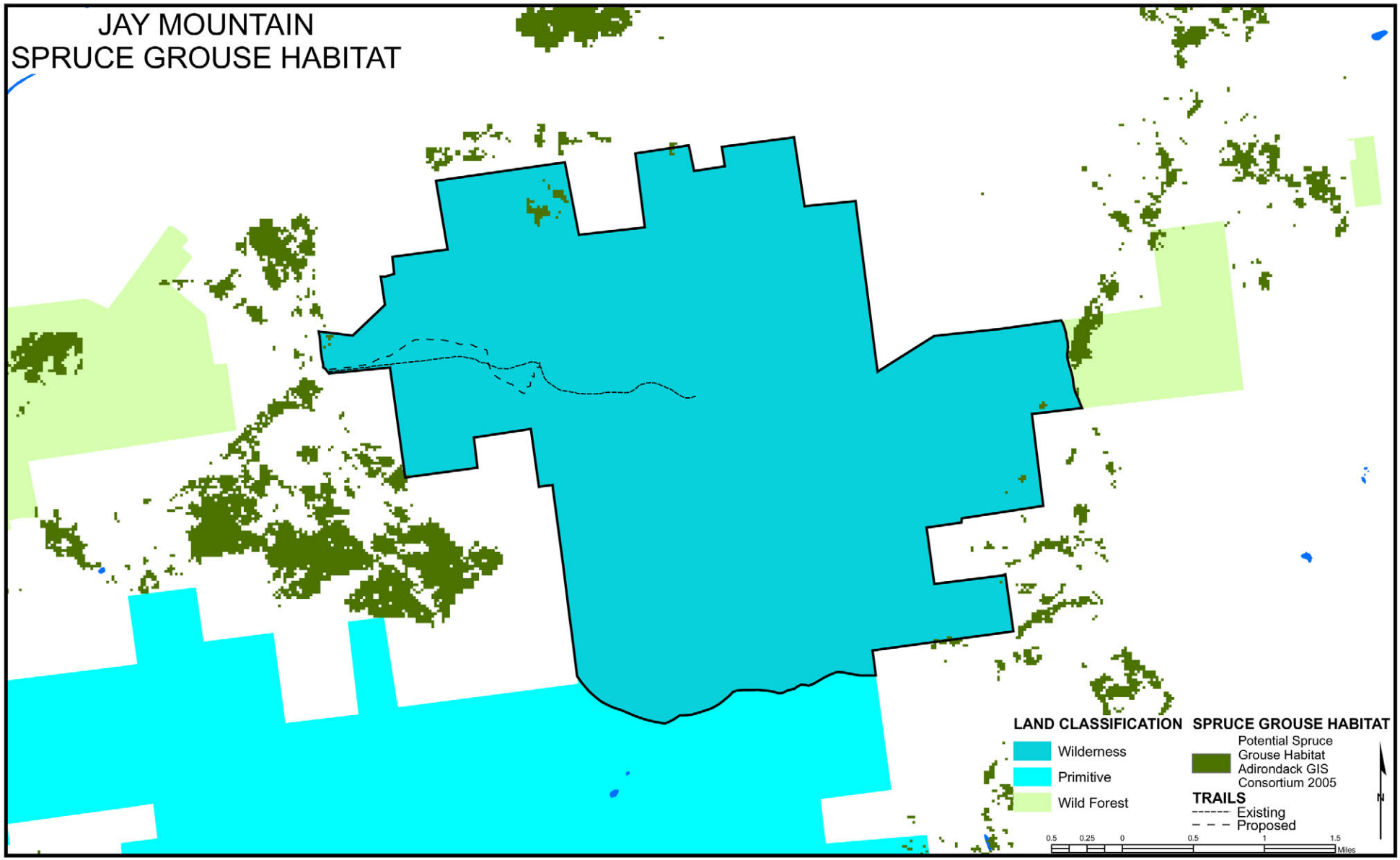
JAY MOUNTAIN WILDERNESS AREA
PROPOSED TRAIL



JAY MOUNTAIN
BREEDING BIRD ATLAS




JAY MOUNTAIN
DEER YARD HABITAT
LAND CLASSIFICATION
Wilderness
Primitive
Wild Forest
DEER YARD HABITAT
Potential Deer Yard Habitat Adirondack GIS Consortium 2005
TRAILS
Existing
Proposed
N
0.5
0.25
0
0.5
1
1.5
Miles


JAY MOUNTAIN
SPRUCE GROUSE HABITAT
LAND CLASSIFICATION
Wilderness
Primitive
Wild Forest
SPRUCE GROUSE HABITAT
Potential Spruce Grouse Habitat Adirondack GIS Consortium 2005
TRAILS
Existing
Proposed
0.5 0.25 0 0.5 1 1.5
Miles
N