



EXECUTIVE SUMMARY

I. Introduction

The Albany Pine Bush is located on a gently rolling sand plain between the Cities of Albany and Schenectady, New York. The sandy, well-drained soils in this area are characterized by a variety of plant species and ecological communities adapted to dry conditions and periodic fires. This area supports the Karner blue butterfly, a state and federally listed endangered species, and the globally rare pitch pine-scrub oak barrens community. The area also includes other natural communities, such as oak and pine forests and a diversity of wetlands, as well as several successional communities that have resulted from historic land use and fire exclusion.

In December of 1988 the New York State Legislature established the first Albany Pine Bush Preserve Commission (see Appendix A) and created the Albany Pine Bush Preserve, consisting of dedicated public and dedicated private land. The Commission is responsible for managing the Preserve for the purposes of its protection and appropriate public use. Since its inception, the Albany Pine Bush Preserve Commission has represented a unique and successful partnership between state agencies, municipalities, conservation organizations and private citizens. Commission members include the New York State Department of Environmental Conservation (NYSDEC), New York State Office of Parks, Recreation and Historic Preservation (NYSOPRHP), The Nature Conservancy (TNC), the City of Albany, the towns of Colonie and Guilderland, Albany County and four private citizens appointed by the Governor.

In accordance with the legislation establishing the Preserve, the *Management Plan and Final Environmental Impact Statement for the Albany Pine Bush Preserve* was prepared and adopted in 1993. A supplement to that plan, entitled *The Albany Pine Bush Preserve Protection and Project Review Implementation Guidelines and Final Environmental Impact Statement* was prepared and adopted in 1996. These plans have successfully guided resource protection and management activities over the past eight years.

Since its inception in 1988, the Commission has been successful in working towards its legislature mandate. Positive relationships have been established between numerous municipal, state, federal and private partners for the common goal of protecting and managing the Albany Pine Bush. As a result of extensive education and outreach efforts, awareness of the Pine Bush as a valuable ecological and open space resource is well established in the Capital District. In addition, the resource protection and management goals of the Commission are generally understood and accepted by the public. Over 2,725 acres of land have been permanently protected as part of the Preserve. Hundreds of these acres have been managed with controlled fire, mowing, planting and other techniques to restore and maintain native habitat. In addition, the

Commission works closely with municipal planning departments and the development community to achieve reasonable solutions for resolving the impacts of development within the Pine Bush Project Review Area. Thousands of visitors enjoy the open space benefits provided by the Pine Bush Preserve, including growing numbers of school children. Over 20 miles of marked trails and established rules and regulations allow the public to pursue a number of outdoor recreational opportunities within the Preserve.

Although significant progress has been made, several factors indicate that the long-term future of the Albany Pine Bush is by no means assured. Development pressures in and around the Pine Bush continue to increase. Since 1996, approximately 130 acres of land that were recommended for full or partial protection in the 1996 Implementation Guidelines have been lost to development. In addition, the Pine Bush municipalities are under increasing development pressure, and other important areas recommended for protection remain at risk. Research and management activities in the last 5 years have also revealed that restoration and management of ecological communities in the Preserve, with the ultimate goal of at least 2,000 fire-manageable acres, will be more difficult than originally anticipated.

The legislation establishing the Preserve requires review of the Preserve Management Plan every five years. All of the factors mentioned above suggest that it is appropriate for the Commission to update and revise the previously prepared Preserve Management Plans. The 2002 Management Plan for the Albany Pine Bush Preserve combines and updates information previously found in the 1993 Preserve Management Plan and the 1996 Implementation Guidelines, and updates the Preserve Fire Management Plan. The contents of the 2002 Plan are summarized below, with an emphasis on the changes that are proposed relative to the previous plans.

II. The Albany Pine Bush Preserve

This section of the 2002 Management Plan describes the history, location, size, ecological communities, rare species, and existing recreational and management facilities of the Preserve. This section is similar to the environmental setting section of the 1993 Preserve Management Plan. It includes a review of study area boundaries and additional discussion of the ecological processes that shape the natural communities of the Pine Bush.

III. Vision and Goals

The overall vision of the Albany Pine Bush Preserve is a continuation and refinement of the visions expressed in the 1993 and 1996 Plans. The Commission will continue to work with willing landowners to assure the creation of a viable Preserve. The Preserve will include dedicated public and dedicated private lands that have the necessary size, contiguity and condition to maintain the natural ecological processes that support the long term viability of the pitch pine-scrub oak community, the Karner blue butterfly, and the full range of natural upland and wetland communities (and associated native species) that make up the Pine Bush. The Preserve will also protect cultural resources (historic and archaeological sites), accommodate a variety of appropriate recreational uses, and provide educational and outreach opportunities for the public.

Ecological resource protection and management goals in the 2002 Plan are also consistent with those included in the 1993 and 1996 Plans, and include the following:

1. Protect and manage an ecologically viable pitch pine-scrub oak barrens community. Use prescribed burns and other management techniques to achieve the long-term goal of at least 2,000 fire-manageable acres.
2. Protect and manage linkages that improve Preserve contiguity and enhance species dispersal opportunities.
3. Protect and manage buffer areas, particularly those that facilitate the Commission's fire management program.
4. Protect and manage significant cultural and environmental resources, including Karner blue butterflies, water resources, and historic and archaeological sites.

Program goals for the Preserve address recreational use as well as education and outreach. As with the ecological goals, these goals are generally consistent with those outlined in the 1993 Management Plan, and include the following:

1. Maintain and enhance public access to the Preserve in locations where doing so will not adversely impact ecological resources.
2. Enhance and expand educational and outreach efforts to increase the visibility and image of the Preserve, develop and maintain a sense of stewardship on the part of the public, and create a better appreciation and awareness of Pine Bush ecology and management.

IV. Threats

An updated analysis of challenges to protection of the Preserve was undertaken as part of the 2002 Management Plan revision. This "threats" analysis indicates that development remains the primary challenge or threat to achievement of Preserve goals, and ultimately to the long-term viability of the natural communities and native species that make up the Preserve. The continued incremental loss of undeveloped land makes it increasingly difficult to assure adequate protection of the land necessary to allow natural ecosystem functions to occur in the Preserve. In addition, development results in increased fragmentation of the Preserve and increased human population and infrastructure in the areas surrounding the Preserve. Both of these factors significantly increase constraints on natural ecosystem functions and effective Preserve management. Natural processes such as species dispersal, interaction of subpopulations, and response to disturbance events do not work well in fragmented habitats. In particular, the juxtaposition of developed lands with Preserve property has created significant difficulties in the effective use of fire as a management tool. Other ecological restoration and management practices, including chemical and mechanical techniques, are also made more difficult/controversial due to the proximity of developed land to the Preserve.

Other identified threats to the achievement of Preserve goals include the presence of invasive plant species that have come to dominate certain communities and displace native species, inappropriate or excessive public use and the impact of abundant deer and other wildlife species which can affect plant species survival and regeneration, alter community composition and structure, and create nuisance and/or health problems for Preserve visitors and adjacent landowners.

V. Ecological Restoration and Management

The overall management objective for the Preserve's pitch pine-scrub oak community remains the same; to have at least 2,000 acres that can be managed by fire (with prescribed burns the primary tool for maintaining this community) within 15 years (by 2017). However, based on 10 years of experience in managing the Albany Pine Bush, the Commission has determined that the objective of simply burning 200 acres annually, by itself, is no longer sufficient to assure the long-term viability of the Albany Pine Bush. In addition to fire, other management techniques will be necessary to restore habitat. Management units will be established, with objectives for each unit to be developed. The primary focus of these objectives will be to restore and maintain the pitch pine-scrub oak community, Karner blue butterfly habitat, and habitat for other rare, declining and vulnerable species.

Fire management activities will be guided by the updated Fire Management Plan included as an appendix to the 2002 Preserve Management Plan. This plan provides both required and recommended prescription parameters for weather and environmental conditions and personnel and equipment needed to safely implement prescribed burns and achieve ecological objectives. Selective mechanical (grubbing, cutting, mowing) and chemical (herbicide) treatments will be utilized to supplement fire management in areas where fire alone will not be effective in restoring pitch pine-scrub oak or in reducing or eliminating certain invasive species, such as black locust or aspen. These techniques are also appropriate in areas where adjacent development places severe constraints on the use of fire. The Commission will also engage in the restoration of natural communities through the planting of native plants, and will continue to encourage the use of such plants by adjacent landowners.

The 2002 Preserve Management Plan also recommends expansion of existing Karner blue butterfly habitat and populations. There are currently four occupied Karner blue butterfly sites within the Albany Pine Bush Project Review Area. Each of these needs to be expanded so that there are at least 1,000 adult butterflies in the summer brood at each site. In addition, eight new sites, with similar subpopulation sizes need to be created. Since the NYS Thruway (I-90) is effectively a barrier for Karner blue butterfly movement, these 12 subpopulations will be part of two populations, one north of I-90 and one south of I-90. The northern population will include Curry Road, Apollo Drive/Route 155 and six new sites between those, while the southern population will include Willow Street, Crossgates, and two new subpopulations between those. In accordance with the draft New York State Karner Blue Butterfly Recovery Plan, the goal for each population is 3,000+ adult butterflies for a total of 6,000-7,000 in the Preserve.

Other rare, declining and vulnerable species in the Pine Bush are dependent primarily on the pitch pine-scrub oak system, including associated terrestrial and wetland communities. Appropriate management of these communities to assure the availability of essential habitat elements (e.g. food sources and plant community structure) is recommended to assure the long-term viability of rare, declining and vulnerable species.

Monitoring the status of the pitch pine-scrub oak barrens, other natural communities and rare species populations is essential to evaluating the effectiveness of management programs. The Commission will continue and expand active monitoring. Inventories of natural communities and species completed a decade ago will be updated over the next five years.

The fire management research initiative proposed by Givnish et al. (1988) has been completed. New research efforts to develop further understanding of fire and other forms of management, species population dynamics, and natural community processes are proposed as part of a comprehensive research program for the next five years.

VI. Education, Outreach, and Recreation

The updated Preserve Management Plan continues and expands upon many of the recommendations included in the 1993 Plan. Recreation and public use recommendations included in the 2002 Plan reflect the fact that public use of the Preserve and recreational demand in the area has increased dramatically since preparation of the original plan. Recreational use of the Preserve is guided by rules and regulations promulgated by the NYSDEC on September 20, 2000. These rules and regulations are posted in summary form at all official trailhead kiosks, and are designed to protect the Preserve and those who visit it by defining appropriate activities. These activities are primarily natural resource-oriented and/or trail-oriented. To accommodate such uses, the Plan proposes publication of an official trail map, evaluation of opportunities for future trail connections, and development of a hierarchy of trail use as additional land is acquired and incorporated into the Preserve. Pursuit of opportunities for connection with other open space resources is proposed, such as Governor Pataki's initiative to incorporate the Tivoli Preserve into a new greenway running from the Hudson River to the Albany Pine Bush. The Management Plan recommends that a comprehensive recreation plan be developed to address appropriate public use and access to Preserve lands, while assuring that the Commission's resource protection and management goals are met.

As with recreation, the 2002 Preserve Management Plan reiterates and expands on many of the educational and outreach recommendations included in the 1993 Plan. The goals of these recommendations are to create a greater public awareness of Pine Bush ecology, Preserve management activities, and allowable Preserve uses. They also serve to increase the visibility of, and public appreciation for, the Preserve. Current and proposed educational and outreach opportunities recommended for implementation include interpretive trails, informational kiosks, portable displays, volunteer naturalist and educator programs, education and outreach internships, development of school curricula and projects, development of fact sheets, development of a web site, informational meetings and mailings, educational walks, and presentations to a variety of groups. Building on recommendations included in the 1993 Management Plan, the 2002 Plan proposes construction of a visitor/education center, referred to as the Pine Bush Discovery Center. The Discovery Center is proposed to include outdoor and indoor classrooms, guided and self-guided walks, interactive and interpretive exhibits, a green house, and native plant and butterfly gardens. Other proposed program elements within the Discovery Center include an orientation theater, biodiversity lab and gift shop. In addition, educational program modules, video documentaries, critical issues and time-lapse exhibits, expanded volunteer programs, and an educational resource network will be developed.

VII. Protection

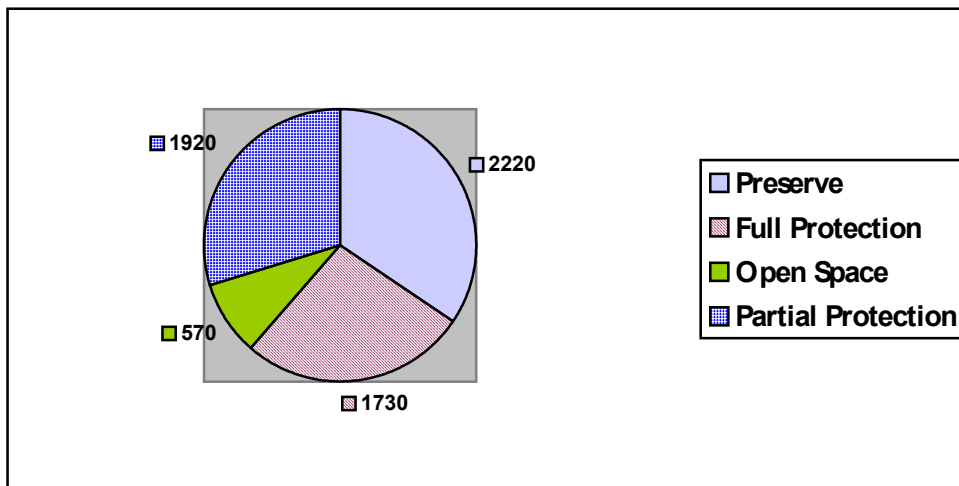
Following the protection recommendations included in the 1996 Implementation Guidelines, the Commission has worked closely with willing landowners to protect approximately 450 acres of additional land over the last five years. Much of these lands have been protected due to the support of the State of New York, under Governor Pataki's leadership, and other Commission members. The Preserve currently totals approximately 2,735 acres, of which, approximately 1,850 are considered fire-manageable. Commission experience has been that the criteria used in the development of the 1996 Implementation Guidelines and the project review process established in that Plan generally have worked well in defining protection priorities and providing Commission input on projects that could affect the Preserve. However, in response to the current configuration and community composition of the Preserve, adjacent development, as well as new information/insight on Preserve resources and management obtained since 1996, the ranking

criteria and scores utilized in the 1996 Implementation Guidelines were reevaluated and slightly modified in the 2002 Management Plan. Reranking of areas within the previously established Pine Bush Protection Area, according to the new criteria and scores, resulted in relatively few changes to proposed protection priorities. Significant results of this reevaluation include the following:

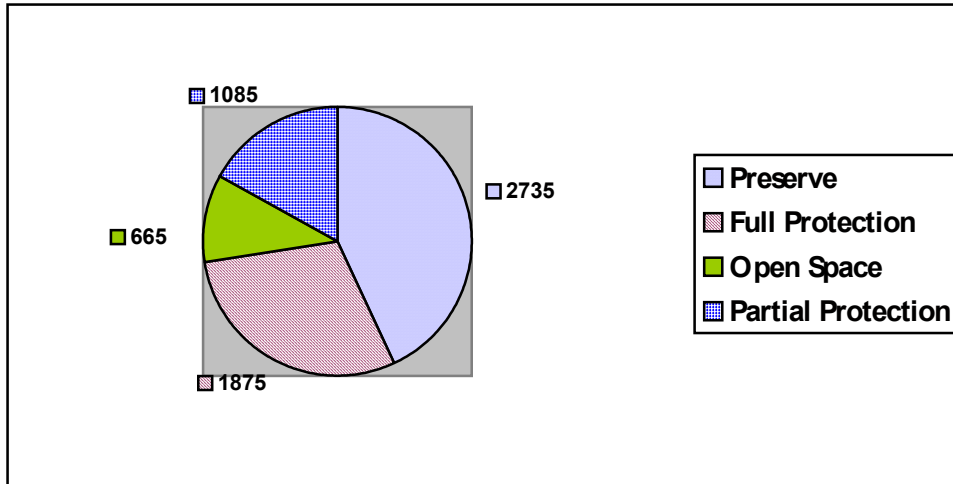
- Three areas, totaling approximately 530 acres, which were recommended for partial protection in 1996 (areas 53, 54 and 55), are now recommended for full protection.
- A 152-acre portion of another area recommended for partial protection in 1996 (area 33a) is now recommended for full protection.
- A 7.5-acre site that was overlooked during 1996 is recommended for full protection (area 27a).
- A 50-acre portion of an area recommended for partial protection in 1996 (area 33b) is now recommended for protection as open space.
- A 66-acre area that was not evaluated in 1996 is recommended for partial protection (area 80).

The overall result of the reevaluation of protection priorities is that the 2002 Management Plan envisions a Preserve of 4,610 acres. This vision is based on the recommendation of an additional 705 acres for full protection (i.e. protection of undeveloped portions of designated areas in their entirety), increasing the total recommended for full protection to approximately 1,875 acres. Adding this acreage to the existing 2,735 acre Preserve would create a Preserve totaling 4,610 acres. The 2002 Plan reduces the overall acreage recommended for partial protection (i.e. protection of an average 50% of a designated area) from 1,920 acres to 1,085 acres. Charts comparing 1996 protection recommendations with those included in this plan are presented below:

1996 Protection Recommendations (in Acres)



2002 Protection Recommendations (in Acres)



The 2002 Management Plan recommends that site-specific analysis of all partial protection areas be undertaken to identify specific features/functions each area provides and means of protecting them. The Plan also recommends that the Commission develop a set of development and conservation guidelines for use by project sponsors in preparing plans for development in the Pine Bush. Encouragement of incentive zoning and/or transfer of development rights by the Pine Bush municipalities are also recommended. The Commission will continue to actively work with willing landowners to acquire or otherwise protect lands within the Pine Bush Study/Project Review Area, while still respecting private property rights. As in the 1996 Implementation Guidelines, an important component of the Commission's resource protection activities will also be the continued provision of review and comment on proposed development projects within the Albany Pine Bush Project Review Area.

VIII. Implementation

The Albany Pine Bush Preserve Commission is faced with meeting multiple financial challenges to accomplish its mission to manage and protect the Preserve. These include an operating budget, capital budget, Discovery Center budget and an endowment. The 2002 Management Plan proposes an updated operating budget for fiscal years 2001-2006 which shows expected average annual expenses of \$695,980.00. Increases in expenditures over current levels relate primarily to staffing the proposed Discovery Center and contracting for outside services in support of the fire management program. The increases in income to meet these expenses are expected to come from growth in support from fundraising, grants and Commissioners, increases in in-kind support and increasing endowment.

To meet its educational and outreach goals, the Commission is committed to the development of an interpretive education facility. Construction of the proposed Pine Bush Discovery Center is estimated to require \$1.3 million in public funds for construction, and \$2 million in private funds for an endowment to maintain the facility. Realizing this challenge by fiscal year 2003 would result in an operational Discovery Center with an annual budget estimated to be in the range of \$117,000 to \$160,000. Successfully funded, the private endowment will provide over 80% of the Discovery Center's income, with the balance supported by fundraising and grants from public and private sources, merchandise sales and lease or rental of facilities.

IX. Environmental Impacts

The 1993 Management Plan and the 1996 Supplement to the Plan included the components of an Environmental Impact Statement (EIS). These Plans/EISs identified both beneficial and adverse impacts associated with plan implementation. Ways to mitigate potential adverse impacts were also described. Consequently, the impacts of Preserve protection and management as proposed in the previous plans have already been addressed. For this reason, only impacts that will be added or changed as a result of implementation of the updated 2002 Management Plan are addressed in the 2002 Plan.

Adoption and implementation of the 2002 Preserve Management Plan will result in a variety of beneficial environmental and socioeconomic impacts, which are outlined below:

1. Improved protection, management and restoration of unique pine barrens communities and rare species, including the endangered Karner blue butterfly.
2. Improved protection and management of wetlands, water resources and forested ravines and the habitat and hydrologic functions they provide.
3. Improved open space and quality of life benefits for Preserve neighbors and residents of the Capital District.
4. Improved recreational and educational opportunities for area residents, students and the general public.
5. Potential increased property values for Preserve neighbors.
6. Greater contiguity and buffering of the Preserve, which facilitates natural ecological processes, such as dispersal, and Preserve management activities, such as prescribed burns.
7. Increased public safety due to the decreased likelihood of wildfires.
8. Improved management of Preserve wildlife populations to reduce the potential for damage to natural communities and conflicts with Preserve neighbors (e.g. motor vehicle accidents, property damage, nuisance, and disease transmission).
9. Maintenance and preservation of significant historical and archaeological sites that exist in the Preserve.

Potential adverse impacts associated with implementation of the 2002 Management Plan include the following:

1. Increased costs for land acquisition if purchased in fee; estimated at \$15-\$25 million for the additional land proposed for full protection.
2. Increased operational costs associated with expanded management, education and outreach programs.
3. Increased capital costs associated with financing the proposed Discovery Center, estimated at \$1.3 million.

4. Removal of up to an additional 705 acres of undeveloped property (recommended for full protection) from the tax rolls in the Towns of Guilderland and Colonie.
5. Impacts on air quality due to smoke associated with a more aggressive fire management plan.
6. Increased impacts on Preserve flora and fauna due to increased recreational use of the Preserve.

Mitigation measures are identified and/or proposed for all of these potential adverse impacts. These include the following:

- Alternatives to fee simple acquisition are proposed to reduce costs and potential loss of tax revenue associated with resource protection.
- Continued expansion and diversification of funding through federal, state and local governments, private foundations, individuals, mitigation fees, funds from Commissioners, and grants from public and private agencies.
- Smoke and wildfire hazards will be minimized by monitoring weather conditions, modifying the size and shape of the burn, monitoring the moisture content of fuel and following site-specific burn prescriptions, as described in the updated Fire Management Plan (Appendix E).
- Monitor recreational use and develop a comprehensive Recreation Plan to address increased public use of the Preserve.

It is therefore the conclusion of the environmental impact statement that there are substantial ecological and socioeconomic benefits associated with Plan implementation, and that any potential adverse impacts can be adequately mitigated.