

The Albany Pine Bush Ecosystem

The Albany Pine Bush ecosystem is one of the best examples of inland pitch pine-scrub oak barrens in the world. The Albany Pine Bush ecosystem is located between the Cities of Albany and Schenectady and primarily in three municipalities: the City of Albany, the Town of Colonie, and the Town of Guilderland. The ecosystem once covered 56,000 acres of land, and is now about one tenth of its size.

The boundaries of the Albany Pine Bush Preserve Commission Study Area are Fuller Road on the east, Central Avenue on the north, Western Avenue on the south and Route 146 on

the east. Within the Study Area is the remaining approximately 6,920 acres of Pine Bush ecosystem. Only about 3,400 acres of the Pine Bush ecosystem has been protected and is dedicated to the Albany Pine Bush Preserve, leaving approximately 3,520 acres of ecosystem that is privately owned and is in danger of being destroyed through development.

The single largest portion of privately-owned undeveloped Pine Bush ecosystem is located in the Town of Guilderland and constitutes approximately 1,795 acres. The Town of Guilderland should strive to protect all of this remaining, undeveloped Pine Bush ecosystem.

Formation of the Preserve

The Albany Pine Bush Preserve Commission (APBPC) was formed in 1988 through the passage of Article 46 of the Environmental Conservation Law by the New York State Legislature to protect, manage, and restore the globally rare inland pitch pine-scrub oak barrens ecosystem known as the Albany Pine Bush. Save the Pine Bush, a local volunteer activist group, played a key role in protecting the Preserve's ecosystem through successful litigation. The Commission's approach combines land acquisition with active ecological management, including prescribed fire, to Preserve and restore the ecosystem for both ecological benefit and public use.

The formation of the APBPC followed decades of conservation efforts driven by the recognition of the Pine Bush's ecological significance, including its globally rare habitat and endangered species like the Karner blue butterfly. The legislation recognized the area as a landscape of rare and endangered species and communities. The APBPC was established as a public benefit corporation, not a state agency, operating with its own budget primarily funded by the New York State Environmental Protection Fund. It is governed by a board representing various stakeholders, including state agencies, local governments, The Nature Conservancy, and citizen representatives.

The Albany Pine Bush Preserve

The Albany Pine Bush Preserve is a large nature area featuring unique inland pine barrens, rolling sand dunes, and diverse habitats, including forests, grasslands, and ravines. Managed for public recreation and education, it is known for its nearly 20 miles of trails, a Discovery Center, and its crucial role in protecting species like the federally endangered Karner blue butterfly. The Preserve's ecosystem relies on fire for rejuvenation, a process now managed through a prescribed fire program, and it is a recognized National Natural Landmark for its extraordinary sand dunes and rare plant communities.



Albany Pine Bush Preserve
Source: [Northern Woodlands](#)



Albany Pine Bush Preserve Trail Marker

Source: [Teevio](#)

The Preserve is a rare inland pine barren, a fire-dependent ecosystem that thrives in sandy, nutrient-poor soil. A signature feature of the landscape, these dunes create a unique visual and provide habitat for specialized species. The Preserve is home to over 1,500 plant and animal species, including the federally endangered Karner blue butterfly, as well as sand-burrowing amphibians.

Mission and Goals

The APBPC's mission is to protect and manage the unique natural communities and species of the Albany Pine Bush, while also allowing for controlled public recreational and educational use. The long-term vision is to protect 5,380 acres to ensure the ecosystem's long-term viability. This means the Commission is still working to Preserve over 1,900 additional acres. The protected land includes not only existing pine barrens but also areas being restored. The Commission uses methods like prescribed fire, mowing, and tree removal to manage these areas and reverse damage from invasive species. Key goals include:

- Acquiring land from willing sellers to protect 5,380 acres and connect fragmented parcels.
- Restoring habitats, such as creating areas for the Karner blue butterfly.
- Using scientific management methods, including prescribed fire, mechanical removal, and invasive species control.
- Providing educational programs through the Albany Pine Bush Discovery Center to promote stewardship.
- Engaging the community through volunteer programs and events.
- Offering over 20 miles of trails for passive recreation compatible with conservation goals

Land Preservation Policies

The APBPC aims to create a connected Preserve by acquiring land within a designated "study area". Land is protected through fee acquisition from willing landowners, donations, and conservation easements. A "Vision Map" guides protection priorities, identifying areas for full or partial protection based on their ecological value and ability to connect existing parcels. The APBPC

lacks regulatory authority over development but works cooperatively with landowners and advises member agencies on potential environmental impacts, and offers mitigation recommendations. Rules are in place to protect Preserved lands from damage and ensure appropriate public use.

Fire Management Policies

Fire is a crucial natural element of the pine barrens ecosystem. The APBPC implements a prescribed fire program, initiated in 1991, to reintroduce controlled burns that mimic natural fire effects. The goals of these burns are to restore fire-dependent plant communities and create habitats necessary for species like the Karner blue butterfly, as well as to reduce the risk of severe wildfires by managing fuel build-up. Prescribed fires are conducted under strict guidelines, involving detailed planning, optimal weather and fuel conditions, and trained personnel.



Albany Pine Bush Preserve Fire Management
Source: Albany.com

Partial and Full Protection Areas

The APBPC uses areas of partial and full protection to create a larger, connected habitat for native species while guiding strategic land acquisition efforts. Different levels of protection allow the Commission to prioritize land based on its ecological value and ability to contribute to the overall health of the ecosystem. The Pine Bush is a globally rare inland pitch pine-scrub oak barrens ecosystem that has become fragmented by development. By protecting and restoring native plant communities, the Commission connects these fragmented parcels into a larger, more viable ecosystem. Larger, connected areas of protected habitat improve the long-term survival chances of

native Pine Bush species. For example, a bigger, more integrated Preserve is essential for the recovery of the federally endangered Karner blue butterfly and other fire-dependent wildlife.

The APBPC has a limited budget and must prioritize which properties to protect. A vision map of the Pine Bush study area guides this process, recommending different levels of protection for different areas. This allows for strategic acquisition through purchase, donation, or easements from willing landowners.

Partial Protection Areas Full Protection Areas

In the Albany Pine Bush Preserve Ecosystem, partial protection areas are designated for lands within the Preserve's larger study area that are recommended for protection as open space but not necessarily full protection. These areas are considered valuable for connecting habitats or supporting the Preserve's ecosystem, but they may have limitations on direct public access or management. The goal is to balance ecological needs with potential land uses and to work with willing landowners to eventually incorporate these areas into the fully protected Preserve. The purpose of the partial protection areas:

Connecting Habitats: These areas help link fragmented parcels of land, creating larger, more viable habitats for native species.

Supporting the Ecosystem: They are identified as important for the long-term health and viability of the entire Albany Pine Bush ecosystem.

Balancing Protection and Use: While not designated for full protection like the dark green areas, they are considered crucial for maintaining the integrity of the Pine Bush and are subject to specific protection goals.

Full protection areas within the Albany Pine Bush Preserve are designated zones where the primary purpose is to create and protect a viable, connected landscape of the inland pine barrens ecosystem, ensuring the long-term survival of its rare species and unique characteristics. These areas are crucial for restoring native plant communities, providing undisturbed habitat for wildlife, and connecting fragmented parcels to create a larger, healthier ecosystem that is dependent on natural processes like fire. The purpose of full protection areas:

Habitat Connectivity: To connect isolated patches of pine barrens, creating a larger, more sustainable landscape for both plant and animal species, including the federally endangered Karner blue butterfly.

Ecosystem Viability: To ensure the long-term survival of the globally rare inland pine barrens ecosystem by protecting and enhancing the specific conditions it needs to thrive.

Protection of Rare Species: To conserve the unique and often endangered species that are dependent on the pine barrens environment, such as specialized plants and wildlife.

Restoration of Native Conditions: To restore and protect native plant communities, which are often fire-dependent, to create the conditions necessary for a healthy pine barrens landscape.

Minimizing Disturbance: To concentrate human activity and recreational use in designated zones, allowing the interior of the Preserve to remain a safe and secure refuge for wildlife.

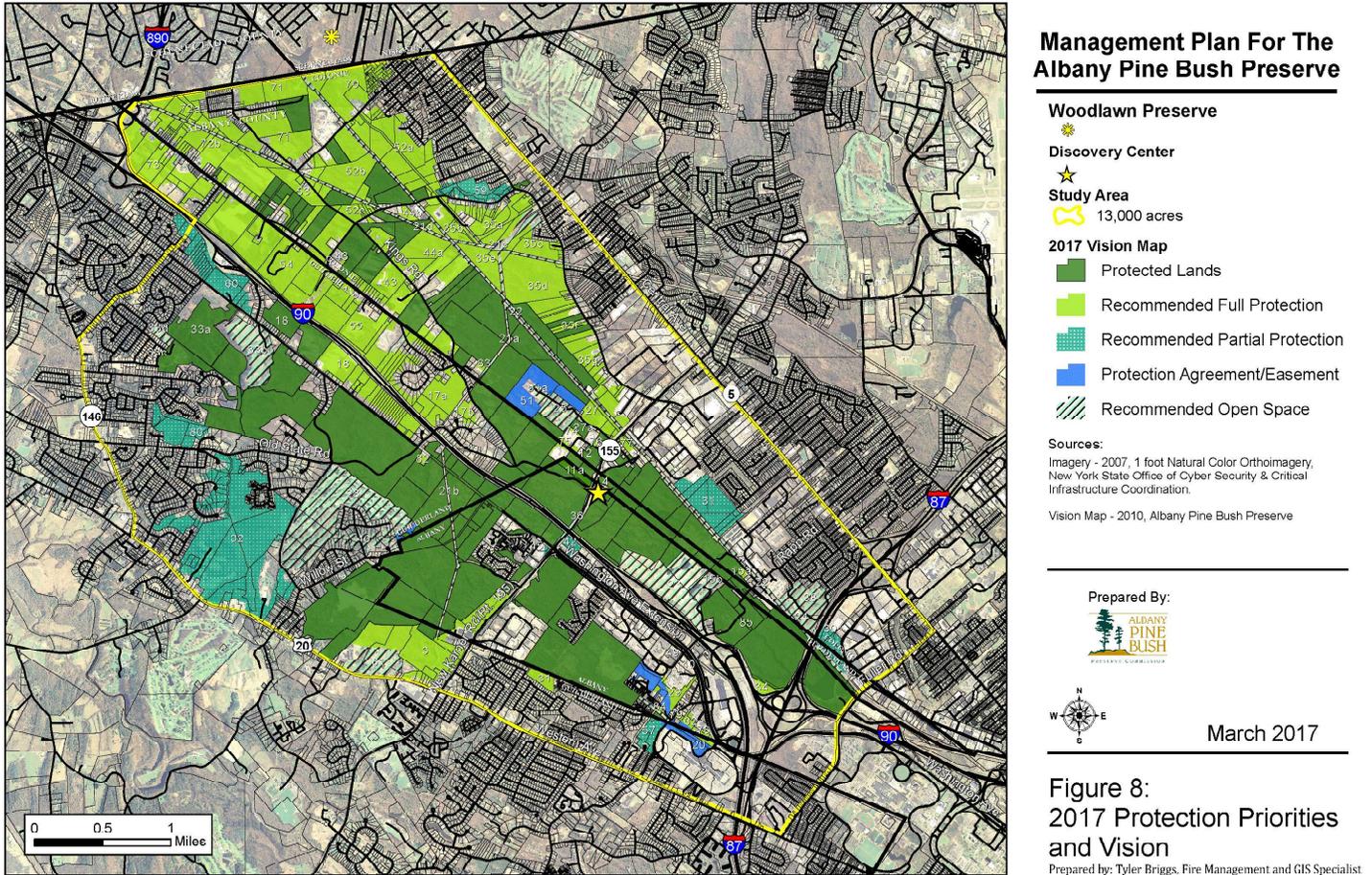


Figure 1.1: Albany Pine Bush Preserve Management Plan, 2017 Protection Priorities and Vision
 Source: [Albany Pine Bush Preserve Commission](#)

The Albany Pine Bush Preserve Management Plan Map (Figure 1.1) shows the areas within the Preserve that are already protected, along with lands identified in the 2017 Vision Plan for full or partial protection. The Pine Bush Preserve Map for Remaining Large Open Spaces in Guilderland (Figure 1.2) focuses on parcels within the Pine Bush Study Area that contain more than two acres of undeveloped land (shown in yellow). This map highlights efforts to preserve these remaining undeveloped parcels. It is important to note that some of the parcels shown are already under protection and/or may contain single family dwelling on the parcels.

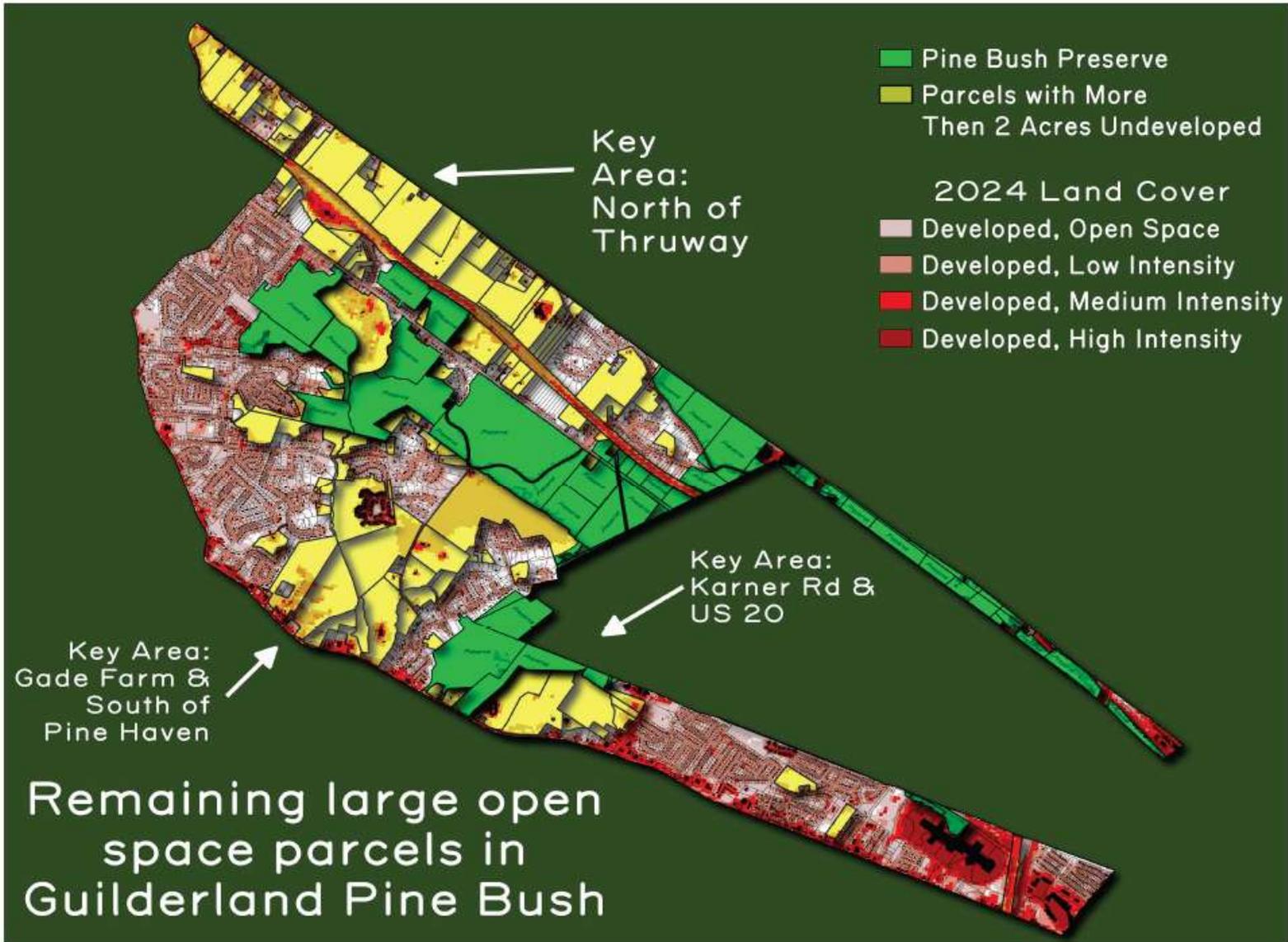


Figure 1.2: The Pine Bush Preserve Map for Remaining Large Open Space in Guilderland
Source: [Save the Pine Bush](#)

Community Benefits

Recreational opportunities: The Preserve offers over 20 miles of trails for non-motorized recreation, including hiking, running, and wildlife observation. These opportunities provide stress relief and a connection to nature for residents.

Educational resources: The Albany Pine Bush Discovery Center and Preserve trails are a "living lab" that provides educational programs for local schools and the general public.

Preserving community character: Guilderland has explicitly recognized the importance of conserving open space and the benefits of a "green infrastructure" of connected trails to its quality of life.



Albany Pine Bush Preserve welcome center

Source: [All trails.com](https://www.alltrails.com)

Albany Pine Bush Preserve Commission Technical Committee

The purpose of the Albany Pine Bush Preserve Technical Committee is to advise municipal and state planning agencies on how to balance economic development with the conservation of the Preserve's natural resources. The Technical Committee also offers guidance to the Albany Pine Bush Preserve Commission (APBPC) staff on protecting and managing the Preserve's environmental and cultural resources. Key functions of the Technical Committee include:

Advising planning agencies: The Technical Committee provides expert advice to government bodies on development proposals near the Preserve. Its input helps ensure that new construction, such as commercial or residential projects, does not negatively impact the protected inland pine barrens ecosystem.

Reviewing development projects: The Technical Committee reviews specific proposals and applications, discussing potential issues with applicants and recommending solutions. For example, the Technical Committee has evaluated plans for community solar projects and proposed bypass roads, assessing their effect on species and management of adjacent Preserve lands.

Protecting endangered species: A critical focus of the committee's work is the protection of the Preserve's rare and endangered species, including the Karner blue butterfly. The Technical Committee reviews proposals for their potential impact on wildlife movement and habitat.

Supporting the APBPC: The Technical Committee provides technical recommendations to the APBPC staff on issues related to the Preserve's ecosystem management and land protection efforts. The committee's expertise is used to evaluate management plans and ecological studies.

Members of the Albany Pine Bush Preserve Technical Committee are experts from various agencies and organizations involved in the Preserve's management and conservation. Members of the Technical Committee include individuals from the NYSDEC (NYS Department of Environmental Conservation), the USFWS (U.S. Fish and Wildlife Service), and the Albany Pine Bush Preserve Commission itself, such as environmental analysts, endangered species biologists, and regional wildlife supervisors and local government representatives. The Town of Guilderland has representation on the Technical Committee.

Importance for the Town of Guilderland in Preserving Land within the Pine Bush Ecosystem

It is important for the Town of Guilderland to preserve land in the Albany Pine Bush ecosystem to protect a globally rare ecosystem, conserve endangered wildlife, manage stormwater, and maintain the region's character. The Town is a partner in creating and managing the Preserve and its future land-use decisions have significant environmental consequences.

Ecological Importance

Protecting a unique ecosystem: The Albany Pine Bush ecosystem is one of the best examples of an inland pitch pine-scrub oak barrens in the world. This unique ecosystem, formed from ancient glacial lake sand deposits, requires periodic wildfires to maintain its health and open character. The APBPC uses controlled burns to mimic this natural process and prevent more dangerous wildfires.

Conserving endangered species: This special ecosystem provides crucial habitat for a variety of rare plants and animals, including the federally endangered Karner blue butterfly. The butterfly depends on the Wild Blue Lupine, which flourishes in the Preserve's sandy soils and open spaces.

Preventing habitat fragmentation: Preserving land within the Pine Bush helps connect fragmented barrens, creating a larger, more viable habitat. This improves the long-term survival prospects for the plant and animal species that live there.



Albany Pine Bush Preserve Karner Blue Butterfly
Source: wgna.com

Environmental Benefits for the Town

Stormwater management: The sandy soil of the pine barrens is naturally effective at absorbing and filtering rainwater. Preserving undeveloped land prevents flooding and erosion that can accompany development.

Maintaining air quality: Land preservation, particularly the protection of native trees, improves air quality for the community by filtering pollutants.

Reducing light and noise pollution: A Preserve buffer zone helps insulate nearby residences from noise and light pollution associated with urban development.



Albany Pine Bush Preserve
Source: [Scenic Hudson.org](http://ScenicHudson.org)