

**Hopewell Valley Community Stewardship Plan  
Friends of Hopewell Valley Open Space**

**Appendix 1.  
Albahary and Grossman Preserves**

**Acreage:** 7.97 (Albahary 7.04 acres, Grossman 0.93 acres)

**Block and Lot:** Albahary: B13, L1; B8, L47; B8, L48; Grossman: B8, L108

**Ownership:** FoHVOS (100%)

**Year(s) Purchased:** 2003 (Albahary); 2001 (Grossman)

**Location & Access:**

From North Greenwood Avenue, the Preserve can be accessed from Washington Street (dead end). Turning around requires use of neighbor's driveway. The Preserve can also be accessed from the Highland Cemetery. Parking can be accommodated along Washington Street (park in grass to allow farm vehicles to pass). Nearest street address: 3 Midland Avenue, Hopewell, NJ, 08525.

**Structures:** None

Additional property information is summarized in Appendix W. The following Preserve maps are provided at the end of this document:

- Map 1 2007 Aerial Photography
- Map 2 1930 Aerial Photography
- Map 3 Topography
- Map 4 Bedrock Geology
- Map 5 Soils
- Map 6 Land Cover Types (2007)
- Map 7 Protected Lands
- Map 8 Deer Management
- Map 9 Invasive Plant Cover (Relative Infestation Severity for all species)

**Website Description:**

**Albahary and Grossman Preserves** are located just north of Hopewell Borough in the foothills of the Sourland Mountain region. The area has a unique history—Webster Edgerly, founder of a health and self-improvement movement called Ralstonianism, purchased this land in the late 1800s. He envisioned a utopian community, Ralston Heights, for his followers. Buyers were not forthcoming, and many of the planned houses and public roads between Hopewell-Amwell and Hopewell-Wertsville Roads were never built. The preserves are primarily Norway spruce plantation and ash.

**BROAD PROPERTY DESCRIPTION**

The Albahary and Grossman Preserve (see Map 1) is located between Hopewell Borough and the Sourland Mountain region. The topography (see Map 3) slopes southward, from 120 to 80 feet above sea level. The Preserve is surrounded by residential development, the Highland Cemetery, agricultural lands, and forest.

Based upon analysis of NJDEP's 2007 Land Use/Land Cover dataset, the preserve contains three broad plant communities: upland coniferous forest (> 50% canopy), upland deciduous forest (> 50% canopy), and upland deciduous woodland (10-50% canopy). Land Use/Land Cover is summarized in Appendix X and illustrated in Map 6.

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The coniferous forest is an abandoned plantation, which comprises nearly 80% of the preserve. The canopy is dominated by Norway spruce with ash and Norway maple in smaller numbers. Japanese aralia and occasionally ash colonize the gaps between the spruces. The aralia has successfully dominated the subcanopy and shrub layer of most gaps, regardless of gap size. As the spruce trees decline, canopy gaps are more frequent, allowing for mile a minute vine to colonize. The shrub layer is sparse. Spicebush is infrequent and heavily browsed. Multiflora rose and Japanese barberry are scattered throughout.

The remaining deciduous forest patches are found primarily in the western portion of the preserve adjacent to the cemetery. Though still scattered, multiflora rose and Japanese barberry are more prevalent in this forest patch. Linden viburnum is a small component of the shrub layer.

Hay-scented fern and Japanese stiltgrass are prevalent throughout the herb layer. Jack-in-the-pulpit and false Solomon's seal are exceedingly infrequent. Mile a minute vine rings the Preserve and is prevalent on the eastern edge and on neighboring parcels. Leaf damage was observed in the summer of 2009 – the mile a minute biocontrol is suspected but not confirmed.

The preserve has one type of bedrock geology--the Passaic formation. See Map 4.

The preserve has four soil types (see Map 5) with Lansdale channery loam, 6 to 12 percent slopes, eroded; Bucks silt loam, 6 to 12 percent slopes, eroded; and Bucks silt loam, 2 to 6 percent slopes being the three most common types. The preserve's soils are described in Appendix Y.

### **CONSERVATION VALUES**

Based on an analysis involving the ranking of ecological values and threats (See Community Stewardship Plan text), the Preserve lies within the 50-75<sup>th</sup> percentile. See Appendix A for a description of ranking factors.

**Forest and Woodland Communities:** The preserve is a part of the Sourland Mountain region. Connections to the Sourland core forest are tenuous—residential development, roads, and agricultural fields make the Preserve a highly fragmented forest.

The forest patch is small, fragmented, and highly disturbed. Recruitment of conservative native species is unlikely in the foreseeable future. Given a reduced deer density, species like spicebush and ash would rebound readily and begin to shade out Japanese barberry, multiflora rose, and Japanese stiltgrass.

**Old forest:** None - See Map 2.

### **Early Successional Communities:**

**Shrublands:** None.

**Meadows/Grasslands:** None.

**Waterbodies:** None.

### **Rare Species:**

**Rare Plants:** None documented on the Preserve.

**Rare Animals:** Landscape Project has identified the Preserve as habitat for State Endangered species that is part of an 18,000 acre contiguous forest patch. However, the connection to this larger forest patch is tenuous (See above) and the Preserve's forest patch size is too small to provide significant habitat. The forest patch found on the Preserve and surrounding area is an important stop-over habitat (spring and fall

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resting and feeding) for migratory species. Forest fragmentation and lack of a woodland shrub layer reduce the chance of nesting and successful breeding.

### **THREATS**

**Deer:** White-tailed deer have suppressed much of the native community, leaving only canopy trees and an extremely sparse herb and shrub layer.

**Invasive species:** In 2008 staff began walk-through surveys for emerging invasive species on all preserves. Mapping documented each species and its population size. Japanese aralia, mile-a-minute, linden viburnum, and Japanese wisteria were detected. See [www.njisst.org](http://www.njisst.org) for the current status of emerging invasive species at the Preserve.

Japanese aralia is scattered in dense patches throughout the preserve. It is especially vigorous and produces seeds in the forest's canopy gaps. It is found even in the dense shade of the Norway spruce trees. Linden viburnum is a small component of the shrub layer near the cemetery. A small population of Japanese wisteria was eradicated in the southern portion of the preserve.

The adjacent private parcel (currently owned by Nini) is high priority as the species is present there. The species was also mapped on the Frances Preston easement (D&R Greenway) and has been observed elsewhere in the Sourlands (Sourland Mountain Preserve and private property-Somerset county).

Mile a minute vine proliferates around the preserve's boundaries and in canopy gaps. Evidence of the biocontrol is present.

In 2011 staff completed surveys for invasive plant species on all preserves (see Map 9). Mapping documented each species found and its population size (See Table 1 below). The five species with the highest infestation scores include: Japanese Stiltgrass, Multiflora Rose, Japanese Honeysuckle, Wineberry and Garlic Mustard. Multiflora rose, Japanese barberry, and Japanese stiltgrass are scattered throughout and become more robust and frequent on the Preserve's edges.

**Other:** N/A

### **STRATEGIES and ACTIONS**

**Forest and Woodland Habitat Stewardship:** Because of the Preserve's proximity and connection to the Sourland Mountain region, stewardship efforts at the Preserve are high priority. The overarching goals at the Preserve are to protect the forest habitat at the Preserve and throughout the region. Thus, regular surveys with eradication of emerging invasive species is the highest priority at this Preserve. Partner work days with Washington Crossing State Park and D&R Greenway began in 2009 to address emerging species.

A significant portion of the Japanese aralia has been successfully treated with basal bark herbicide applications. Follow up treatment is planned with attention on eradicating any remaining fruiting individuals and foliar spray of smaller individuals. Control efforts will continue until all stems are eradicated on the Preserve. Simultaneously, D&R Greenway conservation easement landowner, Frances Preston, and Preserve neighbor, Dante Nini, should be contacted for permission to survey and treat for Japanese aralia.

All seed-producing linden viburnum were treated by the cut stump method. All wisteria were eradicated by foliar spray. Monitoring and eradication should continue for these species as detected.

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No action is recommended for mile-a-minute vine due to the abundance of seed sources and biocontrol presence.

For widespread invasive species, treatment of mature, fruiting individuals of Winged Burning Bush are recommended. Unlike nearly all other invasive plants, this species would likely increase with a decrease in deer density and would be less subject to ecological control exerted by native species due to its mature height and shade tolerance.

Reduced deer density will allow the native plant communities to recover and compete with nearly all widespread invasive species.

**Early Successional Habitat Stewardship:** N/A

**Deer Management:** Since 2011, the preserve has been enrolled in the DMP with bow hunting only. The 450' safety zone restricts gun hunting at the preserve.

However, the 150' safety zone for bow hunting allows for hunting in nearly all portions of the preserve. Only the eastern tip of the Albahary Preserve (B13 L1) and southwestern tip of the Grossman Preserve (B8 L108) are within the 150' safety zone. Access is not hindered, nor are hunting prospects.

If feasible, improve hunting access through arrangements with neighbors. Parcel data shows the following neighbors within the safety zone: Charles Staats, 5 Midland Avenue (B8 L51) and Dante Michael Nini, 3 Midland Avenue (B8 L50).

See Map 8 for delineations of the 150' and 450' safety zones and hunting status.

**Rare Species Management:** N/A

**Neighboring Lands:** All neighbors sharing borders with the Preserve have been contacted about the Japanese aralia. One request for ED/RR survey was answered—Irene Simmons (108 Grandview; B8 L44.01), an acquaintance of FoHVOS Board President John Jackson, responded and allowed an NJISST survey in 2009.

Large blocks of land under conservation easement are located east of the Preserve, including a FoHVOS easement on the Preston tract (Michele and Richard). To the north lie conservation easements and preserved parcels connecting Van Dyke Road, Mountain Church Road, and Featherbed Lane. Preserves are owned by FoHVOS, the State, Mercer County Park Commission, and D&R Greenway. This network offers opportunities to collaborate on regional conservation projects, improve hunting access (see Deer Management), and expand on existing regional trails (see Recreational Opportunities Assessment). See Map 7 for adjacent protected lands.

**Waterbodies Management:** N/A

**Undesirable Activities Management:** N/A

**Scientific Research Assessment:** The Preserve is available for scientific research.

**Recreational Opportunities Assessment:** This property was considered for the Sourlands Foothills regional trail system by an Eagle Scout in 2009, but his project had to be completed before he reached the Preserve.



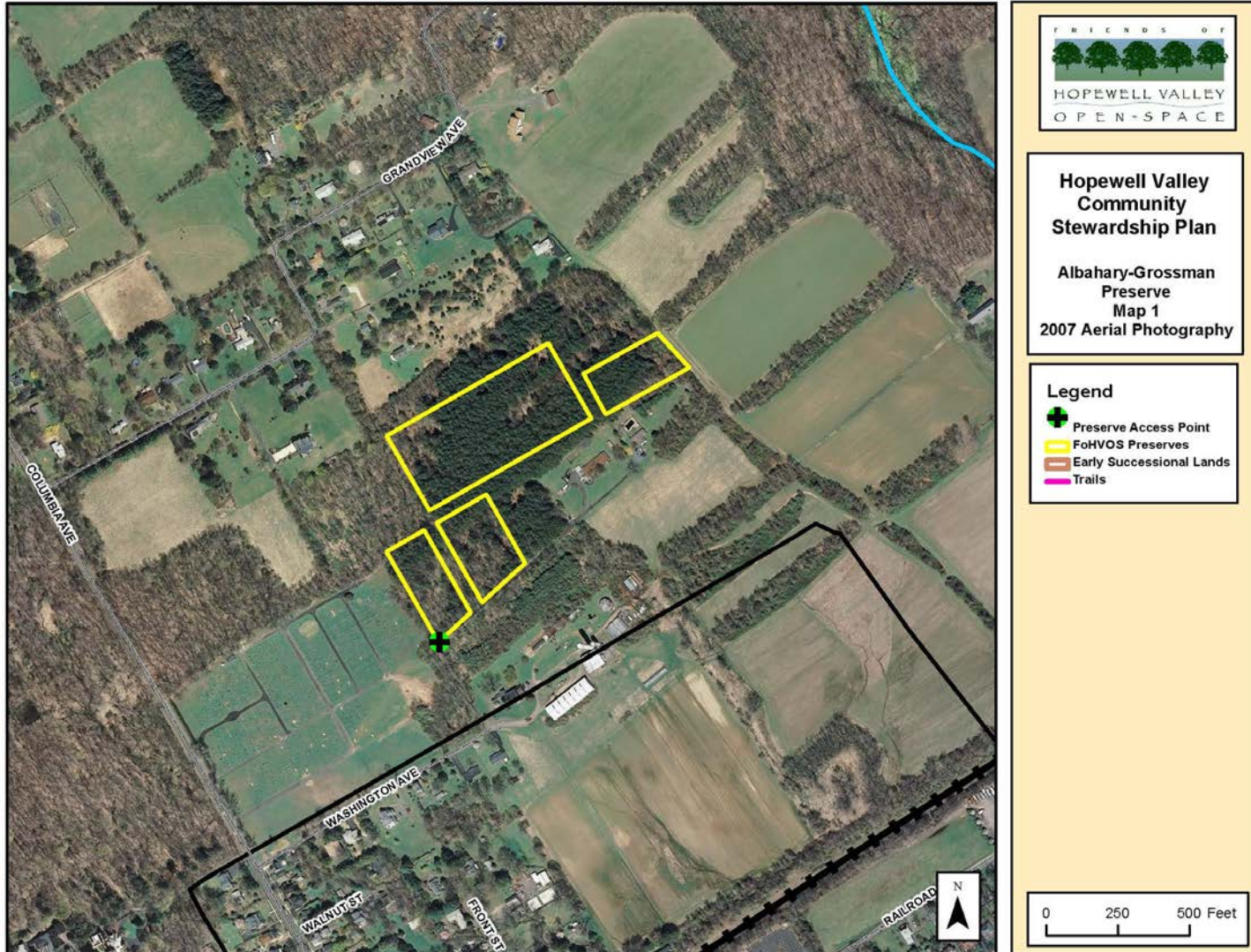
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**Table 1. Invasive Plants – Species Abundance and Treatment Recommendations**

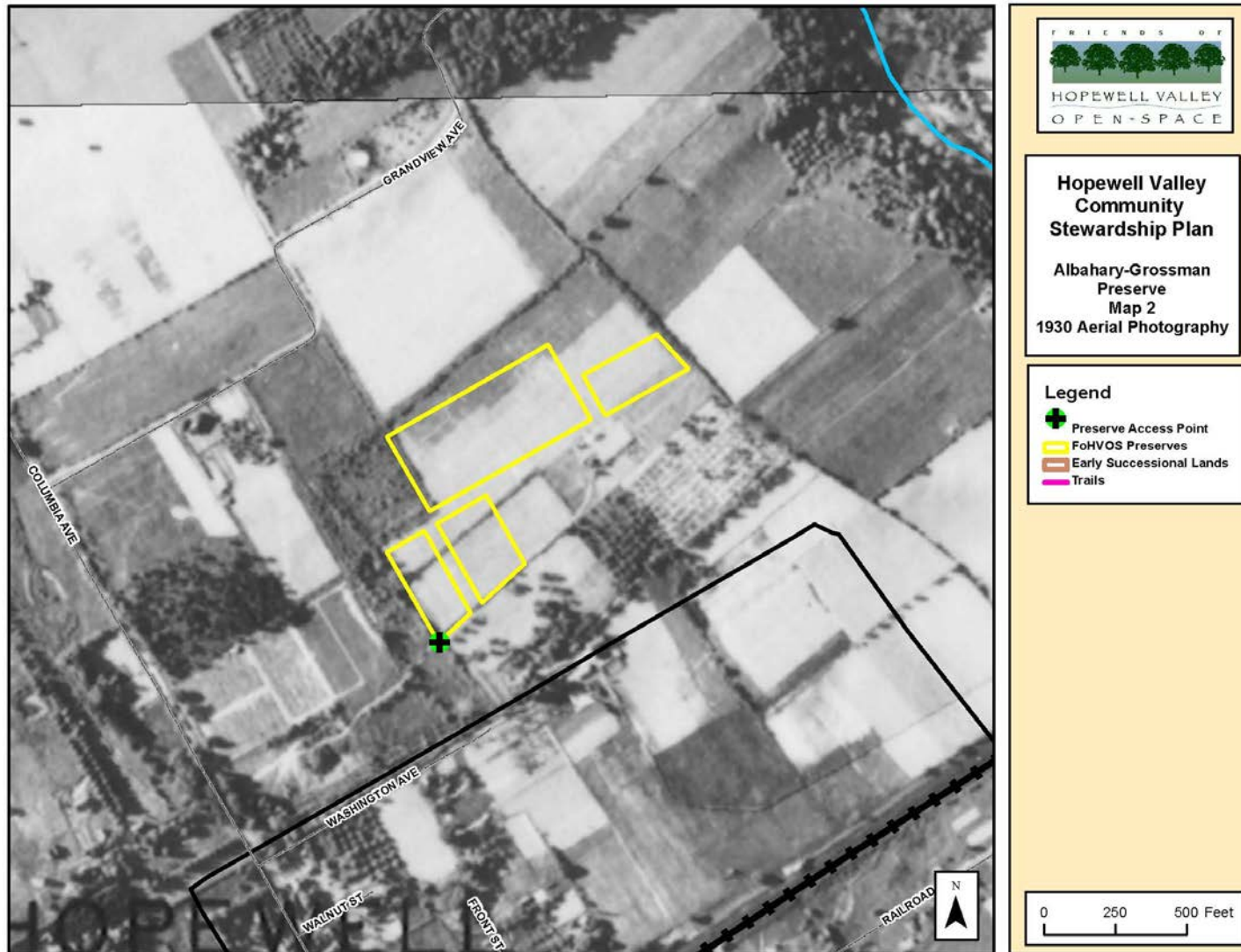
Scientific Name	Common Name	Infestation Index Score <sup>1</sup>	Total Acres Present	Percent of Preserve Area Present	Treatment Recommendation	LOE Estimate (Hours)	Acreage by Percent Ground Cover Categories						
							Category 0: 0%	Category: Trace	Category 1: 1-10%	Category 2: 10-25%	Category 3: 25-50%	Category 4: 50-75%	Category 5: 75-100%
<i>Acer palmatum</i>	Japanese Maple	0.0	0.0	0.0	N/A		8.23	0.0	0.0	0.0	0.0	0.0	0.0
<i>Acer platanoides</i>	Norway Maple	0.0	0.1	1.2	None		8.13	0.1	0.0	0.0	0.0	0.0	0.0
<i>Ailanthus altissima</i>	Tree-of-Heaven	0.0	0.0	0.0	N/A		8.23	0.0	0.0	0.0	0.0	0.0	0.0
<i>Alliaria petiolata</i>	Garlic Mustard	6.8	7.2	86.9	None		1.08	3.4	0.7	3.1	0.0	0.0	0.0
<i>Artemisia vulgaris</i>	Common Mugwort	0.0	0.0	0.0	N/A		8.23	0.0	0.0	0.0	0.0	0.0	0.0
<i>Arthraxon hispidus</i>	Small Cargrass	0.0	0.0	0.0	N/A		8.23	0.0	0.0	0.0	0.0	0.0	0.0
<i>Berberis thunbergii</i>	Japanese Barberry	0.7	0.7	8.7	None		7.51	0.0	0.7	0.0	0.0	0.0	0.0
<i>Cardamine impatiens</i>	Narrow-leaved Bittercress	0.0	0.0	0.0	N/A		8.23	0.0	0.0	0.0	0.0	0.0	0.0
<i>Catalpa bignonioides</i>	Northern Catalpa	0.0	0.0	0.0	N/A		8.23	0.0	0.0	0.0	0.0	0.0	0.0
<i>Celastrus orbiculatus</i>	Asiatic Bittersweet	0.0	0.0	0.0	N/A		8.23	0.0	0.0	0.0	0.0	0.0	0.0
<i>Centurea sp.</i>	Knapweed sp.	0.0	0.0	0.0	N/A		8.23	0.0	0.0	0.0	0.0	0.0	0.0
<i>Cirsium arvense</i>	Canada Thistle	0.0	0.0	0.0	N/A		8.23	0.0	0.0	0.0	0.0	0.0	0.0
<i>Dipsacus sylvestris</i>	Teasel	0.0	0.0	0.0	N/A		8.23	0.0	0.0	0.0	0.0	0.0	0.0
<i>Eleaegnus umbellata</i>	Autumn Olive	0.0	0.0	0.0	N/A		8.23	0.0	0.0	0.0	0.0	0.0	0.0
<i>Euonymus alata</i>	Winged Burning Bush	0.0	1.4	16.8	Control - Treat Fruiting Plants	5	6.85	1.4	0.0	0.0	0.0	0.0	0.0
<i>Iris pseudoacris</i>	Yellow Iris	0.0	0.0	0.0	N/A		8.23	0.0	0.0	0.0	0.0	0.0	0.0
<i>Lespedeza cuneata</i>	Chinese Bushclover	0.0	0.0	0.0	N/A		8.23	0.0	0.0	0.0	0.0	0.0	0.0
<i>Ligustrum obtusifolium</i>	Border Privet	1.3	1.3	15.6	None		6.95	0.0	1.3	0.0	0.0	0.0	0.0
<i>Lonicera japonica</i>	Japanese Honeysuckle	8.5	2.8	34.3	None		5.41	0.0	0.2	0.2	1.9	0.6	0.0
<i>Lonicera maackii</i>	Amur Honeysuckle	0.0	0.0	0.0	N/A		8.23	0.0	0.0	0.0	0.0	0.0	0.0
<i>Lonicera morrowii</i>	Morrow's Honeysuckle	4.0	2.5	30.9	None		5.69	0.0	1.1	1.4	0.0	0.0	0.0
<i>Lysimachia nummularia</i>	Moneywort	0.0	0.0	0.0	N/A		8.23	0.0	0.0	0.0	0.0	0.0	0.0
<i>Lythrum salicaria</i>	Purple Loosestrife	0.0	0.0	0.0	N/A		8.23	0.0	0.0	0.0	0.0	0.0	0.0
<i>Malus toringo</i>	Toringo Crabapple	0.0	0.0	0.0	N/A		8.23	0.0	0.0	0.0	0.0	0.0	0.0
<i>Microstegium vimineum</i>	Japanese Stiltgrass	37.5	8.2	99.9	None		0.01	0.0	0.0	0.1	0.8	1.8	5.6
N/A	Non-native, cool season grass	0.0	0.0	0.0	N/A		8.23	0.0	0.0	0.0	0.0	0.0	0.0
<i>Phalaris arundinacea</i>	Reed Canary Grass	0.0	0.0	0.0	N/A		8.23	0.0	0.0	0.0	0.0	0.0	0.0
<i>Phragmites australis</i>	Common Reed	0.0	0.0	0.0	N/A		8.23	0.0	0.0	0.0	0.0	0.0	0.0
<i>Polygonum cuspidatum</i>	Japanese Knotweed	0.0	0.0	0.0	N/A		8.23	0.0	0.0	0.0	0.0	0.0	0.0
<i>Polygonum perfoliatum</i>	Mile-a-Minute	4.3	3.6	43.1	None - Check for biocontrol agent		4.68	0.0	3.0	0.4	0.2	0.0	0.0
<i>Pyrus calleryana</i>	Callery Pear	0.0	0.0	0.0	N/A		8.23	0.0	0.0	0.0	0.0	0.0	0.0
<i>Ranunculus ficaria</i>	Lesser Celandine	0.0	0.0	0.0	N/A		8.23	0.0	0.0	0.0	0.0	0.0	0.0
<i>Robinia pseudoacacia</i>	Black Locust	0.2	0.2	2.1	None		8.06	0.0	0.2	0.0	0.0	0.0	0.0
<i>Rosa multiflora</i>	Multiflora Rose	8.7	2.8	34.0	None		5.43	0.0	0.0	0.2	2.2	0.4	0.1
<i>Rubus pheonculusius</i>	Wineberry	7.3	3.6	43.1	None		4.68	0.0	1.5	0.4	1.7	0.0	0.0
<i>Securigera varia</i>	Crown vetch	0.0	0.0	0.0	N/A		8.23	0.0	0.0	0.0	0.0	0.0	0.0
<i>Viburnum dilatatum</i>	Linden Viburnum	0.0	0.0	0.0	N/A		8.23	0.0	0.0	0.0	0.0	0.0	0.0
<i>Viburnum sieboldii</i>	Siebold's Viburnum	0.0	0.0	0.0	N/A		8.23	0.0	0.0	0.0	0.0	0.0	0.0
<i>Wisteria floribunda</i>	Japanese Wisteria	0.0	0.0	0.0	N/A		8.23	0.0	0.0	0.0	0.0	0.0	0.0
<b>Total LOE</b>						<b>5</b>							

<sup>1</sup> The Infestation Index Score combines the extent of acreage infested and the intensity of the infestation. It was derived by multiplying the cover class number by the number of acres within each cover class.

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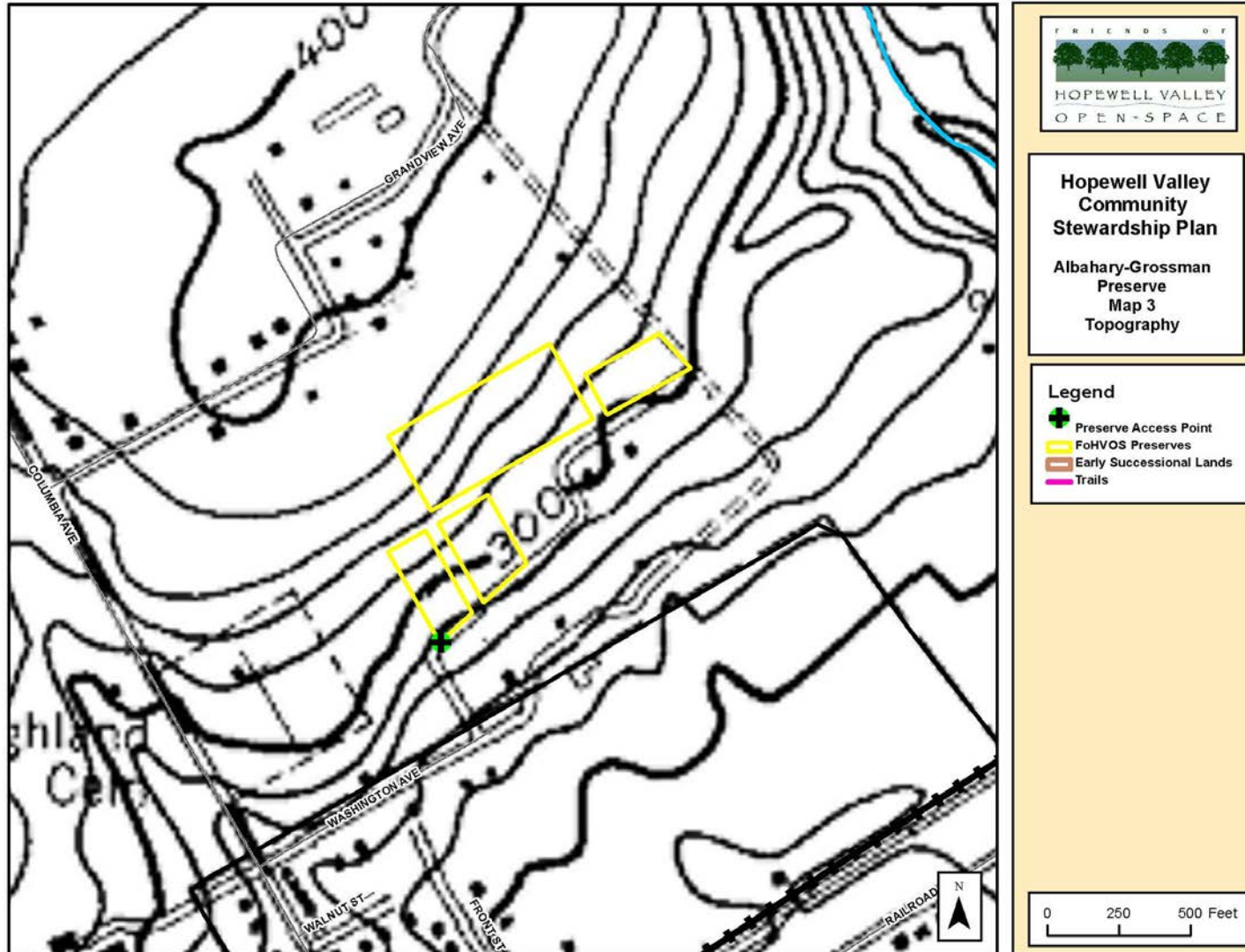


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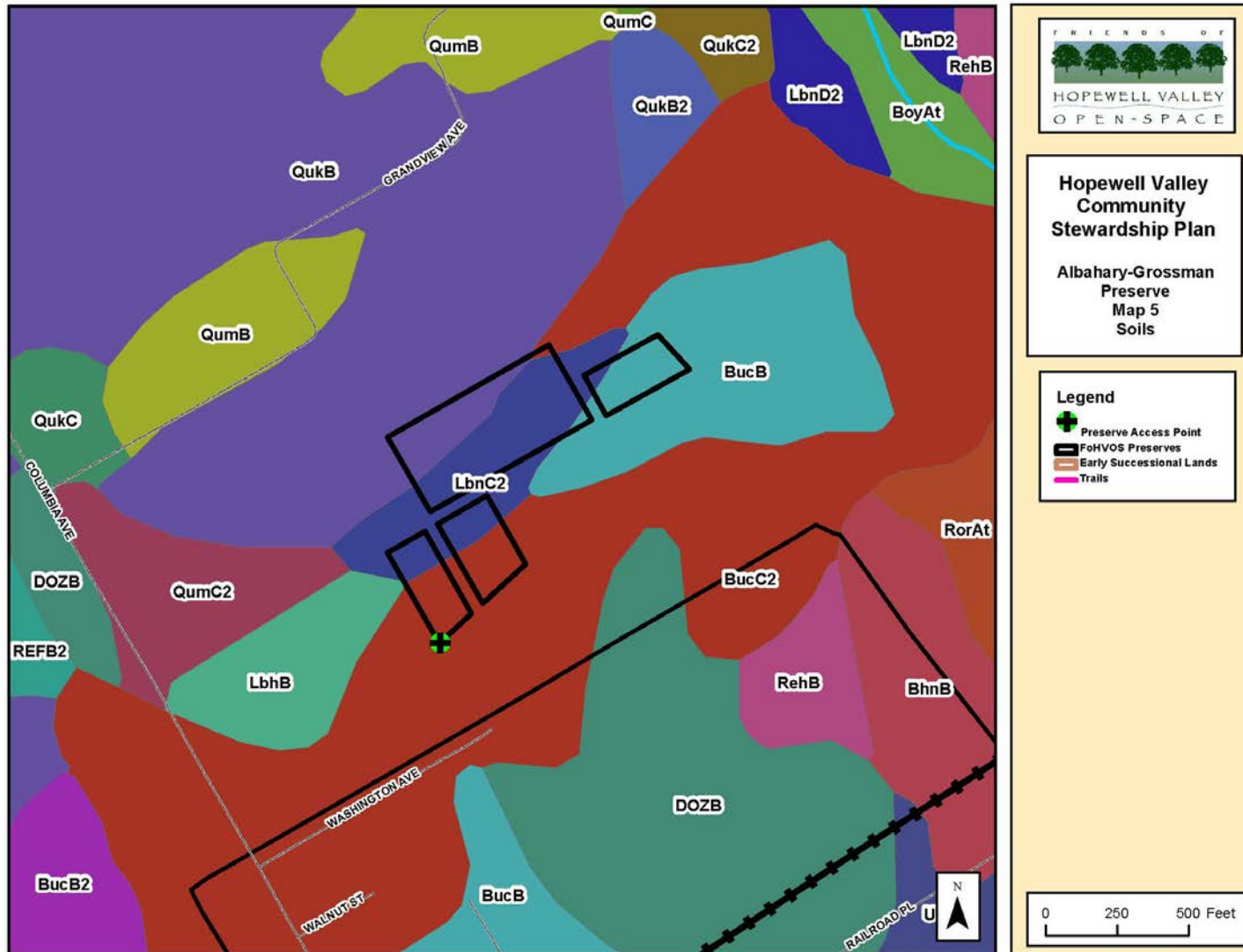
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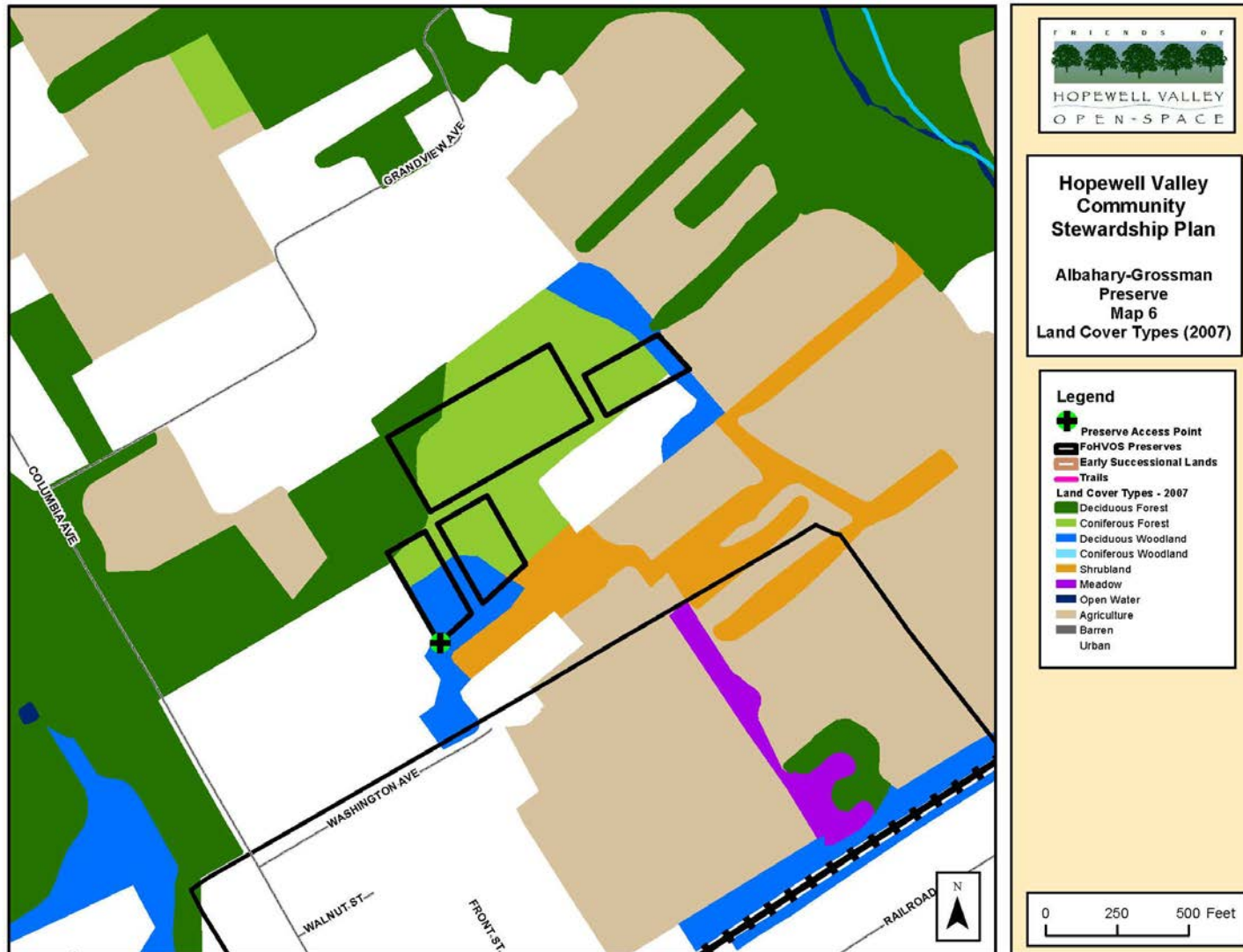
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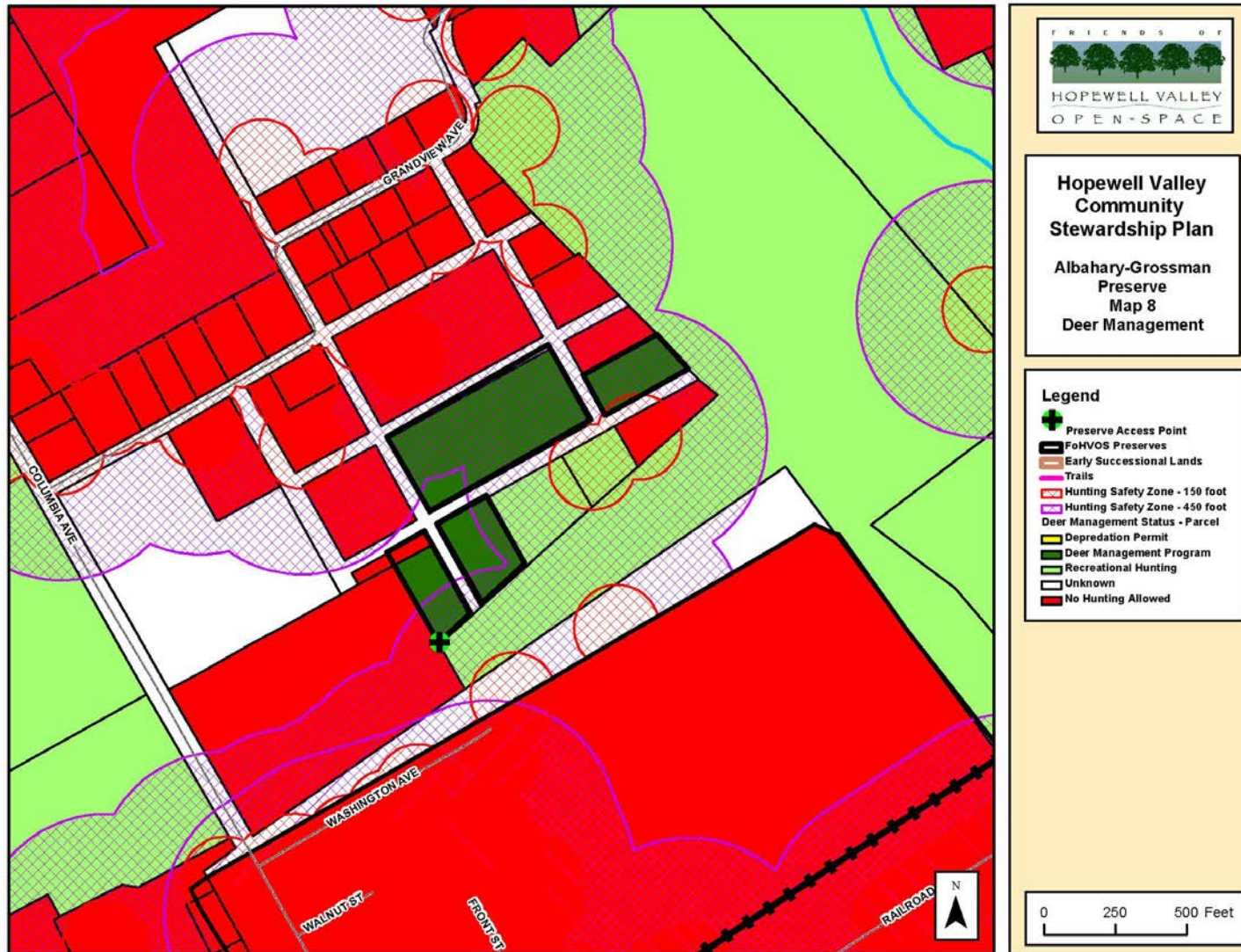


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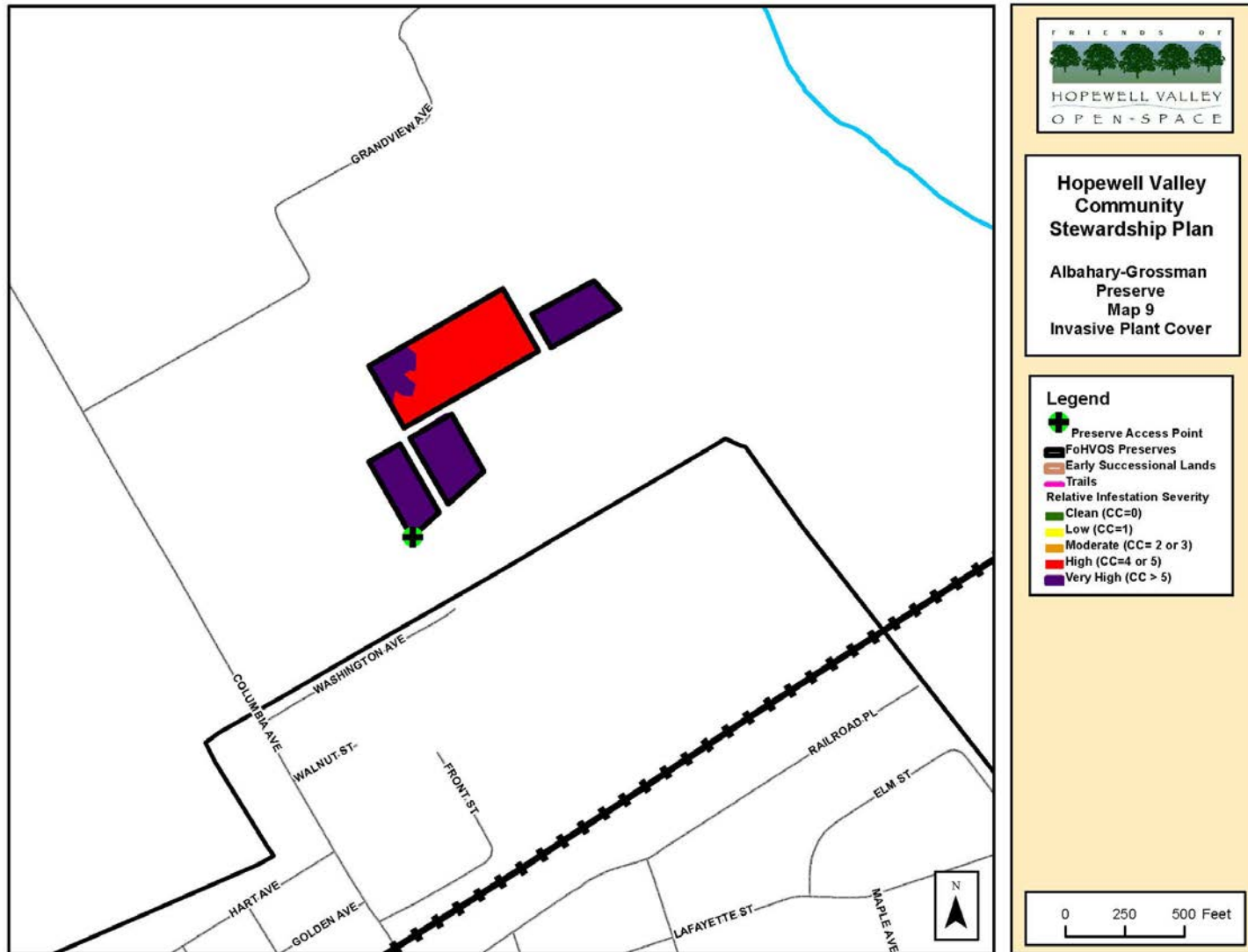




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**Appendix 2.  
Arena Preserve**

**Acreage:** 28.225

**Block and Lot:** B26, L4.01

**Ownership:** FoHVOS (100%)

**Year(s) Purchased:** 2005

**Location & Access:** Preserve is located on the west side of Harbourton-Rocktown Road/Route 579, 0.25 mile north of Route 518. Preserve access on the gravel driveway of Hopewell Township parcel currently being redeveloped. Just north of the gravel drive is a narrow and over grown break in the guardrail. Nearest street address: 1615 Harbourton-Rocktown Road, Lambertville 08530 (actual Preserve address).

**Structures:** One corn crib - an open-ended farm structure is on the Preserve adjacent to the Hopewell parcel.

Additional property information is summarized in Appendix W. The following Preserve maps are provided at the end of this document:

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- Map 9 Invasive Plant Cover (Relative Infestation Severity for all species)

**Website Description:**

**Arena Preserve**, surrounded by equal parts farmland and forest, is located at the Hopewell Township's northern border. Much of the preserve's 10 acre forest was wooded in the 1930s and features red oak, shagbark hickory, and black birch. The remaining portions of the preserve are formerly hayfields, now reverting to a mix of native—New York ironweed and swamp milkweed—and invasive—multiflora rose and Callery pear—species.

**BROAD PROPERTY DESCRIPTION**

The Arena Preserve (see Map 1) is located at the north-central section of the Hopewell Valley. The topography (see Map 3) is primarily flat at 110 feet above sea level. The Preserve is surrounded by equal parts agricultural lands and forest. Single home dwellings and commercial development are scattered along Routes 579 and 518.

Based upon analysis of NJDEP's 2007 Land Use/Land Cover dataset, the preserve contains three broad plant communities: upland deciduous forest (> 50% canopy), upland shrubland (< 10% canopy, > 25% shrub cover), and agricultural lands. Land Use/Land Cover is summarized in Appendix X and illustrated in Map 6.

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Though designated as agricultural land, Fields 1 and 3 have not been mowed for hay since 2009. Field 2 contains a significant amount of woody invasive species, and was most likely abandoned at an earlier date. The fields are part of a contiguous patch of 139 acres of agricultural land, which includes the preserve acreage. The adjacent landowner permits hunting for deer and gamebird species.

The easternmost field has a strong component of native species including swamp milkweed, New York ironweed, goldenrods, dogbane, sensitive fern, jewelweed, mountain mint, soft rush, and sedges. Invasive and adventive species include small carp grass, *Bidens* sp. (2 distinct populations), autumn olive, and Callery pear. Fields 1 and 3 contain yarrow, dogbane, sensitive fern, jewelweed, mountain mint, soft rush, and sedges. Reed canary grass is found throughout the Fields 1 and 3, and is especially dense at the eastern edge of Field 3. The fields are enclosed by hedgerows consisting of pin oak, blackhaw, ash, shagbark hickory, black walnut, autumn olive, and multiflora rose.

The forest lacks a significant herb, shrub and subcanopy layer. The canopy is dominated by red oak, shagbark hickory, red maple, and black birch. Arrowwood and mapleleaf viburnums, spicebush, multiflora rose, Japanese honeysuckle, and Japanese barberry are sporadic. Herbs, sedges and grasses include jack-in-the-pulpit, mayapple, spring beauty, hayscented fern, wild yam root, partridgeberry, true and false Solomon's seals, Japanese stiltgrass, periwinkle, and various sedges.

The preserve has two types of bedrock geology--the Lockatong and Passaic formations. See Map 4.

The preserve has 3 soil types (see Map 5) with Chalfont silt loam, 0 to 2 percent slopes being the most common type. Chalfont silt loam, 2 to 6 percent slopes and Chalfont silt loam, 2 to 6 percent slopes, eroded make up the remaining soil types. The preserve's soils are described in Appendix Y.

### **CONSERVATION VALUES**

Based on Natural Heritage data, ENSP data, Landscape Project, 1930s forest presence/absence et al. the Preserve has the highest weighted Ecological Value at >75%. See Appendix A for a description of ranking factors.

**Forest and Woodland Communities:** The preserve is on the outer edge of the RHWHP Crossroads Forest Focal Area. The forest patch found on the Preserve and surrounding area is an important stop-over habitat (spring and fall resting and feeding) for migratory species. Numerous forest interior dwelling birds were observed in the spring of 2009; however, the presence of cowbirds and the lack of a shrub layer reduces the chance of nesting and successful breeding. However, avian life is abundant on the preserve and has been enhanced by kestrel and bluebird nest boxes in the meadows.

The meadows are adjacent to the Weidel farm which is managed for upland gamebird hunting, bringing the total contiguous meadow acres to 71.

**Old forest:** Based upon analysis of 1930 aerial photography, the preserve is part of a 54 acre block that has been forested since at least the 1930s. This is reflected in the presence of a relatively conservative native plant community and lack of dense invasive species cover. See Map 2.

### **Early Successional Communities:**

**Shrublands:** The shrubland is composed of invasive species.

**Meadows/Grasslands:** Fields 1 and 3 seem to have been mowed annually in spring, preventing the establishment of native forbs and grasses. Field 2 has a rich variety of native forbs and grasses, but is significantly invaded by non-native woody species.

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**Waterbodies:** None.

**Rare Species:**

**Rare Plants:** None documented on the Preserve. Natural Heritage grid data shows Wildenow's Sedge.

**Rare Animals:** The Landscape Project has identified the meadow areas of the Preserve as Suitable Habitat. Forested areas of the Preserve are identified as habitat for State Threatened species. See Appendix L for a list of species.

**THREATS**

**Deer:** White-tailed deer have suppressed much of the native community, leaving only canopy trees and an extremely sparse herb and shrub layer. Native herbs and shrubs are so severely browsed they are unable to flower and set fruit. Forest health monitoring was performed in 2007/2008 (See main plan, Table 9).

**Invasive species:** In 2008 staff began walk-through surveys for emerging invasive species on all preserves. Mapping documented each species and its population size. Callery pear, Seibold's crabapple, and Japanese aralia (eradicated) were detected. See [www.njisst.org](http://www.njisst.org) for the current status of emerging invasive species at the Preserve.

In 2011 staff completed surveys for invasive plant species on all preserves (see Map 9). Mapping documented each species found and its population size (See Table 1 below). The five species with the highest infestation scores include: Multiflora Rose, Autumn Olive, Non-native Cool Season grass, Reed Canary Grass, and Callery Pear.

The core of the forest is largely free of invasive plants, and is invaded only very sporadically by Japanese stiltgrass and Japanese barberry. The southern edge of the forest is invaded by periwinkle, stiltgrass, Japanese honeysuckle, and multiflora rose (here, the preserve boundary meets a younger forest).

Woody invasive species—autumn olive, multiflora rose, Callery pear, and crabapple—are a significant threat all fields.

**Other:** N/A

**STRATEGIES and ACTIONS:**

**Forest and Woodland Habitat Stewardship:** Because of the Preserve's high Ecological Value, the stewardship efforts at the preserve are a high priority. The forest offers an opportunity to restore the rich native plant communities still present, but diminished, in the preserve's forest. Forest Health data collected in 2008 found a browse rate on planted seedling plots of 58% with native woody cover < 2% and no non-native woody cover.

In addition, biannual surveys for and eradication of emerging invasive species should continue.

No action is recommended for widespread invasive species, except all Asiatic bittersweet should be cut from trees and all fruiting winged euonymus should receive basal bark treatment. Reduced deer density will allow the native plant communities to recover and compete with the widespread invasive species.

**Early Successional Habitat Stewardship:** The variety of native species in Field 2 reveals the restoration potential of the remaining fields. A biannual winter mowing or burning regime is recommended to maintain early successional habitat and remove invasive woody plants.

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Burning and mowing may improve the species composition in the western meadows. Meadow restoration should be considered for Fields 1 and 3, leaving the local eco-types in the eastern meadow intact.

Basal bark treatment of woody plants in Field 2 is required. Cover is too dense for typical mowing machinery. Subsequent eradication of woody invasive species will occur through regular meadow maintenance. In addition, foliar spray of mugwort and hand pulling of teasel is required.

For habitat goals and maintenance schedule see Appendix T & U.

**Deer Management:** The preserve is enrolled in the DMP with bow and gun hunting.

The 450' safety zone allows hunting in the forest and portions of Field 1. The parcel to the north is posted as "Semi-Wild" by a hunting group on lands owned by a neighboring landowner (Weidel). See Map 8 for delineations of the 150' and 450' safety zones and hunting status.

**Rare Species Management:** Survey for Wildenow's sedge (currently low priority).

**Neighboring Lands:** Large blocks of preserved farmland are located to the north and west of the Preserve. See Map 7.

**Waterbodies Management:** No waterbodies occur on the preserve.

**Undesirable Activities Management:** The neighboring property owner to the west appears to have improperly posted their boundary signs – these should be checked via GPS and landowner should be contacted.

ATV trail had been marked on the Nayfield Preserve and continued through several private parcels, across Route 579, into the Hopewell Township parcel and Arena Preserve. Hopewell Township police were contacted and Preserve hunters erected a sign. All neighbors, including suspected offenders, were sent letters. ATV activity has ceased.

**Scientific Research Assessment:** The Preserve is available for scientific research.

**Recreational Opportunities Assessment:** This property was considered for a loop trail, but vehicular access is difficult. Current access requires using township land, which is being redeveloped.

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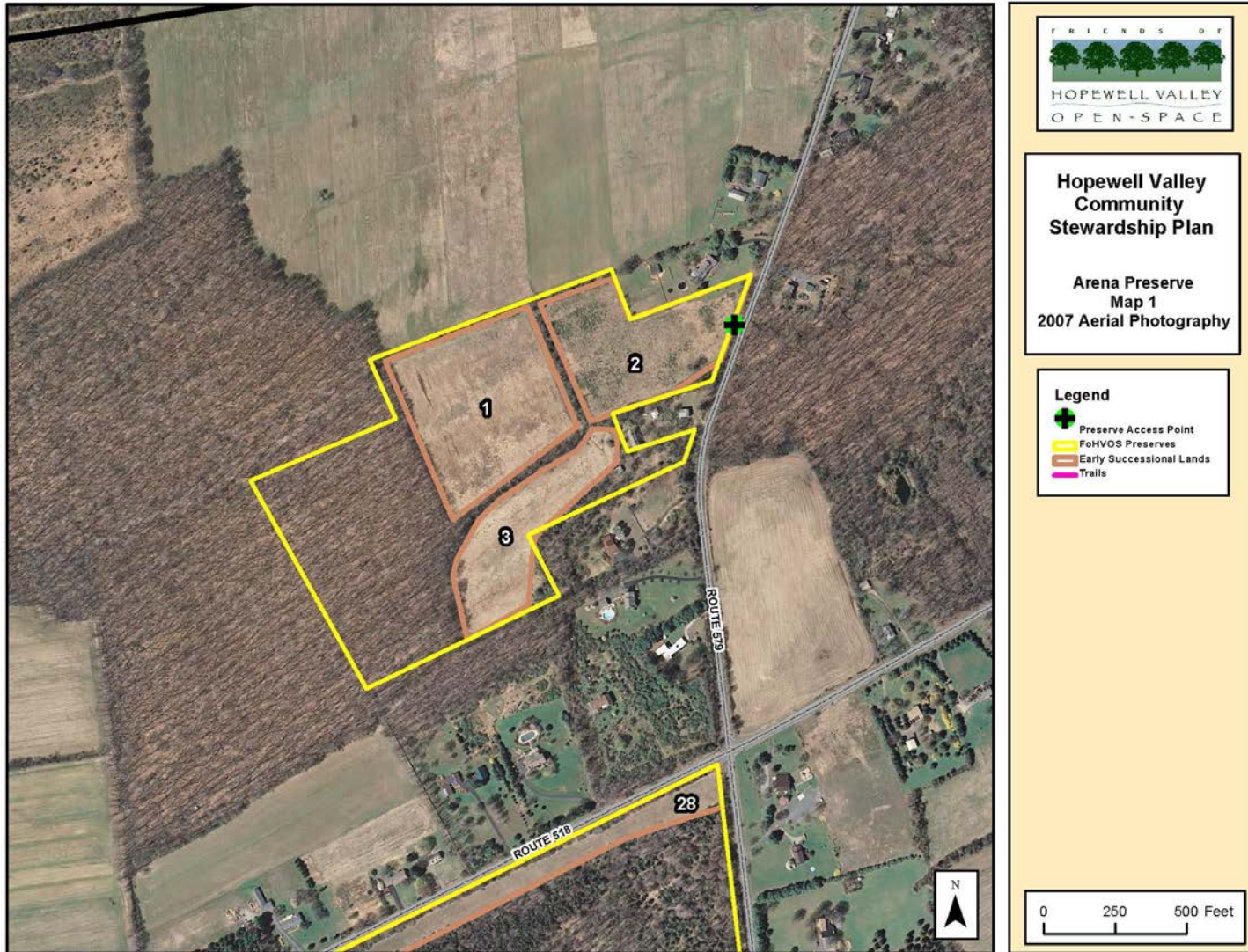
**Table 1. Invasive Plants – Species Abundance and Treatment Recommendations**

Scientific Name	Common Name	Infestation Index Score <sup>1</sup>	Total Acres Present	Percent of Preserve Area Present	Treatment Recommendation	LOE Estimate (Hours)	Acreage by Percent Ground Cover Categories						
							Category 0: 0%	Category: Trace	Category 1: 1-10%	Category 2: 10-25%	Category 3: 25-50%	Category 4: 50-75%	Category 5: 75-100%
<i>Acer palmatum</i>	Japanese Maple	0.0	0.0	0.0	N/A		28.11	0.0	0.0	0.0	0.0	0.0	0.0
<i>Acer platanoides</i>	Norway Maple	0.4	0.4	1.3	None		27.74	0.0	0.3	0.03	0.0	0.01	0.0
<i>Ailanthus altissima</i>	Tree-of-Heaven	0.0	0.0	0.0	N/A		28.11	0.0	0.0	0.0	0.0	0.0	0.0
<i>Alliaria petiolata</i>	Garlic Mustard	0.4	0.6	2.2	None		27.49	0.2	0.4	0.0	0.0	0.0	0.0
<i>Artemisia vulgaris</i>	Common Mugwort	0.2	0.2	0.6	Eradicate	2	27.95	0.0	0.2	0.0	0.0	0.0	0.0
<i>Arthraxon hispidus</i>	Small Carpgrass	12.1	10.6	37.5	None		17.56	0.0	9.9	0.2	0.1	0.2	0.1
<i>Berberis thunbergii</i>	Japanese Barberry	1.7	8.9	31.5	None		19.26	7.1	1.7	0.0	0.0	0.0	0.0
<i>Cardamine impatiens</i>	Narrow-leaved Bittercress	0.0	0.0	0.0	N/A		28.11	0.0	0.0	0.0	0.0	0.0	0.0
<i>Catalpa bignonioides</i>	Northern Catalpa	0.0	0.0	0.0	N/A		28.11	0.0	0.0	0.0	0.0	0.0	0.0
<i>Celastrus orbiculatus</i>	Asiatic Bittersweet	0.8	2.3	8.3	Control - Treat Fruiting Plants	5	25.78	1.6	0.7	0.0	0.02	0.0	0.0
<i>Centaurea sp.</i>	Knawweed sp.	0.0	0.0	0.0	N/A		28.11	0.0	0.0	0.0	0.0	0.0	0.0
<i>Cirsium arvense</i>	Canada Thistle	0.0	0.0	0.0	N/A		28.11	0.0	0.0	0.0	0.0	0.0	0.0
<i>Dipsacus sylvestris</i>	Teasel	0.0	0.0	0.1	Control - PU	3	28.07	0.0	0.04	0.0	0.0	0.0	0.0
<i>Eleaegnus umbellata</i>	Autumn Olive	59.5	13.1	46.5	Control - Field Maintenance	Strategy 3B	15.05	0.2	0.5	0.3	0.5	1.1	10.5
<i>Euonymus alata</i>	Winged Burning Bush	1.3	1.1	3.9	Control - Treat Fruiting Plants	10	27.00	0.2	0.6	0.3	0.0	0.0	0.01
<i>Iris pseudoacris</i>	Yellow Iris	0.0	0.0	0.0	N/A		28.11	0.0	0.0	0.0	0.0	0.0	0.0
<i>Lespedeza cuneata</i>	Chinese Bushclover	0.0	0.0	0.0	N/A		28.11	0.0	0.0	0.0	0.0	0.0	0.0
<i>Ligustrum obtusifolium</i>	Border Privet	0.0	0.0	0.0	N/A		28.10	0.0	0.01	0.0	0.0	0.0	0.0
<i>Lonicera japonica</i>	Japanese Honeysuckle	15.3	12.9	46.0	None		15.17	0.0	10.7	2.1	0.2	0.0	0.0
<i>Lonicera maackii</i>	Amur Honeysuckle	0.0	0.0	0.0	N/A		28.11	0.0	0.0	0.0	0.0	0.0	0.0
<i>Lonicera morrowii</i>	Morrow's Honeysuckle	4.2	3.1	11.0	None		25.02	0.2	1.7	1.2	0.02	0.0	0.0
<i>Lysimachia nummularia</i>	Moneywort	0.0	0.0	0.0	N/A		28.11	0.0	0.0	0.0	0.0	0.0	0.0
<i>Lythrum salicaria</i>	Purple Loosestrife	0.0	0.0	0.0	N/A		28.11	0.0	0.0	0.0	0.0	0.0	0.0
<i>Malus toringo</i>	Toringo Crabapple	31.9	12.1	42.9	Control - Field Maintenance	Strategy 3B	16.05	0.0	1.5	1.3	9.2	0.0	0.0
<i>Microstegium vimineum</i>	Japanese Stiltgrass	29.6	20.9	74.2	None		7.26	0.0	17.2	0.9	0.6	2.0	0.1
N/A	Non-native, cool season grass	46.9	12.5	44.6	None		15.57	0.0	0.0	0.0	3.3	9.3	0.0
<i>Phalaris arundinacea</i>	Reed Canary Grass	44.6	15.9	56.5	Control - Field Maintenance	Strategy 3B	12.22	0.2	0.9	9.5	0.1	1.2	3.9
<i>Phragmites australis</i>	Common Reed	0.4	0.1	0.2	None		28.04	0.0	0.0	0.0	0.0	0.0	0.1
<i>Polygonum cuspidatum</i>	Japanese Knotweed	0.0	0.0	0.0	N/A		28.11	0.0	0.0	0.0	0.0	0.0	0.0
<i>Polygonum perfoliatum</i>	Mile-a-Minute	0.0	0.0	0.0	N/A		28.11	0.0	0.0	0.0	0.0	0.0	0.0
<i>Pyrus calleryana</i>	Callery Pear	35.5	14.8	52.5	Control - Field Maintenance	Strategy 3B	13.34	0.0	4.3	0.1	10.3	0.0	0.0
<i>Ranunculus ficaria</i>	Lesser Celandine	0.0	0.0	0.0	N/A		28.11	0.0	0.0	0.0	0.0	0.0	0.0
<i>Robinia pseudoacacia</i>	Black Locust	0.0	0.0	0.0	N/A		28.11	0.0	0.0	0.0	0.0	0.0	0.0
<i>Rosa multiflora</i>	Multiflora Rose	67.1	20.8	74.1	Control - Field Maintenance	Strategy 3B	7.29	0.3	5.6	0.4	0.6	10.8	3.2
<i>Rubus pheonculasius</i>	Wineberry	0.0	0.0	0.0	N/A		28.11	0.0	0.0	0.0	0.0	0.0	0.0
<i>Securigera varia</i>	Crown vetch	0.0	0.0	0.0	N/A		28.11	0.0	0.0	0.0	0.0	0.0	0.0
<i>Viburnum dilatatum</i>	Linden Viburnum	0.0	0.0	0.0	N/A		28.11	0.0	0.0	0.0	0.0	0.0	0.0
<i>Viburnum sieboldii</i>	Siebold's Viburnum	0.0	0.0	0.0	N/A		28.11	0.0	0.0	0.0	0.0	0.0	0.0
<i>Wisteria floribunda</i>	Japanese Wisteria	0.0	0.0	0.0	N/A		28.11	0.0	0.0	0.0	0.0	0.0	0.0
<b>Total LOE</b>						<b>20</b>							

<sup>1</sup> The Infestation Index Score combines the extent of acreage infested and the intensity of the infestation. It was derived by multiplying the cover class number by the number of acres within each cover class.

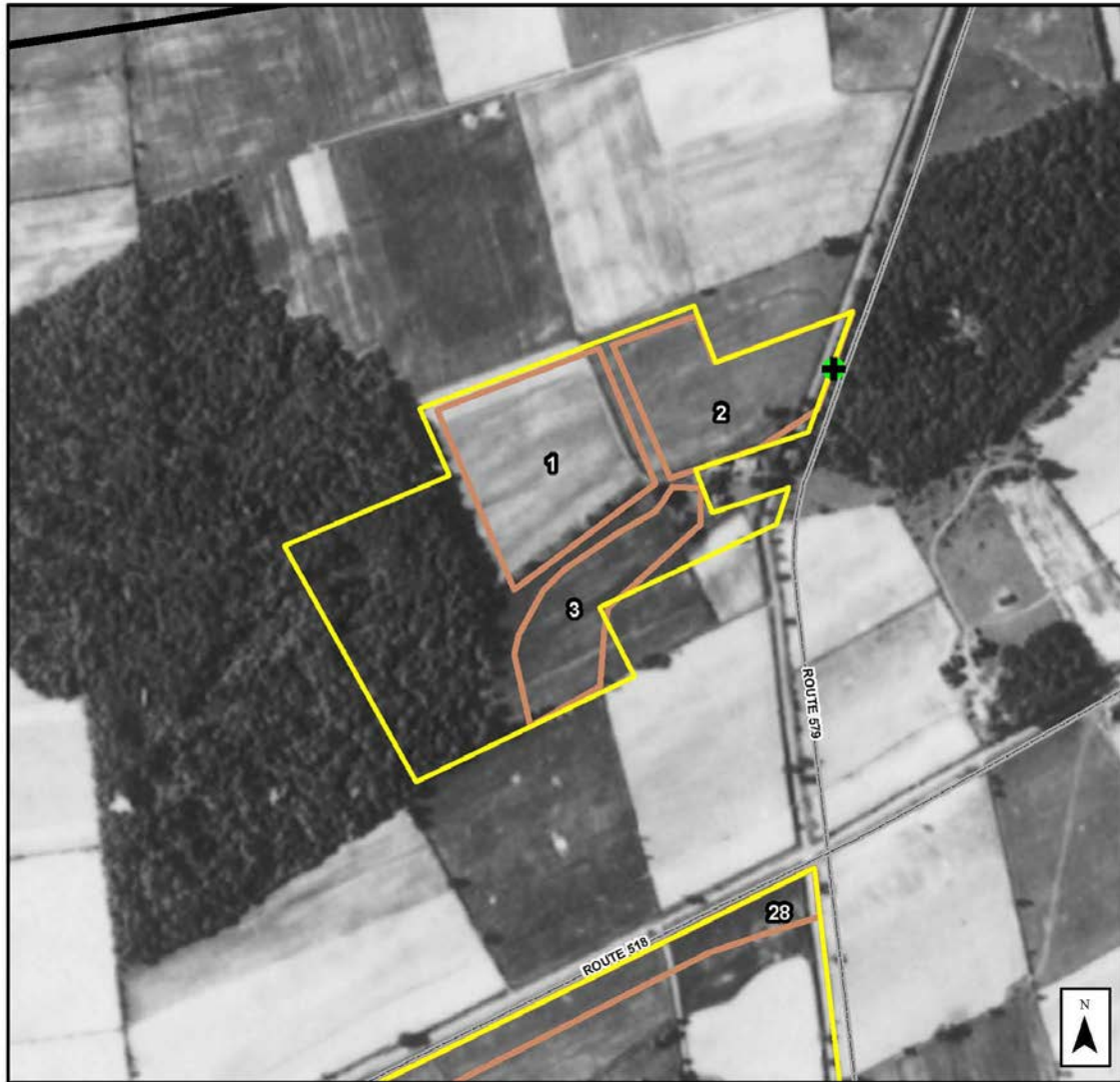


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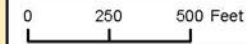


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Community  
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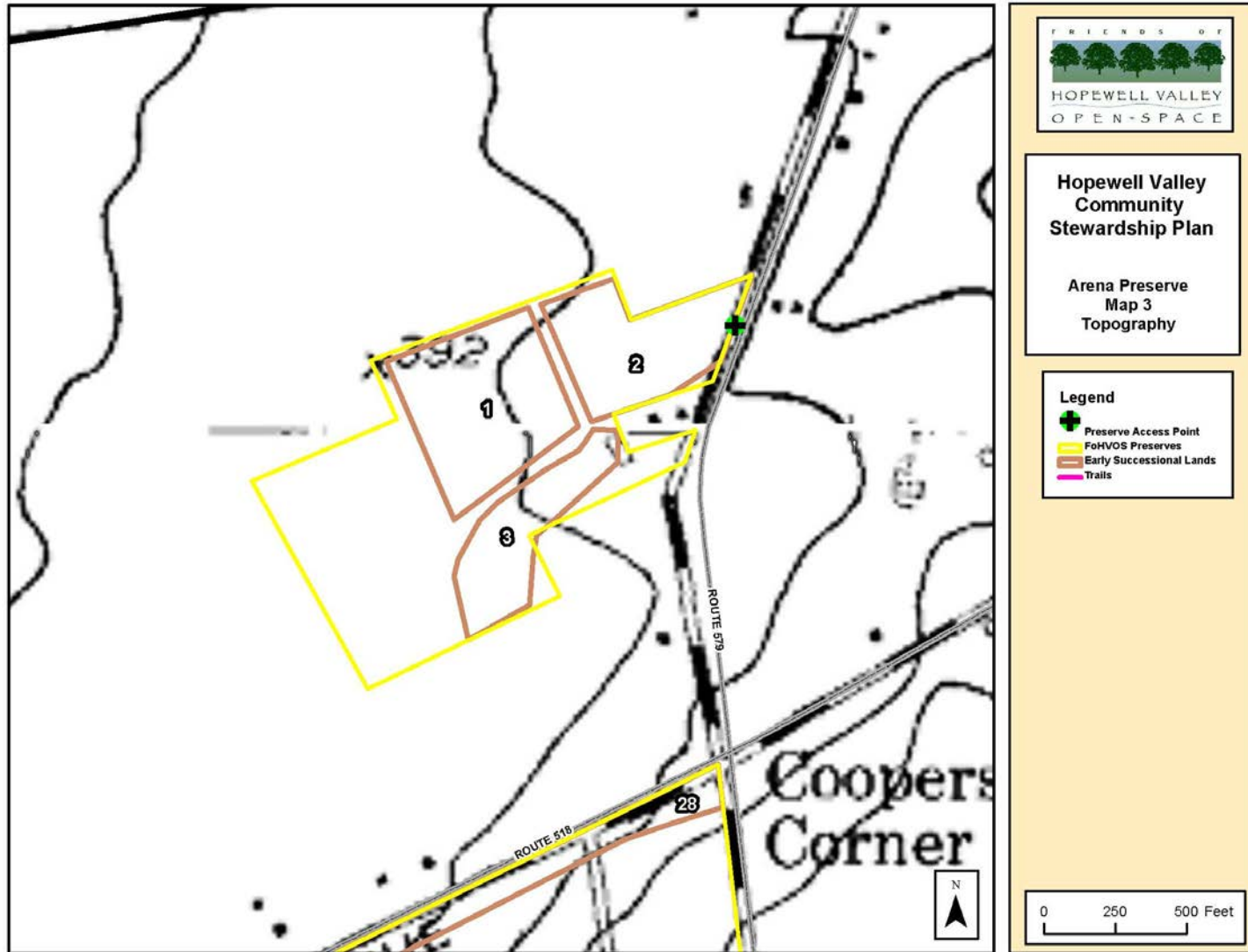
**Arena Preserve  
Map 2  
1930 Aerial Photography**

**Legend**

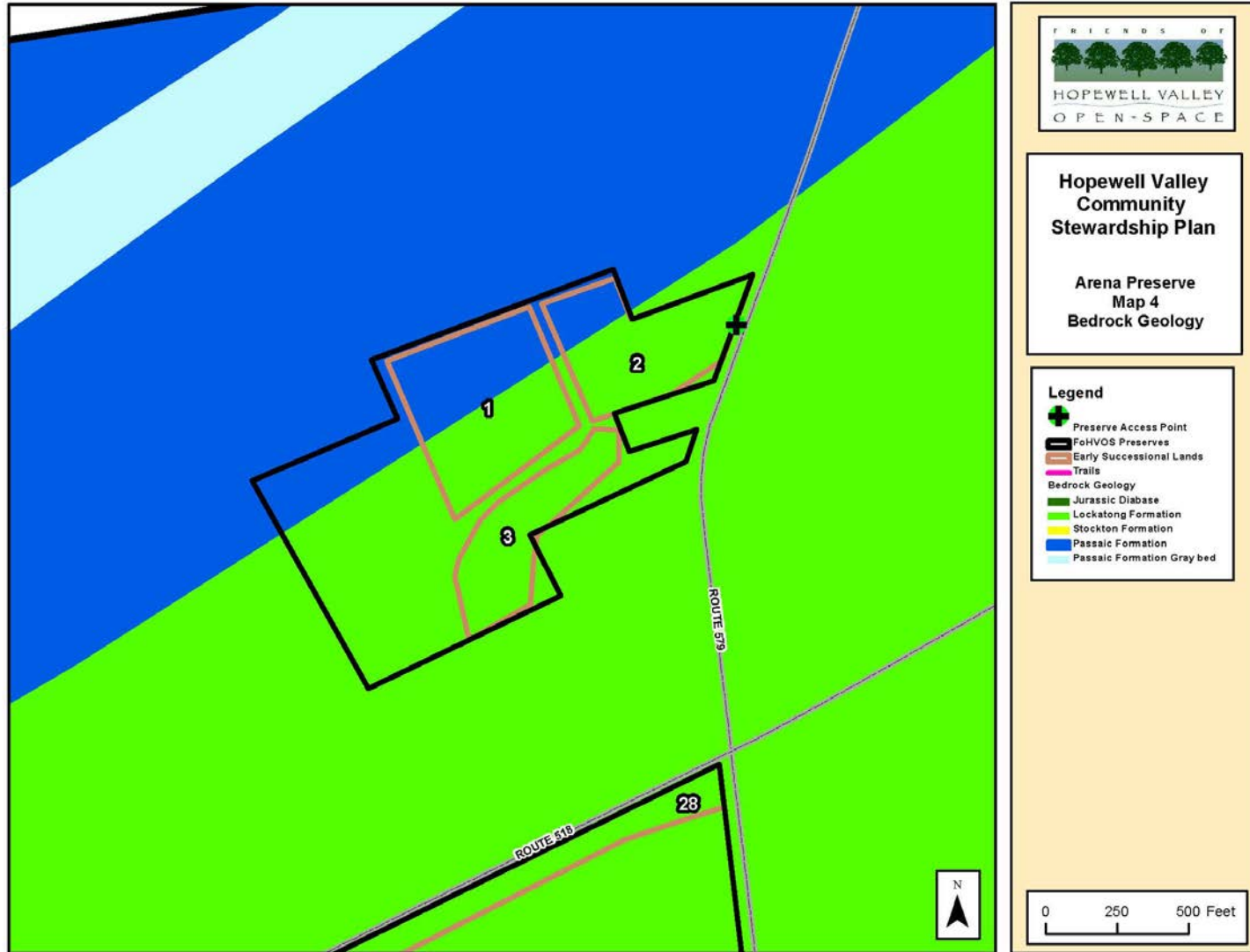
-  Preserve Access Point
-  FoHVOS Preserves
-  Early Successional Lands
-  Trails



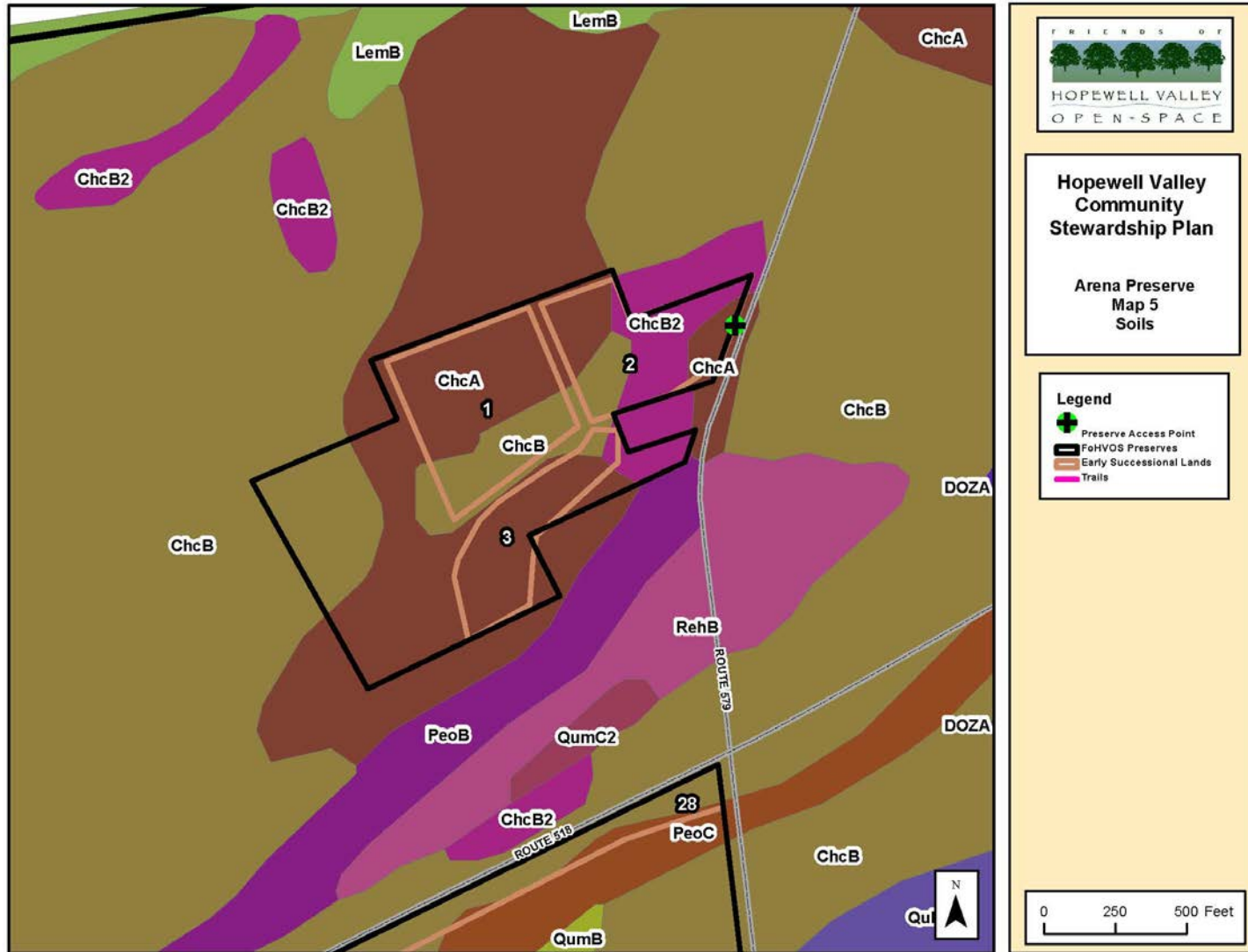
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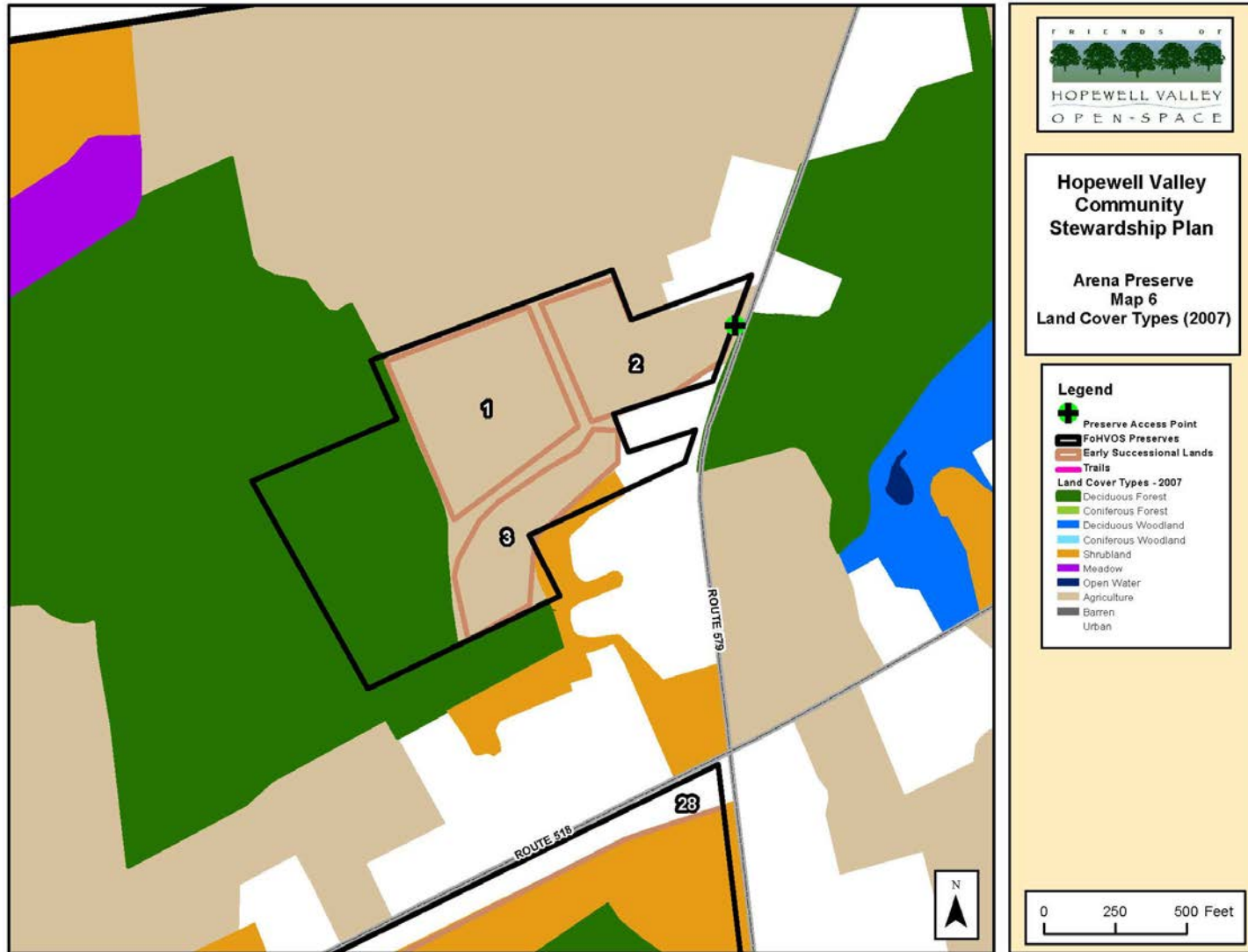
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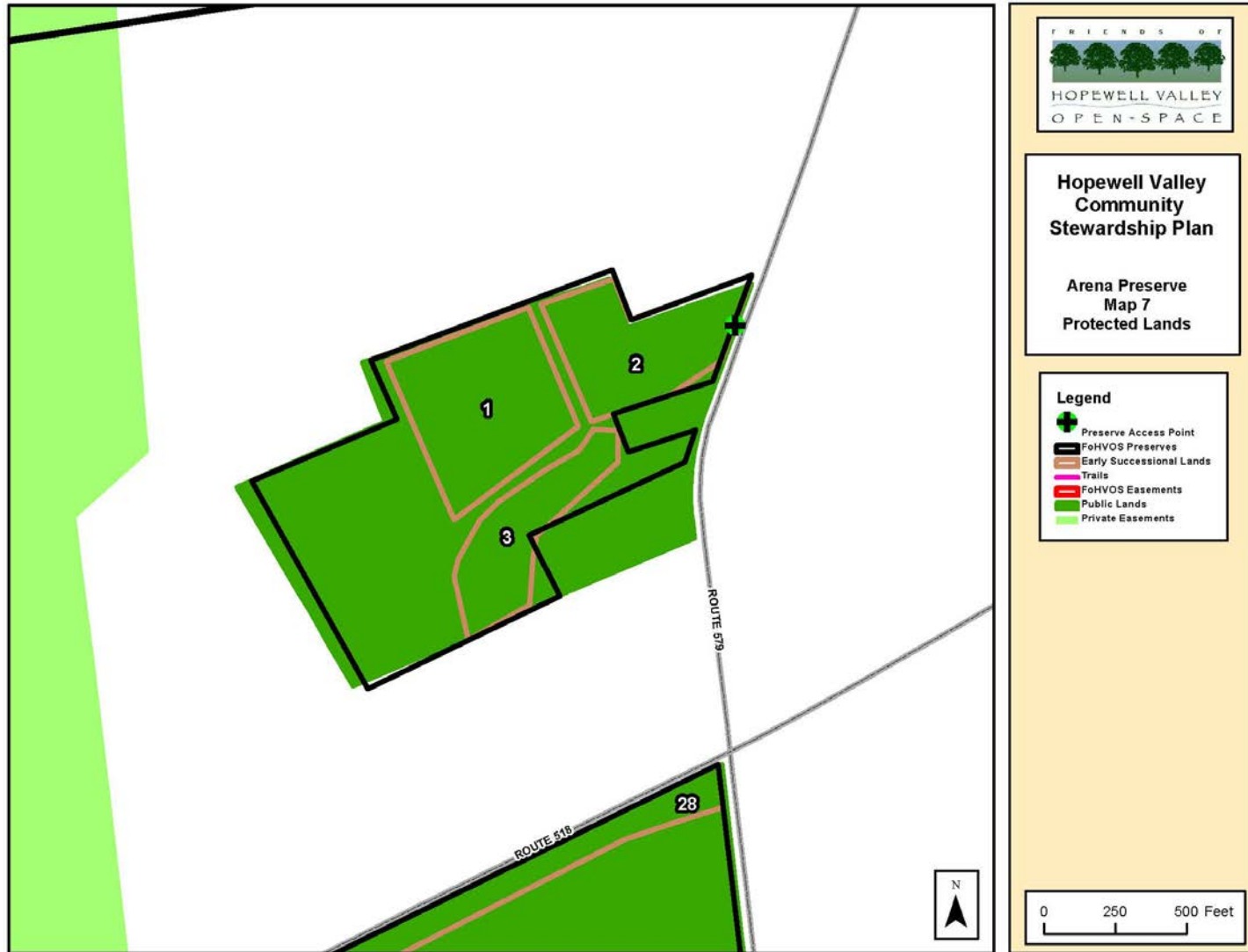


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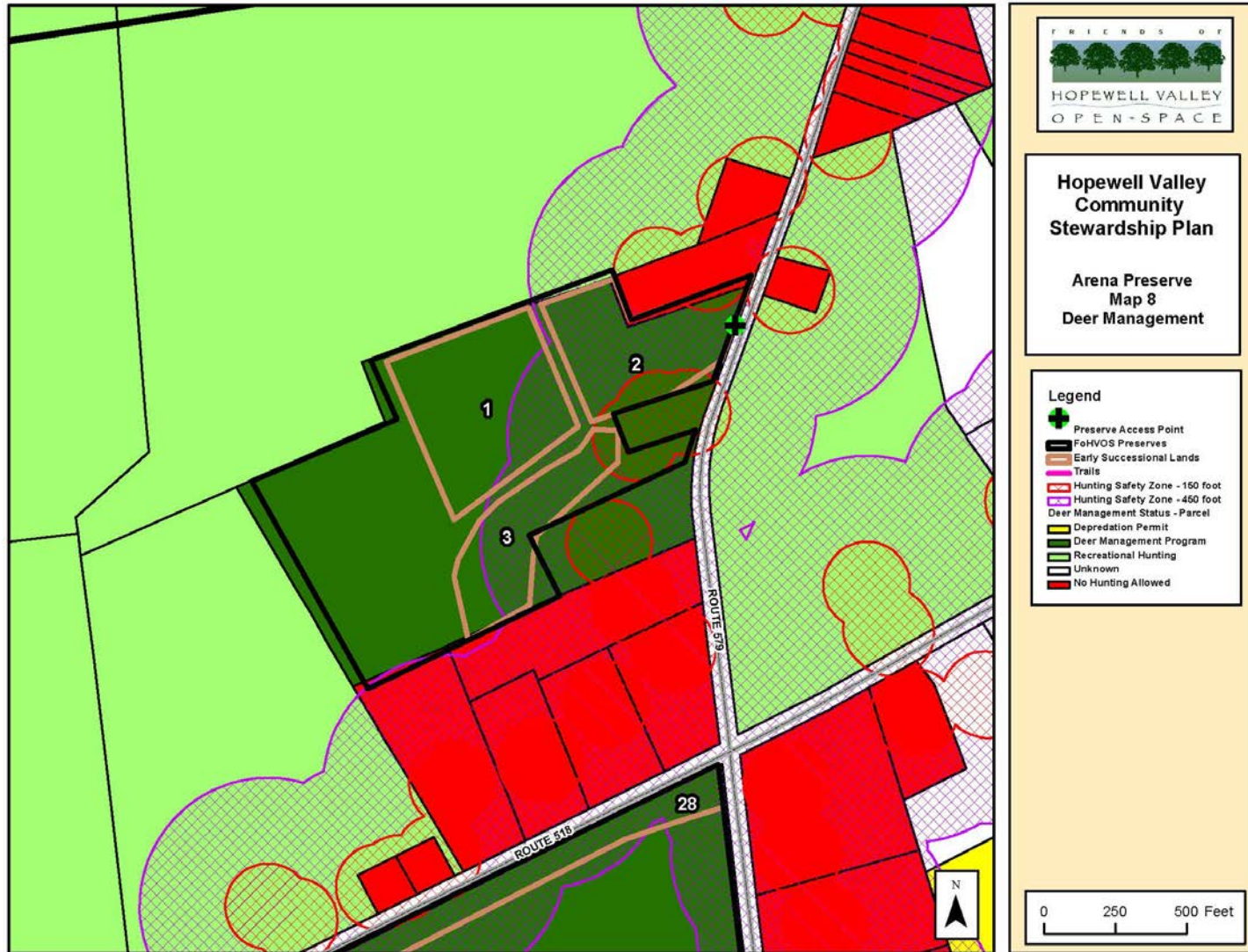




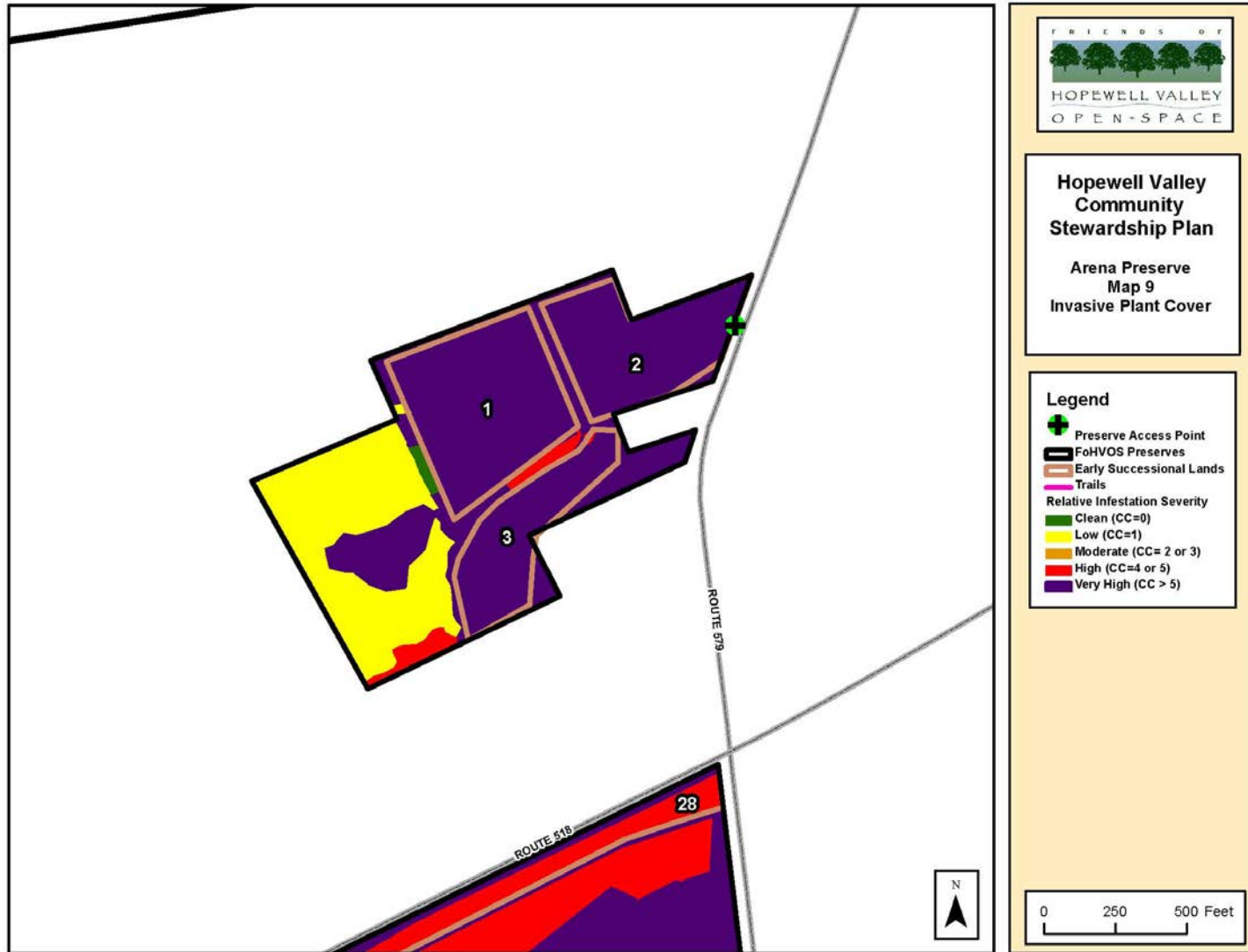
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**Appendix 3.  
Arno and Pogorzelski Preserves**

**Acreage:** 14.33 (Arno 5.71 acres, Pogorzelski 8.62 acres)

**Block and Lot:** Multiple. B14, L9.022 (Arno); B14, L6 & L7 (Pogorzelski)

**Ownership:** FoHVOS (100%)

**Year(s) Purchased:** 2001 (Arno); 2004 (Pogorzelski)

**Location & Access:** Preserve access is a narrow pedestrian easement. There is no safe location to park. Road is narrow. Nearest street address: 306 Hopewell-Amwell Road, Hopewell, NJ, 08525.

**Structures:** None

Additional property information is summarized in Appendix W. The following Preserve maps are provided at the end of this document:

- Map 1 2007 Aerial Photography
- Map 2 1930 Aerial Photography
- Map 3 Topography
- Map 4 Bedrock Geology
- Map 5 Soils
- Map 6 Land Cover Types (2007)
- Map 7 Protected Lands
- Map 8 Deer Management
- Map 9 Invasive Plant Cover (Relative Infestation Severity)

**Website Description:** Arno and Pogorzelski Preserves feature a forest canopy of primarily mature oak, ash, and American beech trees. The habitat represents an upland forest community of the Sourland Mountain region.

**BROAD PROPERTY DESCRIPTION**

The Arno and Pogorzelski Preserves (see Map 1) are located to the north of Hopewell Borough in the foothills of the Sourland Mountain region. The topography (see Map 3) slopes southward, from 120 to 80 feet above sea level.

Based upon analysis of NJDEP's 2007 Land Use/Land Cover dataset, the preserve contains one broad plant community upland deciduous forest (> 50% canopy). Land Use/Land Cover is summarized in Appendix X and illustrated in Map 6.

The preserve canopy layer is primarily American beech and oak species. The understory layers are denuded by deer browse leaving only invasive species such as jetbead, Japanese honeysuckle and Japanese stiltgrass scattered throughout the preserve.

The preserve has one type of bedrock geology--the Stockton formation. See Map 4.

The preserve has two soil types (see Map 5) with Lansdale loam, 0 to 12 percent slopes, very stony, being the most common type. Lansdale sandy loam, 2 to 6 percent slopes occurs along the access corridor. The preserve's soils are described in Appendix Y.

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**CONSERVATION VALUES**

**Forest and Woodland Communities:** The Preserve is connected to the Sourland Mountain's 18,000 forested acres. The forest patch size found on the Preserve and surrounding area create important nesting habitat for migratory species. No forest interior dwelling birds have been observed (access limits site visits). The lack of a woodland shrub layer reduces the chance of nesting and successful breeding.

Based on Natural Heritage data, ENSP data, Landscape Project, 1930s forest presence/absence et al. the Preserve has the highest weighted Ecological Value at >75%. See Appendix A for a description of ranking factors.

**Old forest:** Based upon analysis of 1930 aerial photography, the preserve is part of a 12 acre block that has been forested since at least the 1930s. This is reflected in the presence of a mature canopy and lack of dense invasive species cover. The canopy suggests a once rich community of native plants, however, no significant herb or shrub layer remain at the preserve. See Map 2.

**Early Successional Communities:**

**Shrublands:** None.

**Meadows/Grasslands:** None.

**Waterbodies:** None.

**Rare Species:**

**Rare Plants:** None documented on the Preserve. Natural Heritage grid data shows no species.

**Rare Animals:** The Landscape Project has identified the Preserve as Habitat for State Endangered species. See Appendix L for a list of species.

**THREATS**

**Deer:** White-tailed deer have suppressed much of the native community, leaving only canopy trees.

**Invasive species:** In 2008 staff began walk-through surveys for emerging invasive species on all preserves. Mapping documented each species and its population size. Black jetbead was found on the preserve. A population >100 of jetbead was found in the northwest corner of the preserve and on the adjacent private parcel owned by Phillip Collins. All stems were eradicated on the preserve. See [www.njisst.org](http://www.njisst.org) for the current status of emerging invasive species at the Preserve.

In 2011 staff completed surveys for invasive plant species on all preserves (see Map 9). Mapping documented each species found and its population size (See Table 1 below). The five species with the highest infestation scores include: Japanese Honeysuckle, Multiflora Rose, Japanese Stiltgrass, Japanese Barberry, and Wineberry.

Widespread invasive species will pose a threat only in canopy gaps where the native species are unable to avoid significant deer browse.

**Other:** N/A

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**STRATEGIES and ACTIONS**

**Forest and Woodland Habitat Stewardship:** Because of the Preserve's high Ecological Value, the stewardship efforts at the Preserve are high priority. The overarching goals at the Preserve are to protect the forest habitat. The forest offers an opportunity to restore the rich native plant communities that were once present. A deer enclosure should be considered for a portion of the Preserve.

In addition, biannual surveys for and eradication of emerging invasive species should continue. The jetbead population should be monitored, any re-sprouts or seedlings should be treated regularly. Contacting neighbors will be essential to effective control. Several letters have been sent to Phillip Collins regarding the jetbead infestation, but we have received no reply. We will seek contact with Mr. Collins through other surrounding neighbors.

No action is recommended for widespread invasive species. Reduced deer density will allow the native plant communities to recover and compete with the widespread invasive species.

**Early Successional Habitat Stewardship:** N/A

**Deer Management:** The preserve is enrolled in the DMP. Bow and gun hunting is allowed at the Preserve (within appropriate safety zones). The current hunters also hunt on an adjacent private property, which provides easy access to the Preserve.

The 450' safety zone allows hunting in only the northwestern portion of the preserve. However, the 150' safety zone for bow hunting allows for hunting in nearly all portions of the preserve. See Map 8 for delineations of the 150' and 450' safety zones and hunting status.

**Rare Species Management:** N/A

**Neighboring Lands:** Large blocks of land under conservation easement are located near the Preserve, including FoHVOS easements (Preston, Davis, Wilson, Byers). See Map 7.

**Waterbodies Management:** N/A

**Undesirable Activities Management:** N/A

**Scientific Research Assessment:** The Preserve is available for scientific research. Access is limited because parking is difficult.

**Recreational Opportunities Assessment:** Access difficulties preclude recreational access. Currently, there are no opportunities to connect to a regional trail system—none yet exist.

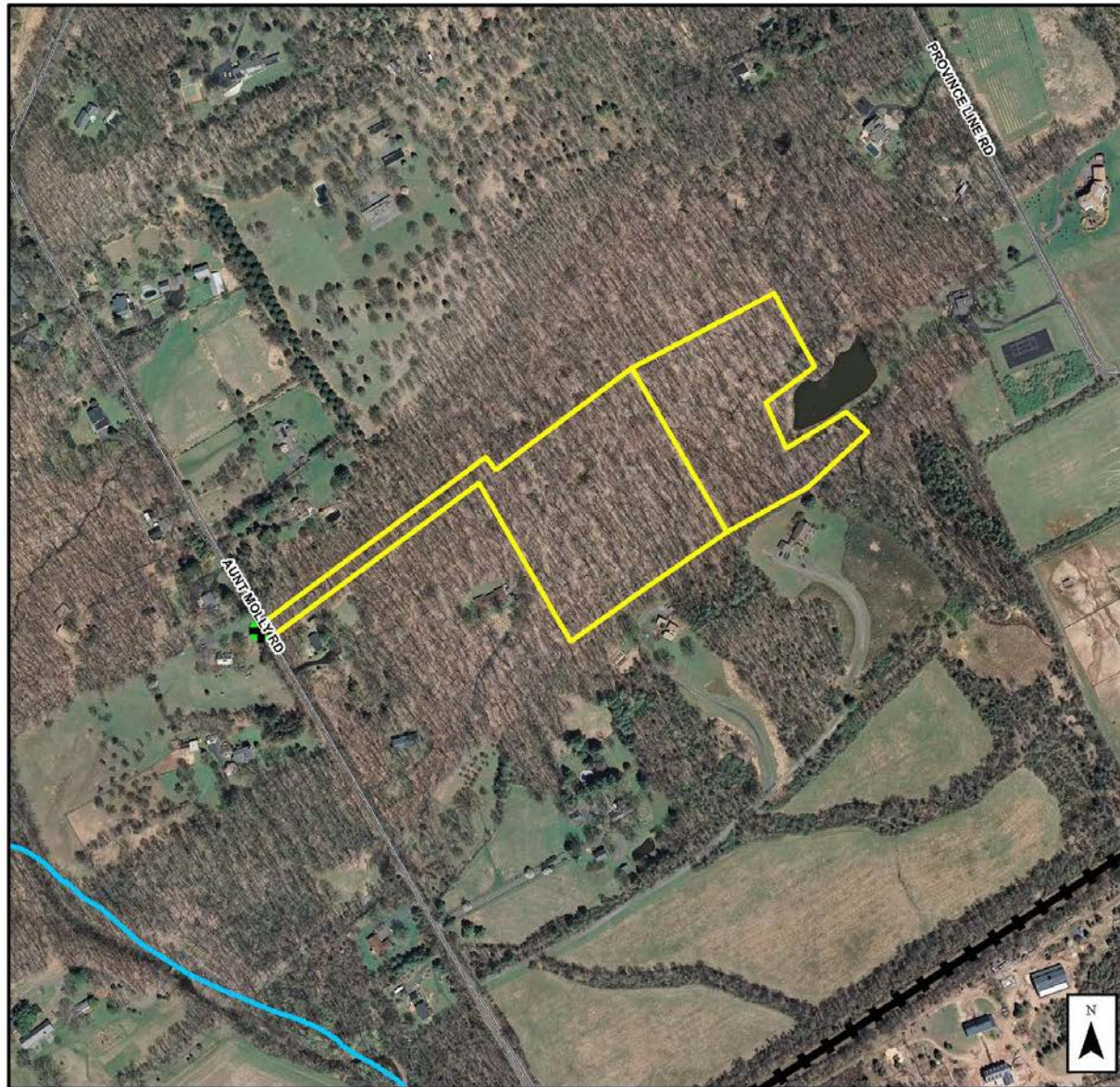
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**Table 1. Invasive Plants – Species Abundance and Treatment Recommendations**

Scientific Name	Common Name	Infestation Index Score <sup>1</sup>	Total Acres Present	Percent of Preserve Area Present	Treatment Recommendation	LOE Estimate (Hours)	Acreage by Percent Ground Cover Categories						
							Category 0: 0%	Category: Trace	Category 1: 1-10%	Category 2: 10-25%	Category 3: 25-50%	Category 4: 50-75%	Category 5: 75-100%
<i>Acer palmatum</i>	Japanese Maple	0.0	0.0	0.0	N/A		14.31	0.0	0.0	0.0	0.0	0.0	0.0
<i>Acer platanoides</i>	Norway Maple	0.0	0.0	0.0	N/A		14.31	0.0	0.0	0.00	0.0	0.00	0.0
<i>Ailanthus altissima</i>	Tree-of-Heaven	0.0	0.0	0.0	N/A		14.31	0.0	0.0	0.0	0.0	0.0	0.0
<i>Alliaria petiolata</i>	Garlic Mustard	2.6	1.1	7.3	None		13.26	0.0	0.03	0.5	0.6	0.0	0.0
<i>Artemisia vulgaris</i>	Common Mugwort	0.0	0.0	0.0	N/A		14.31	0.0	0.0	0.0	0.0	0.0	0.0
<i>Arthraxon hispidus</i>	Small Carpgrass	0.0	0.0	0.0	N/A		14.31	0.0	0.0	0.0	0.0	0.0	0.0
<i>Berberis thunbergii</i>	Japanese Barberry	10.7	12.5	87.1	None		1.85	2.0	10.3	0.2	0.0	0.0	0.0
<i>Cardamine impatiens</i>	Narrow-leaved Bittercress	0.0	0.0	0.0	N/A		14.31	0.0	0.0	0.0	0.0	0.0	0.0
<i>Catalpa bignonioides</i>	Northern Catalpa	0.0	0.0	0.0	N/A		14.31	0.0	0.0	0.0	0.0	0.0	0.0
<i>Celastrus orbiculatus</i>	Asiatic Bittersweet	0.0	0.0	0.0	N/A		14.31	0.0	0.0	0.0	0.00	0.0	0.0
<i>Centurea sp.</i>	Knapsweed sp.	0.0	0.0	0.0	N/A		14.31	0.0	0.0	0.0	0.0	0.0	0.0
<i>Cirsium arvense</i>	Canada Thistle	0.0	0.0	0.0	N/A		14.31	0.0	0.0	0.0	0.0	0.0	0.0
<i>Dipsacus sylvestris</i>	Teasel	0.0	0.0	0.0	N/A		14.31	0.0	0.00	0.0	0.0	0.0	0.0
<i>Eleaagnus umbellata</i>	Autumn Olive	0.0	1.3	9.4	None		12.97	1.3	0.0	0.0	0.0	0.0	0.0
<i>Euonymus alata</i>	Winged Burning Bush	0.0	0.0	0.0	N/A		14.31	0.0	0.0	0.0	0.0	0.0	0.00
<i>Iris pseudoacris</i>	Yellow Iris	0.0	0.0	0.0	N/A		14.31	0.0	0.0	0.0	0.0	0.0	0.0
<i>Lespedeza cuneata</i>	Chinese Bushclover	0.0	0.0	0.0	N/A		14.31	0.0	0.0	0.0	0.0	0.0	0.0
<i>Ligustrum obtusifolium</i>	Border Privet	0.0	0.0	0.0	N/A		14.31	0.0	0.00	0.0	0.0	0.0	0.0
<i>Lonicera japonica</i>	Japanese Honeysuckle	18.3	14.0	97.8	None		0.31	0.0	10.0	3.6	0.4	0.0	0.0
<i>Lonicera maackii</i>	Amur Honeysuckle	0.0	0.0	0.0	N/A		14.31	0.0	0.0	0.0	0.0	0.0	0.0
<i>Lonicera morrowii</i>	Morrow's Honeysuckle	0.0	0.0	0.0	N/A		14.31	0.0	0.0	0.0	0.00	0.0	0.0
<i>Lysimachia nummularia</i>	Moneywort	0.0	0.0	0.0	N/A		14.31	0.0	0.0	0.0	0.0	0.0	0.0
<i>Lythrum salicaria</i>	Purple Loosestrife	0.0	0.0	0.0	N/A		14.31	0.0	0.0	0.0	0.0	0.0	0.0
<i>Malus toringo</i>	Toringo Crabapple	0.0	0.0	0.0	N/A		14.31	0.0	0.0	0.0	0.0	0.0	0.0
<i>Microstegium vimineum</i>	Japanese Stiltgrass	12.8	11.7	81.6	None		2.63	0.0	11.4	0.03	0.0	0.0	0.3
N/A	Non-native, cool season grass	0.0	0.0	0.0	N/A		14.31	0.0	0.0	0.0	0.0	0.0	0.0
<i>Phalaris arundinacea</i>	Reed Canary Grass	0.0	0.0	0.0	N/A		14.31	0.0	0.0	0.0	0.0	0.0	0.0
<i>Phragmites australis</i>	Common Reed	0.0	0.0	0.0	N/A		14.31	0.0	0.0	0.0	0.0	0.0	0.0
<i>Polygonum cuspidatum</i>	Japanese Knotweed	0.0	0.0	0.0	N/A		14.31	0.0	0.0	0.0	0.0	0.0	0.0
<i>Polygonum perforiatum</i>	Mile-a-Minute	0.0	0.0	0.2	None - Check for biocontrol agent		14.28	0.03	0.0	0.0	0.0	0.0	0.0
<i>Pyrus calleryana</i>	Callery Pear	0.0	0.0	0.0	N/A		14.31	0.0	0.0	0.0	0.0	0.0	0.0
<i>Ranunculus ficaria</i>	Lesser Celandine	0.0	0.0	0.0	N/A		14.31	0.0	0.0	0.0	0.0	0.0	0.0
<i>Robinia pseudoacacia</i>	Black Locust	0.0	0.0	0.0	N/A		14.31	0.0	0.0	0.0	0.0	0.0	0.0
<i>Rosa multiflora</i>	Multiflora Rose	14.1	12.6	87.8	None		1.75	0.0	11.6	0.5	0.3	0.0	0.1
<i>Rubus phoeniculus</i>	Wineberry	7.1	3.6	25.2	None		10.70	0.0	0.2	3.4	0.0	0.0	0.03
<i>Securigera varia</i>	Crown vetch	0.0	0.0	0.0	N/A		14.31	0.0	0.0	0.0	0.0	0.0	0.0
<i>Viburnum dilatatum</i>	Linden Viburnum	0.0	0.0	0.0	N/A		14.31	0.0	0.0	0.0	0.0	0.0	0.0
<i>Viburnum sieboldii</i>	Siebold's Viburnum	0.0	0.0	0.0	N/A		14.31	0.0	0.0	0.0	0.0	0.0	0.0
<i>Wisteria floribunda</i>	Japanese Wisteria	0.0	0.0	0.0	N/A		14.31	0.0	0.0	0.0	0.0	0.0	0.0
<b>Total LOE</b>						<b>0</b>							

<sup>1</sup> The Infestation Index Score combines the extent of acreage infested and the intensity of the infestation. It was derived by multiplying the cover class number by the number of acres within each cover class.

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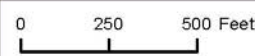


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**Arno-Pogorzelski  
Preserve  
Map 1  
2007 Aerial Photography**

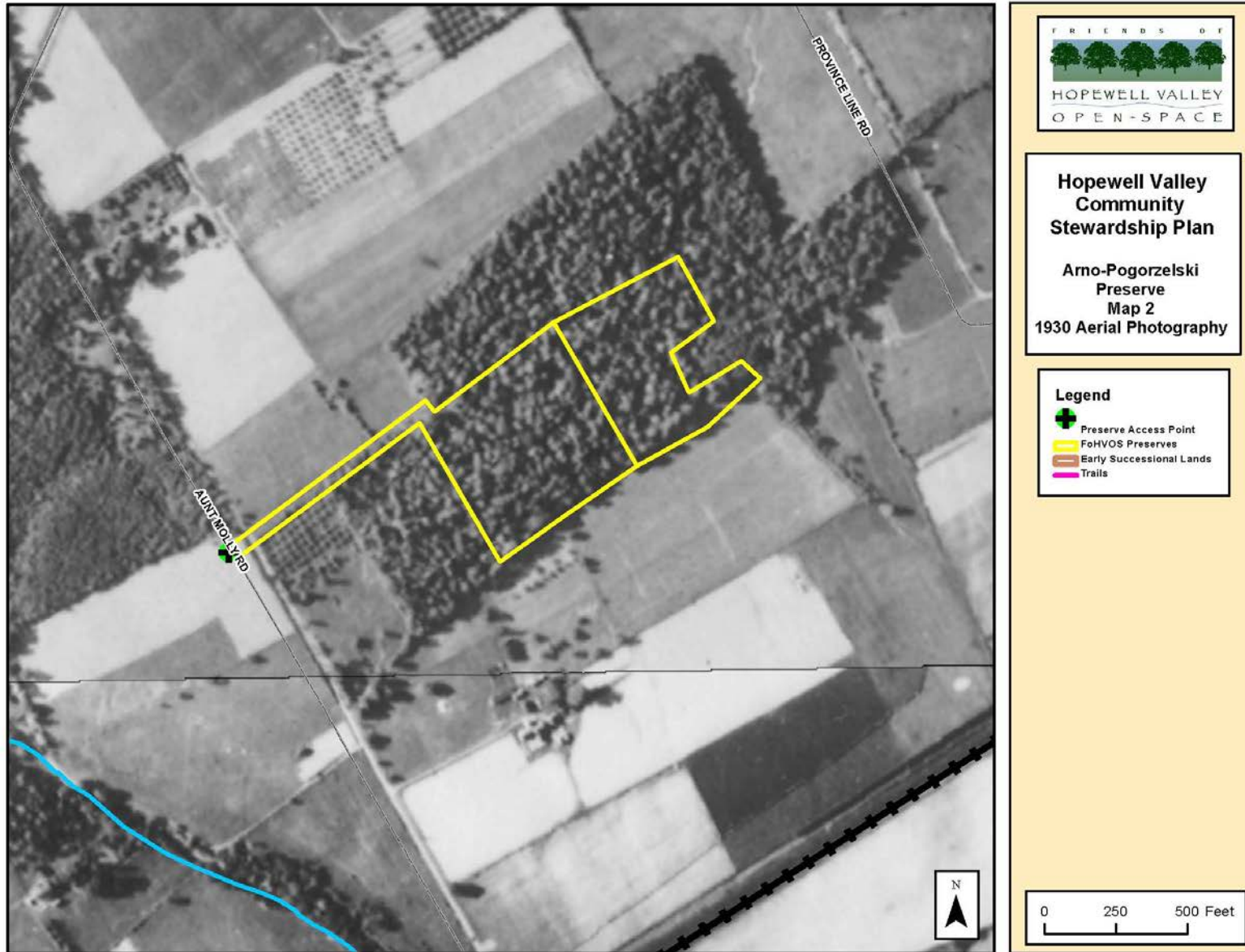
**Legend**

- Preserve Access Point
- FohVOS Preserves
- Early Successional Lands
- Trails

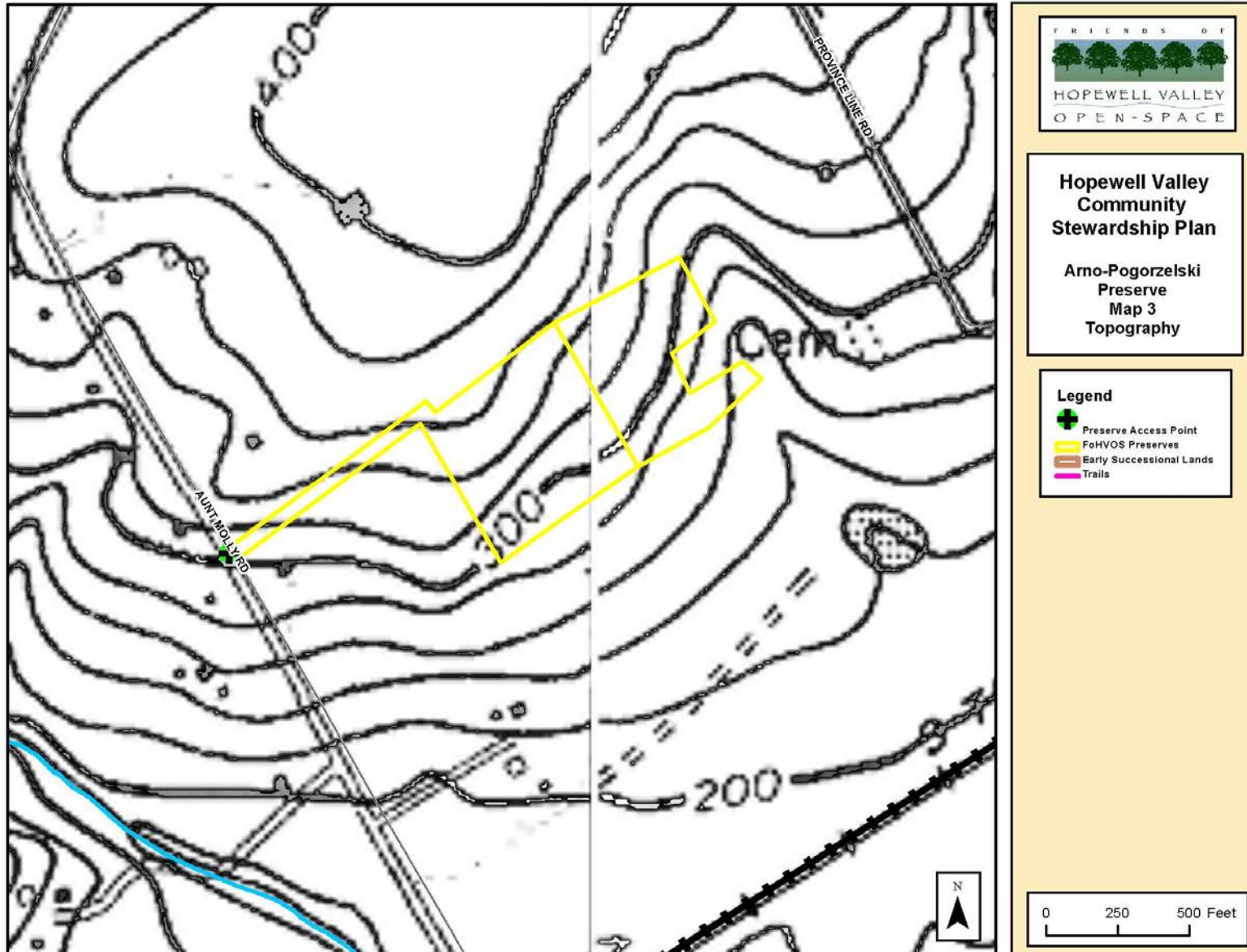




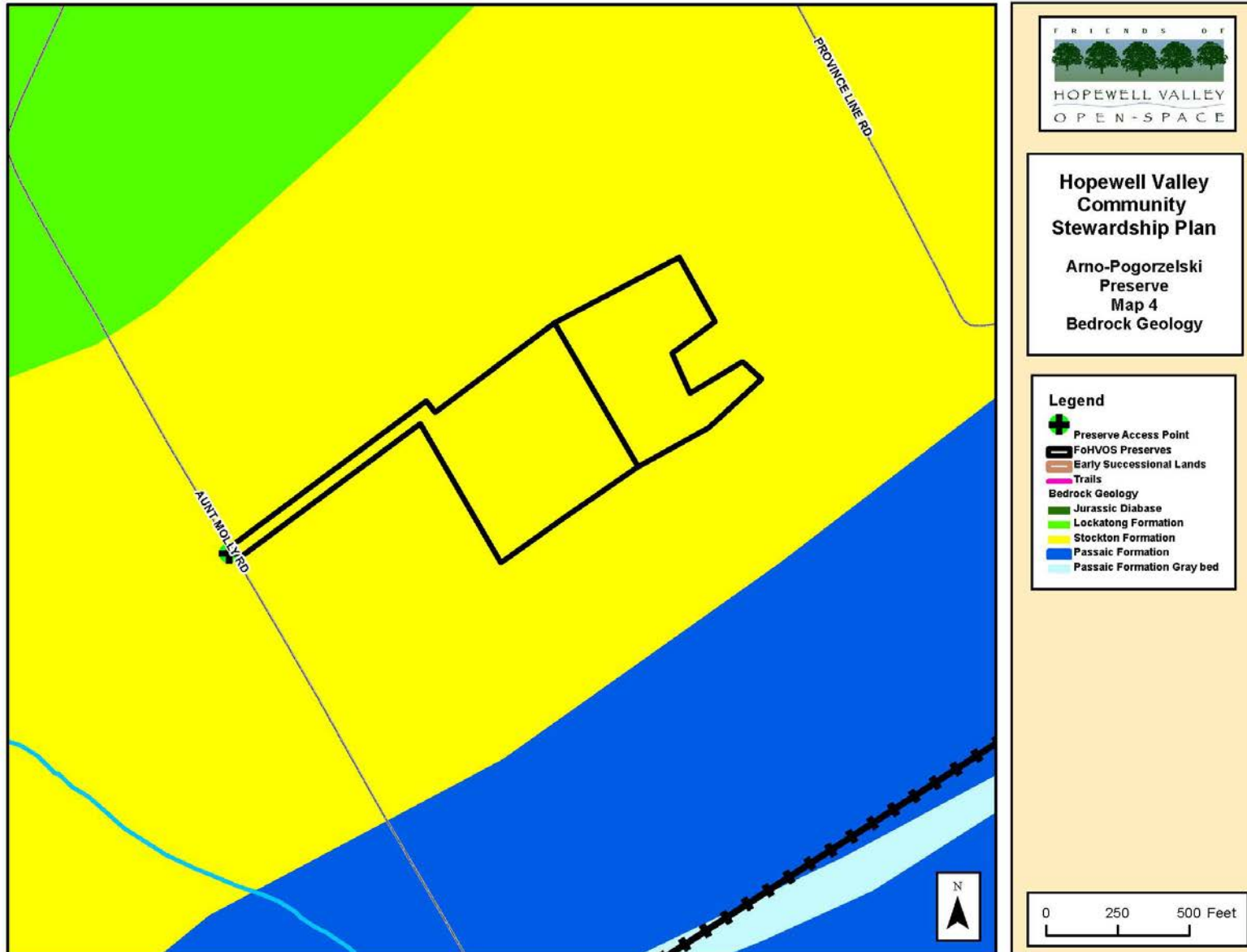
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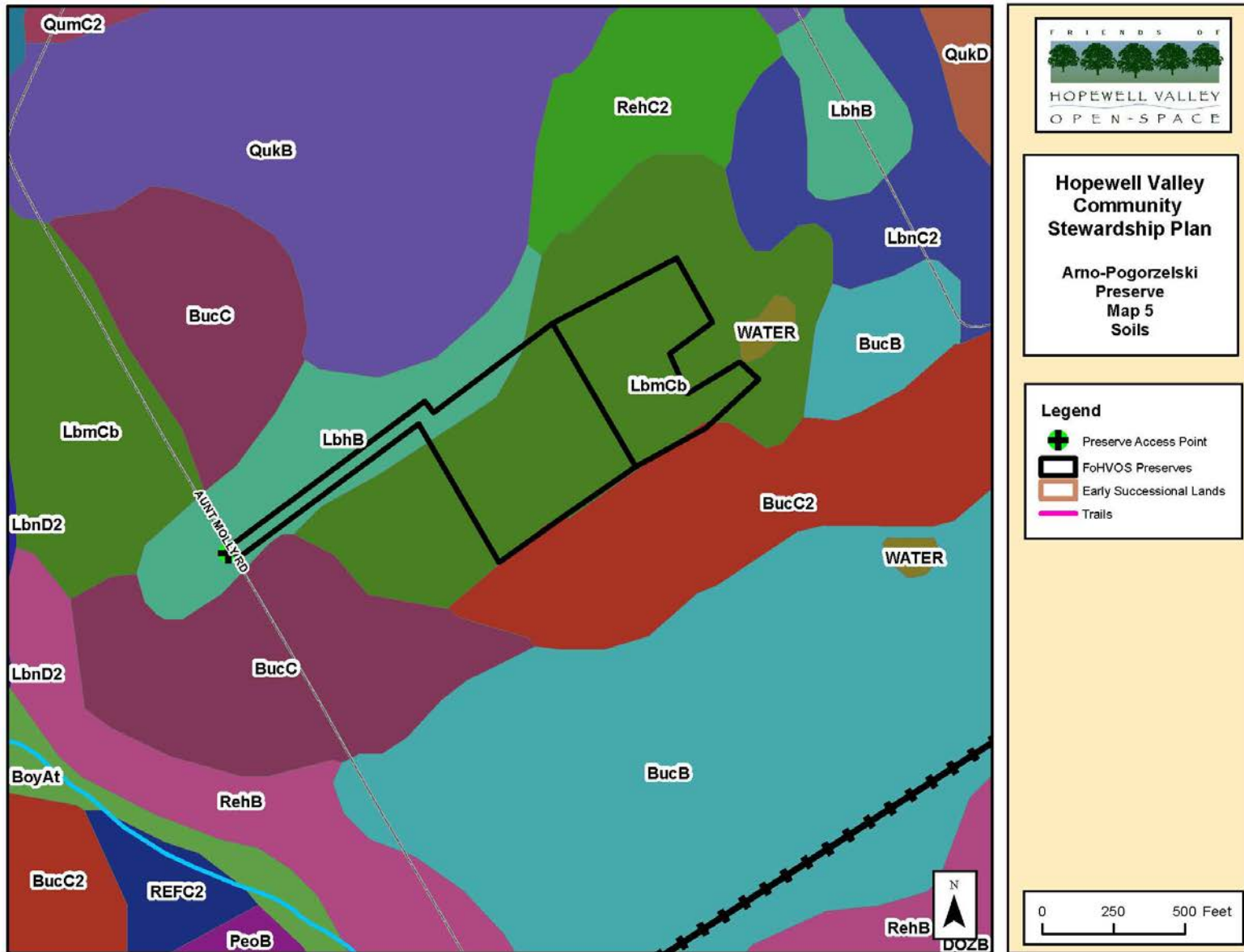


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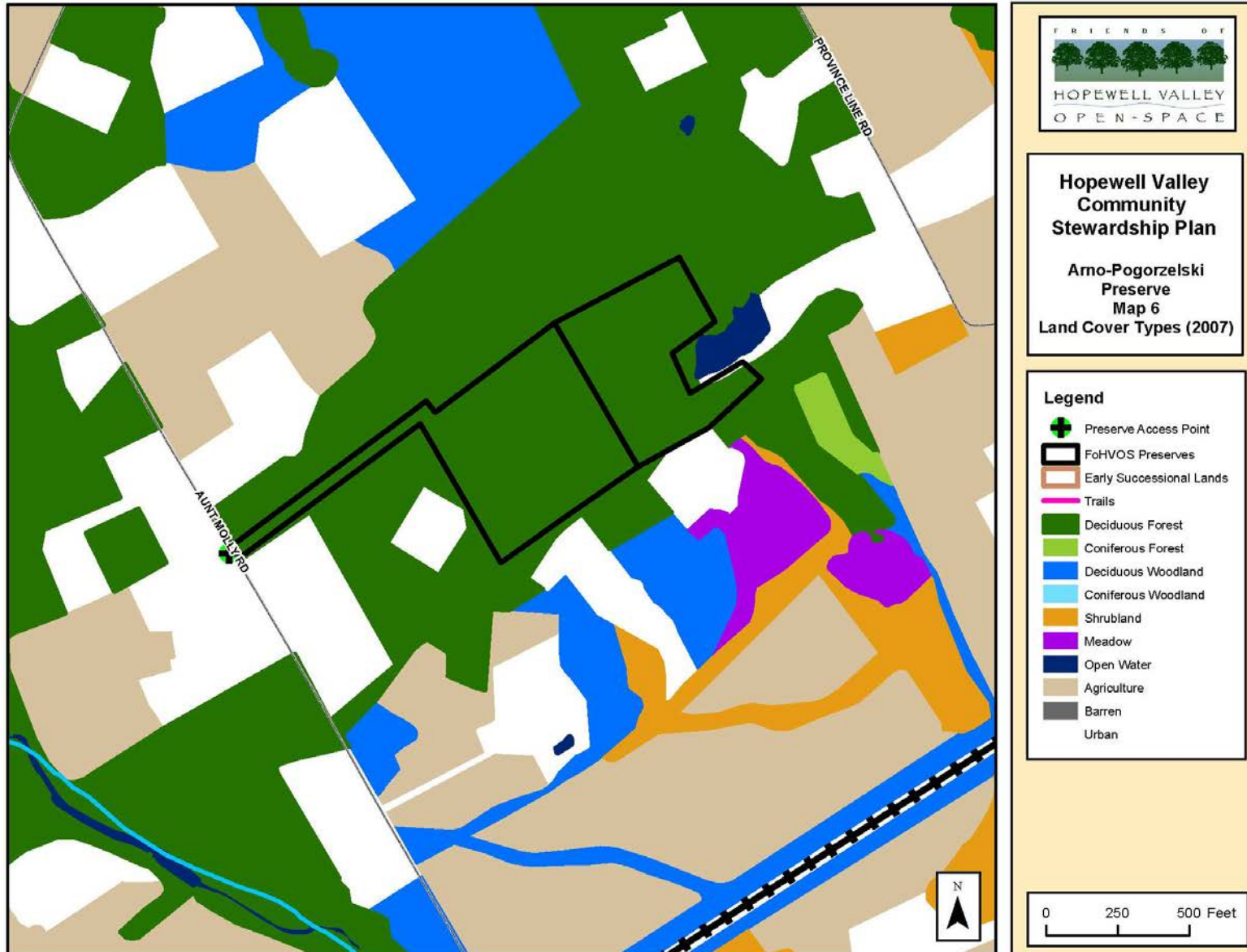




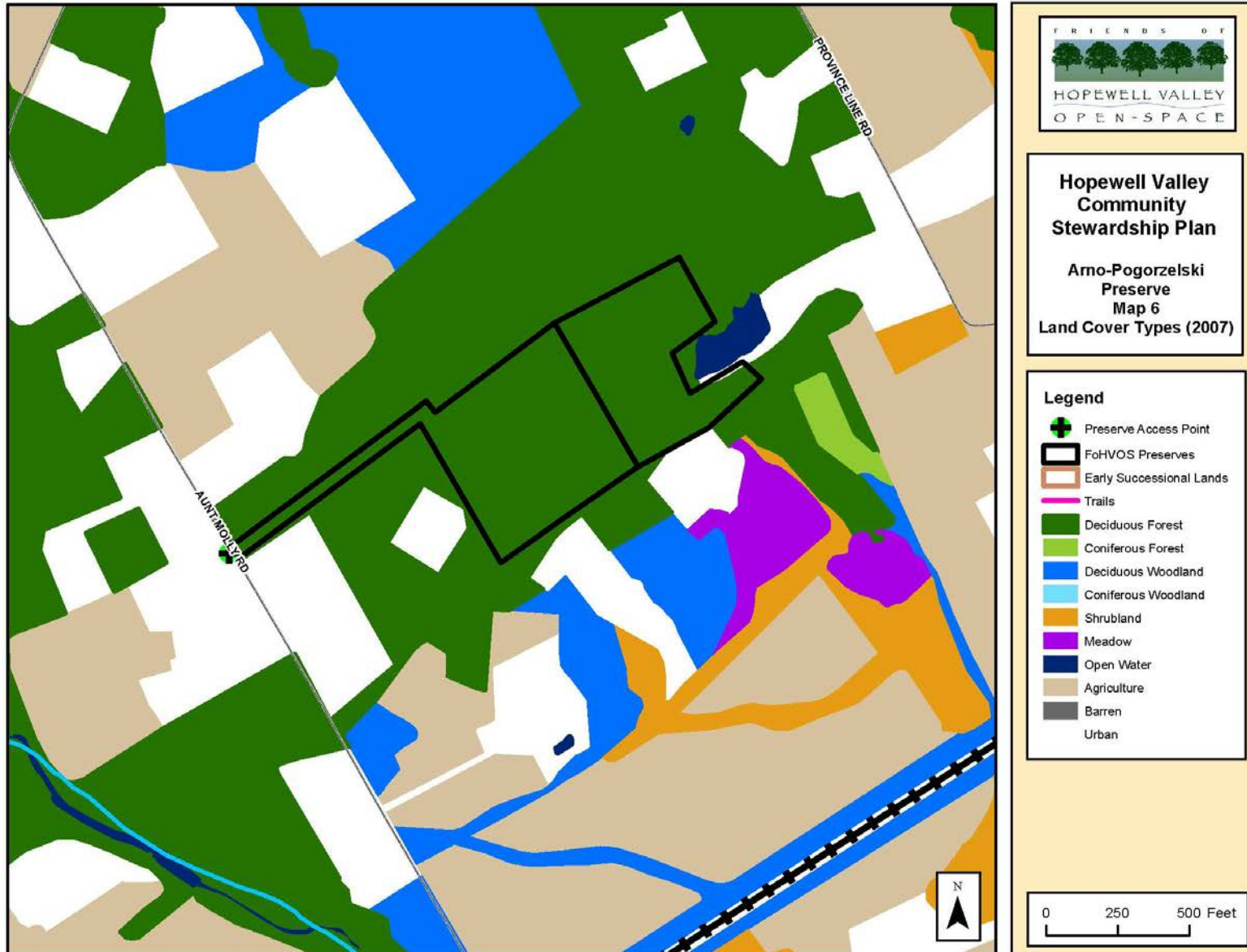
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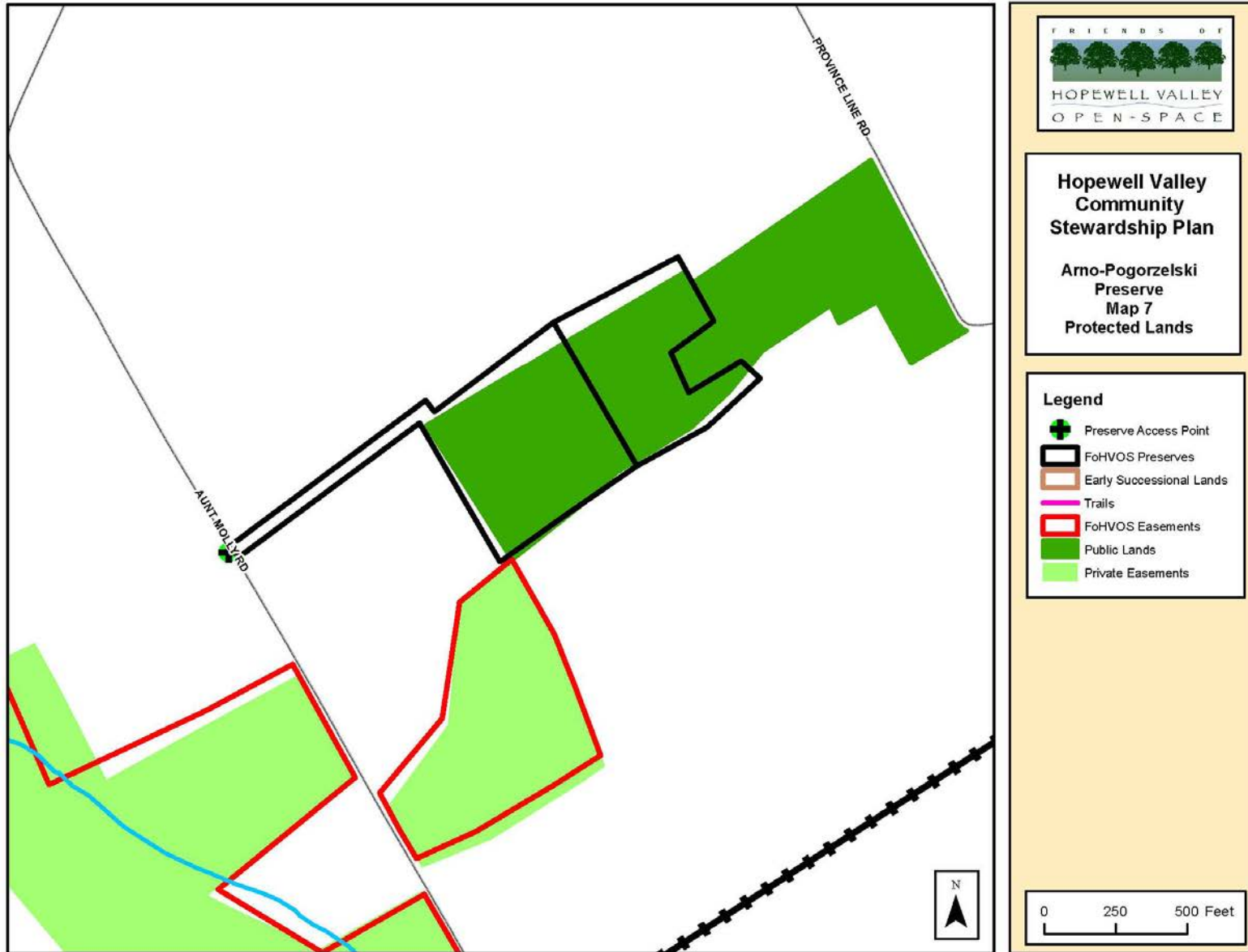
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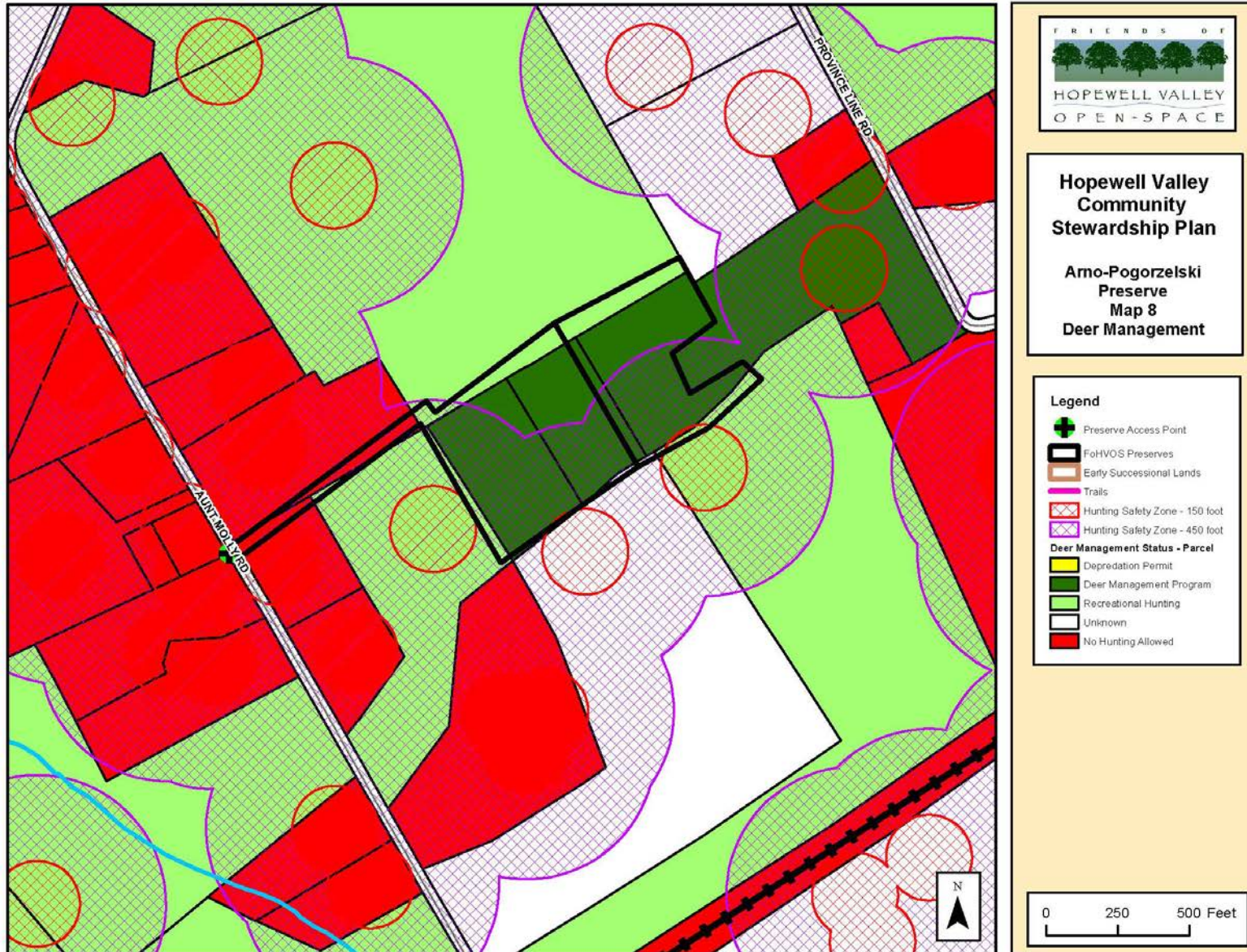


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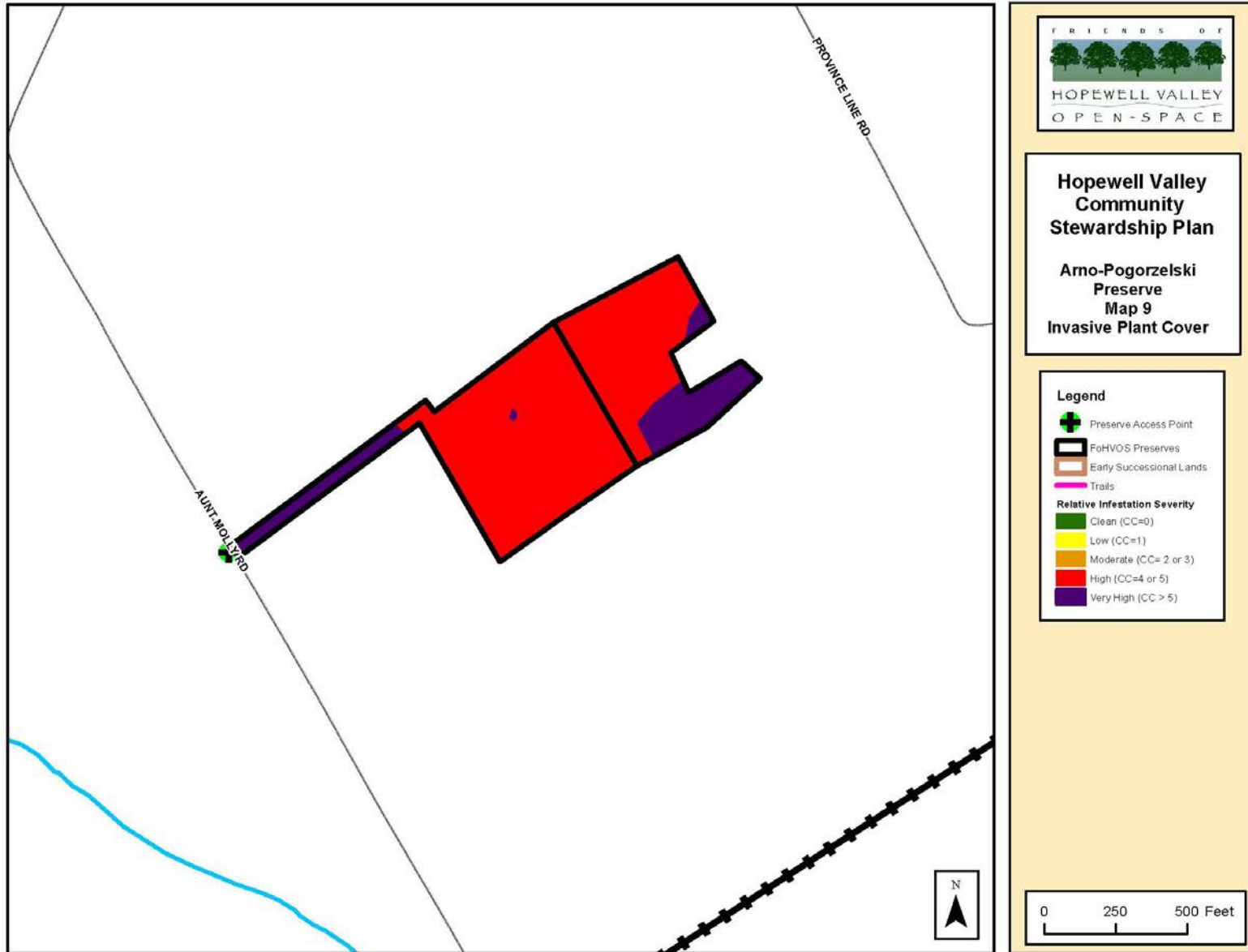


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**Appendix 4.  
Eames Preserve**

**Acreage:** 75.9

**Block and Lot:** B30, L4

**Ownership:** FoHVOS (27.4%) and NJDEP (72.6%)

**Year(s) Purchased:** 2004

**Location & Access:** The preserve is located on the north side of Harbourton Woodsville Road, approximately 2 miles east of Route 579. Nearest street address: 43 Harbourton-Woodsville Road, Pennington (actual preserve address). A formal gravel parking lot is installed at the preserve entrance. Vehicular access via the former driveway to the preserve's interior is possible, though the driveway becomes deeply rutted past the former house site. The driveway beyond the parking lot is secured with a lock and cable.

**Structures:** None

Additional property information is summarized in Appendix W. The following Preserve maps are provided at the end of this document:

- Map 1 2007 Aerial Photography
- Map 2 1930 Aerial Photography
- Map 3 Topography
- Map 4 Bedrock Geology
- Map 5 Soils
- Map 6 Land Cover Types (2007)
- Map 7 Protected Lands
- Map 8 Deer Management
- Map 9 Invasive Plant Cover (Relative Infestation Severity for all species)

**Website Description:**

**Eames Preserve** protects a mosaic of habitats—mature upland forest, young forest, meadow, and a portion of Woodsville Brook and its floodplain. A 1.6 mile loop trail traverses through each habitat. It is co-owned with the New Jersey Department of Environmental Protection.

**BROAD PROPERTY DESCRIPTION**

The Eames Preserve (see Map 1) is located in north central Hopewell Township. The topography (see Map 3) slopes down northward, from 130 to 80 feet above sea level. The preserve is surrounded by residential parcels and farmland.

Based upon analysis of NJDEP's 2007 Land Use/Land Cover dataset, the preserve contains five broad plant communities: Coniferous Forest (> 50% canopy) - Upland, Deciduous Forest (> 50% canopy) - Upland, Deciduous Woodland (10-50% canopy) - Upland, Shrubland (< 10% canopy, > 25% shrub cover) - Upland, Deciduous Forest (> 50% canopy) - Wetland. Land Use/Land Cover is summarized in Appendix X and illustrated in Map 6.

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The preserve is accessed through a young forest woodland comprised of flowering dogwood, ash, red maple, black cherry, sassafras, spicebush, autumn olive, multiflora rose, garlic mustard, and scattered horticultural plantings. The drought of the summer of 2010 caused spicebush dieback of about 50%.

Approximately 900 feet from the road is a former house site (field 26); the structure was demolished and a buried oil tank was remediated. Beyond this area is a former pasture.

The forest north of field 26 and adjacent to fields 22 and 23 is mid-successional and is comprised of red cedar, ash, blackhaw, multiflora rose, and Japanese stiltgrass.

The remaining forest north to field 26 features mature American beech, black oak, and white oak. Less than ten individuals each and primarily non-flowering size forest herbs are found in this section of forest. Notable species are *Preanthes* sp., wood sorrel, and doll's eyes.

The floodplain forest around Woodsville Brook is comprised of multiflora rose, ash, and singular mature specimens of witch hazel and serviceberry.

Fields 21 - 25 contain a mix of native and agricultural grasses, autumn olive, multiflora rose, sedges and rushes, and wildflowers (goldenrod, Indian grass, mountain mint).

The preserve has two types of bedrock geology--the Lockatong (majority of the preserve) and Stockton formations (southern end only). See Map 4.

The preserve has seven soil types (see Map 5) with Quakertown channery silt loam, 2 to 6 percent slopes; Quakertown silt loam, 2 to 6 percent slopes; and Doylestown and Reaville variant silt loams, 2 to 6 percent slopes being the three most common types. The preserve's soils are described in Appendix Y.

### **CONSERVATION VALUES**

Based on an analysis involving the ranking of ecological values and threats (See Community Stewardship Plan text), the Preserve has a weighted Ecological Value at 25-50%. See Appendix A for a description of ranking factors.

**Forest and Woodland Communities:** The preserve falls into the Pennington Mountain forest patch.

The forest patch found on the Preserve and surrounding area is an important stop-over habitat (spring and fall resting and feeding) for migratory species. Red-shouldered hawk was identified by call on the preserve during spring migration. A Volunteer Site Steward has been documenting the preserve's bird populations using e-Bird. The lack of a woodland shrub layer reduces the chance of nesting and successful breeding.

**Old forest:** Approximately 42 acres of the forest area dates to the 1930s. Fifteen of those acres are within the Preserve's boundaries. This forest has repelled invasion by non-native species and contains unique forest herbs, as listed in the Broad Property Description. See Map 2.

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**Early Successional Communities:**

**Shrublands:** N/A

**Meadows/Grasslands:** Meadows are heavily disturbed by past use. However, the presence of fields adjacent to forest provides a habitat mosaic. Fields containing cool season grasses, native warm season grasses, and some native wildflowers provide habitat and forage for pollinators. Eastern comma (or Question mark butterflies) was observed in previous springs.

**Waterbodies:** Woodsville Brook crosses into the preserve at the north. The Brook regularly floods, and has scoured the forest floor. A small Stony Brook tributary crosses though the eastern part of the preserve. This tributary has intermittent flow.

**Rare Species:**

**Rare Plants:** None documented on the Preserve. Natural Heritage grid data shows no species.

**Rare Animals:** None documented on the Preserve. Red-shouldered hawk was identified by call during spring migration, but breeding pairs were not observed. Forested areas of the Preserve are identified as habitat for State Special Concern species.

See Appendix L for a list of species.

**THREATS**

**Deer:** The understory and herb layers are severely browsed. Regeneration of the shrub and canopy layer are non-existent. Understory and herb layers are absent in the mature forest. Spicebush is not expected to regenerate after severe dieback from the drought of 2010. Forest health monitoring was performed in 2007/2008 (See main plan, Table 9).

**Invasive species:** In 2008 staff began walk-through surveys for emerging invasive species on all preserves. Mapping documented each species and its population size. No ED/RR species were detected. See [www.njisst.org](http://www.njisst.org) for the current status of emerging invasive species at the Preserve.

In 2011 staff completed surveys for invasive plant species on all preserves (see Map 9). Mapping documented each species found and its population size (See Table 1 below). The five species with the highest infestation scores include: Japanese Stiltgrass, Multiflora Rose, Autumn Olive, Japanese Honeysuckle, and Japanese Barberry.

**Other:** The preserve has a significant amount of broken glass in forested areas to the southwest of the former house site. Large debris (washing machine, wood, fencing) is found in field 26. The remains of a wooden structure are found in the gap between fields 22 and 23.

All former boundary issues have been resolved.

**STRATEGIES and ACTIONS**

**Forest and Woodland Habitat Stewardship:** Annual surveys for and eradication of emerging invasive species is the highest priority at this Preserve.

No action is recommended for widespread invasive species. Reduced deer density will allow the native plant communities to recover and compete with the widespread invasive species on a long-term basis.

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Large debris and some glass were removed by Clean Communities crews. Many smaller pieces of glass remain, and do not affect forest health. Trails do not pass through this area, so glass is not a safety concern. However, future Clean Communities crews could improve the area.

**Early Successional Habitat Stewardship:** A biannual winter mowing or burning regime is recommended to maintain early successional habitat and remove invasive woody plants. Fields 21, 24, 25 and 26 will be allowed to succeed. Fields 22 and 23 will be maintained as meadow communities. Several invasive species should be managed to maintain ecological health of meadows (See Table 1 below).

Further cleanup of debris is required for habit maintenance and safe mowing. Future Clean Communities crews and hunters can be engaged in the activity.

For habitat goals and maintenance schedule see Appendix T & U.

**Deer Management:** The preserve is enrolled in the DMP with bow and gun hunting.

The preserve's narrow shape makes hunting challenging. FoHVOS hunters have arranged hunting privileges with adjacent landowner, Judith Wolfe.

See Map 8 for delineations of the 150' and 450' safety zones and hunting status.

**Rare Species Management:** Maintain forest and stream corridor for rare migrants.

**Neighboring Lands:** See Deer Management. See Map 7 for adjacent preserved land.

**Waterbodies Management:** N/A. Length of Woodsville Brook on the Preserve is too short to merit restoration activities.

**Undesirable Activities Management:** N/A

**Scientific Research Assessment:** The Preserve is available for scientific research.

**Recreational Opportunities Assessment:** This property currently has a 1.6 mile loop trail and parking. Currently, there are no opportunities to connect to a regional trail system—none yet exist



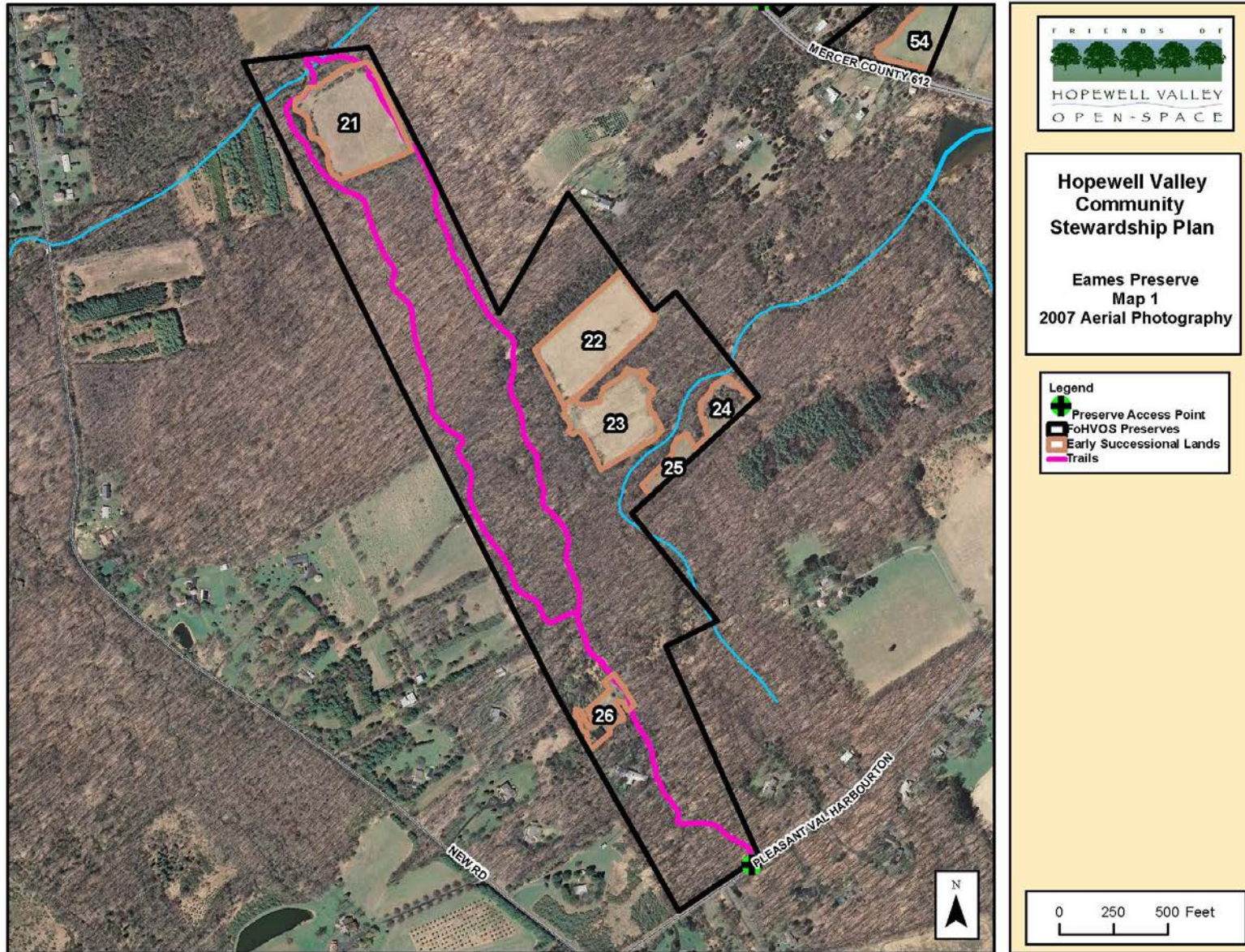
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**Table 1. Invasive Plants – Species Abundance and Treatment Recommendations**

Scientific Name	Common Name	Infestation Index Score <sup>1</sup>	Total Acres Present	Percent of Preserve Area Present	Treatment Recommendation	LOE Estimate (Hours)	Acreage by Percent Ground Cover Categories						
							Category 0: 0%	Category: Trace	Category 1: 1-10%	Category 2: 10-25%	Category 3: 25-50%	Category 4: 50-75%	Category 5: 75-100%
<i>Acer palmatum</i>	Japanese Maple	0.0	0.0	0.0	N/A		75.97	0.0	0.0	0.0	0.0	0.0	0.0
<i>Acer platanoides</i>	Norway Maple	0.0	0.0	0.0	N/A		75.97	0.0	0.0	0.00	0.0	0.00	0.0
<i>Ailanthus altissima</i>	Tree-of-Heaven	0.0	0.0	0.0	N/A		75.97	0.0	0.0	0.0	0.0	0.0	0.0
<i>Alliaria petiolata</i>	Garlic Mustard	38.2	23.4	30.8	None		52.54	1.7	11.9	4.9	3.3	1.7	0.0
<i>Artemisia vulgaris</i>	Common Mugwort	0.0	0.0	0.0	N/A		75.97	0.0	0.0	0.0	0.0	0.0	0.0
<i>Arthraxon hispidus</i>	Small Carpgrass	10.3	7.5	9.8	None		68.49	0.0	4.7	2.8	0.0	0.0	0.0
<i>Berberis thunbergii</i>	Japanese Barberry	89.9	41.4	54.5	None		34.58	0.2	21.3	5.6	0.6	12.8	0.9
<i>Cardamine impatiens</i>	Narrow-leaved Bittercress	0.0	0.0	0.0	N/A		75.97	0.0	0.0	0.0	0.0	0.0	0.0
<i>Catalpa bignonioides</i>	Northern Catalpa	0.0	0.0	0.0	N/A		75.97	0.0	0.0	0.0	0.0	0.0	0.0
<i>Celastrus orbiculatus</i>	Asiatic Bittersweet	0.0	0.0	0.0	N/A		75.97	0.0	0.0	0.0	0.00	0.0	0.0
<i>Centurea sp.</i>	Knapsweed sp.	0.0	0.0	0.0	N/A		75.97	0.0	0.0	0.0	0.0	0.0	0.0
<i>Cirsium arvense</i>	Canada Thistle	1.3	1.3	1.7	Control - Field Maintenance	Strategy 3B	74.70	0.0	1.3	0.0	0.0	0.0	0.0
<i>Dipsacus sylvestris</i>	Teasel	0.0	0.0	0.0	N/A		75.97	0.0	0.00	0.0	0.0	0.0	0.0
<i>Eleaegnus umbellata</i>	Autumn Olive	183.1	81.4	107.1	Control - Field Maintenance	Strategy 3B	-5.41	1.7	30.6	1.6	42.1	3.9	1.5
<i>Euonymus alata</i>	Winged Burning Bush	0.0	0.0	0.0	N/A		75.97	0.0	0.0	0.0	0.0	0.0	0.00
<i>Iris pseudoacris</i>	Yellow Iris	0.0	0.0	0.0	N/A		75.97	0.0	0.0	0.0	0.0	0.0	0.0
<i>Lespedeza cuneata</i>	Chinese Bushclover	0.0	0.0	0.0	N/A		75.97	0.0	0.0	0.0	0.0	0.0	0.0
<i>Ligustrum obtusifolium</i>	Border Privet	5.3	3.7	4.9	None		72.25	0.0	2.10	1.6	0.0	0.0	0.0
<i>Lonicera japonica</i>	Japanese Honeysuckle	121.0	63.2	83.2	None		12.80	0.0	32.8	7.7	17.8	4.9	0.0
<i>Lonicera maackii</i>	Amur Honeysuckle	0.0	0.0	0.0	N/A		75.97	0.0	0.0	0.0	0.0	0.0	0.0
<i>Lonicera morrowii</i>	Morrow's Honeysuckle	0.0	0.0	0.0	N/A		75.97	0.0	0.0	0.0	0.00	0.0	0.0
<i>Lysimachia nummularia</i>	Moneywort	0.0	0.0	0.0	N/A		75.97	0.0	0.0	0.0	0.0	0.0	0.0
<i>Lythrum salicaria</i>	Purple Loosestrife	0.0	0.0	0.0	N/A		75.97	0.0	0.0	0.0	0.0	0.0	0.0
<i>Malus toringo</i>	Toringo Crabapple	0.0	0.0	0.0	N/A		75.97	0.0	0.0	0.0	0.0	0.0	0.0
<i>Microstegium vimineum</i>	Japanese Stiltgrass	223.2	73.4	96.6	None		2.57	0.0	18.1	6.2	10.3	32.3	6.5
N/A	Non-native, cool season grass	20.1	4.0	5.3	None		71.96	0.0	0.0	0.0	0.0	0.0	4.0
<i>Phalaris arundinacea</i>	Reed Canary Grass	0.9	0.2	0.3	Control - Field Maintenance	Strategy 3B	75.75	0.0	0.0	0.0	0.0	0.2	0.0
<i>Phragmites australis</i>	Common Reed	0.0	0.0	0.0	N/A		75.97	0.0	0.0	0.0	0.0	0.0	0.0
<i>Polygonum cuspidatum</i>	Japanese Knotweed	0.0	0.0	0.0	N/A		75.97	0.0	0.0	0.0	0.0	0.0	0.0
<i>Polygonum perfoliatum</i>	Mile-a-Minute	0.0	0.0	0.0	N/A		75.97	0.0	0.0	0.0	0.0	0.0	0.0
<i>Pyrus calleryana</i>	Callery Pear	0.0	0.0	0.0	N/A		75.97	0.0	0.0	0.0	0.0	0.0	0.0
<i>Ranunculus ficaria</i>	Lesser Celandine	0.0	0.0	0.0	N/A		75.97	0.0	0.0	0.0	0.0	0.0	0.0
<i>Robinia pseudoacacia</i>	Black Locust	0.0	0.0	0.0	N/A		75.97	0.0	0.0	0.0	0.0	0.0	0.0
<i>Rosa multiflora</i>	Multiflora Rose	213.4	74.6	98.2	Control - Field Maintenance	Strategy 3B	1.37	0.0	22.6	5.5	10.6	31.5	4.4
<i>Rubus pheoniculiasius</i>	Wineberry	37.7	36.1	47.5	Control - Field Maintenance	Strategy 3B	39.90	0.0	34.5	1.6	0.0	0.0	0.0
<i>Securigera varia</i>	Crown vetch	0.0	0.0	0.0	N/A		75.97	0.0	0.0	0.0	0.0	0.0	0.0
<i>Viburnum dilatatum</i>	Linden Viburnum	0.0	0.0	0.0	N/A		75.97	0.0	0.0	0.0	0.0	0.0	0.0
<i>Viburnum sieboldii</i>	Siebold's Viburnum	0.0	0.0	0.0	N/A		75.97	0.0	0.0	0.0	0.0	0.0	0.0
<i>Wisteria floribunda</i>	Japanese Wisteria	0.0	0.0	0.0	N/A		75.97	0.0	0.0	0.0	0.0	0.0	0.0
<b>Total LOE</b>						<b>0</b>							

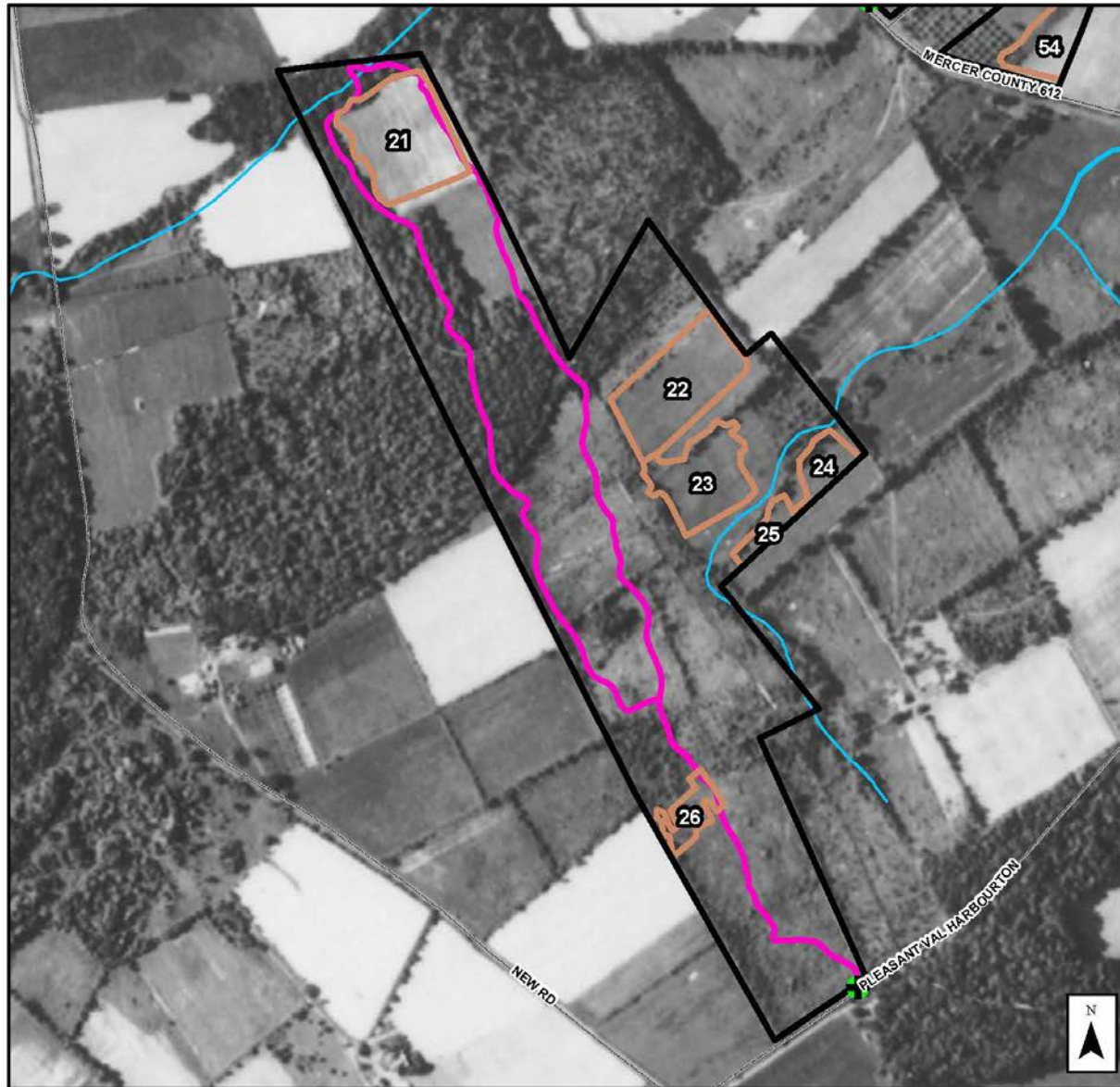
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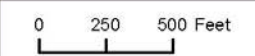
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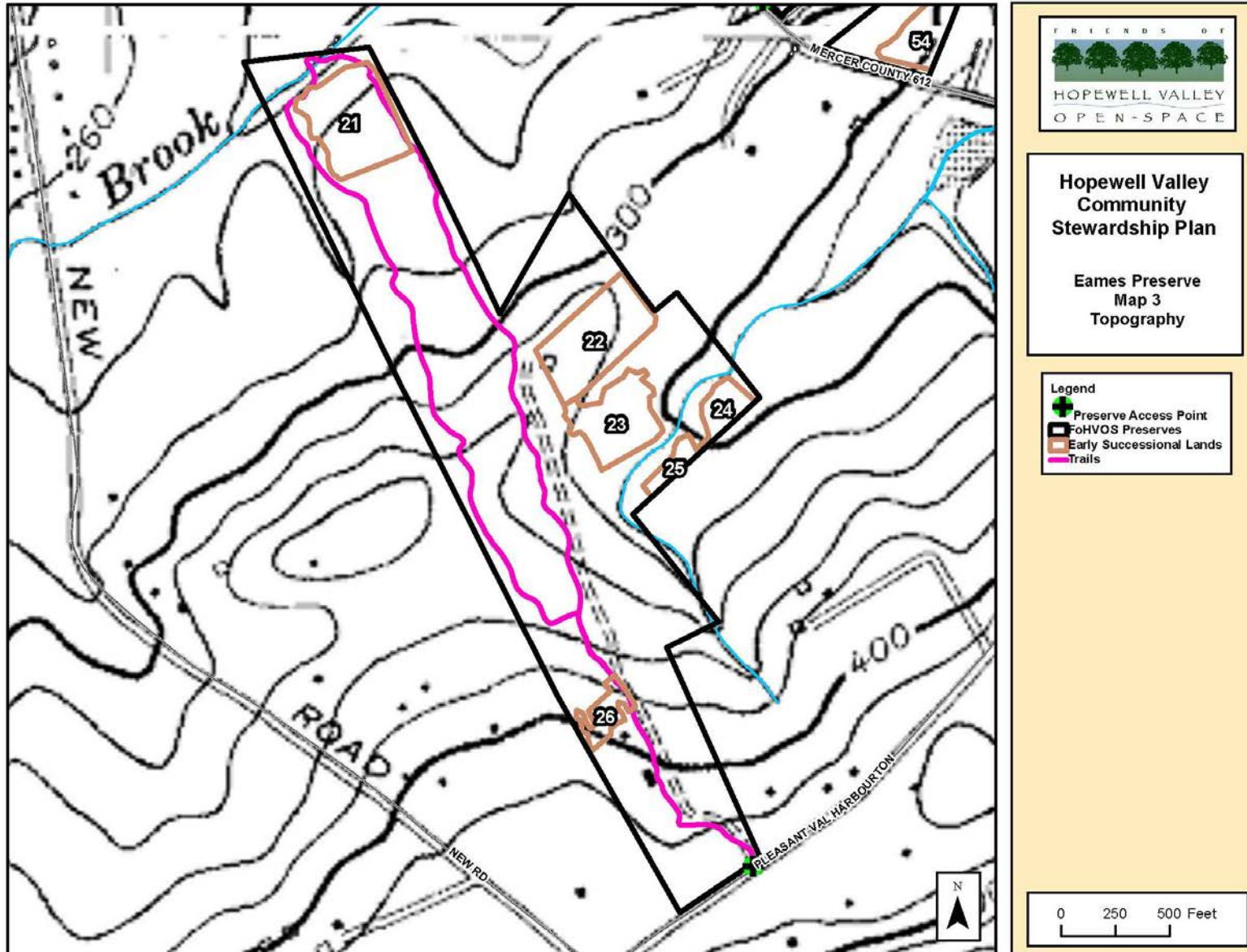
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Eames Preserve  
Map 2  
1930 Aerial Photography

- Legend
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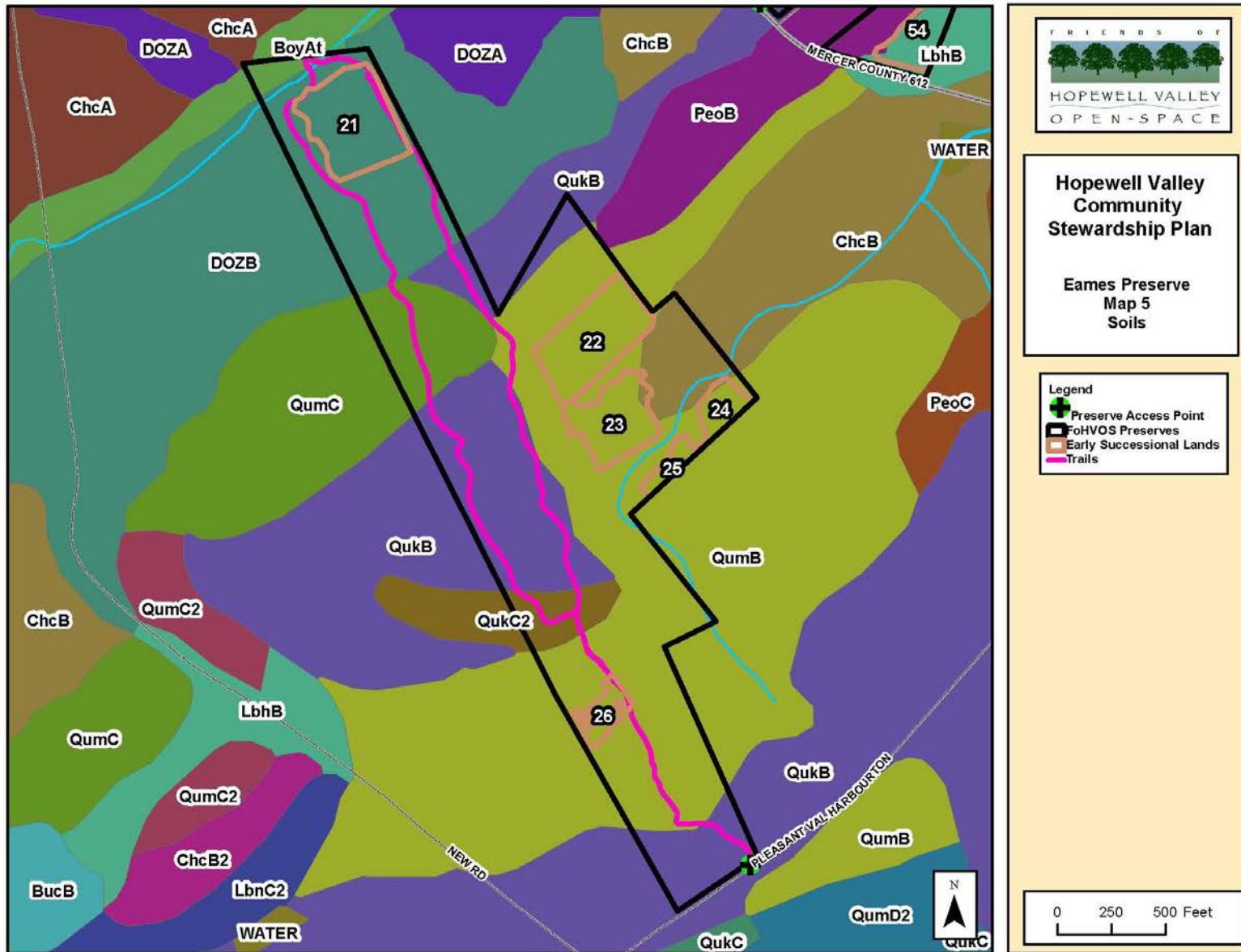


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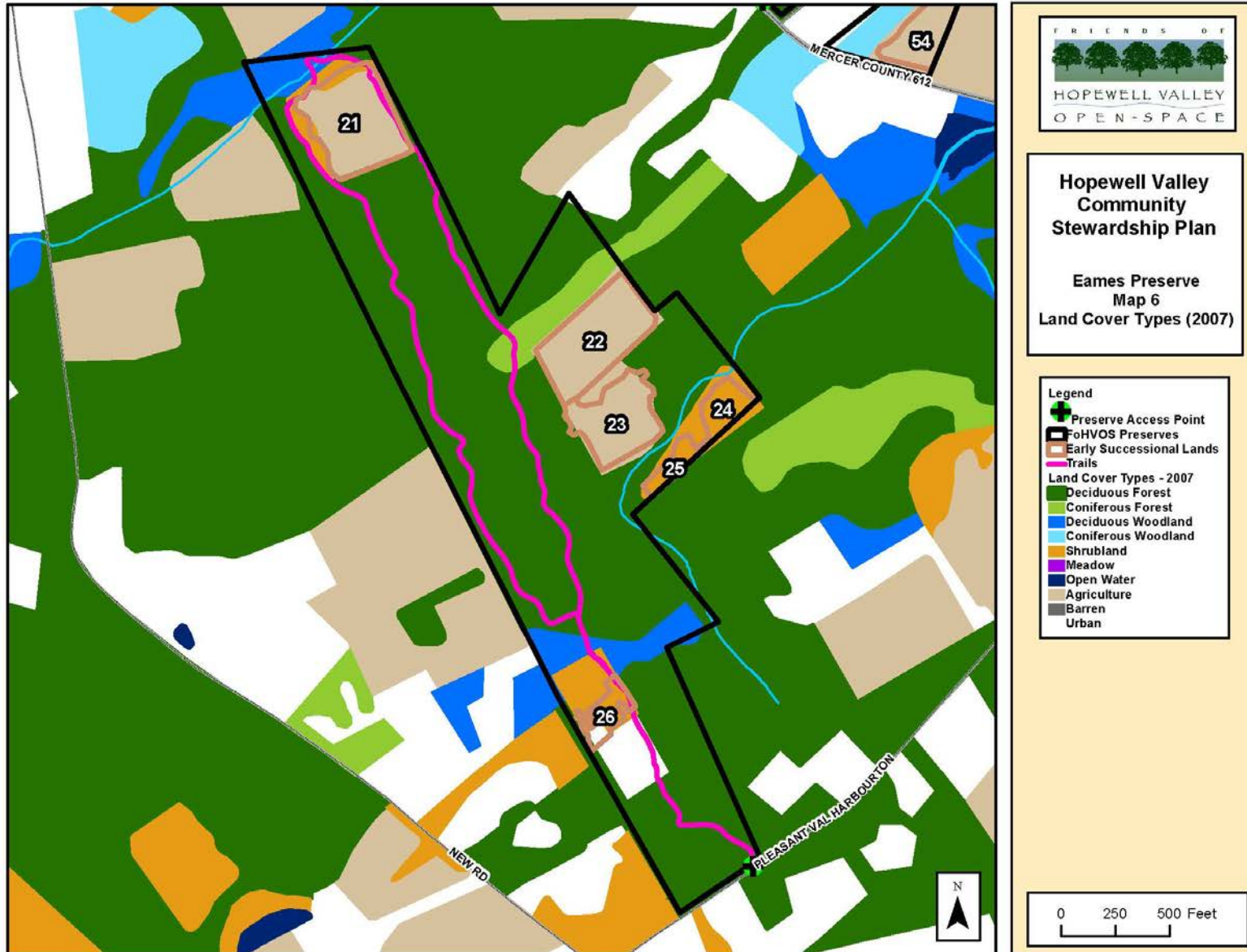




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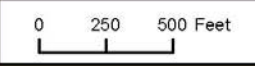
Hopewell Valley Community Stewardship Plan  
 Friends of Hopewell Valley Open Space



Hopewell Valley  
 Community  
 Stewardship Plan

Eames Preserve  
 Map 6  
 Land Cover Types (2007)

- Legend
- Preserve Access Point
  - FoHVOS Preserves
  - Early Successional Lands
  - Trails
- Land Cover Types - 2007
- Deciduous Forest
  - Coniferous Forest
  - Deciduous Woodland
  - Coniferous Woodland
  - Shrubland
  - Meadow
  - Open Water
  - Agriculture
  - Barren
  - Urban

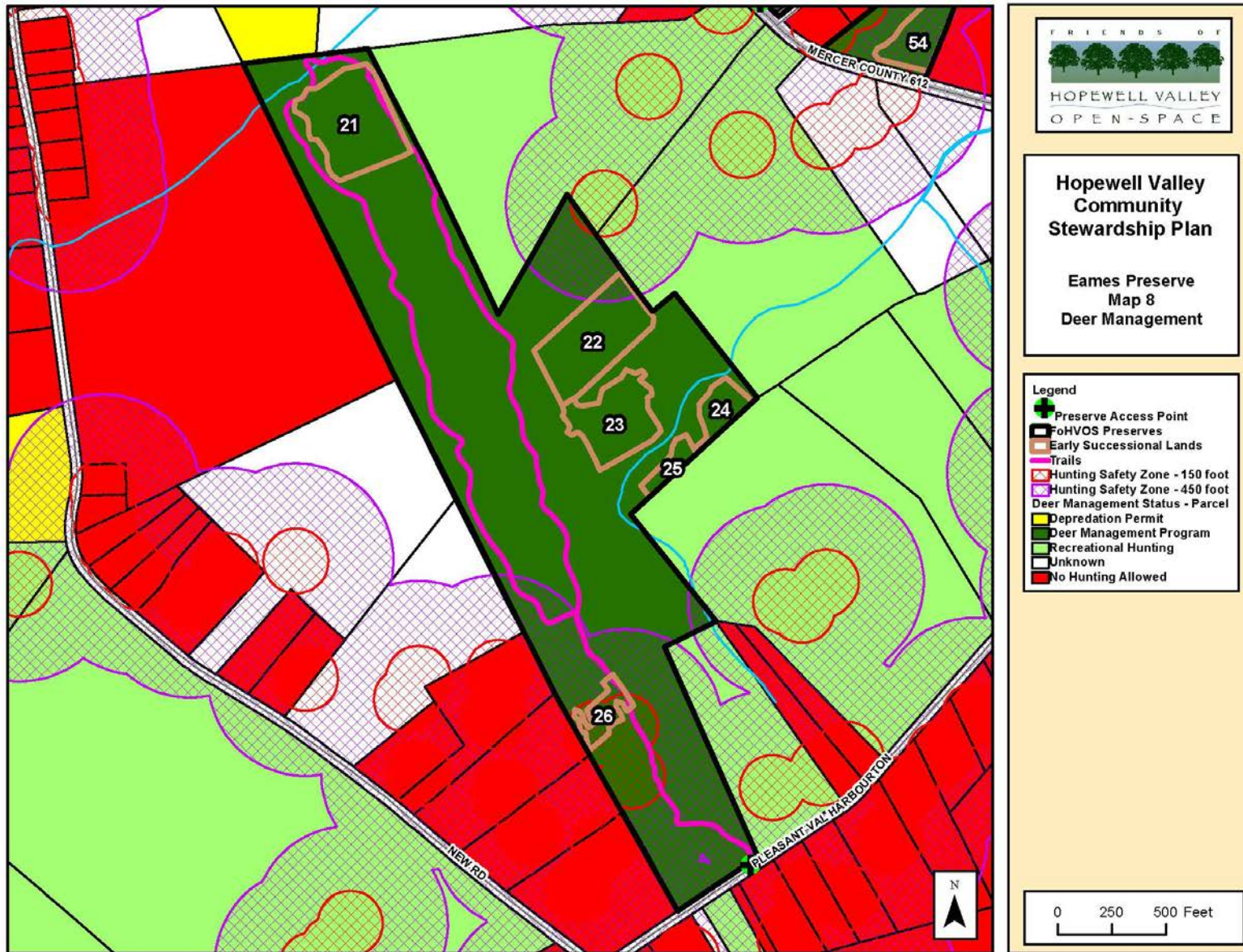


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**Appendix 5.  
Elks Preserve**

**Acreage:** 44.6

**Block and Lot:** B20, L10

**Ownership:** FoHVOS (100%)

**Year(s) Purchased:** 2000

**Location & Access:** The preserve is located on the south side of Crusher Road, approximately 0.2 miles east of Route 654. Nearest street address: 172 Crusher Road, Hopewell. A formal gravel parking lot is installed at the preserve entrance.

**Structures:** None

Additional property information is summarized in Appendix W. The following Preserve maps are provided at the end of this document:

- Map 1 2007 Aerial Photography
- Map 2 1930 Aerial Photography
- Map 3 Topography
- Map 4 Bedrock Geology
- Map 5 Soils
- Map 6 Land Cover Types (2007)
- Map 7 Protected Lands
- Map 8 Deer Management
- Map 9 Invasive Plant Cover (Relative Infestation Severity for all species)

**Website Description:**

**Elks Preserve** is in the Mount Rose vicinity of Hopewell Township. A loop trail of just over 1 mile traverses through former agricultural lands, now reverting to red maple and red cedar. In addition, the trail connects to the Stony Brook Millstone Watershed Association trail network, offering a longer hike.

**BROAD PROPERTY DESCRIPTION**

The Elks Preserve (See Map 1) is located in north central Hopewell Township. The topography (see Map 3) is flat at 60 to 70 feet above sea level.

Based upon analysis of NJDEP's 2007 Land Use/Land Cover dataset, the preserve contains two broad plant communities: Deciduous Forest (> 50% canopy) - Upland, Deciduous Forest (> 50% canopy) - Wetland. The preserve is surrounded by residential parcels and Stony Brook-Millstone Watershed Association. Land Use/Land Cover is summarized in Appendix X and illustrated in Map 6.

Historically the preserve and adjacent land, was in agricultural use. The preserve's forest is early successional with moist, compacted soils. The canopy is composed primarily of red cedar, red maple and ash. The understory is comprised of multiflora rose, and sporadic burning bush, spicebush, linden viburnum, arrowwood, blackhaw, wintercreeper, Asiatic bittersweet, Japanese stiltgrass, and Japanese barberry. Lesser celandine occupies agricultural drainage ditches that run across the preserve. A patch of a princess pine species can be found along the northeastern leg of the trail.

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In the center of the preserve is a small patch of forest with increased species diversity. It includes American beech, black oak, round leaved greenbriar, black cherry, blackhaw, and partridgeberry.

The preserve has two types of bedrock geology--the Passaic formation and Passaic formation gray bed. See Map 4.

The preserve has seven soil types (see Map 5) with Doylestown and Reaville variant silt loams, 0 to 2 percent slopes; Doylestown and Reaville variant silt loams, 2 to 6 percent slopes; and Lawrenceville and Mount Lucas silt loams, 2 to 6 percent slopes being the three most common types. The preserve's soils are described in Appendix Y.

### **CONSERVATION VALUES**

Based on an analysis involving the ranking of ecological values and threats (See Community Stewardship Plan text), the Preserve has a weighted Ecological Value of 25-50%. See Appendix A for a description of ranking factors.

**Forest and Woodland Communities:** The preserve is part of the Mount Rose large forest patch. Forest habitat patch size from Landscape Project is 1921 acres, however, this patch is severely fragmented by road and developments.

The forest patch found on the Preserve and surrounding area is an important stop-over habitat (spring and fall resting and feeding) for migratory species. The spottiness of the woodland shrub layer reduces the value for nesting and successful breeding of birds. However, significant thickets of spicebush are found the preserve's center. Arrowwood is found throughout the preserve but below the browse line.

**Old forest:** None on the preserve (See Map 2). To the north of Crusher Road, is approximately 180 acres of 1930s era forest.

### **Early Successional Communities:**

**Shrublands:** N/A

**Meadows/Grasslands:** N/A

**Waterbodies:** Unnamed intermittent streams/former agricultural ditches flow across the preserve. Vernal pool activity (wood frog eggs) has been observed in tire tracks along former woods roads.

### **Rare Species:**

**Rare Plants:** None documented on the Preserve, but Natural Heritage grid data shows Willdenow's sedge (*Carex willdenowii*), as present in the grid.

**Rare Animals:** The Landscape Project has identified the Preserve as ranked for species of State Endangered Species. The Preserve has suitable wood turtle habitat in the eastern areas. See Appendix L for a list of species.

### **THREATS**

**Deer:** The understory and herb layers are severely browsed. Regeneration of the shrub and canopy layer is currently non-existent. Forest health monitoring was performed in 2006/2007 (See main plan, Table 9).

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**Invasive species:** In 2008 staff began walk-through surveys for emerging invasive species on all preserves. Mapping documented each species and its population size. Wintercreeper and linden viburnum were detected. See [www.njisst.org](http://www.njisst.org) for the current status of emerging invasive species at the Preserve.

In 2011 staff completed surveys for invasive plant species on all preserves (see Map 9). Mapping documented each species found and its population size (See Table 1 below). The five species with the highest infestation scores include: Japanese Stiltgrass, Multiflora Rose, Japanese Honeysuckle, Japanese Barberry and Autumn Olive.

**Other:** N/A

**STRATEGIES and ACTIONS**

**Forest and Woodland Habitat Stewardship:** Annual surveys for and eradication of emerging invasive species is a high priority at this Preserve. Fruiting linden viburnum and wintercreeper have been eradicated. Further surveys and eradication work for these species will continue.

No action is recommended for widespread invasive species, except for winged burning bush and Asiatic bittersweet (See Table 1 below). All fruiting and flowering individuals should be removed from the preserve. Eradication of large bittersweet vines was completed in 2008. Reduced deer density will allow the native plant communities to recover and compete with all other widespread invasive species on a long-term basis.

**Early Successional Habitat Stewardship:** N/A

**Deer Management:** The preserve is enrolled in the DMP with bow and gun hunting. See Map 8 for delineations of the 150' and 450' safety zones and hunting status.

**Rare Species Management:** Survey for presence of rare species. Maintain forest habitat for rare species. Coordinate activities with Stony Brook-Millstone Watershed Association.

**Neighboring Lands:** See Deer Management. Partnerships with Stony Brook-Millstone Watershed Association can be sought for habitat improvement projects. See Map 7.

**Waterbodies Management:** Through grant funding, consider creation of vernal pool sites to provide additional habitat.

**Undesirable Activities Management:** N/A

**Scientific Research Assessment:** The Preserve is available for scientific research.

**Recreational Opportunities Assessment:** This property has a parking and a 1 mile loop trail that connects to the Stony Brook-Millstone Watershed Association trail network.

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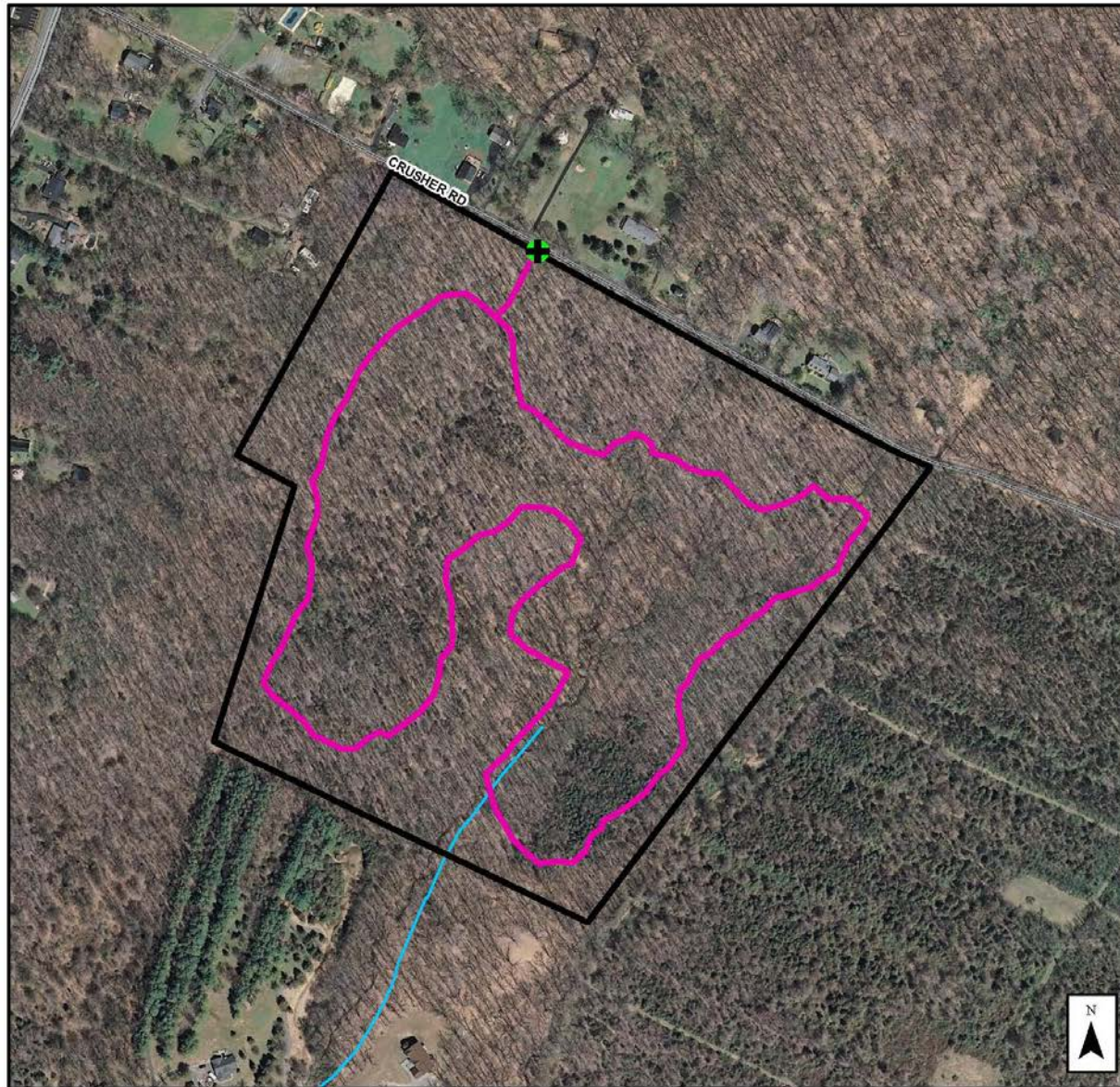
**Table 1. Invasive Plants – Species Abundance and Treatment Recommendations**

Scientific Name	Common Name	Infestation Index Score <sup>1</sup>	Total Acres Present	Percent of Preserve Area Present	Treatment Recommendation	LOE Estimate (Hours)	Acreage by Percent Ground Cover Categories						
							Category 0: 0%	Category: Trace	Category 1: 1-10%	Category 2: 10-25%	Category 3: 25-50%	Category 4: 50-75%	Category 5: 75-100%
<i>Acer palmatum</i>	Japanese Maple	0.0	0.0	0.0	N/A		42.09	0.0	0.0	0.0	0.0	0.0	0.0
<i>Acer platanoides</i>	Norway Maple	0.0	0.0	0.0	N/A		42.09	0.0	0.0	0.00	0.0	0.00	0.0
<i>Ailanthus altissima</i>	Tree-of-Heaven	0.0	0.0	0.0	N/A		42.09	0.0	0.0	0.0	0.0	0.0	0.0
<i>Alliaria petiolata</i>	Garlic Mustard	4.5	2.5	5.9	None		39.61	0.0	0.5	2.0	0.0	0.0	0.0
<i>Artemisia vulgaris</i>	Common Mugwort	0.0	0.0	0.0	N/A		42.09	0.0	0.0	0.0	0.0	0.0	0.0
<i>Arthraxon hispidus</i>	Small Carpgrass	0.0	0.0	0.0	N/A		42.09	0.0	0.0	0.0	0.0	0.0	0.0
<i>Berberis thunbergii</i>	Japanese Barberry	41.5	36.5	86.8	None		5.55	0.0	31.6	5.0	0.0	0.0	0.0
<i>Cardamine impatiens</i>	Narrow-leaved Bittercress	0.0	0.0	0.0	N/A		42.09	0.0	0.0	0.0	0.0	0.0	0.0
<i>Catalpa bignonioides</i>	Northern Catalpa	0.0	0.0	0.0	N/A		42.09	0.0	0.0	0.0	0.0	0.0	0.0
<i>Celastrus orbiculatus</i>	Asiatic Bittersweet	17.7	15.6	37.1	Control - Treat Fruiting Plants	10	26.47	6.8	0.0	8.9	0.00	0.0	0.0
<i>Centurea sp.</i>	Knapweed sp.	0.0	0.0	0.0	N/A		42.09	0.0	0.0	0.0	0.0	0.0	0.0
<i>Cirsium arvense</i>	Canada Thistle	0.0	0.0	0.0	N/A		42.09	0.0	0.0	0.0	0.0	0.0	0.0
<i>Dipsacus sylvestris</i>	Teasel	0.0	0.0	0.0	N/A		42.09	0.0	0.00	0.0	0.0	0.0	0.0
<i>Eleaagnus umbellata</i>	Autumn Olive	19.5	19.3	45.9	None		22.76	3.2	13.7	1.6	0.9	0.0	0.0
<i>Euonymus alata</i>	Winged Burning Bush	0.0	2.8	6.7	Control - Treat Fruiting Plants	5	39.25	2.8	0.0	0.0	0.0	0.0	0.00
<i>Iris pseudoacris</i>	Yellow Iris	0.0	0.0	0.0	N/A		42.09	0.0	0.0	0.0	0.0	0.0	0.0
<i>Lespedeza cuneata</i>	Chinese Bushclover	0.0	0.0	0.0	N/A		42.09	0.0	0.0	0.0	0.0	0.0	0.0
<i>Ligustrum obtusifolium</i>	Border Privet	19.0	19.0	45.0	None		23.14	0.0	18.95	0.0	0.0	0.0	0.0
<i>Lonicera japonica</i>	Japanese Honeysuckle	67.1	27.4	65.1	None		14.67	0.0	4.1	7.0	16.4	0.0	0.0
<i>Lonicera maackii</i>	Amur Honeysuckle	0.0	0.0	0.0	N/A		42.09	0.0	0.0	0.0	0.0	0.0	0.0
<i>Lonicera morrowii</i>	Morrow's Honeysuckle	0.0	0.0	0.0	N/A		42.09	0.0	0.0	0.0	0.00	0.0	0.0
<i>Lysimachia nummularia</i>	Moneywort	0.0	0.0	0.0	N/A		42.09	0.0	0.0	0.0	0.0	0.0	0.0
<i>Lythrum salicaria</i>	Purple Loosestrife	0.0	0.0	0.0	N/A		42.09	0.0	0.0	0.0	0.0	0.0	0.0
<i>Malus toringo</i>	Toringo Crabapple	0.0	0.0	0.0	N/A		42.09	0.0	0.0	0.0	0.0	0.0	0.0
<i>Microstegium vimineum</i>	Japanese Stiltgrass	172.6	42.0	99.7	None		0.13	0.0	0.0	1.9	12.5	6.5	21.1
N/A	Non-native, cool season grass	0.0	0.0	0.0	N/A		42.09	0.0	0.0	0.0	0.0	0.0	0.0
<i>Phalaris arundinacea</i>	Reed Canary Grass	0.0	0.0	0.0	N/A		42.09	0.0	0.0	0.0	0.0	0.0	0.0
<i>Phragmites australis</i>	Common Reed	0.0	0.0	0.0	N/A		42.09	0.0	0.0	0.0	0.0	0.0	0.0
<i>Polygonum cuspidatum</i>	Japanese Knotweed	0.0	0.0	0.0	N/A		42.09	0.0	0.0	0.0	0.0	0.0	0.0
<i>Polygonum perfoliatum</i>	Mile-a-Minute	0.0	0.0	0.0	N/A		42.09	0.0	0.0	0.0	0.0	0.0	0.0
<i>Pyrus calleryana</i>	Callery Pear	0.0	0.0	0.0	N/A		42.09	0.0	0.0	0.0	0.0	0.0	0.0
<i>Ranunculus ficaria</i>	Lesser Celandine	0.0	0.0	0.0	N/A		42.09	0.0	0.0	0.0	0.0	0.0	0.0
<i>Robinia pseudoacacia</i>	Black Locust	0.0	0.0	0.0	N/A		42.09	0.0	0.0	0.0	0.0	0.0	0.0
<i>Rosa multiflora</i>	Multiflora Rose	105.2	35.6	84.6	None		6.47	0.0	11.4	4.9	0.9	11.2	7.4
<i>Rubus phoenicolasius</i>	Wineberry	15.4	28.6	67.9	None		13.50	16.0	9.8	2.8	0.0	0.0	0.0
<i>Securigera varia</i>	Crown vetch	0.0	0.0	0.0	N/A		42.09	0.0	0.0	0.0	0.0	0.0	0.0
<i>Viburnum dilatatum</i>	Linden Viburnum	0.0	0.0	0.0	N/A		42.09	0.0	0.0	0.0	0.0	0.0	0.0
<i>Viburnum sieboldii</i>	Siebold's Viburnum	0.0	0.0	0.0	N/A		42.09	0.0	0.0	0.0	0.0	0.0	0.0
<i>Wisteria floribunda</i>	Japanese Wisteria	0.0	0.0	0.0	N/A		42.09	0.0	0.0	0.0	0.0	0.0	0.0
<b>Total LOE</b>						<b>15</b>							

<sup>1</sup> The Infestation Index Score combines the extent of acreage infested and the intensity of the infestation. It was derived by multiplying the cover class number by the number of acres within each cover class.






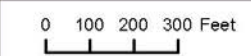
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Stewardship Plan**

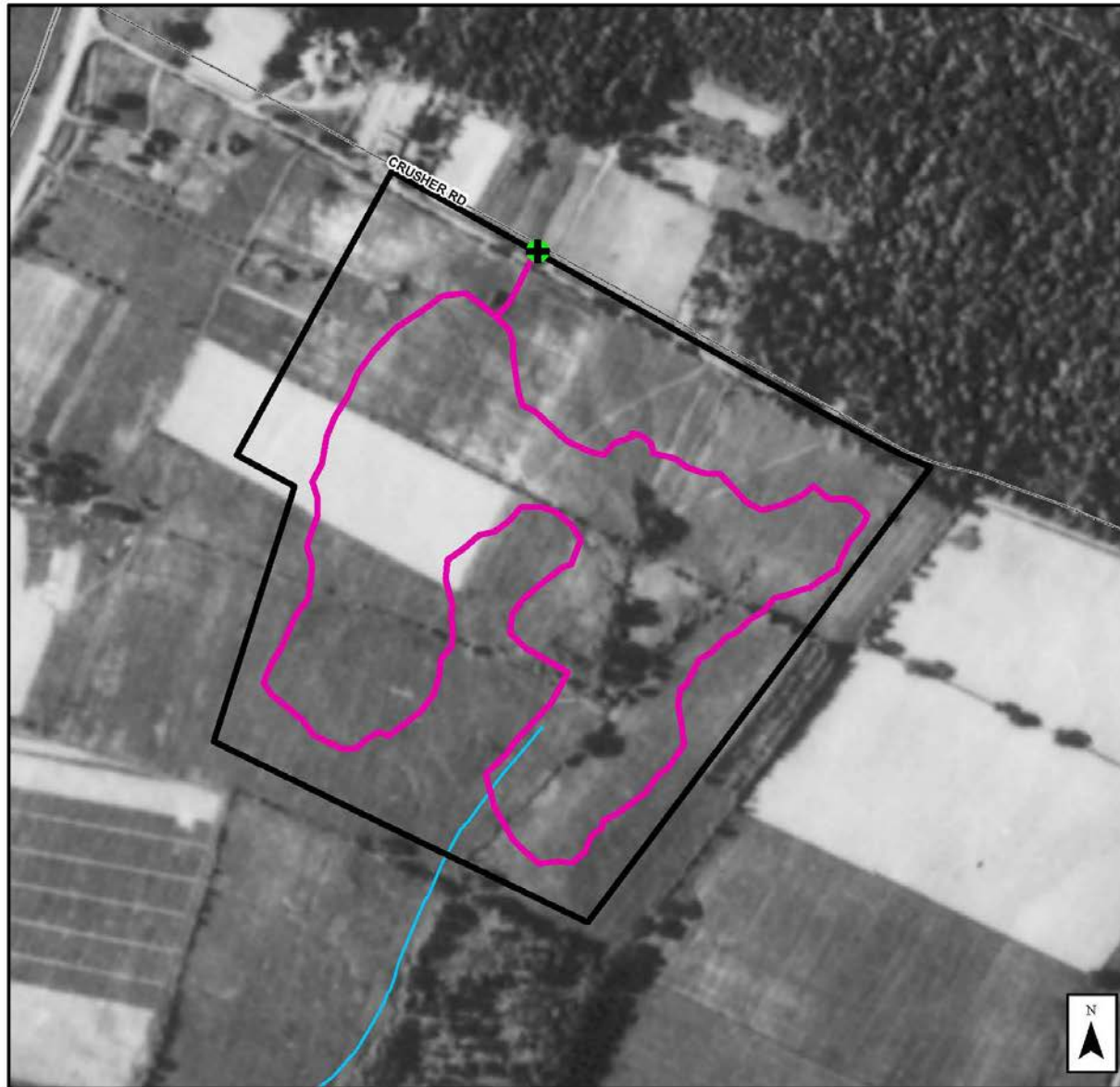
**Elks Preserve  
Map 1  
2007 Aerial Photography**

- Legend**
-  Preserve Access Point
  -  FoHVOS Preserves
  -  Early Successional Lands
  -  Trails





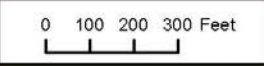
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**Elks Preserve  
Map 2  
1930 Aerial Photography**

- Legend**
- Preserve Access Point
  - ▭ FoHVOS Preserves
  - ▭ Early Successional Lands
  - Trails



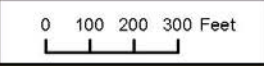
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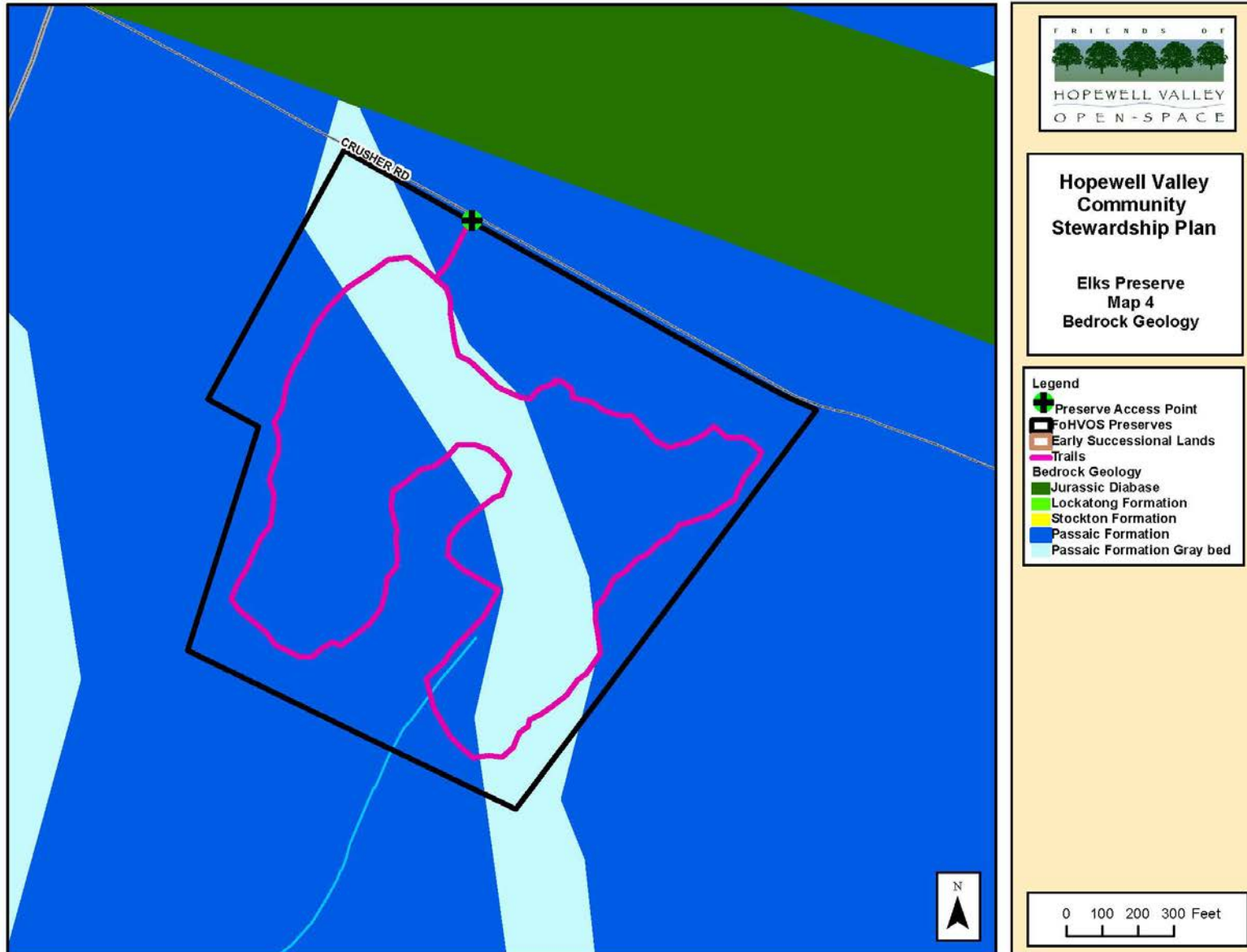
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Stewardship Plan

Elks Preserve  
Map 3  
Topography

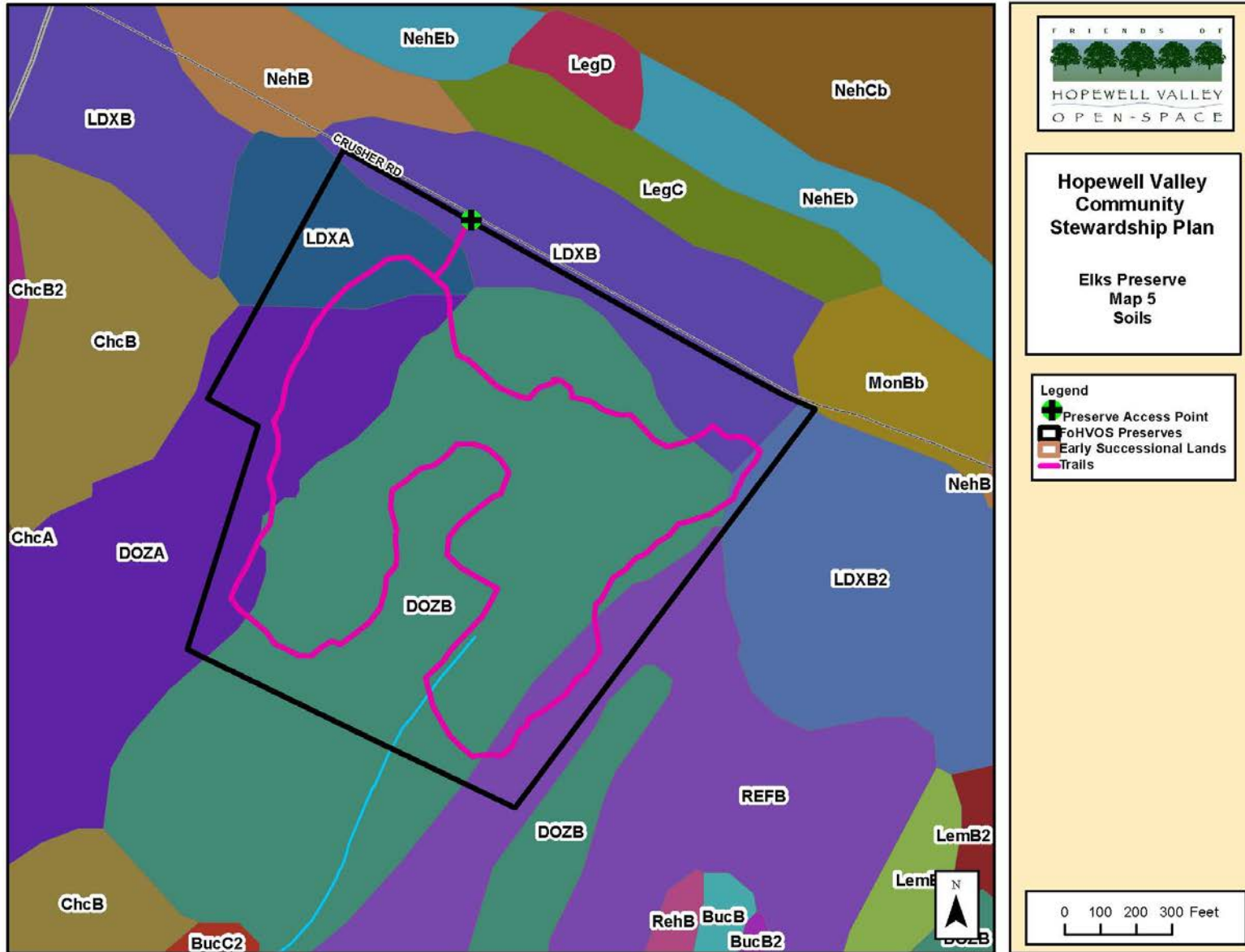
- Legend
- Preserve Access Point
  - FoHVOS Preserves
  - Early Successional Lands
  - Trails



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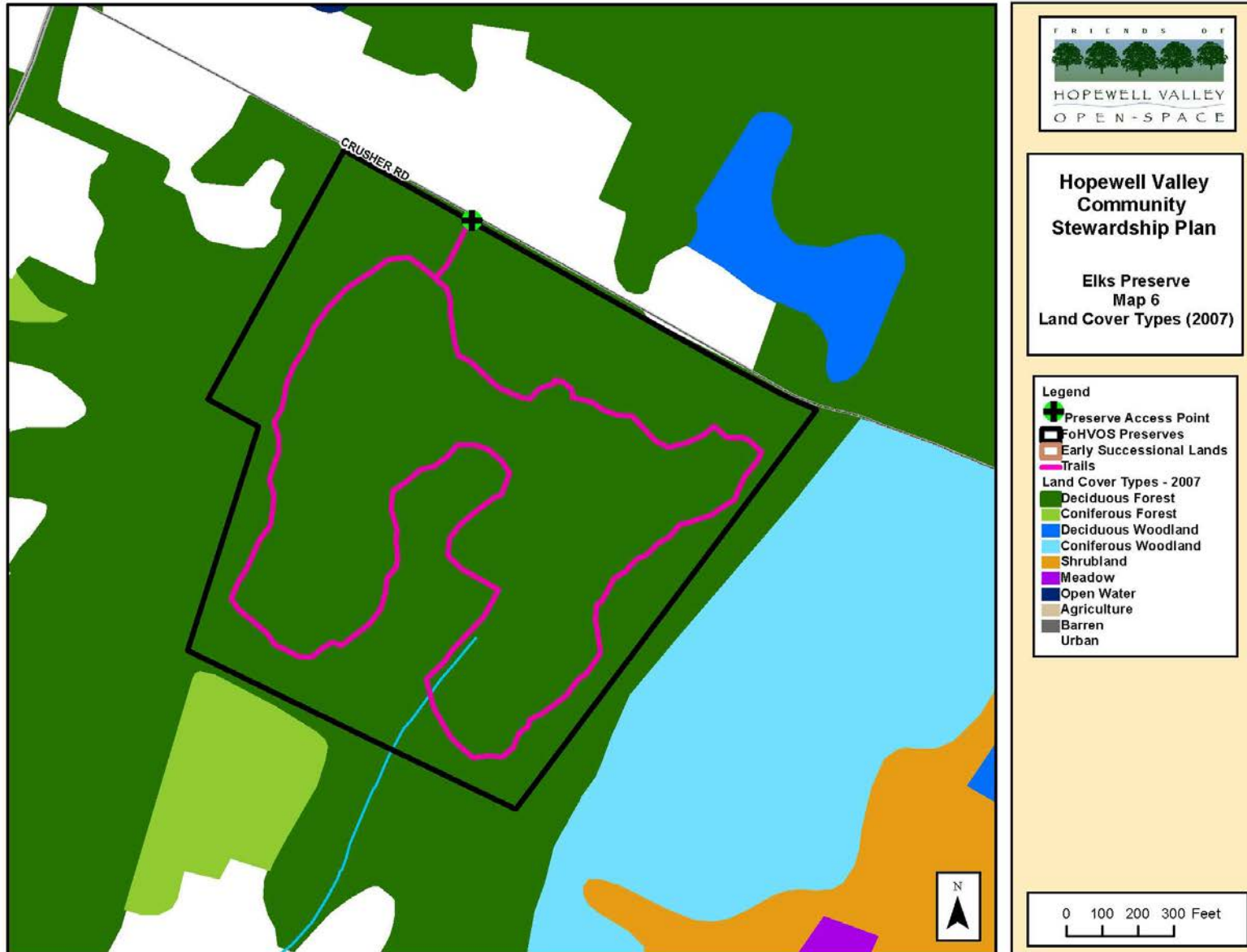


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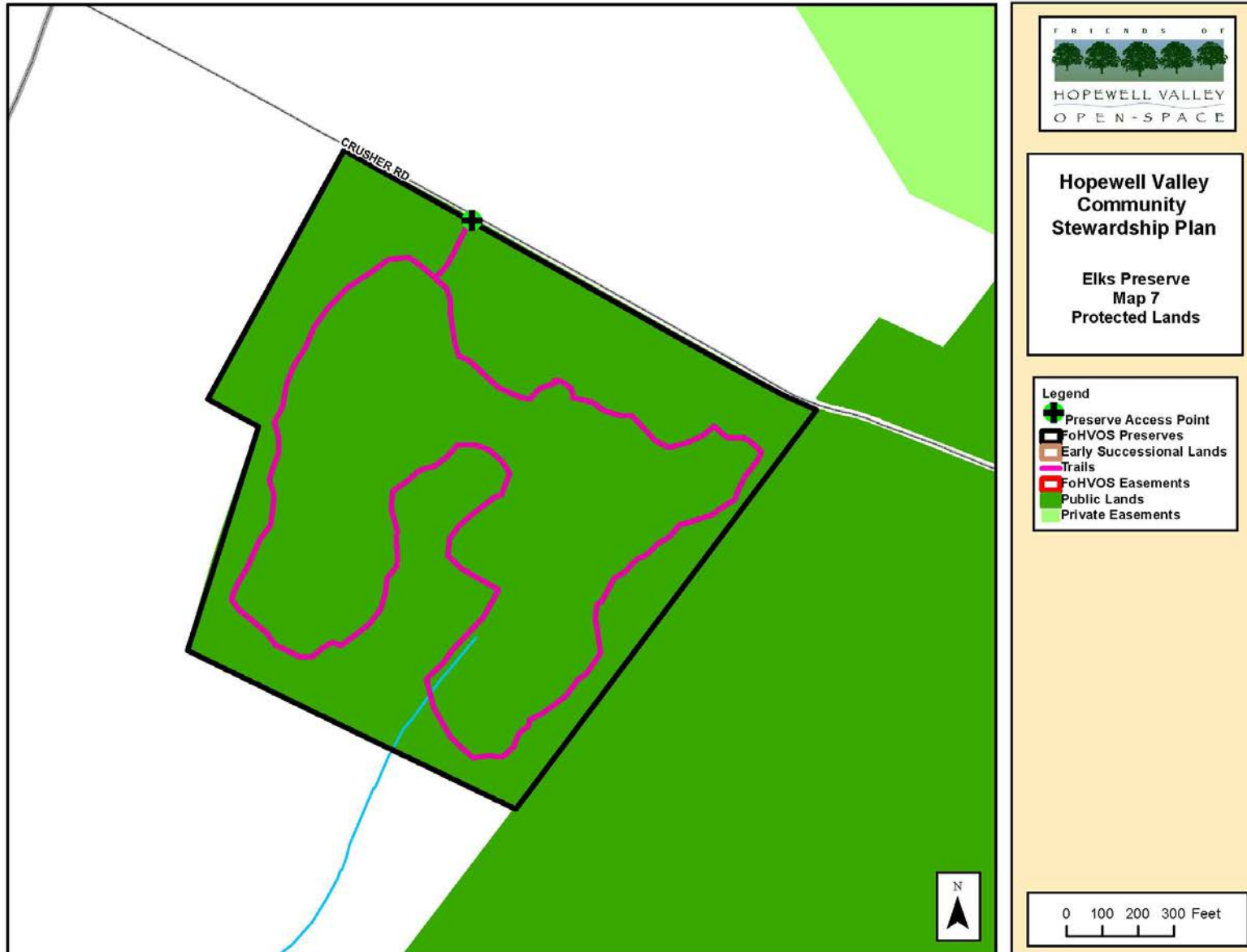




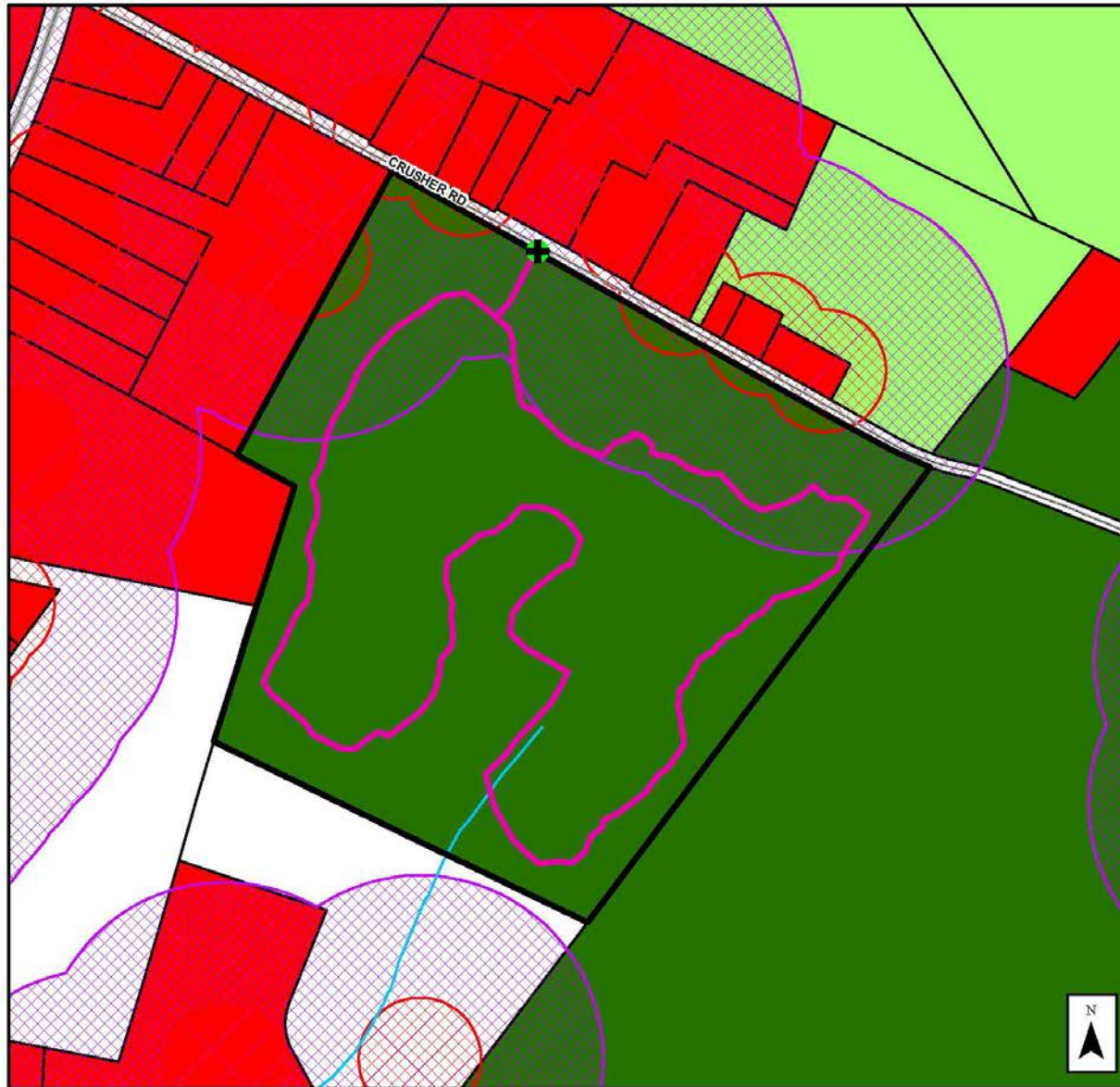
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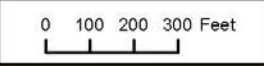
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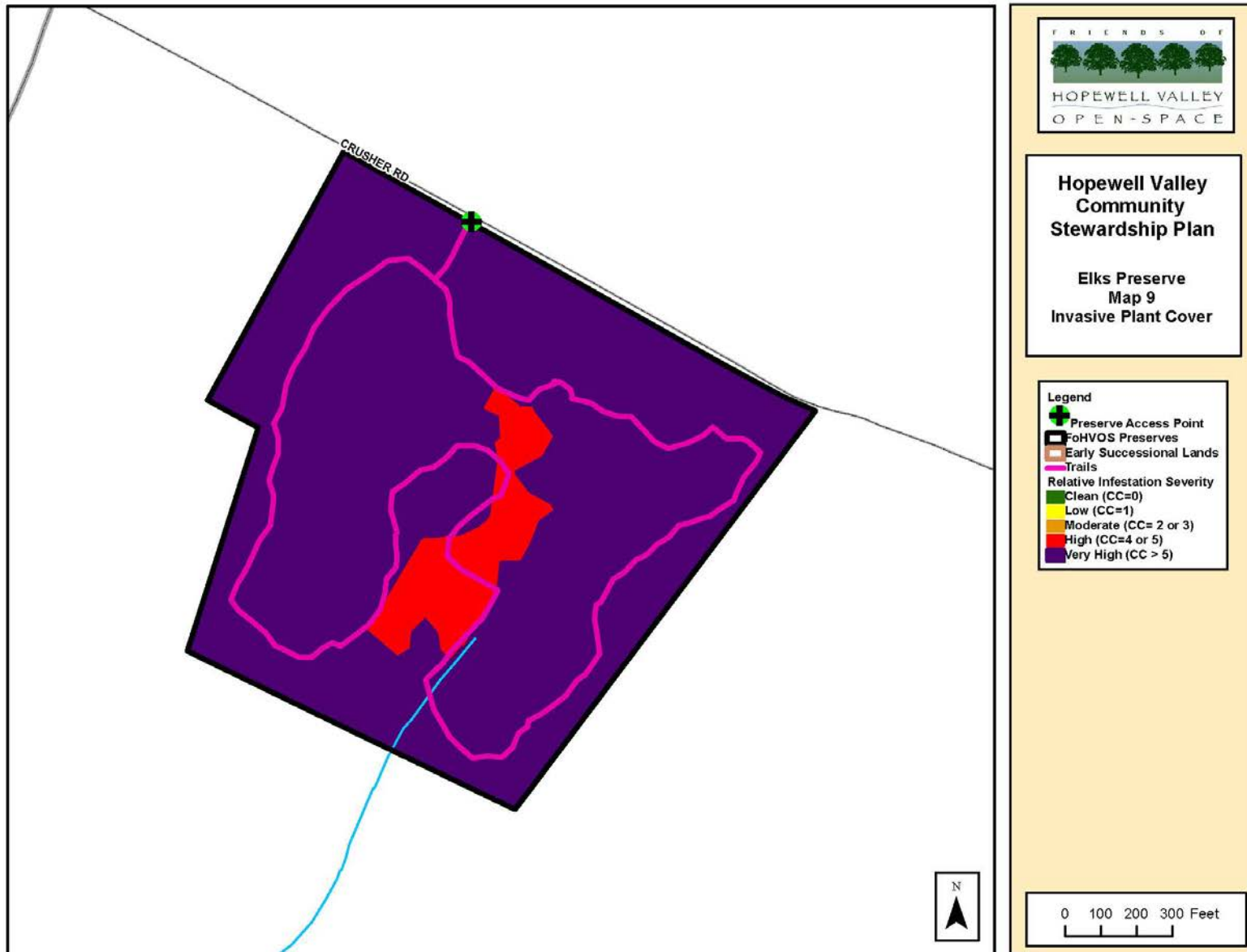
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Community  
Stewardship Plan**

**Elks Preserve  
Map 8  
Deer Management**

- Legend**
- Preserve Access Point
  - FoHVOS Preserves
  - Early Successional Lands
  - Trails
  - Hunting Safety Zone - 150 foot
  - Hunting Safety Zone - 450 foot
  - Deer Management Status - Parcel
  - Depredation Permit
  - Deer Management Program
  - Recreational Hunting
  - Unknown
  - No Hunting Allowed



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**Appendix 6.  
Franz Preserve**

**Acreage:** 18.5

**Block and Lot:** B92, L12.02

**Ownership:** FoHVOS (100%)

**Year(s) Purchased:** 2000

**Location & Access:** Preserve is located on the south side of Pennington-Titusville Road, 0.7 miles east of Bear Tavern Road/Route 579. A formal gravel parking lot is installed at the preserve entrance. Alternate access at dead end street off of Continental Lane (south side of preserve). Nearest street address: 388 Pennington-Titusville Road, Pennington.

**Structures:** None

Additional property information is summarized in Appendix W. The following Preserve maps are provided at the end of this document:

- Map 1 2007 Aerial Photography
- Map 2 1930 Aerial Photography
- Map 3 Topography
- Map 4 Bedrock Geology
- Map 5 Soils
- Map 6 Land Cover Types (2007)
- Map 7 Protected Lands
- Map 8 Deer Management
- Map 9 Invasive Plant Cover (Relative Infestation Severity for all species)

**Website Description:**

**Franz Preserve** protects a portion of the Jacobs Creek, one of its tributaries, and adjacent forested wetlands and uplands. The preserve's forests are in various states of succession from young red cedar thickets to mature forest.

**BROAD PROPERTY DESCRIPTION**

The Franz Preserve (see Map 1) is located in central Hopewell Township. The preserve is bounded by residential development, forest, and farmland. The topography (see Map 3) slopes down towards Jacob's Creek.

Based upon analysis of NJDEP's 2007 Land Use/Land Cover dataset, the preserve contains seven broad plant communities: Coniferous Forest (> 50% canopy) - Upland, Deciduous Forest (> 50% canopy) - Upland, Deciduous Woodland (10-50% canopy) - Upland, Deciduous Forest (> 50% canopy) - Wetland, Open Water, Agricultural Lands, and Urban Lands. Land Use/Land Cover is summarized in Appendix X and illustrated in Map 6.

The forest in the eastern arm of the preserve follows a tributary of Jacob's Creek. Although it appears that the area once served as a woods road, this section was forested or in shrubland as of the 1930s. The canopy consists of black cherry and sugar maple. No native herbs, nor any larger native woody regeneration was detected within the deer browse zone.

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The forested floodplain of Jacob's Creek is inhabited by willow, elm, black walnut, sycamore, ash, sugar maple, multiflora rose, Japanese stiltgrass, lesser celandine, white snakeroot, skunk cabbage, jack-in-the-pulpit, boneset, false nettle, hog peanut, jewelweed, clearweed, bottlebrush grass, sedges, Virginia creeper, white avens, and spicebush. Shrubs and herbaceous species were not abundant or robust.

Just north of the intersection of Jacob's Creek and its tributary, the preserve harbors a narrow band of 1930s forest. American beech, red oak, sugar maple, and ash compose the canopy. Small, non-flowering individuals of sedges, Indian pipe, spicebush, and white wood aster are in the understory layer.

The western arm of the preserve are former cropland or pastureland that is now ash, sassafras, red cedar, autumn olive, Japanese honeysuckle, black cherry, flowering dogwood (trace), garlic mustard, and white snakeroot (abundant).

The preserve has one type of bedrock geology--the Stockton formation. See Map 4.

The preserve has six soil types (see Map 5) with Klinesville channery loam, 18 to 35 percent slopes; Reaville silt loam, 2 to 6 percent slopes, eroded; and Rowland silt loam, 0 to 2 percent slopes, frequently flooded, being the three most common types. The preserve's soils are described in Appendix Y.

### **CONSERVATION VALUES**

Based on an analysis involving the ranking of ecological values and threats (See Community Stewardship Plan text), the Preserve has a weighted Ecological Value at 25-50%. See Appendix A for a description of ranking factors.

**Forest and Woodland Communities:** The forest serves as a buffer for Jacob's Creek and its tributary. The forest patch found on the Preserve and surrounding area is an important stop-over habitat (spring and fall resting and feeding) for migratory species. However, the patch size and lack of a woodland shrub layer reduces the value for nesting and successful breeding bird species.

**Old forest:** The preserve has 2.17 acres of 1930s forest along the eastern bank of Jacob's Creek and in the eastern arm of the preserve. The later forest was patchy, probably due to active forestry. See Map 2.

### **Early Successional Communities:**

**Shrublands:** N/A

**Meadows/Grasslands:** N/A

**Waterbodies:** Jacob's Creek and a tributary intersect within the preserve.

### **Rare Species:**

**Rare Plants:** Winged monkeyflower was observed along the Jacobs Creek. However, Natural Heritage grid data shows no species.

**Rare Animals:** Forested areas of the Preserve are identified as habitat for State Special Concern species. See Appendix L for a list of species.

### **THREATS**

**Deer:** The understory is severely browsed. Regeneration of the shrub and canopy layer is nearly non-existent.

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**Invasive species:** In 2008 staff began walk-through surveys for emerging invasive species on all preserves. Mapping documented each species and its population size. Oriental photinia was detected. See [www.njisst.org](http://www.njisst.org) for the current status of emerging invasive species at the Preserve.

In 2011 staff completed surveys for invasive plant species on all preserves (see Map 9). Mapping documented each species found and its population size (See Table 1 below). The five species with the highest infestation scores include: Garlic Mustard, Japanese Stiltgrass, Japanese Honeysuckle, Multiflora Rose, and Autumn Olive.

**Other:** N/A

**STRATEGIES and ACTIONS**

**Forest and Woodland Habitat Stewardship:** Annual surveys for and eradication of emerging invasive species is a high priority at this Preserve. Eradication of and survey for Oriental Photinia and yellow iris is the primary management goal.

No action is recommended for widespread invasive species. Reduced deer density will allow the native plant communities to recover and compete with the widespread invasive species on a long-term basis.

**Early Successional Habitat Stewardship:** N/A

**Deer Management:** The preserve is enrolled in the DMP with bow and gun hunting. See Map 8 for delineations of the 150' and 450' safety zones and hunting status.

**Rare Species Management:** Survey for winged monkeyflower. Maintain DMP goals to protect forest health and encourage recovery of herbaceous and shrub layers for improved nesting and foraging habitat.

**Neighboring Lands:** See Deer Management. See Map 7 for adjacent protected lands.

**Waterbodies Management:** Single yellow iris individual along Jacob's Creek should be eradicated. No eradication is recommended for the lesser celandine as infestations would reoccur as plant material is transported via the creek. No additional action is recommended for Jacob's Creek or its tributary.

**Undesirable Activities Management:** N/A

**Scientific Research Assessment:** The Preserve is available for scientific research.

**Recreational Opportunities Assessment:** A through trail is being developed on this property. Parking in a gravel lot is available along the roadside. The Jacob's Creek trail will connect the preserve to the Logan easement to the north (across Pennington-Titusville Road).

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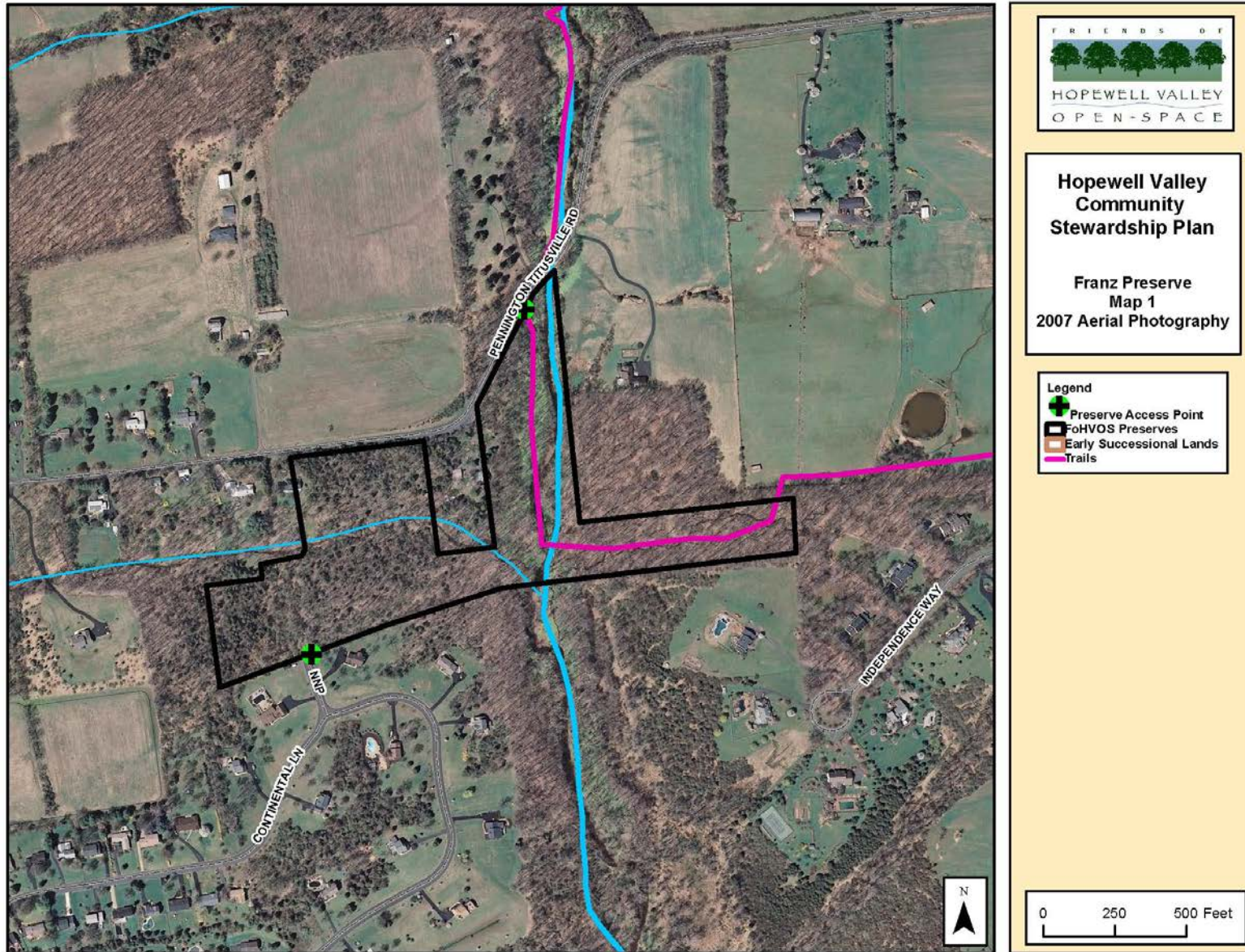
**Table 1. Invasive Plants – Species Abundance and Treatment Recommendations**

Scientific Name	Common Name	Infestation Index Score <sup>1</sup>	Total Acres Present	Percent of Preserve Area Present	Treatment Recommendation	LOE Estimate (Hours)	Acreage by Percent Ground Cover Categories						
							Category 0: 0%	Category: Trace	Category 1: 1-10%	Category 2: 10-25%	Category 3: 25-50%	Category 4: 50-75%	Category 5: 75-100%
<i>Acer palmatum</i>	Japanese Maple	0.0	0.0	0.0	N/A		19.91	0.0	0.0	0.0	0.0	0.0	0.0
<i>Acer platanoides</i>	Norway Maple	0.0	0.0	0.0	N/A		19.91	0.0	0.0	0.00	0.0	0.00	0.0
<i>Ailanthus altissima</i>	Tree-of-Heaven	0.1	0.0	0.1	None		19.89	0.0	0.0	0.0	0.0	0.02	0.0
<i>Alliaria petiolata</i>	Garlic Mustard	70.8	17.8	89.6	None		2.07	0.0	1.5	2.8	0.4	3.4	9.8
<i>Artemisia vulgaris</i>	Common Mugwort	0.1	0.0	0.1	None		19.89	0.0	0.0	0.0	0.0	0.02	0.0
<i>Arthraxon hispidus</i>	Small Carpgrass	0.0	0.0	0.0	N/A		19.91	0.0	0.0	0.0	0.0	0.0	0.0
<i>Berberis thunbergii</i>	Japanese Barberry	0.1	8.0	40.0	None		11.95	7.9	0.1	0.0	0.0	0.0	0.0
<i>Cardamine impatiens</i>	Narrow-leaved Bittercress	0.0	0.0	0.0	N/A		19.91	0.0	0.0	0.0	0.0	0.0	0.0
<i>Catalpa bignonioides</i>	Northern Catalpa	0.0	0.0	0.0	N/A		19.91	0.0	0.0	0.0	0.0	0.0	0.0
<i>Celastrus orbiculatus</i>	Asiatic Bittersweet	0.0	0.0	0.0	N/A		19.91	0.0	0.0	0.0	0.00	0.0	0.0
<i>Centurea sp.</i>	Knapsweed sp.	0.0	0.0	0.0	N/A		19.91	0.0	0.0	0.0	0.0	0.0	0.0
<i>Cirsium arvense</i>	Canada Thistle	0.0	0.0	0.0	N/A		19.91	0.0	0.0	0.0	0.0	0.0	0.0
<i>Dipsacus sylvestris</i>	Teasel	0.1	0.1	0.6	None		19.80	0.0	0.11	0.0	0.0	0.0	0.0
<i>Eleagnus umbellata</i>	Autumn Olive	17.9	9.3	46.5	None		10.66	0.0	5.7	1.4	0.0	1.5	0.7
<i>Euonymus alata</i>	Winged Burning Bush	0.0	0.0	0.0	N/A		19.91	0.0	0.0	0.0	0.0	0.0	0.00
<i>Iris pseudoacris</i>	Yellow Iris	0.0	0.3	1.7	Eradicate	Strategy 2A	19.58	0.3	0.0	0.0	0.0	0.0	0.0
<i>Lespedeza cuneata</i>	Chinese Bushclover	0.0	0.0	0.0	N/A		19.91	0.0	0.0	0.0	0.0	0.0	0.0
<i>Ligustrum obtusifolium</i>	Border Privet	5.5	9.1	45.8	None		10.80	3.7	5.45	0.0	0.0	0.0	0.0
<i>Lonicera japonica</i>	Japanese Honeysuckle	35.8	13.9	69.9	None		5.99	0.2	1.6	3.3	7.4	1.3	0.0
<i>Lonicera maackii</i>	Amur Honeysuckle	0.0	0.0	0.0	N/A		19.91	0.0	0.0	0.0	0.0	0.0	0.0
<i>Lonicera morrowii</i>	Morrow's Honeysuckle	8.8	8.7	43.9	None		11.17	4.5	1.6	0.7	1.94	0.0	0.0
<i>Lysimachia nummularia</i>	Moneywort	0.0	0.0	0.0	N/A		19.91	0.0	0.0	0.0	0.0	0.0	0.0
<i>Lythrum salicaria</i>	Purple Loosestrife	0.0	1.1	5.7	None - Check for biocontrol agent		18.77	1.1	0.0	0.0	0.0	0.0	0.0
<i>Malus toringo</i>	Toringo Crabapple	0.0	0.0	0.0	N/A		19.91	0.0	0.0	0.0	0.0	0.0	0.0
<i>Microstegium vimineum</i>	Japanese Stiltgrass	43.8	14.6	73.1	None		5.36	1.0	0.7	3.7	3.2	3.7	2.3
N/A	Non-native, cool season grass	0.0	0.0	0.0	N/A		19.91	0.0	0.0	0.0	0.0	0.0	0.0
<i>Phalaris arundinacea</i>	Reed Canary Grass	4.8	2.1	10.7	None		17.78	0.7	0.6	0.0	0.0	0.3	0.6
<i>Phragmites australis</i>	Common Reed	0.0	0.0	0.0	N/A		19.91	0.0	0.0	0.0	0.0	0.0	0.0
<i>Polygonum cuspidatum</i>	Japanese Knotweed	0.0	0.0	0.0	N/A		19.91	0.0	0.0	0.0	0.0	0.0	0.0
<i>Polygonum perfoliatum</i>	Mile-a-Minute	0.0	0.0	0.0	N/A		19.91	0.0	0.0	0.0	0.0	0.0	0.0
<i>Pyrus calleryana</i>	Callery Pear	0.0	0.0	0.0	N/A		19.91	0.0	0.0	0.0	0.0	0.0	0.0
<i>Ranunculus ficaria</i>	Lesser Celandine	14.4	3.4	17.0	None		16.52	0.0	0.0	0.9	0.0	0.0	2.5
<i>Robinia pseudoacacia</i>	Black Locust	0.0	0.0	0.0	N/A		19.91	0.0	0.0	0.0	0.0	0.0	0.0
<i>Rosa multiflora</i>	Multiflora Rose	19.4	15.9	80.0	None		3.98	3.8	8.1	2.2	0.6	1.3	0.0
<i>Rubus phoenicolasius</i>	Wineberry	9.0	7.6	38.0	None		12.34	0.6	5.9	0.6	0.0	0.5	0.0
<i>Securigera varia</i>	Crown vetch	0.0	0.0	0.0	N/A		19.91	0.0	0.0	0.0	0.0	0.0	0.0
<i>Viburnum dilatatum</i>	Linden Viburnum	0.0	0.0	0.0	N/A		19.91	0.0	0.0	0.0	0.0	0.0	0.0
<i>Viburnum sieboldii</i>	Siebold's Viburnum	0.0	0.0	0.0	N/A		19.91	0.0	0.0	0.0	0.0	0.0	0.0
<i>Wisteria floribunda</i>	Japanese Wisteria	0.0	0.0	0.0	N/A		19.91	0.0	0.0	0.0	0.0	0.0	0.0
<b>Total LOE</b>						<b>0</b>							

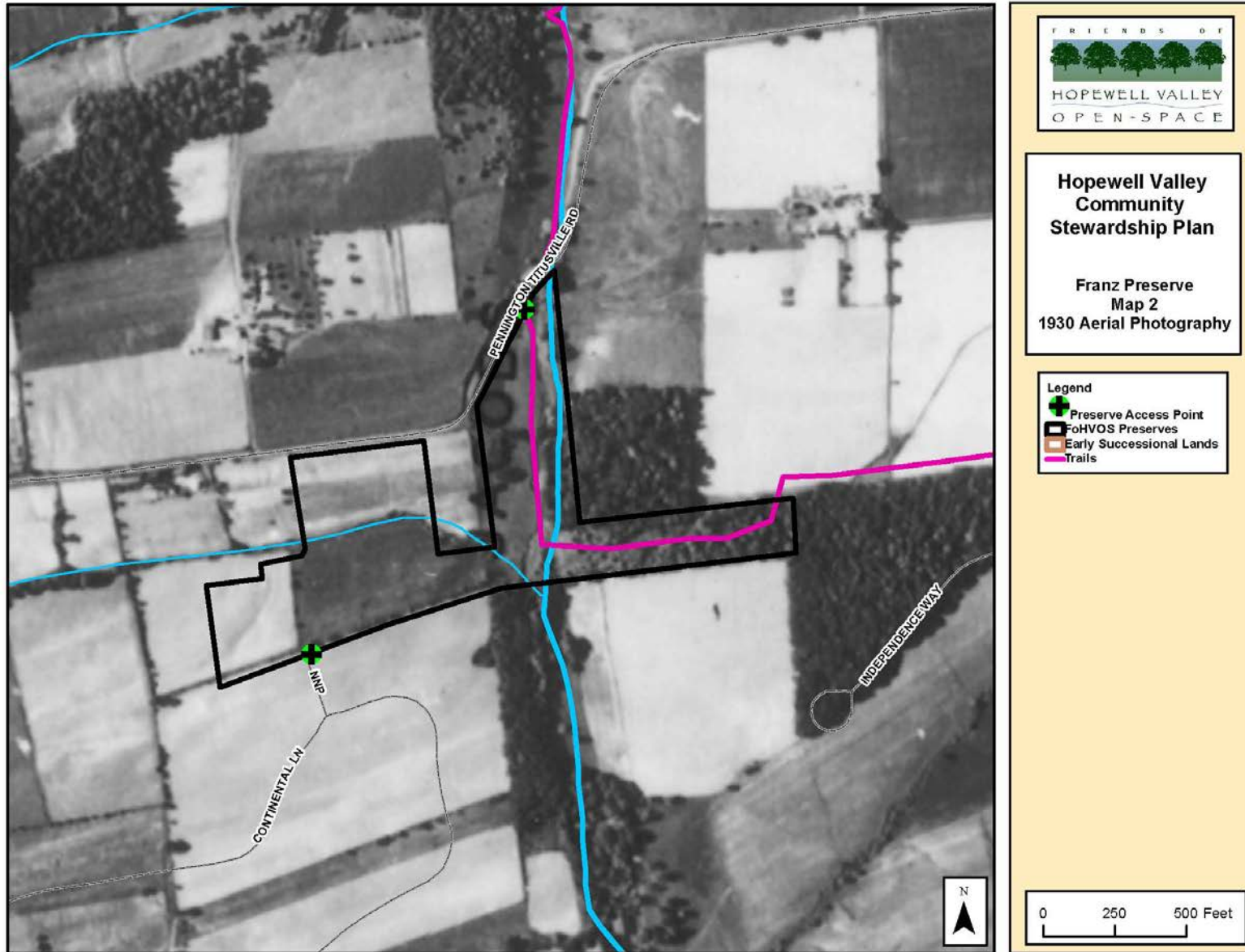
<sup>1</sup> The Infestation Index Score combines the extent of acreage infested and the intensity of the infestation. It was derived by multiplying the cover class number by the number of acres within each cover class.



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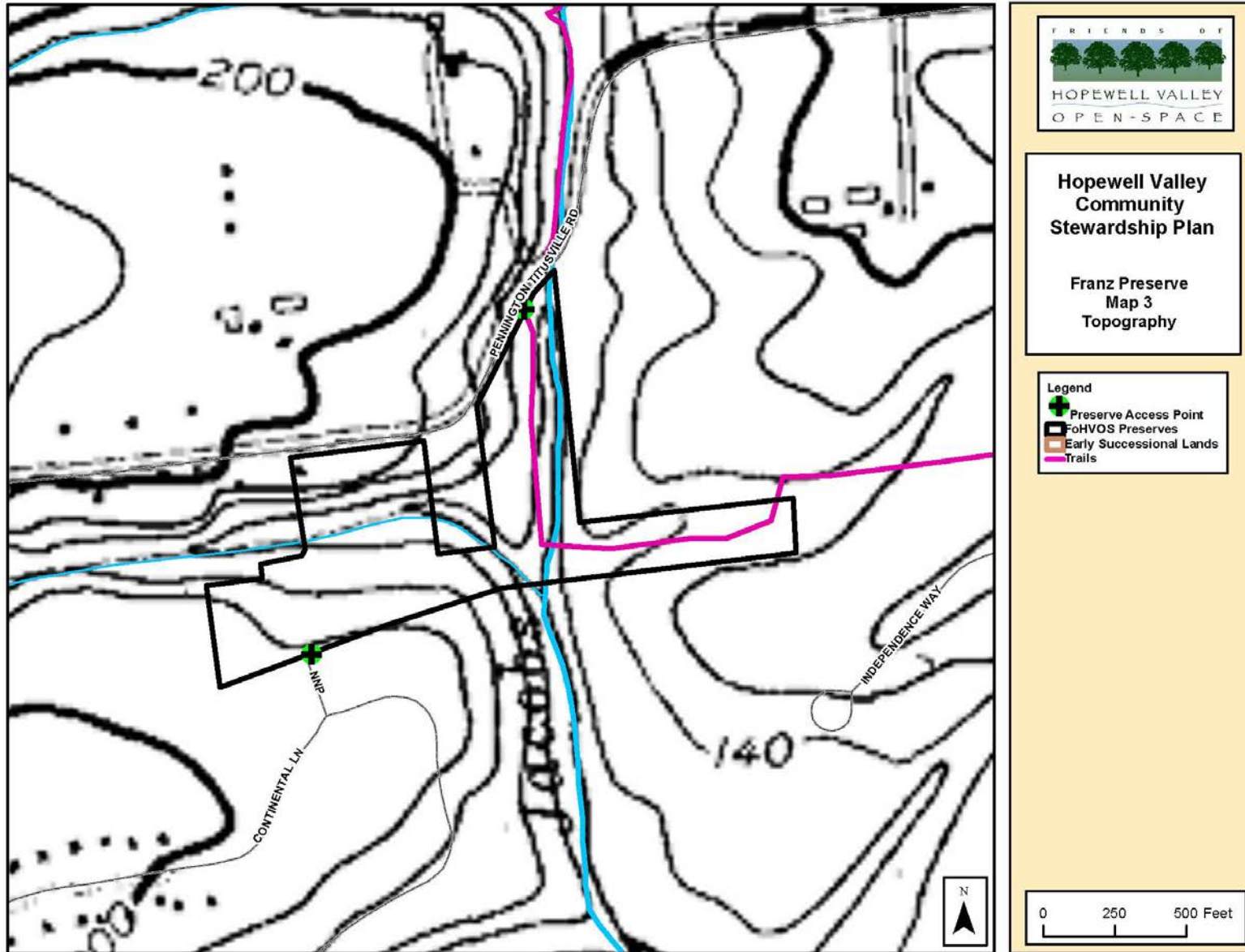


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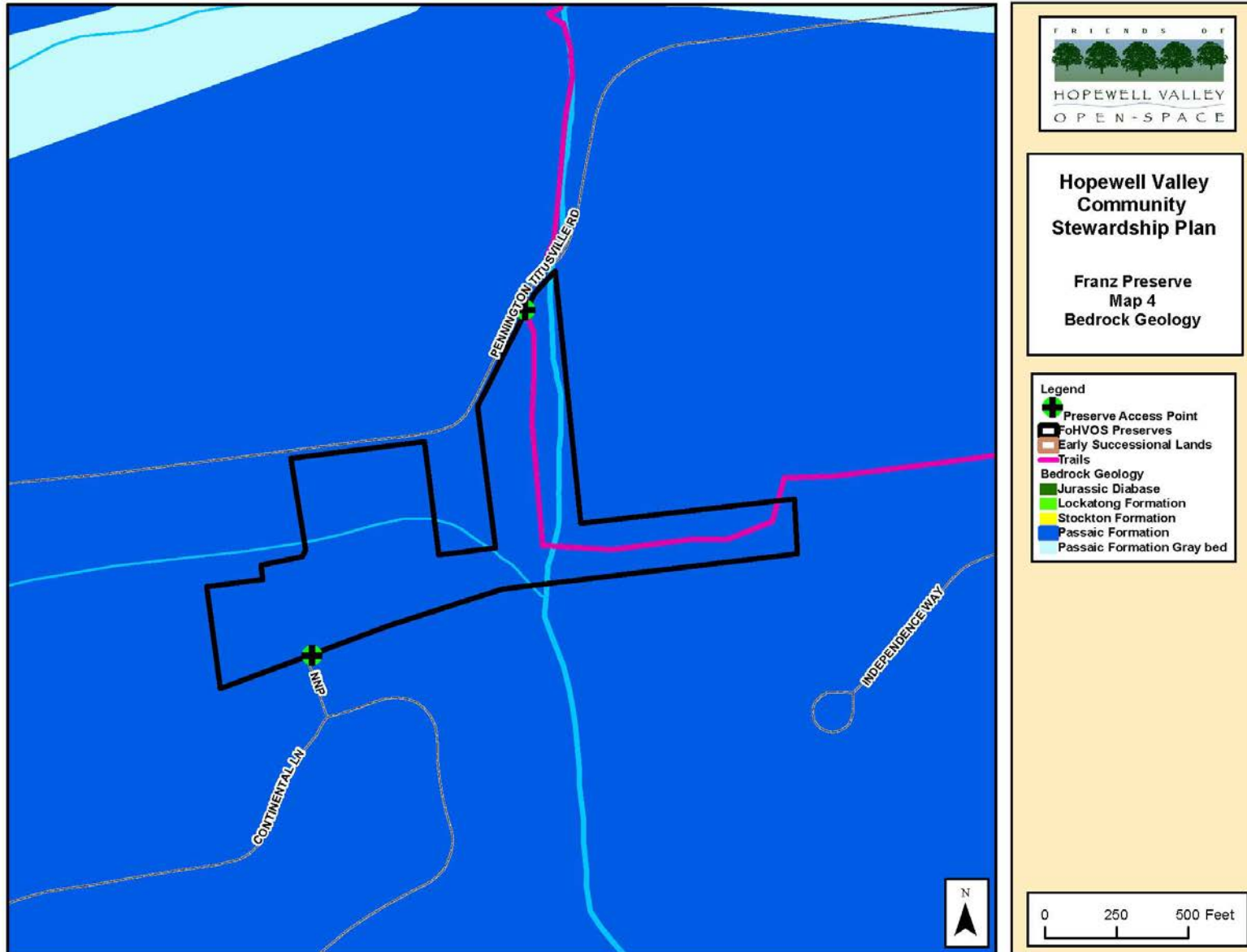




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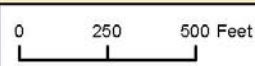
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 Stewardship Plan**

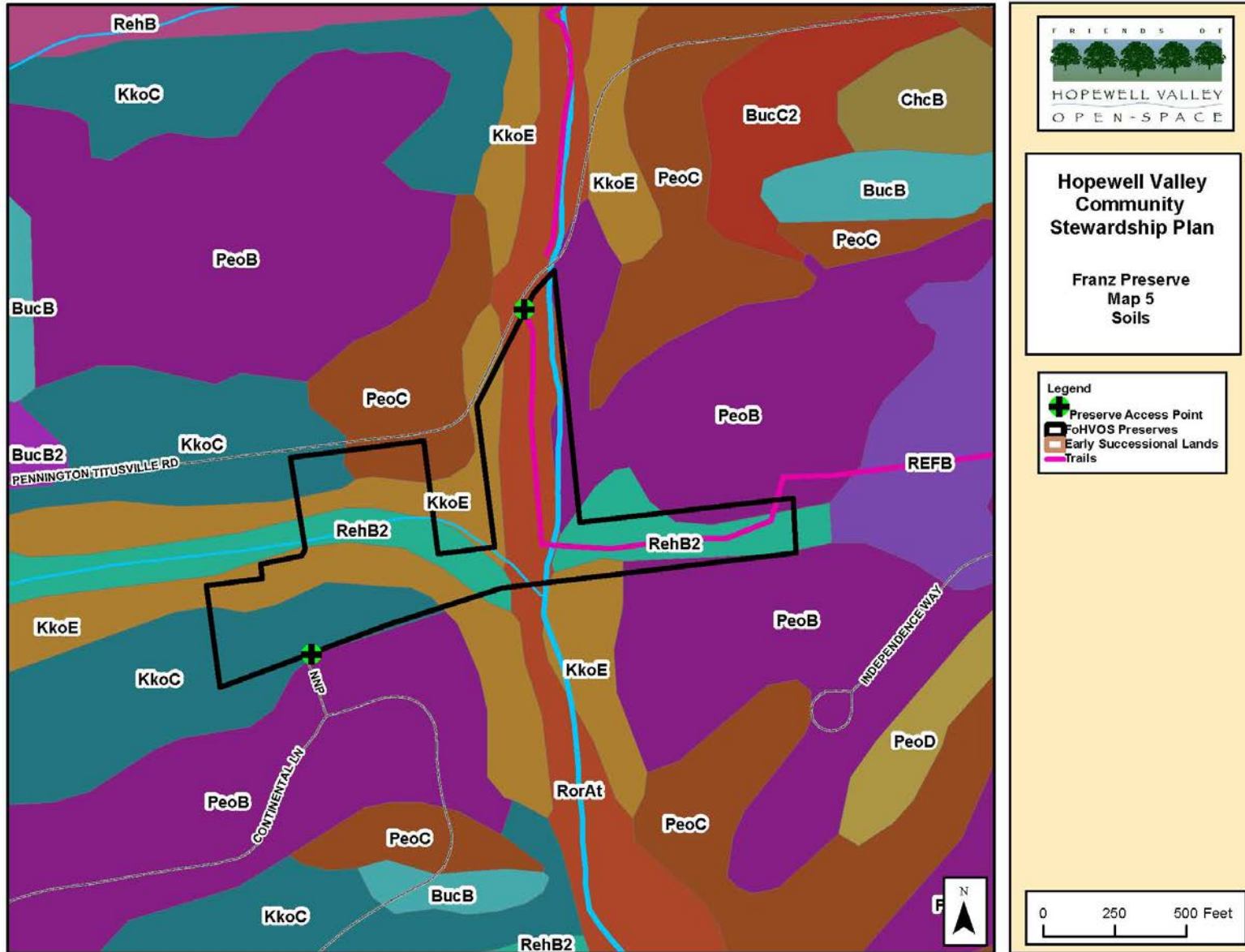
**Franz Preserve  
 Map 4  
 Bedrock Geology**

- Legend**
- Preserve Access Point
  - FoHVOS Preserves
  - Early Successional Lands
  - Trails
  - Bedrock Geology**
  - Jurassic Diabase
  - Lockatong Formation
  - Stockton Formation
  - Passaic Formation
  - Passaic Formation Gray bed

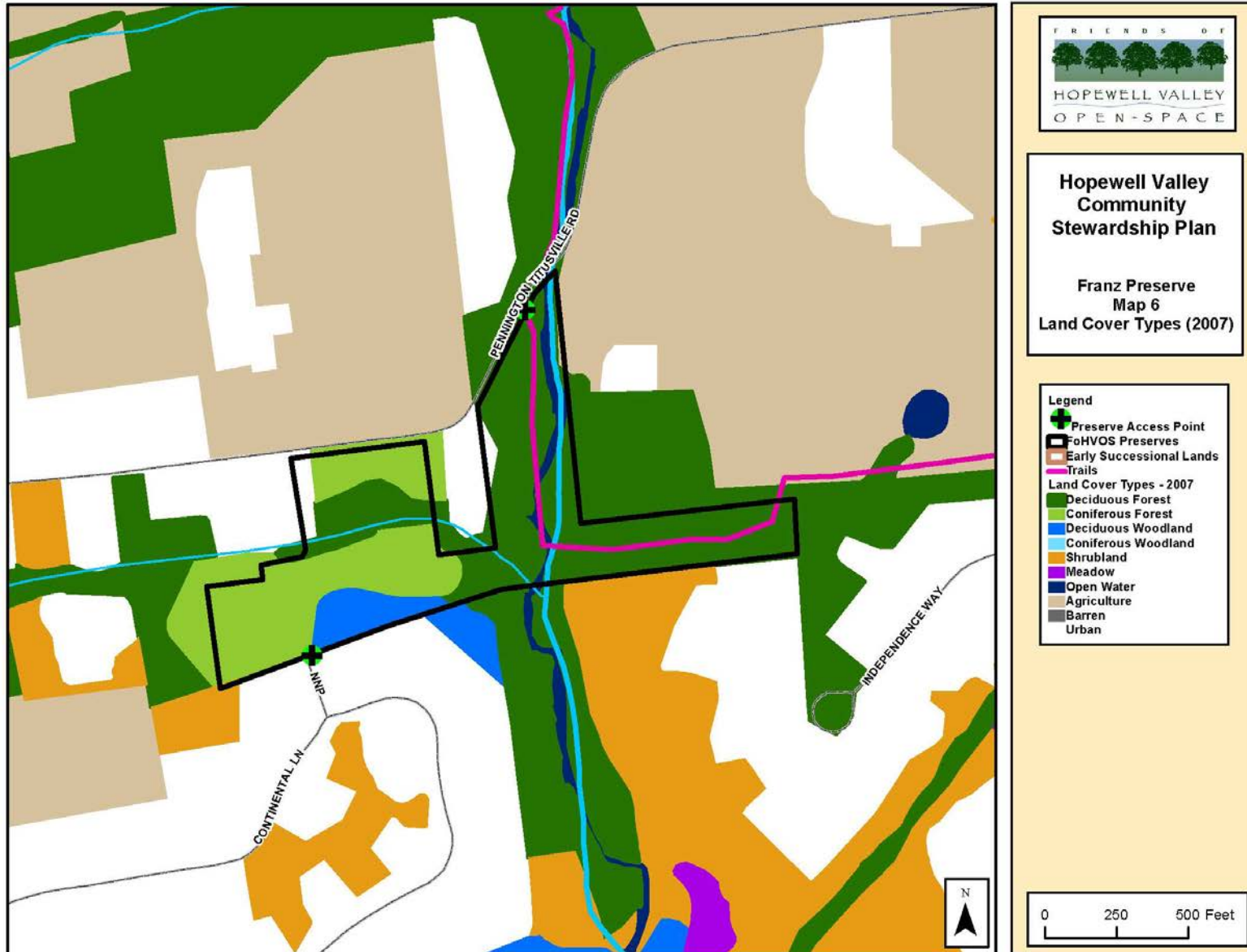




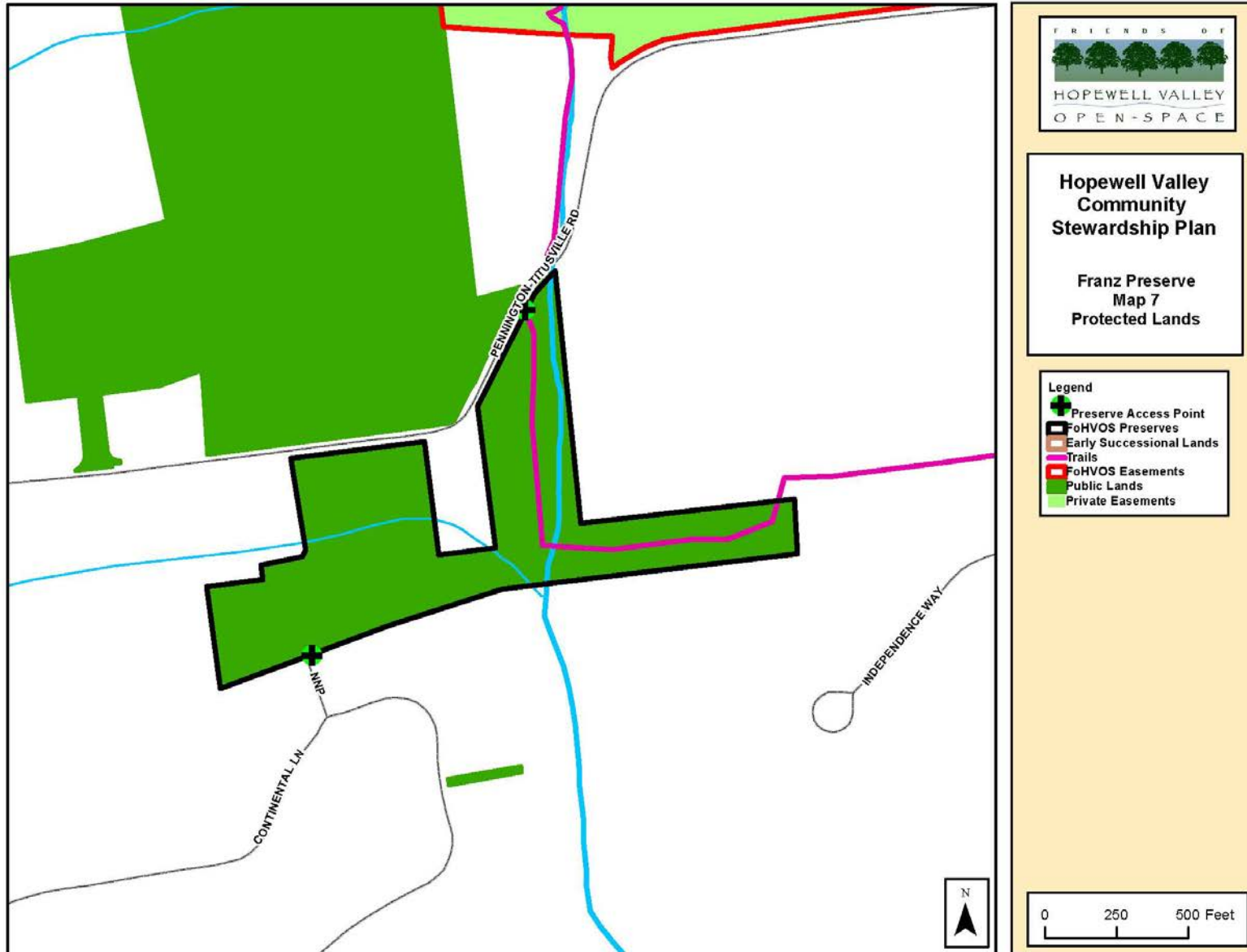
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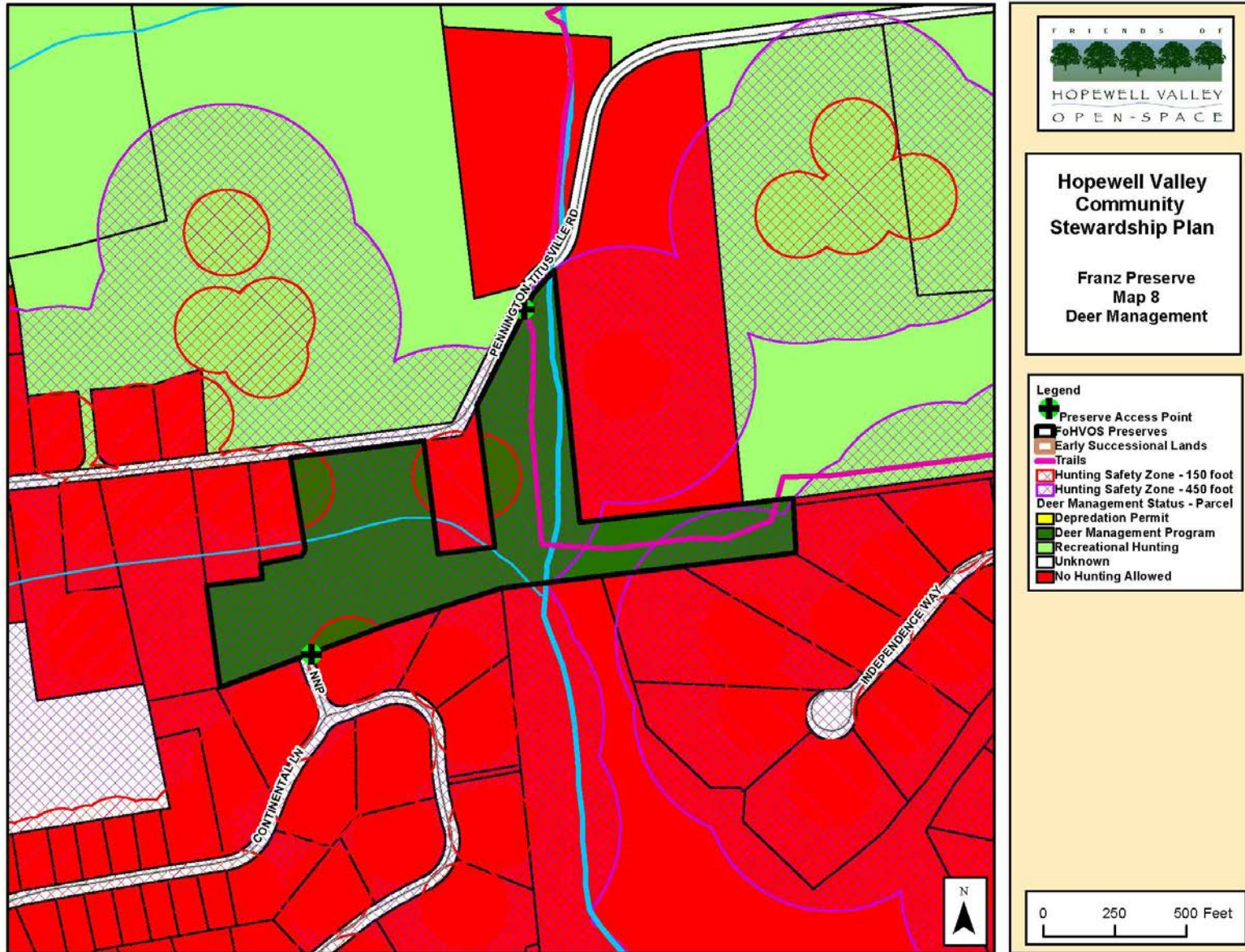


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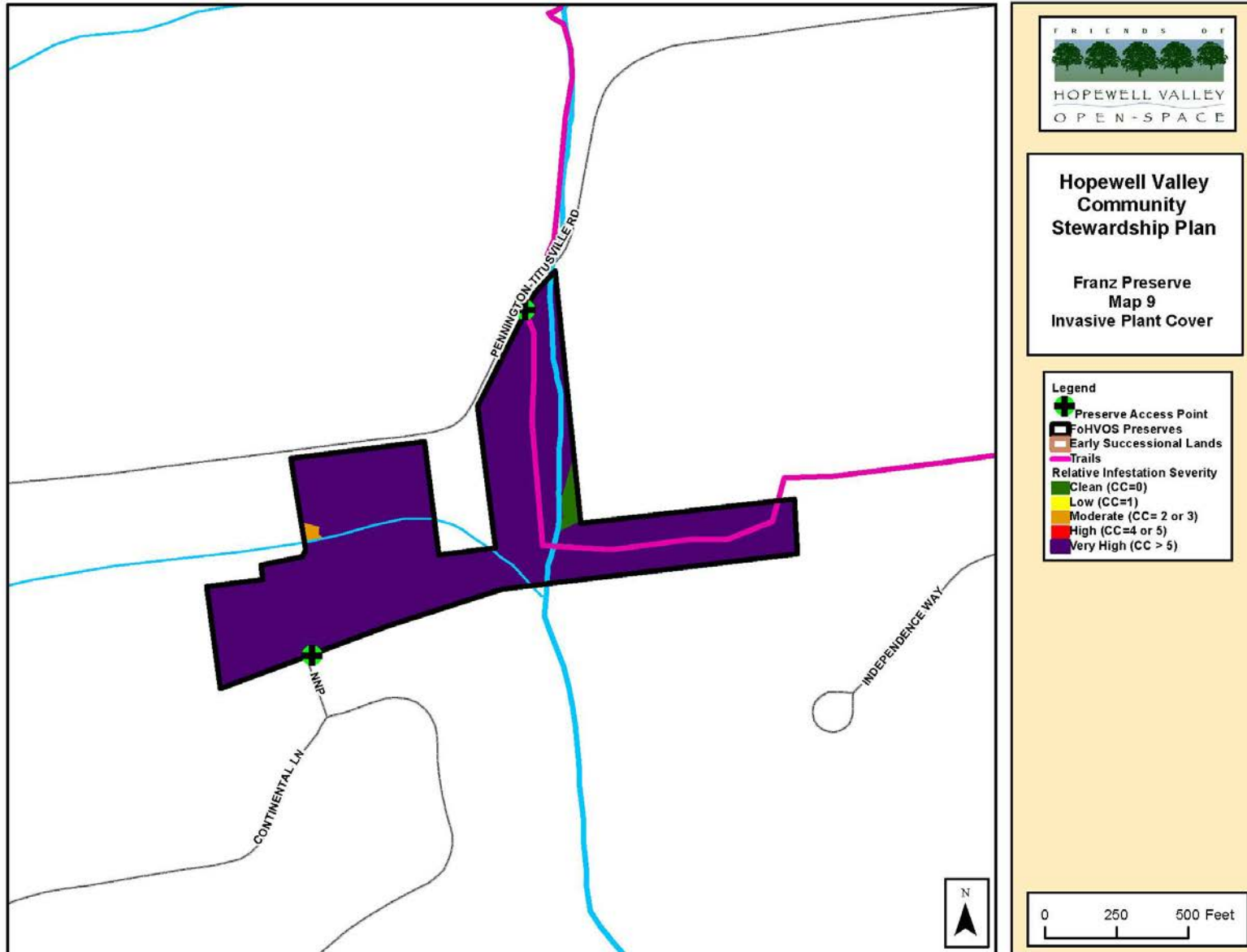


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**Appendix 9.  
Genovesi Preserve**

**Acreage:** 3.0

**Block and Lot:** B20, L18.01

**Ownership:** FoHVOS (100%)

**Year(s) Purchased:** 2000

**Location & Access:** The preserve is located on the south side of Crusher Road, approximately 2.8 miles east of Route 654. Nearest street address: 29 Crusher Road, Hopewell. Parking access is difficult, but available along the road (shoulder is narrow).

**Structures:** None

Additional property information is summarized in Appendix W. The following Preserve maps are provided at the end of this document:

- Map 1 2007 Aerial Photography
- Map 2 1930 Aerial Photography
- Map 3 Topography
- Map 4 Bedrock Geology
- Map 5 Soils
- Map 6 Land Cover Types (2007)
- Map 7 Protected Lands
- Map 8 Deer Management
- Map 9 Invasive Plant Cover (Relative Infestation Severity for all species)

**Website Description:**

**Genovesi Preserve** is situated in Hopewell's Mount Rose section. This parcel protects a portion of the area's forest and features woody plant species such as maple leaf viburnum, black birch, and ironwood. The site was once quarried – a large pit and a stone foundation remain as evidence.

**BROAD PROPERTY DESCRIPTION**

The Genovesi Preserve (see Map 1) is located in eastern Hopewell Township. The topography (see Map 3) is steep sloping in multiple directions at about 280 feet above sea level.

Based upon analysis of NJDEP's 2007 Land Use/Land Cover dataset, the preserve contains one broad plant community: Deciduous Forest (> 50% canopy) – Upland. The preserve is surrounded by forest and residential parcels. Land Use/Land Cover is summarized in Appendix X and illustrated in Map 6.

Historically the preserve was forest and quarry. Stone foundations and steep topography delineate the quarry areas.

The forest's native species composition is comprised of American beech, tulip tree, ash, black cherry, mazzard cherry, black birch, grape, red oak, hop hornbeam, white wood aster (only on roadside), bitternut hickory, and sedges. Herbaceous plants are found only in small populations. Canopy gaps and much of the understory are colonized by non-native species.

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The preserve has two types of bedrock geology--the Jurassic (predominant) and Passaic formations. See Map 4.

The preserve has three soil types (see Map 5)--Neshaminy silt loam, 6 to 12 percent slopes, very stony; Neshaminy silt loam, 12 to 30 percent slopes, very rubbly; and Neshaminy silt loam, 2 to 6 percent slopes. The preserve's soils are described in Appendix Y.

**CONSERVATION VALUES**

Based on an analysis involving the ranking of ecological values and threats (See Community Stewardship Plan text), the Preserve has a weighted Ecological Value of 25-50%. See Appendix A for a description of ranking factors.

**Forest and Woodland Communities:** The preserve is part of the Mount Rose large forest patch.

The forest patch found on the Preserve and surrounding area is an important stop-over habitat (spring and fall resting and feeding) for migratory species. The spottiness of the woodland shrub layer reduces the value of nesting and successful breeding for bird species.

**Old forest:** The majority of the preserve was forested in the 1930s, except for the quarry area. See Map 2.

**Early Successional Communities:**

**Shrublands:** N/A

**Meadows/Grasslands:** N/A

**Waterbodies:** N/A

**Rare Species:**

**Rare Plants:** None.

**Rare Animals:** The Landscape Project has identified the Preserve as ranked for species of State Endangered, Threatened, and Special Concern Species. The Preserve has suitable wood turtle habitat in the eastern areas. See Appendix L for a list of species.

**THREATS**

**Deer:** The understory and herb layers are severely browsed. Regeneration of the native shrub and canopy layer are currently non-existent.

**Invasive species:** In 2008 staff began walk-through surveys for emerging invasive species on all preserves. Mapping documented each species and its population size. No species were detected. See [www.njisst.org](http://www.njisst.org) for the current status of emerging invasive species at the Preserve.

In 2011 staff completed surveys for invasive plant species on all preserves (see Map 9). Mapping documented each species found and its population size (See Table 1 below). The five species with the highest infestation scores include: Winged Burning Bush, Japanese Honeysuckle, Garlic Mustard, Wineberry, and Multiflora Rose.

**Other:** N/A

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**STRATEGIES and ACTIONS**

**Forest and Woodland Habitat Stewardship:** Annual surveys for and eradication of emerging invasive species is a high priority at this Preserve.

No action is recommended for widespread invasive species, except for winged burning bush and Asiatic bittersweet. All fruiting and flowering individuals should be treated with basal bark or cut stump (in the case of vines on trees). Reduced deer density will allow the native plant communities to recover and compete with all other widespread invasive species on a long-term basis.

**Early Successional Habitat Stewardship:** N/A

**Deer Management:** The preserve is enrolled in the DMP for bow hunting. See Map 8 for delineations of the 150' and 450' safety zones and hunting status.

**Rare Species Management:** N/A

**Neighboring Lands:** See Map 7 for adjacent protected lands.

**Waterbodies Management:** N/A

**Undesirable Activities Management:** N/A

**Scientific Research Assessment:** The Preserve is available for scientific research.

**Recreational Opportunities Assessment:** The preserve is too small to support a trail and vehicular access is difficult.



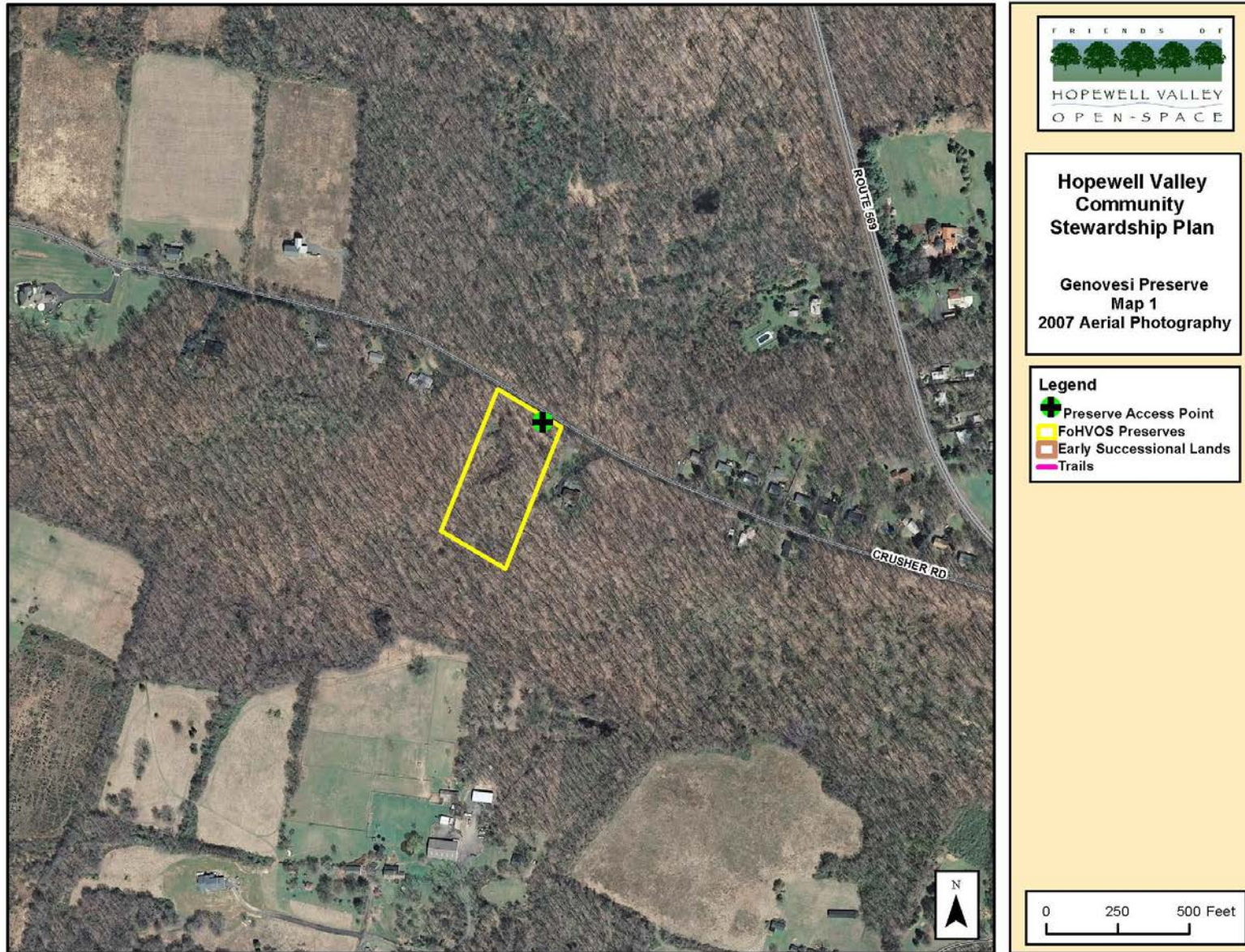
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**Table 1. Invasive Plants – Species Abundance and Treatment Recommendations**

Scientific Name	Common Name	Infestation Index Score <sup>1</sup>	Total Acres Present	Percent of Preserve Area Present	Treatment Recommendation	LOE Estimate (Hours)	Acreage by Percent Ground Cover Categories						
							Category 0: 0%	Category: Trace	Category 1: 1-10%	Category 2: 10-25%	Category 3: 25-50%	Category 4: 50-75%	Category 5: 75-100%
<i>Acer palmatum</i>	Japanese Maple	0.0	0.0	0.0	N/A		3.16	0.0	0.0	0.0	0.0	0.0	0.0
<i>Acer platanoides</i>	Norway Maple	0.0	0.0	0.0	N/A		3.16	0.0	0.0	0.00	0.0	0.00	0.0
<i>Ailanthus altissima</i>	Tree-of-Heaven	0.0	0.0	0.0	N/A		3.16	0.0	0.0	0.0	0.0	0.0	0.0
<i>Alliaria petiolata</i>	Garlic Mustard	3.9	1.7	52.8	None		1.49	0.0	0.1	0.9	0.6	0.0	0.0
<i>Artemisia vulgaris</i>	Common Mugwort	0.0	0.0	0.0	N/A		3.16	0.0	0.0	0.0	0.0	0.0	0.0
<i>Arthraxon hispidus</i>	Small Carpgrass	0.0	0.0	0.0	N/A		3.16	0.0	0.0	0.0	0.0	0.0	0.0
<i>Berberis thunbergii</i>	Japanese Barberry	0.0	1.0	31.3	None		2.17	1.0	0.02	0.0	0.0	0.0	0.0
<i>Cardamine impatiens</i>	Narrow-leaved Bittercress	0.0	0.0	0.0	N/A		3.16	0.0	0.0	0.0	0.0	0.0	0.0
<i>Catalpa bignonioides</i>	Northern Catalpa	0.0	0.0	0.0	N/A		3.16	0.0	0.0	0.0	0.0	0.0	0.0
<i>Celastrus orbiculatus</i>	Asiatic Bittersweet	2.0	1.7	52.2	Control - Treat Fruiting Plants	10	1.51	0.0	1.5	0.1	0.1	0.0	0.0
<i>Centurea sp.</i>	Knapsweed sp.	0.0	0.0	0.0	N/A		3.16	0.0	0.0	0.0	0.0	0.0	0.0
<i>Cirsium arvense</i>	Canada Thistle	0.0	0.0	0.0	N/A		3.16	0.0	0.0	0.0	0.0	0.0	0.0
<i>Dipsacus sylvestris</i>	Teasel	0.0	0.0	0.0	N/A		3.16	0.0	0.00	0.0	0.0	0.0	0.0
<i>Eleaagnus umbellata</i>	Autumn Olive	0.0	0.0	0.0	N/A		3.16	0.0	0.0	0.0	0.0	0.0	0.0
<i>Euonymus alata</i>	Winged Burning Bush	7.4	2.1	64.9	Control - Treat Fruiting Plants	30	1.11	0.1	0.2	0.2	0.5	0.0	1.08
<i>Iris pseudoacris</i>	Yellow Iris	0.0	0.0	0.0	N/A		3.16	0.0	0.0	0.0	0.0	0.0	0.0
<i>Lespedeza cuneata</i>	Chinese Bushclover	0.0	0.0	0.0	N/A		3.16	0.0	0.0	0.0	0.0	0.0	0.0
<i>Ligustrum obtusifolium</i>	Border Privet	0.0	0.0	0.0	N/A		3.16	0.0	0.00	0.0	0.0	0.0	0.0
<i>Lonicera japonica</i>	Japanese Honeysuckle	6.2	2.7	84.8	None		0.48	0.0	0.4	1.1	1.0	0.2	0.0
<i>Lonicera maackii</i>	Amur Honeysuckle	0.0	0.0	0.0	N/A		3.16	0.0	0.0	0.0	0.0	0.0	0.0
<i>Lonicera morrowii</i>	Morrow's Honeysuckle	0.0	0.0	0.0	N/A		3.16	0.0	0.0	0.0	0.00	0.0	0.0
<i>Lysimachia nummularia</i>	Moneywort	0.0	0.0	0.0	N/A		3.16	0.0	0.0	0.0	0.0	0.0	0.0
<i>Lythrum salicaria</i>	Purple Loosestrife	0.0	0.0	0.0	N/A		3.16	0.0	0.0	0.0	0.0	0.0	0.0
<i>Malus toringo</i>	Toringo Crabapple	0.0	0.0	0.0	N/A		3.16	0.0	0.0	0.0	0.0	0.0	0.0
<i>Microstegium vimineum</i>	Japanese Stiltgrass	1.9	1.2	36.7	None		2.00	0.0	0.8	0.0	0.3	0.0	0.04
N/A	Non-native, cool season grass	0.0	0.0	0.0	N/A		3.16	0.0	0.0	0.0	0.0	0.0	0.0
<i>Phalaris arundinacea</i>	Reed Canary Grass	0.0	0.0	0.0	N/A		3.16	0.0	0.0	0.0	0.0	0.0	0.0
<i>Phragmites australis</i>	Common Reed	0.0	0.0	0.0	N/A		3.16	0.0	0.0	0.0	0.0	0.0	0.0
<i>Polygonum cuspidatum</i>	Japanese Knotweed	0.0	0.0	0.0	N/A		3.16	0.0	0.0	0.0	0.0	0.0	0.0
<i>Polygonum perfoliatum</i>	Mile-a-Minute	0.0	0.0	0.0	N/A		3.16	0.0	0.0	0.0	0.0	0.0	0.0
<i>Pyrus calleryana</i>	Callery Pear	0.0	0.0	0.0	N/A		3.16	0.0	0.0	0.0	0.0	0.0	0.0
<i>Ranunculus ficaria</i>	Lesser Celandine	0.0	0.0	0.0	N/A		3.16	0.0	0.0	0.0	0.0	0.0	0.0
<i>Robinia pseudoacacia</i>	Black Locust	0.0	0.0	0.0	N/A		3.16	0.0	0.0	0.0	0.0	0.0	0.0
<i>Rosa multiflora</i>	Multiflora Rose	3.2	1.5	47.2	None		1.67	0.0	0.3	0.7	0.5	0.0	0.0
<i>Rubus phoenicolasius</i>	Wineberry	3.9	2.3	72.8	None		0.86	0.0	1.6	0.04	0.3	0.3	0.0
<i>Securigera varia</i>	Crown vetch	0.0	0.0	0.0	N/A		3.16	0.0	0.0	0.0	0.0	0.0	0.0
<i>Viburnum dilatatum</i>	Linden Viburnum	0.0	0.0	0.0	N/A		3.16	0.0	0.0	0.0	0.0	0.0	0.0
<i>Viburnum sieboldii</i>	Siebold's Viburnum	0.0	0.0	0.0	N/A		3.16	0.0	0.0	0.0	0.0	0.0	0.0
<i>Wisteria floribunda</i>	Japanese Wisteria	0.0	0.0	0.0	N/A		3.16	0.0	0.0	0.0	0.0	0.0	0.0
<b>Total LOE</b>						<b>40</b>							

<sup>1</sup> The Infestation Index Score combines the extent of acreage infested and the intensity of the infestation. It was derived by multiplying the cover class number by the number of acres within each cover class.

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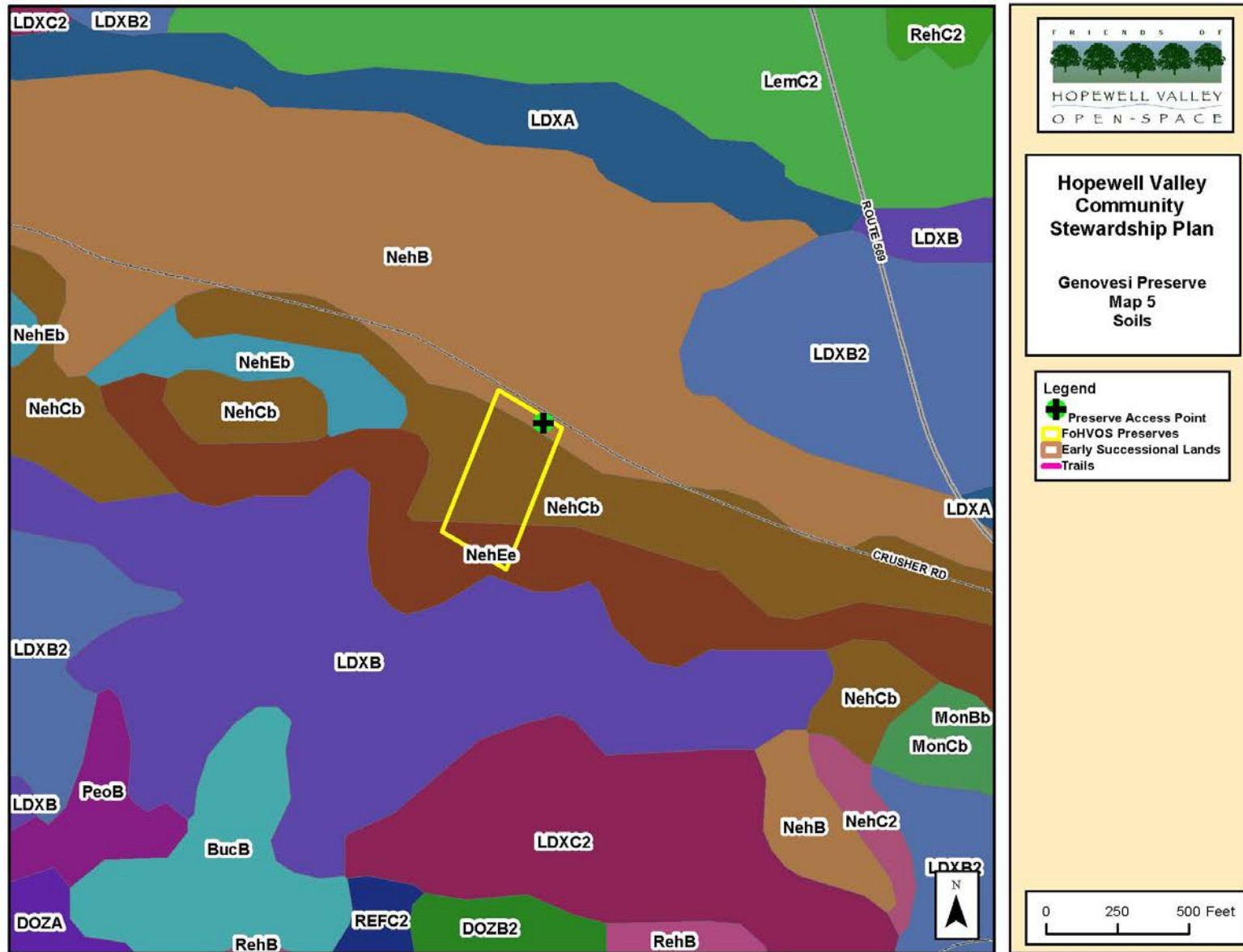




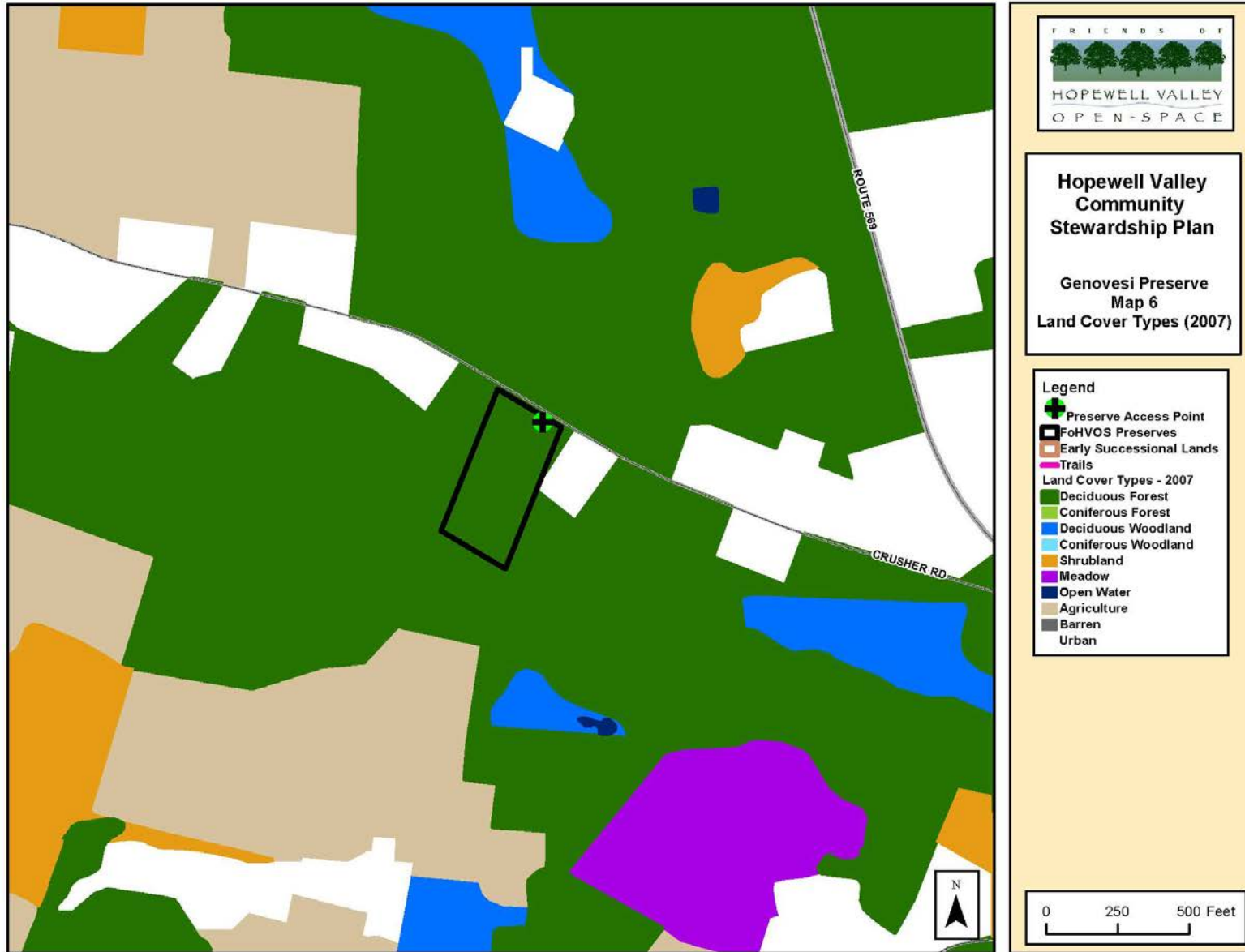
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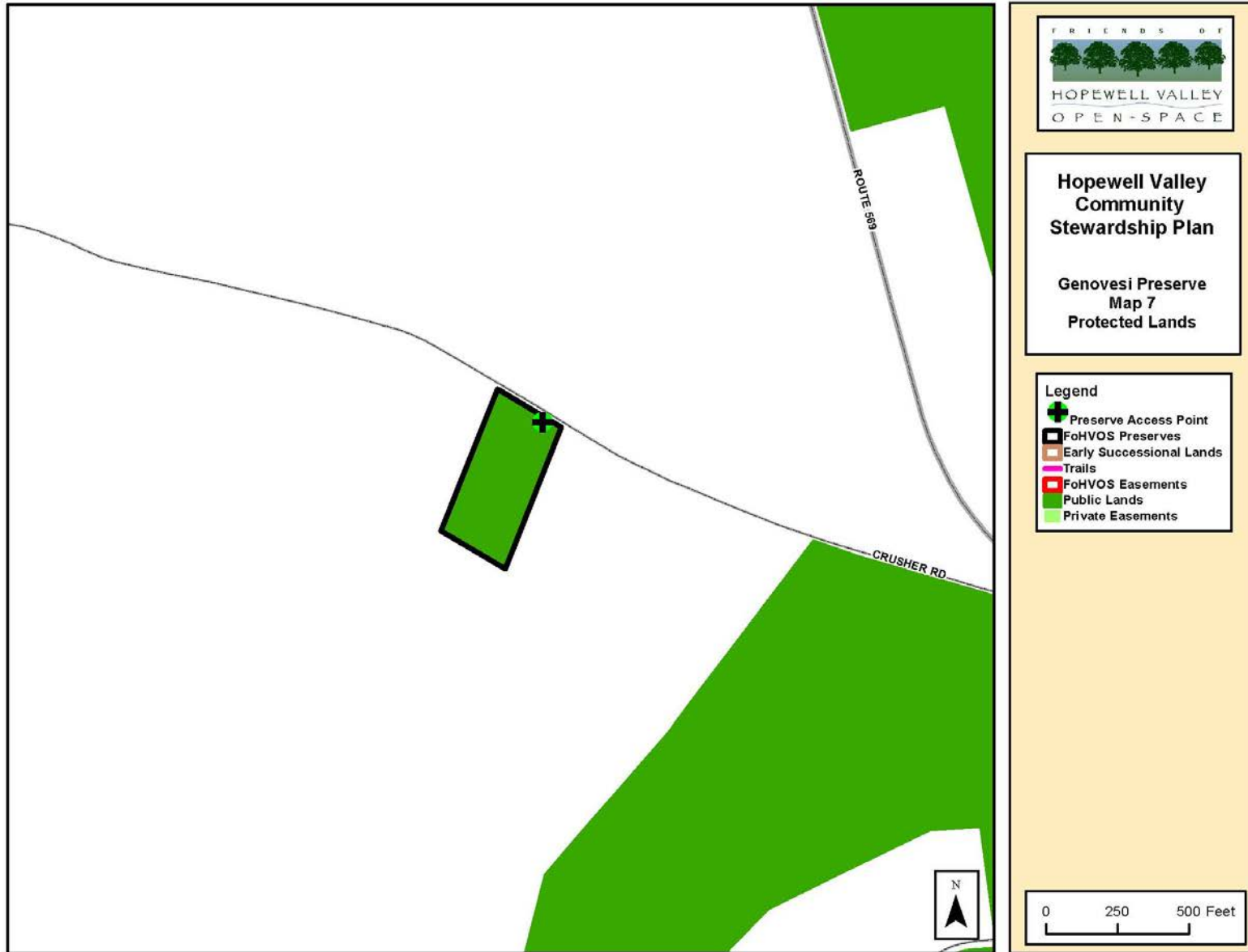
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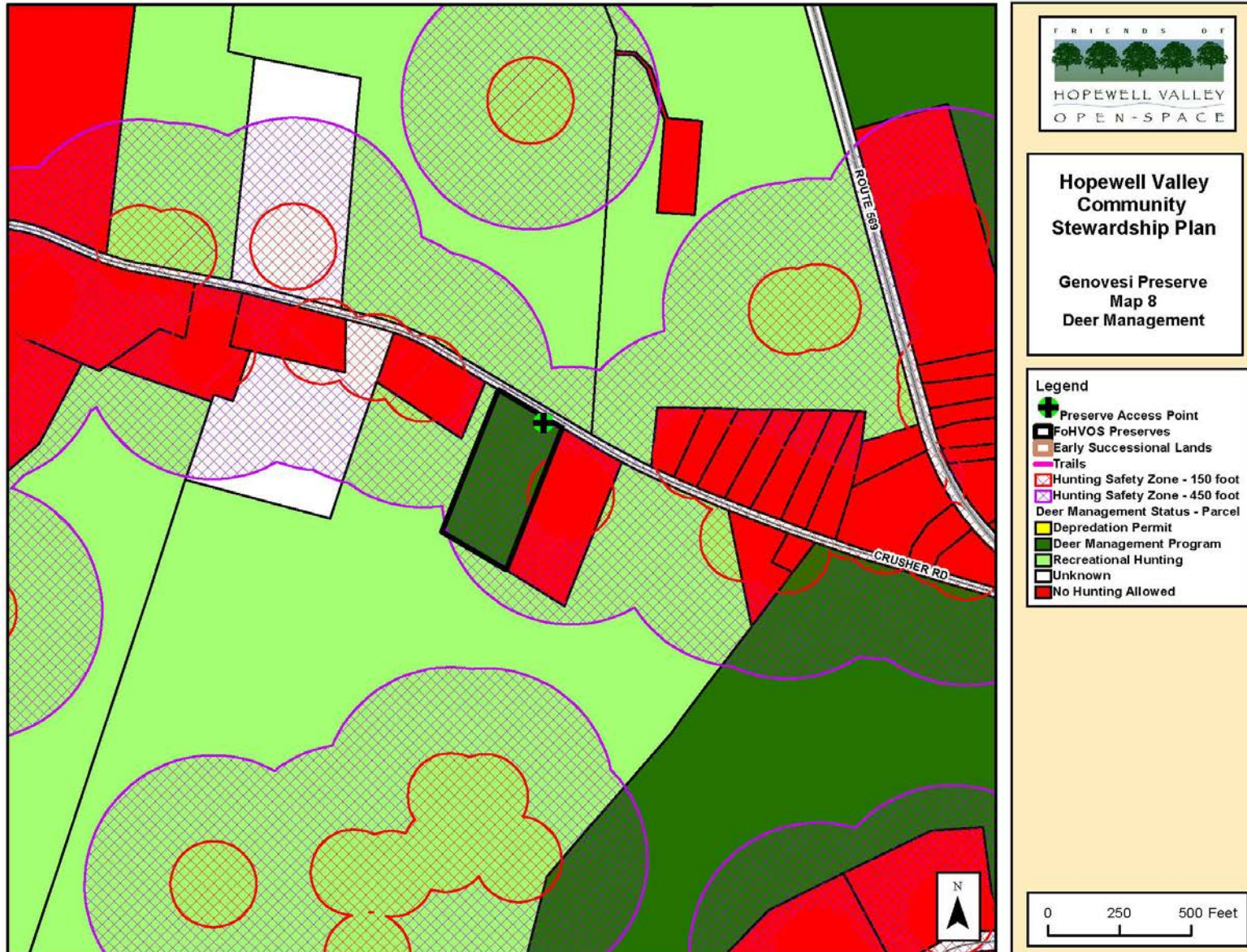


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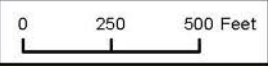
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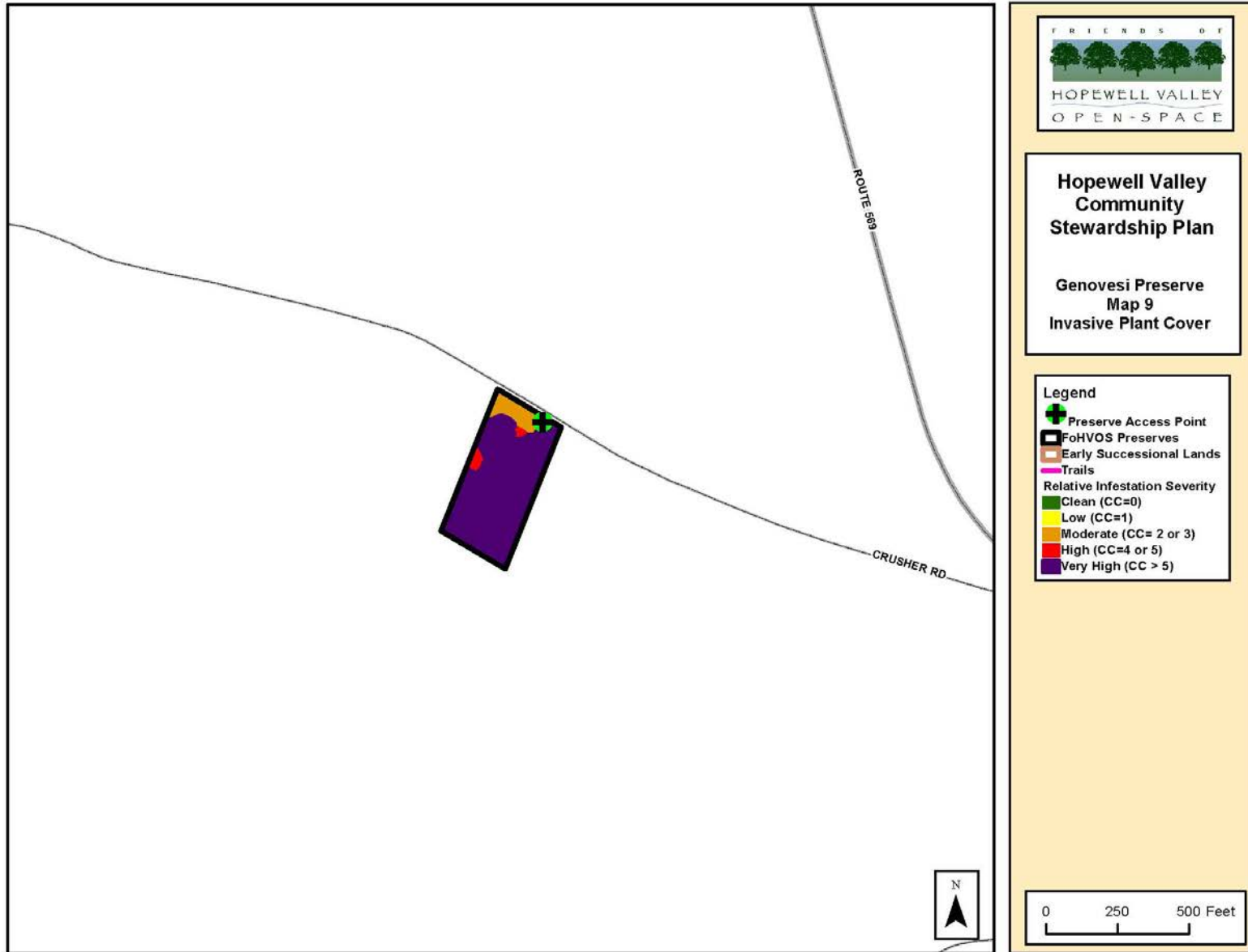
**Hopewell Valley  
Community  
Stewardship Plan**

**Genovesi Preserve  
Map 8  
Deer Management**

- Legend**
- Preserve Access Point
  - FoHVOS Preserves
  - Early Successional Lands
  - Trails
  - Hunting Safety Zone - 150 foot
  - Hunting Safety Zone - 450 foot
  - Deer Management Status - Parcel**
  - Depredation Permit
  - Deer Management Program
  - Recreational Hunting
  - Unknown
  - No Hunting Allowed



Hopewell Valley Community Stewardship Plan  
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**Hopewell Valley Community Stewardship Plan  
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**Appendix 8.  
Gomez Preserve**

**Acreage:** 58.598

**Block and Lot:** B28, L3.01, 11

**Ownership:** FoHVOS (80%) and Hopewell Township (20%)

**Year(s) Purchased:** 2008

**Location & Access:** Preserve is located on the southwestern corner of Route 579 and Route 518. Preserve access on unimproved access road along Route 579 (across from Lynnbrook Drive). Four wheel drive is recommended. Parking also available along the shoulder of Lynnbrook Drive. Nearest street address: 1585 Harbourton-Rocktown Road, Lambertville.

**Structures:** Several stone structures of potential historical importance are located in the eastern portion of the Preserve.

Additional property information is summarized in Appendix W. The following Preserve maps are provided at the end of this document:

- Map 1 2007 Aerial Photography
- Map 2 1930 Aerial Photography
- Map 3 Topography
- Map 4 Bedrock Geology
- Map 5 Soils
- Map 6 Land Cover Types (2007)
- Map 7 Protected Lands
- Map 8 Deer Management
- Map 9 Invasive Plant Cover (Relative Infestation Severity for all species)

**Website Description:**

**Gomez Preserve** is a patchwork of meadows, open woodlands, red cedar thickets, and a spruce/fir plantation. The former owner maintained a narrow airstrip which is still visible along Route 518.

**BROAD PROPERTY DESCRIPTION**

The Gomez Preserve (see Map 1) is located at the north-central section of the township. The topography (see Map 3) is primarily flat at 110 feet above sea level. The Preserve is surrounded by residential development, agricultural lands and forest. Single home dwellings and commercial development are scattered along Routes 579 and 518.

Based upon analysis of NJDEP's 2007 Land Use/Land Cover dataset, the preserve contains broad plant communities: Deciduous Forest (> 50% canopy) - Upland, Coniferous Woodland (10-50% canopy) - Upland, Shrubland (< 10% canopy, > 25% shrub cover) - Upland, Agricultural Lands, and Urban Lands. Land Use/Land Cover is summarized in Appendix X.

The preserve was historically used for agriculture and the current native plant communities reflect this alteration in the soils. Ash, red cedar, and white snakeroot are among the most common native species. An abandoned Christmas tree plantation exists behind the Gomez easement.

**Hopewell Valley Community Stewardship Plan**  
**Friends of Hopewell Valley Open Space**

The preserve has one type of bedrock geology--the Lockatong formation. See Map 4.

The preserve has 6 soil types (see Map 5) with Chalfont silt loam, 2 to 6 percent slopes; Quakertown silt loam, 2 to 6 percent slopes; and Quakertown channery silt loam, 2 to 6 percent slopes being the three most common types. The preserve's soils are described in Appendix Y.

**CONSERVATION VALUES**

Based on Natural Heritage data, ENSP data, Landscape Project, 1930s forest presence/absence et al. the Preserve has the highest weighted Ecological Value at >75%. See Appendix A for a description of ranking factors.

**Forest and Woodland Communities:** The forest patch found on the Preserve and surrounding area is an important stop-over habitat (spring and fall resting and feeding) for migratory species. Native species cover consists of oaks, red maple, ash and red cedar. Invasive species infestations are intense throughout the forest.

**Old forest:** None. See Map 2.

**Early Successional Communities:**

**Shrublands:** This community type is primarily composed of non-native species such as multiflora rose and autumn olive. The upland soils disturbed by past agricultural use do not contain a diversity of native shrubs.

**Meadows/Grasslands:** In previous years, Fields 27-29 had been maintained as lawn by a neighbor. The neighbor has altered their mowing schedule and now mows during the winter, which has led to increases in native grasses and herbs.

While diversity of native species is low (Indian grass, grease grass, beardtongue, field aster, and goldenrods), percent cover is high for particular species such as Indian grass). Additionally, the cover of invasive woody species is predominantly very low in all fields at the Preserve.

**Waterbodies:** None.

**Rare Species:**

**Rare Plants:** None documented on the Preserve. Natural Heritage grid data shows no species.

**Rare Animals:** The Preserve is identified as habitat for State Special Concern species. See Appendix L for a list of species.

**THREATS**

**Deer:** White-tailed deer have suppressed much of the native community, leaving only canopy trees and an extremely sparse native herb and shrub layer. Soils have been altered by past agricultural use. Forest health monitoring was performed in 2007/2008 (See main plan, Table 9).

**Invasive species:** In 2008 staff began walk-through surveys for emerging invasive species on all preserves. Mapping documented each species and its population size. Japanese wisteria (near buildings/foundations), Chinese bushclover, and Chinese silvergrass were detected. See [www.njisst.org](http://www.njisst.org) for the current status of emerging invasive species at the Preserve.



**Hopewell Valley Community Stewardship Plan**  
**Friends of Hopewell Valley Open Space**

In 2011 staff completed surveys for invasive plant species on all preserves (see Map 9). Mapping documented each species found and its population size (See Table 1 below). The five species with the highest infestation scores include: Japanese Stiltgrass, Multifloral Rose, Japanese Honeysuckle, Autumn Olive, and Non-native, cool season grass.

**Other:** N/A

**STRATEGIES and ACTIONS:**

**Forest and Woodland Habitat Stewardship:**

Surveys for and eradication of emerging invasive species are a high priority. Treatment of wisteria should begin with basal bark treatments of vines climbing trees and subsequent follow up with foliar spray.

No action is recommended for widespread invasive species, except for Asiatic bittersweet. All fruiting vines should be treated with basal bark or cut stump (in the case of vines on trees) methods. Reduced deer density will allow the native plant communities to recover and compete with the widespread invasive species.

**Early Successional Habitat Stewardship:**

A biannual winter mowing or burning regime is recommended in all meadows. Eradicate Chinese bushclover and Chinese silvergrass in Field 32. Additional species of concern include autumn olive, Siebold's crabapple, common mugwort, multifloral rose and Wineberry (See Table 1 below).

For habitat goals and maintenance schedule see Appendix T & U.

**Deer Management:** The preserve is not currently enrolled in the DMP. Hopewell Township is planning to incorporate the Preserve in their DMP beginning in fall 2012. See Map 8 for delineations of the 150' and 450' safety zones and hunting status.

**Rare Species Management:** Maintain matrix of forest and fields as habitat.

**Neighboring Lands:** See Map 7 for adjacent protected lands.

**Waterbodies Management:** N/A

**Undesirable Activities Management:** N/A

**Scientific Research Assessment:** The Preserve is available for scientific research.

**Recreational Opportunities Assessment:** This property was considered for a loop trail, but vehicular access is difficult and historic buildings and their remnants must be addressed. Currently, there are no opportunities to connect to a regional trail system—none yet exist.

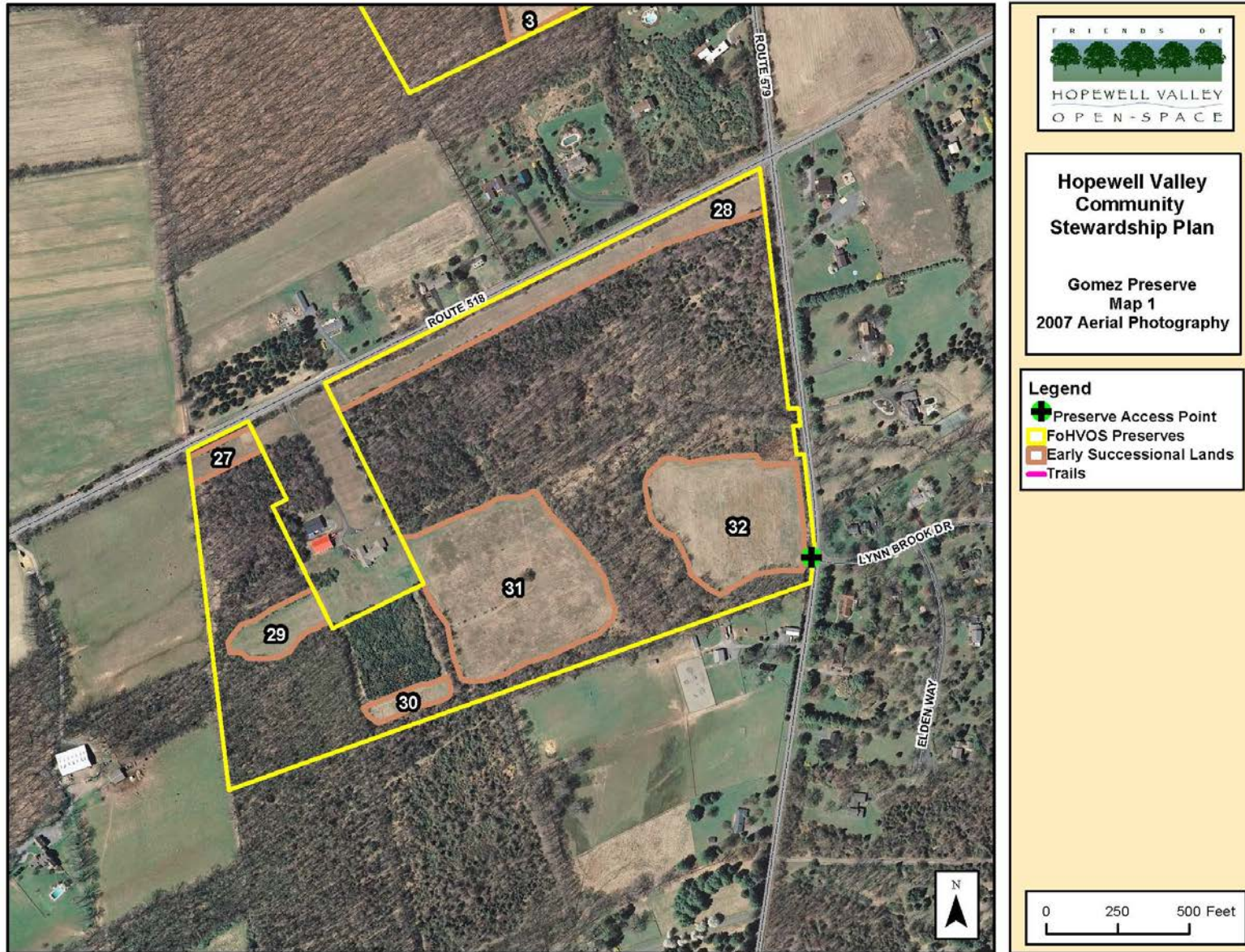
**Hopewell Valley Community Stewardship Plan  
Friends of Hopewell Valley Open Space**

**Table 1. Invasive Plants – Species Abundance and Treatment Recommendations**

Scientific Name	Common Name	Infestation Index Score <sup>1</sup>	Total Acres Present	Percent of Preserve Area Present	Treatment Recommendation	LOE Estimate (Hours)	Acreage by Percent Ground Cover Categories						
							Category 0: 0%	Category: Trace	Category 1: 1-10%	Category 2: 10-25%	Category 3: 25-50%	Category 4: 50-75%	Category 5: 75-100%
<i>Acer palmatum</i>	Japanese Maple	0.0	0.0	0.0	N/A		58.47	0.0	0.0	0.0	0.0	0.0	0.0
<i>Acer platanoides</i>	Norway Maple	0.0	0.0	0.0	N/A		58.47	0.0	0.0	0.00	0.0	0.00	0.0
<i>Ailanthus altissima</i>	Tree-of-Heaven	0.0	0.0	0.0	N/A		58.47	0.0	0.0	0.0	0.0	0.0	0.0
<i>Alliaria petiolata</i>	Garlic Mustard	7.7	7.7	13.1	None		50.81	0.0	7.7	0.0	0.0	0.0	0.0
<i>Artemisia vulgaris</i>	Common Mugwort	4.9	4.9	8.3	Control - Field Maintenance	Strategy 3B	53.61	0.0	4.9	0.0	0.0	0.0	0.0
<i>Arthraxon hispidus</i>	Small Carpgrass	8.0	8.0	13.6	None		50.50	0.0	8.0	0.0	0.0	0.0	0.0
<i>Berberis thunbergii</i>	Japanese Barberry	0.0	6.5	11.0	None		52.02	6.5	0.0	0.0	0.0	0.0	0.0
<i>Cardamine impatiens</i>	Narrow-leaved Bittercress	0.0	0.0	0.0	N/A		58.47	0.0	0.0	0.0	0.0	0.0	0.0
<i>Catalpa bignonioides</i>	Northern Catalpa	0.0	0.0	0.0	N/A		58.47	0.0	0.0	0.0	0.0	0.0	0.0
<i>Celastrus orbiculatus</i>	Asiatic Bittersweet	15.2	13.5	23.1	Control - Treat Fruiting Plants	20	44.96	0.5	10.9	2.1	0.00	0.0	0.0
<i>Centurea sp.</i>	Knapweed sp.	0.0	0.0	0.0	N/A		58.47	0.0	0.0	0.0	0.0	0.0	0.0
<i>Cirsium arvense</i>	Canada Thistle	0.0	0.0	0.0	N/A		58.47	0.0	0.0	0.0	0.0	0.0	0.0
<i>Dipsacus sylvestris</i>	Teasel	0.0	0.0	0.0	N/A		58.47	0.0	0.00	0.0	0.0	0.0	0.0
<i>Eleagnus umbellata</i>	Autumn Olive	76.0	35.0	59.8	Control - Field Maintenance	Strategy 3B	23.50	6.2	13.4	1.9	1.5	5.5	6.5
<i>Euonymus alata</i>	Winged Burning Bush	0.0	0.0	0.0	N/A		58.47	0.0	0.0	0.0	0.0	0.0	0.00
<i>Iris pseudoacris</i>	Yellow Iris	0.0	0.0	0.0	N/A		58.47	0.0	0.0	0.0	0.0	0.0	0.0
<i>Lespedeza cuneata</i>	Chinese Bushclover	0.0	0.0	0.0	N/A		58.47	0.0	0.0	0.0	0.0	0.0	0.0
<i>Ligustrum obtusifolium</i>	Border Privet	2.1	9.6	16.5	None		48.83	7.5	2.10	0.0	0.0	0.0	0.0
<i>Lonicera japonica</i>	Japanese Honeysuckle	78.1	39.2	67.0	None		19.30	6.2	7.0	10.4	11.8	3.7	0.0
<i>Lonicera maackii</i>	Amur Honeysuckle	0.0	0.0	0.0	N/A		58.47	0.0	0.0	0.0	0.0	0.0	0.0
<i>Lonicera morrowii</i>	Morrow's Honeysuckle	29.3	18.4	31.4	None		40.10	6.2	1.4	5.7	3.83	1.3	0.0
<i>Lysimachia nummularia</i>	Moneywort	0.0	0.0	0.0	N/A		58.47	0.0	0.0	0.0	0.0	0.0	0.0
<i>Lythrum salicaria</i>	Purple Loosestrife	0.0	0.0	0.0	N/A		58.47	0.0	0.0	0.0	0.0	0.0	0.0
<i>Malus toringo</i>	Toringo Crabapple	0.0	1.6	2.7	Control - Field Maintenance	Strategy 3B	56.90	1.6	0.0	0.0	0.0	0.0	0.0
<i>Microstegium vimineum</i>	Japanese Stiltgrass	144.8	47.7	81.5	None		10.82	0.0	15.3	5.9	3.7	7.3	15.5
N/A	Non-native, cool season grass	49.1	17.1	29.2	None		41.40	0.0	0.5	7.0	3.7	5.9	0.0
<i>Phalaris arundinacea</i>	Reed Canary Grass	0.0	0.0	0.0	N/A		58.47	0.0	0.0	0.0	0.0	0.0	0.0
<i>Phragmites australis</i>	Common Reed	0.0	0.0	0.0	N/A		58.47	0.0	0.0	0.0	0.0	0.0	0.0
<i>Polygonum cuspidatum</i>	Japanese Knotweed	0.0	0.0	0.0	N/A		58.47	0.0	0.0	0.0	0.0	0.0	0.0
<i>Polygonum perfoliatum</i>	Mile-a-Minute	0.0	0.0	0.0	N/A		58.47	0.0	0.0	0.0	0.0	0.0	0.0
<i>Pyrus calleryana</i>	Callery Pear	0.0	0.0	0.0	N/A		58.47	0.0	0.0	0.0	0.0	0.0	0.0
<i>Ranunculus ficaria</i>	Lesser Celandine	0.0	0.0	0.0	N/A		58.47	0.0	0.0	0.0	0.0	0.0	0.0
<i>Robinia pseudoacacia</i>	Black Locust	0.0	0.0	0.0	N/A		58.47	0.0	0.0	0.0	0.0	0.0	0.0
<i>Rosa multiflora</i>	Multiflora Rose	80.8	42.6	72.8	Control - Field Maintenance	Strategy 3B	15.91	8.9	7.0	10.3	13.9	1.0	1.5
<i>Rubus pheonculus</i>	Wineberry	15.0	12.7	21.8	Control - Field Maintenance	Strategy 3B	45.75	5.1	3.9	0.0	3.7	0.0	0.0
<i>Securigera varia</i>	Crowfoot	0.0	0.0	0.0	N/A		58.47	0.0	0.0	0.0	0.0	0.0	0.0
<i>Viburnum dilatatum</i>	Linden Viburnum	0.0	0.0	0.0	N/A		58.47	0.0	0.0	0.0	0.0	0.0	0.0
<i>Viburnum sieboldii</i>	Siebold's Viburnum	0.0	0.0	0.0	N/A		58.47	0.0	0.0	0.0	0.0	0.0	0.0
<i>Wisteria floribunda</i>	Japanese Wisteria	0.0	0.0	0.0	N/A		58.47	0.0	0.0	0.0	0.0	0.0	0.0
<b>Total LOE</b>						<b>20</b>							

<sup>1</sup> The Infestation Index Score combines the extent of acreage infested and the intensity of the infestation. It was derived by multiplying the cover class number by the number of acres within each cover class.

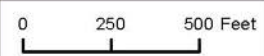
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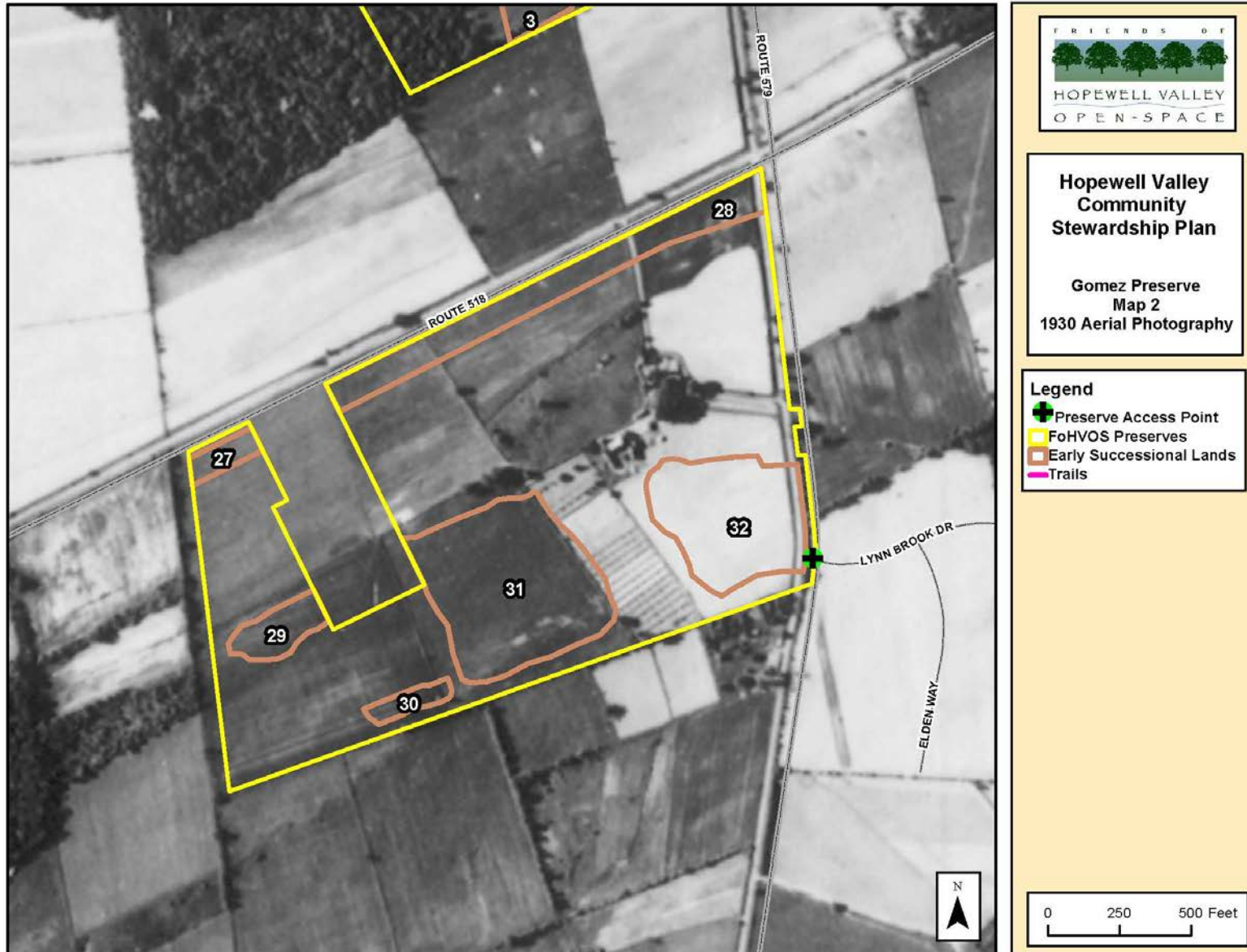
Gomez Preserve  
Map 1  
2007 Aerial Photography

- Legend**
- Preserve Access Point
  - FoHVOS Preserves
  - Early Successional Lands
  - Trails



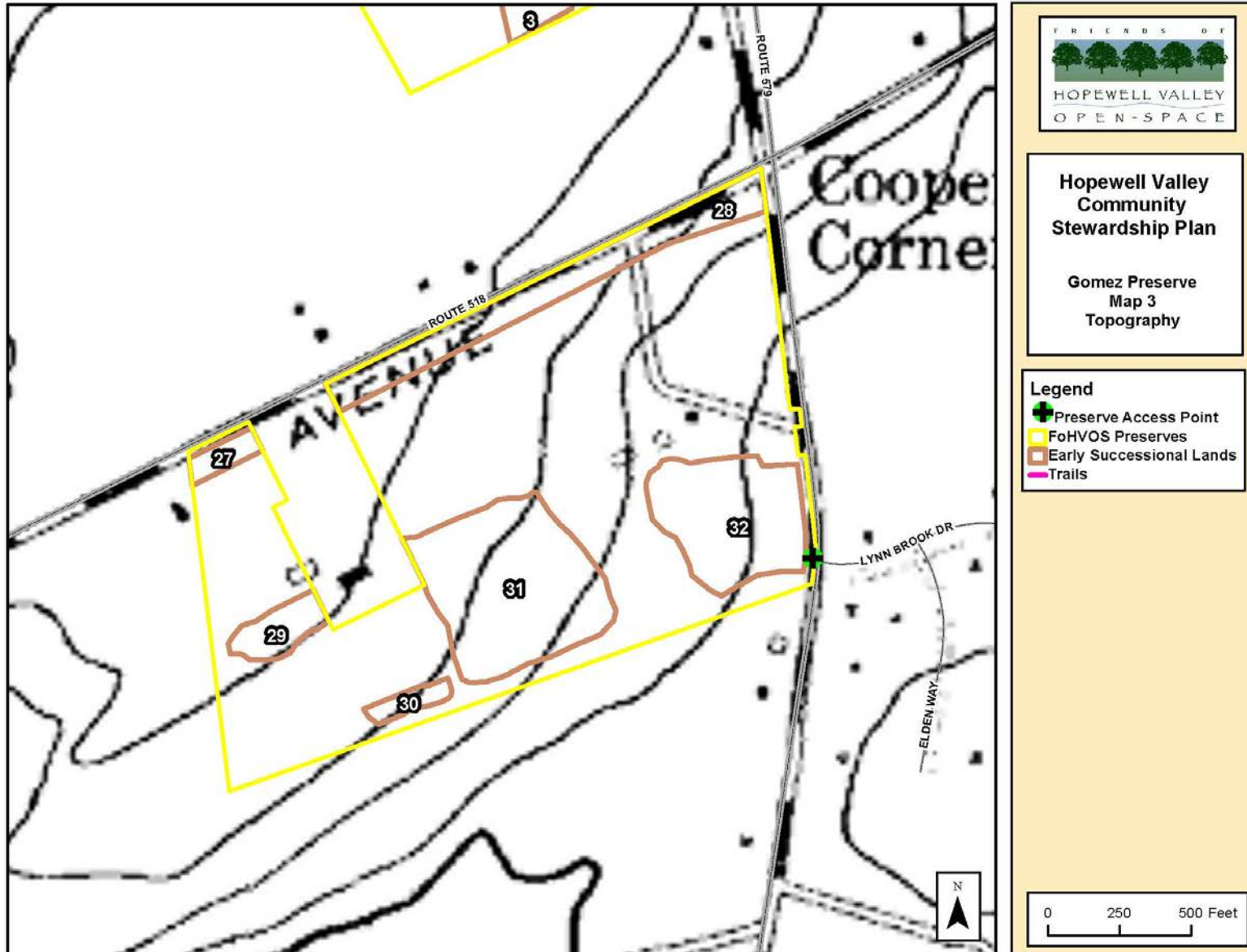


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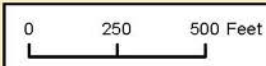
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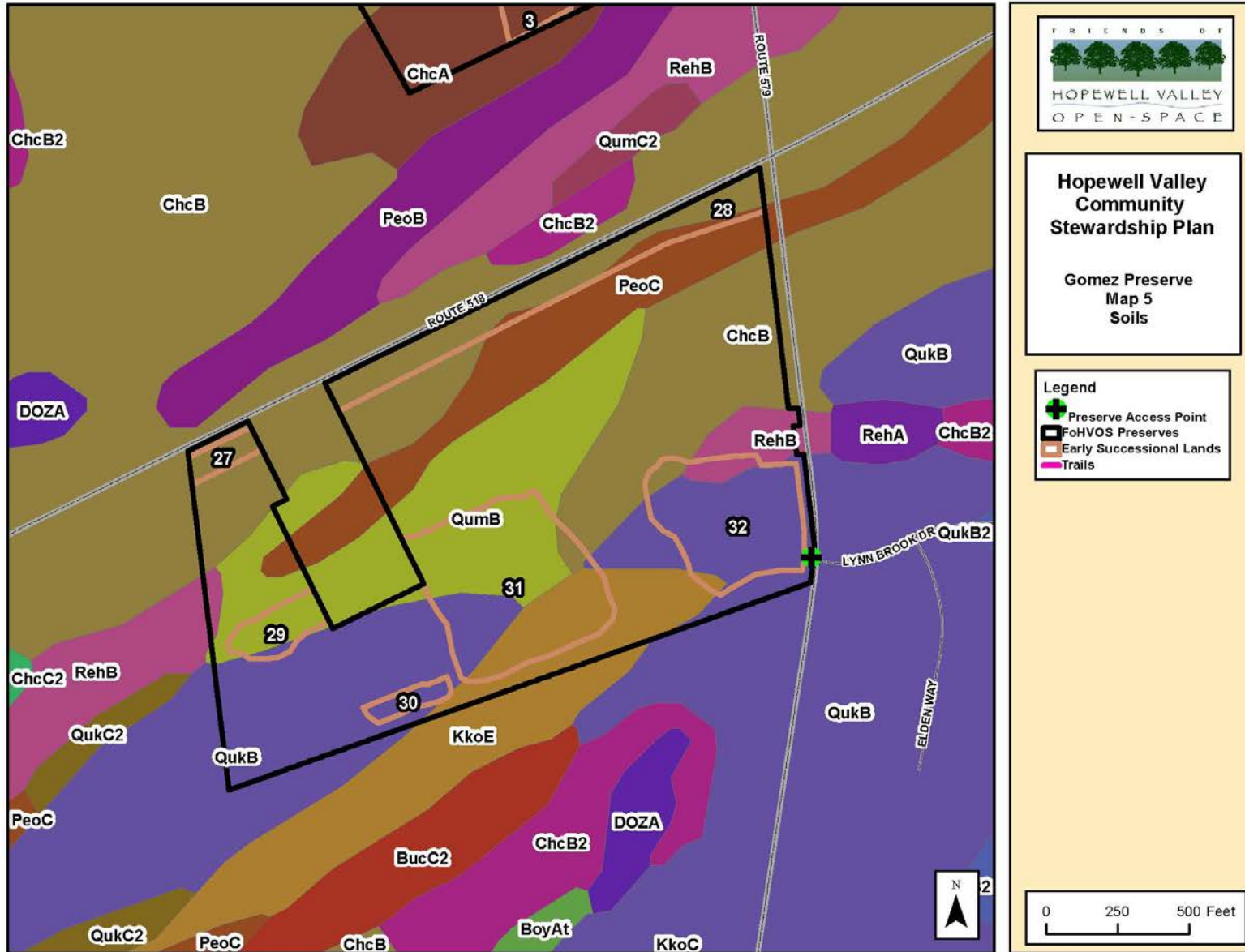
**Hopewell Valley  
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**Gomez Preserve  
 Map 4  
 Bedrock Geology**

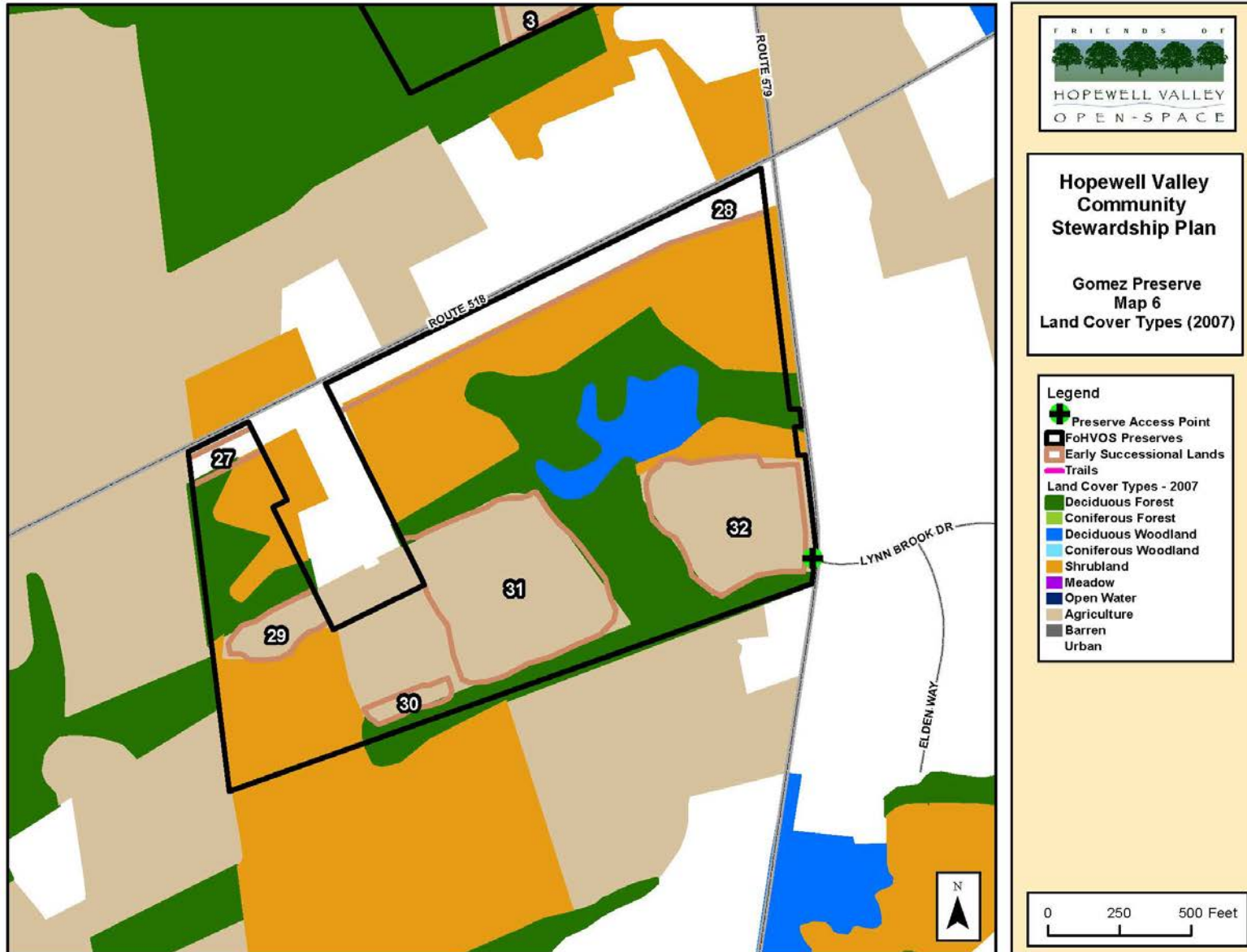
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  - Fohvos Preserves
  - Early Successional Lands
  - Trails
  - Bedrock Geology**
  - Jurassic Diabase
  - Lockatong Formation
  - Stockton Formation
  - Passaic Formation
  - Passaic Formation Gray bed



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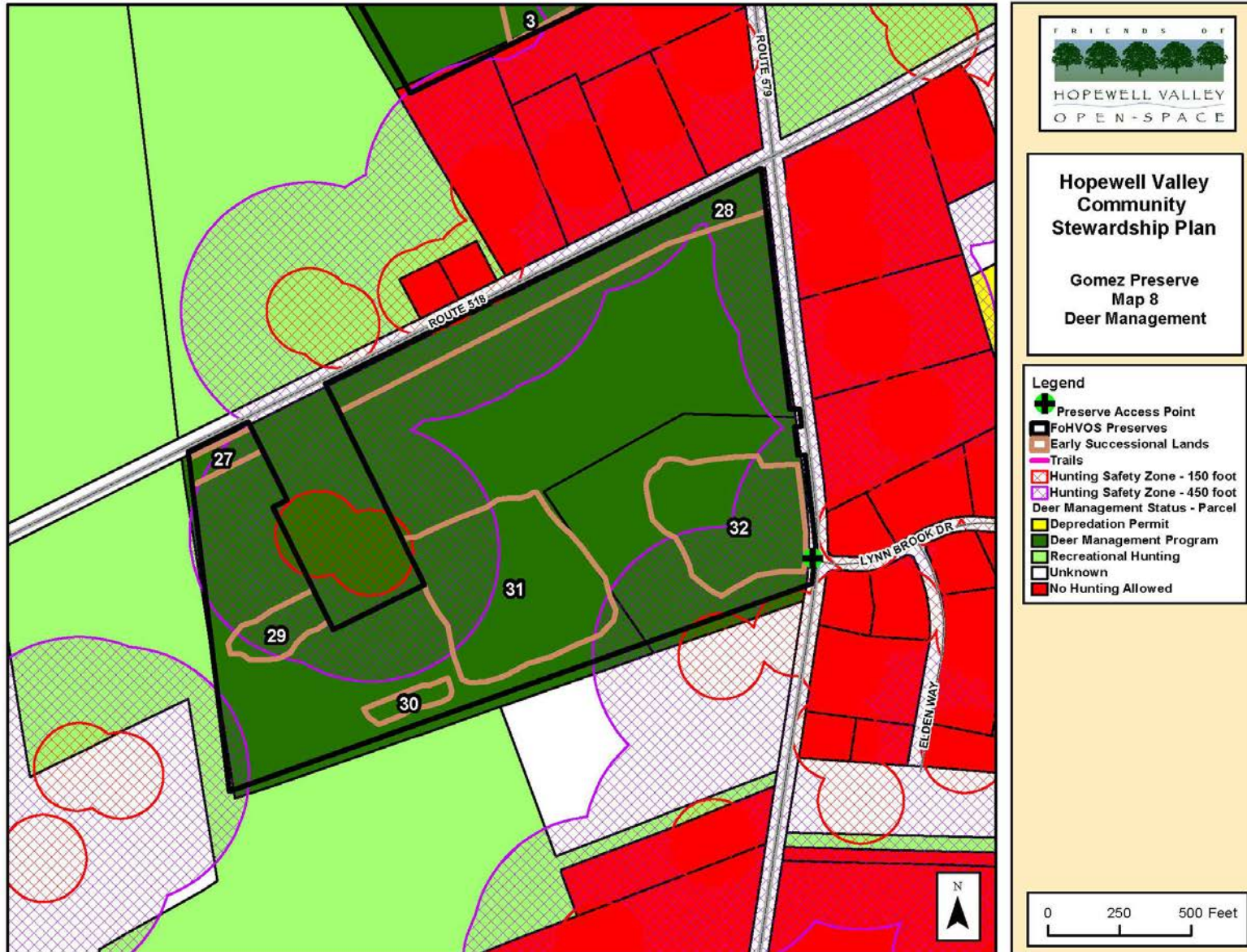




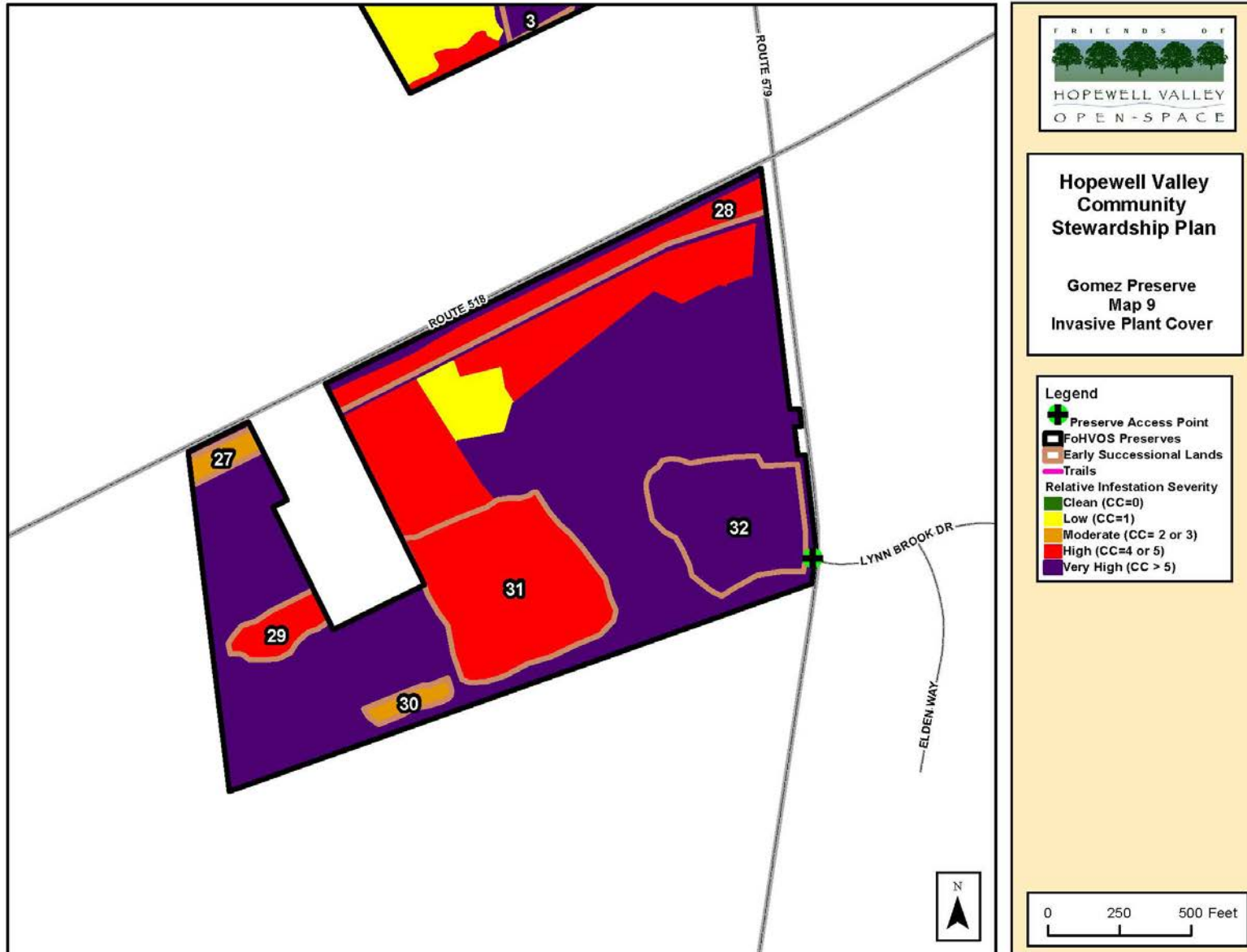
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**Appendix 9.  
Guastella Preserve**

**Acreage:** 0.53

**Block and Lot:** B7, L16

**Ownership:** FoHVOS (100%)

**Year(s) Purchased:** 2008

**Location & Access:** Preserve is located on the east side of Van Dyke Road (just north of intersection with Route 654). Unofficial parking access occurs along the opposite road shoulder. Nearest street address: 64 Van Dyke Road, Hopewell, NJ 08525.

**Structures:** None

Additional property information is summarized in Appendix W. The following Preserve maps are provided at the end of this document:

- Map 1 2007 Aerial Photography
- Map 2 1930 Aerial Photography
- Map 3 Topography
- Map 4 Bedrock Geology
- Map 5 Soils
- Map 6 Land Cover Types (2007)
- Map 7 Protected Lands
- Map 8 Deer Management
- Map 9 Invasive Plant Cover (Relative Infestation Severity for all species)

**Website Description:**

**Guastella Preserve** is a small tract located just west of the Hopewell Borough boundary. The parcel is part of a network of open space outside the Borough.

**BROAD PROPERTY DESCRIPTION**

The Guastella Preserve (see Map 1) is located in northeastern Hopewell Township, just west of Hopewell Borough. The preserve is bounded by forest and residential development. The topography (see Map 3) is relatively flat, at about 280 feet above sea level.

Based upon analysis of NJDEP's 2007 Land Use/Land Cover dataset, the preserve contains two broad plant communities: Shrubland (< 10% canopy, > 25% shrub cover) – Upland and Urban Lands. Land Use/Land Cover is summarized in Appendix X and illustrated in Map 6.

Historically, the preserve and its surroundings were used for agriculture and the current native plant communities reflect this alteration in the soils. Currently, the preserve is a narrow strip which connects to a small forest patch. The preserve is located between two developed parcels.

The preserve has one type of bedrock geology--the Passaic formation. See Map 4.

The preserve has one soil type (see Map 5)--Lawrenceville and Mount Lucas silt loams, 2 to 6 percent slopes. The preserve's soils are described in Appendix Y.



**Hopewell Valley Community Stewardship Plan  
Friends of Hopewell Valley Open Space**

**CONSERVATION VALUES**

Based on an analysis involving the ranking of ecological values and threats (See Community Stewardship Plan text), the Preserve has a weighted Ecological Value at 25%. See Appendix A for a description of ranking factors.

**Forest and Woodland Communities:** The forest patch found on the Preserve is too small and fragmented to provide significant habitat.

**Old forest:** None. See Map 2.

**Early Successional Communities:**

**Shrublands:** This community type is primarily composed of non-native species, including multiflora rose, shrub honeysuckle species, Norway maple, privet and Asiatic bittersweet.

**Meadows/Grasslands:** N/A

**Waterbodies:** N/A

**Rare Species:**

**Rare Plants:** None documented on the Preserve. Natural Heritage grid data shows no species.

**Rare Animals:** None.

**THREATS**

**Deer:** The preserve serves as habitat for ‘pocket deer’ that cannot be accessed by hunters.

**Invasive species:** In 2008 staff began walk-through surveys for emerging invasive species on all preserves. Mapping documented each species and its population size. No species were detected. See [www.njisst.org](http://www.njisst.org) for the current status of emerging invasive species at the Preserve.

In 2011 staff completed surveys for invasive plant species on all preserves (see Map 9). Mapping documented each species found and its population size (See Table 1 below). The five species with the highest infestation scores include: Japanese Honeysuckle, Asiatic Bittersweet, Multiflora Rose, Norway Maple, and Morrow's Honeysuckle.

**Other:** N/A

**STRATEGIES and ACTIONS**

**Forest and Woodland Habitat Stewardship:** N/A

**Early Successional Habitat Stewardship:** Annual surveys for and eradication of emerging invasive species is the highest priority at this Preserve.

No action is recommended for widespread invasive species, except for Asiatic bittersweet. All fruiting vines should be treated with basal bark or cut stump (in the case of vines on trees) methods. Reduced deer density will allow the native plant communities to recover and compete with the widespread invasive species on a long-term basis.

**Hopewell Valley Community Stewardship Plan**  
**Friends of Hopewell Valley Open Space**

**Deer Management:** The preserve is not enrolled in the DMP. It falls completely within the 450' and 150' safety zones. See Map 8 for delineations of the 150' and 450' safety zones and hunting status.

**Rare Species Management:** N/A

**Neighboring Lands:** See Map 7 for adjacent protected lands.

**Waterbodies Management:** N/A

**Undesirable Activities Management:** N/A

**Scientific Research Assessment:** The Preserve is available for scientific research.

**Recreational Opportunities Assessment:** The preserve is too small to merit a trail. Currently, there are no opportunities to connect to a regional trail system—none yet exist.

**Hopewell Valley Community Stewardship Plan  
Friends of Hopewell Valley Open Space**

**Table 1. Invasive Plants – Species Abundance and Treatment Recommendations**

Scientific Name	Common Name	Infestation Index Score <sup>1</sup>	Total Acres Present	Percent of Preserve Area Present	Treatment Recommendation	LOE Estimate (Hours)	Acreage by Percent Ground Cover Categories						
							Category 0: 0%	Category: Trace	Category 1: 1-10%	Category 2: 10-25%	Category 3: 25-50%	Category 4: 50-75%	Category 5: 75-100%
<i>Acer palmatum</i>	Japanese Maple	0.0	0.0	0.0	N/A		0.53	0.0	0.0	0.0	0.0	0.0	0.0
<i>Acer platanoides</i>	Norway Maple	1.1	0.5	100.0	None		0.00	0.0	0.0	0.5	0.0	0.00	0.0
<i>Ailanthus altissima</i>	Tree-of-Heaven	0.0	0.0	0.0	N/A		0.53	0.0	0.0	0.0	0.0	0.0	0.0
<i>Alliaria petiolata</i>	Garlic Mustard	0.0	0.0	0.0	N/A		0.53	0.0	0.0	0.0	0.0	0.0	0.0
<i>Artemisia vulgaris</i>	Common Mugwort	0.0	0.0	0.0	N/A		0.53	0.0	0.0	0.0	0.0	0.0	0.0
<i>Arthraxon hispidus</i>	Small Carpgrass	0.0	0.0	0.0	N/A		0.53	0.0	0.0	0.0	0.0	0.0	0.0
<i>Berberis thunbergii</i>	Japanese Barberry	0.0	0.0	0.0	N/A		0.53	0.0	0.0	0.0	0.0	0.0	0.0
<i>Cardamine impatiens</i>	Narrow-leaved Bittercress	0.0	0.0	0.0	N/A		0.53	0.0	0.0	0.0	0.0	0.0	0.0
<i>Catalpa bignonioides</i>	Northern Catalpa	0.0	0.0	0.0	N/A		0.53	0.0	0.0	0.0	0.0	0.0	0.0
<i>Celastrus orbiculatus</i>	Asiatic Bittersweet	1.6	0.5	100.0	Control - Treat Fruiting Plants	5	0.00	0.0	0.0	0.0	0.5	0.0	0.0
<i>Centurea</i> sp.	Knapweed sp.	0.0	0.0	0.0	N/A		0.53	0.0	0.0	0.0	0.0	0.0	0.0
<i>Cirsium arvense</i>	Canada Thistle	0.0	0.0	0.0	N/A		0.53	0.0	0.0	0.0	0.0	0.0	0.0
<i>Dipsacus sylvestris</i>	Teasel	0.0	0.0	0.0	N/A		0.53	0.0	0.00	0.0	0.0	0.0	0.0
<i>Eleagnus umbellata</i>	Autumn Olive	0.0	0.0	0.0	N/A		0.53	0.0	0.0	0.0	0.0	0.0	0.0
<i>Euonymus alata</i>	Winged Burning Bush	0.0	0.0	0.0	N/A		0.53	0.0	0.0	0.0	0.0	0.0	0.00
<i>Iris pseudoacris</i>	Yellow Iris	0.0	0.0	0.0	N/A		0.53	0.0	0.0	0.0	0.0	0.0	0.0
<i>Lespedeza cuneata</i>	Chinese Bushclover	0.0	0.0	0.0	N/A		0.53	0.0	0.0	0.0	0.0	0.0	0.0
<i>Ligustrum obtusifolium</i>	Border Privet	0.0	0.5	100.0	None		0.00	0.5	0.00	0.0	0.0	0.0	0.0
<i>Lonicera japonica</i>	Japanese Honeysuckle	2.7	0.5	100.0	None		0.00	0.0	0.0	0.0	0.0	0.0	0.5
<i>Lonicera maackii</i>	Amur Honeysuckle	0.0	0.0	0.0	N/A		0.53	0.0	0.0	0.0	0.0	0.0	0.0
<i>Lonicera morrowii</i>	Morrow's Honeysuckle	0.5	0.5	94.3	None		0.03	0.0	0.5	0.0	0.00	0.0	0.0
<i>Lysimachia nummularia</i>	Moneywort	0.0	0.0	0.0	N/A		0.53	0.0	0.0	0.0	0.0	0.0	0.0
<i>Lythrum salicaria</i>	Purple Loosestrife	0.0	0.0	0.0	N/A		0.53	0.0	0.0	0.0	0.0	0.0	0.0
<i>Malus toringo</i>	Toringo Crabapple	0.0	0.0	0.0	N/A		0.53	0.0	0.0	0.0	0.0	0.0	0.0
<i>Microstegium vimineum</i>	Japanese Stiltgrass	0.5	0.5	94.3	None		0.03	0.0	0.5	0.0	0.0	0.0	0.0
N/A	Non-native, cool season grass	0.0	0.0	0.0	N/A		0.53	0.0	0.0	0.0	0.0	0.0	0.0
<i>Phalaris arundinacea</i>	Reed Canary Grass	0.0	0.0	0.0	N/A		0.53	0.0	0.0	0.0	0.0	0.0	0.0
<i>Phragmites australis</i>	Common Reed	0.0	0.0	0.0	N/A		0.53	0.0	0.0	0.0	0.0	0.0	0.0
<i>Polygonum cuspidatum</i>	Japanese Knotweed	0.0	0.0	0.0	N/A		0.53	0.0	0.0	0.0	0.0	0.0	0.0
<i>Polygonum perforiatum</i>	Mile-a-Minute	0.0	0.0	0.0	N/A		0.53	0.0	0.0	0.0	0.0	0.0	0.0
<i>Pyrus calleryana</i>	Callery Pear	0.0	0.0	0.0	N/A		0.53	0.0	0.0	0.0	0.0	0.0	0.0
<i>Ranunculus ficaria</i>	Lesser Celandine	0.0	0.0	0.0	N/A		0.53	0.0	0.0	0.0	0.0	0.0	0.0
<i>Robinia pseudoacacia</i>	Black Locust	0.0	0.0	0.0	N/A		0.53	0.0	0.0	0.0	0.0	0.0	0.0
<i>Rosa multiflora</i>	Multiflora Rose	1.5	0.5	94.3	None		0.03	0.0	0.0	0.0	0.5	0.0	0.0
<i>Rubus phoenicolasius</i>	Wineberry	0.5	0.5	94.3	None		0.03	0.0	0.5	0.0	0.0	0.0	0.0
<i>Securigera varia</i>	Crown vetch	0.0	0.0	0.0	N/A		0.53	0.0	0.0	0.0	0.0	0.0	0.0
<i>Viburnum dilatatum</i>	Linden Viburnum	0.0	0.0	0.0	N/A		0.53	0.0	0.0	0.0	0.0	0.0	0.0
<i>Viburnum sieboldii</i>	Siebold's Viburnum	0.0	0.0	0.0	N/A		0.53	0.0	0.0	0.0	0.0	0.0	0.0
<i>Wisteria floribunda</i>	Japanese Wisteria	0.0	0.0	0.0	N/A		0.53	0.0	0.0	0.0	0.0	0.0	0.0
<b>Total LOE</b>						<b>5</b>							





<sup>1</sup> The Infestation Index Score combines the extent of acreage infested and the intensity of the infestation. It was derived by multiplying the cover class number by the number of acres within each cover class.

Hopewell Valley Community Stewardship Plan  
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**Hopewell Valley  
Community  
Stewardship Plan**

**Guastella Preserve  
Map 1  
2007 Aerial Photography**

- Legend**
-  Preserve Access Point
  -  FoHVOS Preserves
  -  Early Successional Lands
  -  Trails





Hopewell Valley Community Stewardship Plan  
Friends of Hopewell Valley Open Space



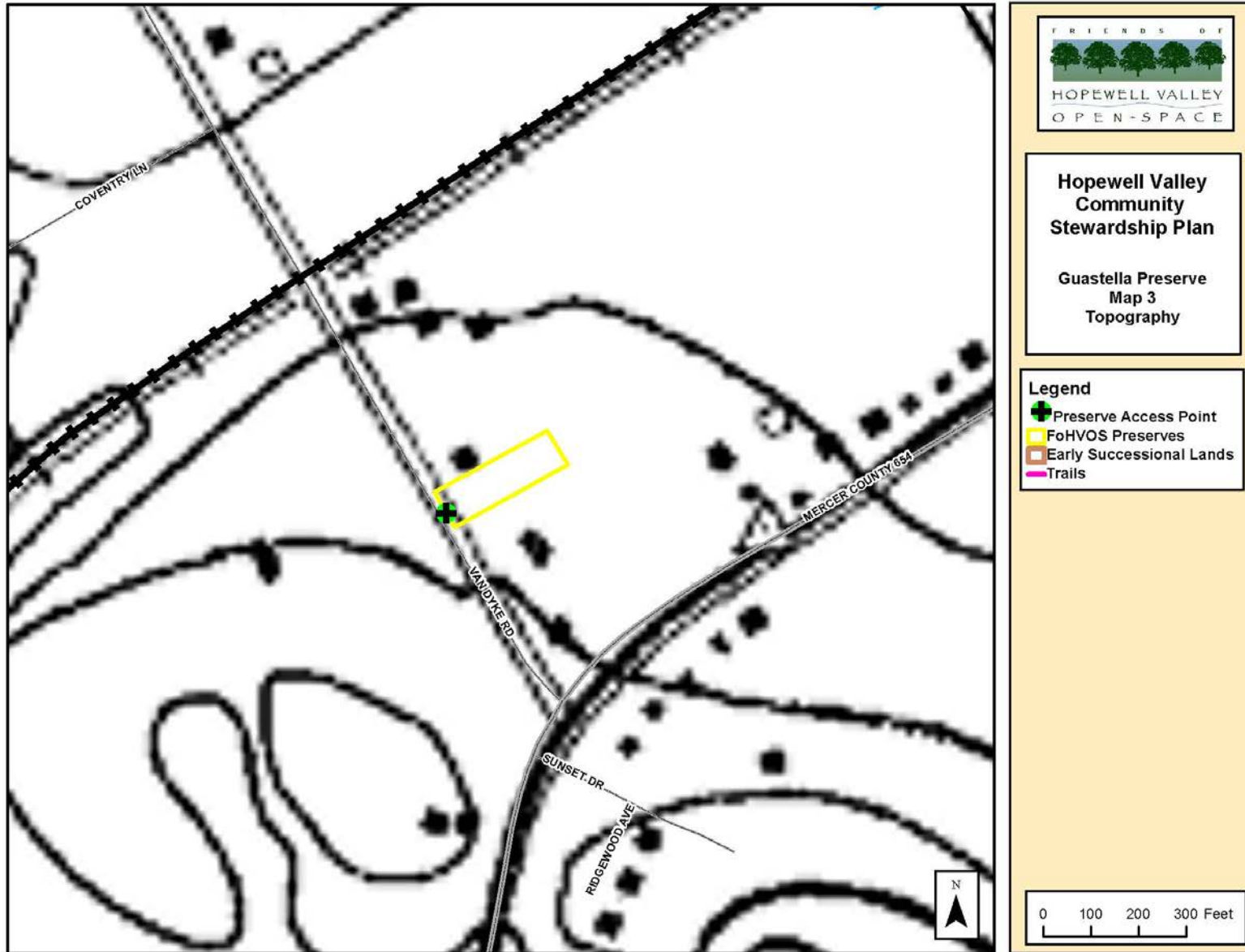
**Hopewell Valley  
Community  
Stewardship Plan**

**Guastella Preserve  
Map 2  
1930 Aerial Photography**

- Legend**
- Preserve Access Point
  - FoHVOS Preserves
  - Early Successional Lands
  - Trails



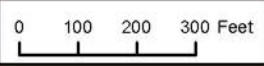
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**Hopewell Valley  
Community  
Stewardship Plan**

Guastella Preserve  
Map 3  
Topography

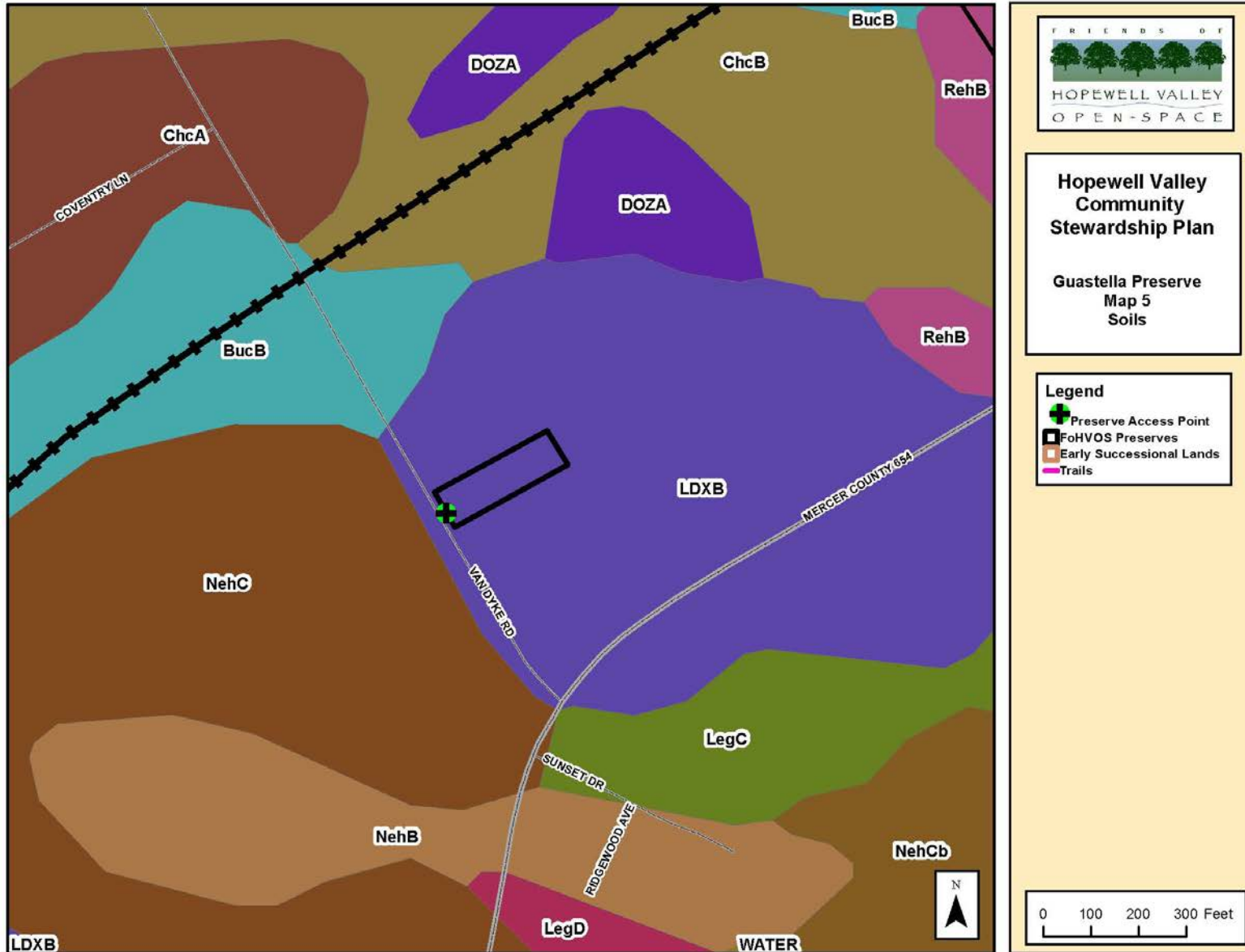
- Legend**
- Preserve Access Point
  - FoHVOS Preserves
  - Early Successional Lands
  - Trails



Hopewell Valley Community Stewardship Plan  
 Friends of Hopewell Valley Open Space

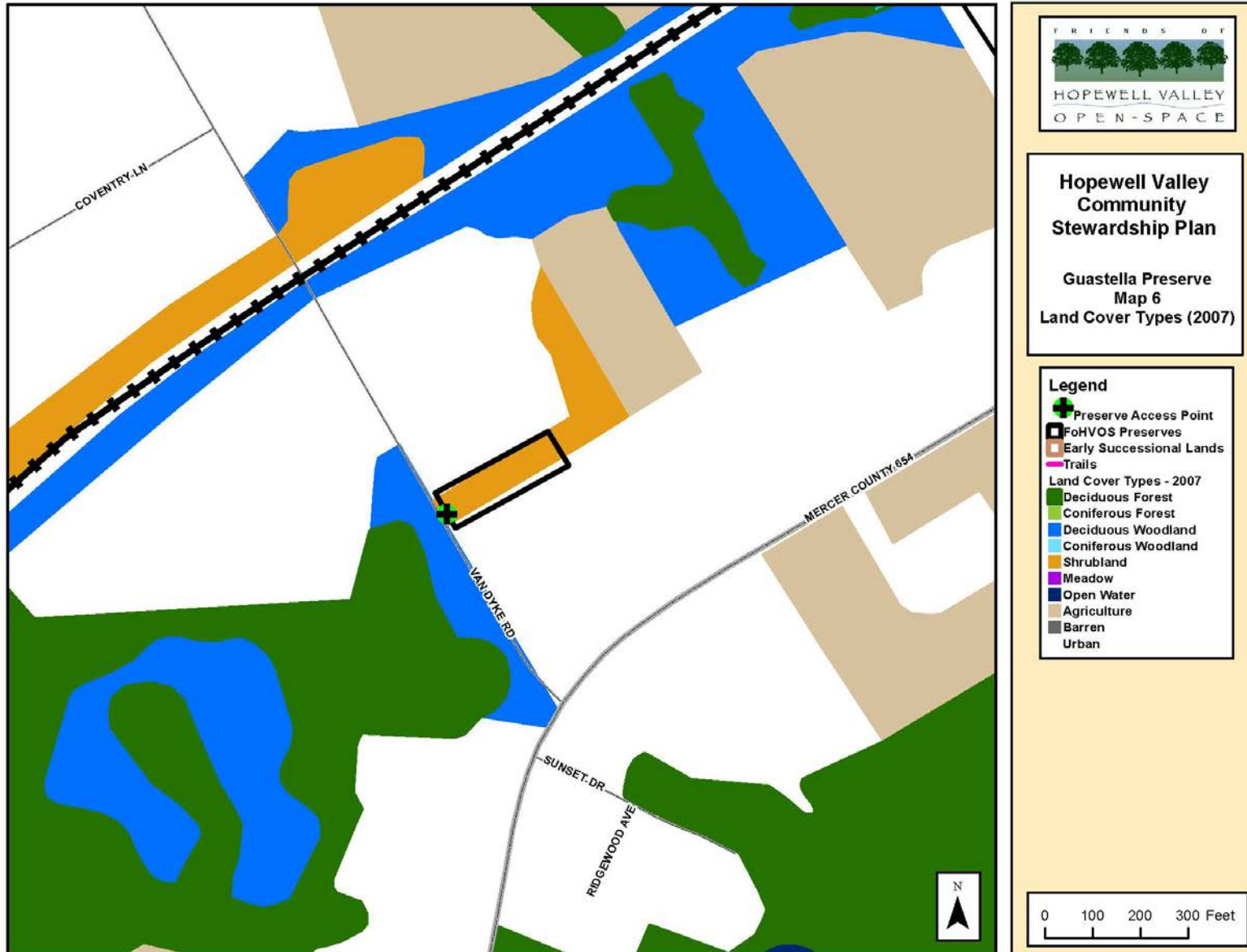


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 Friends of Hopewell Valley Open Space

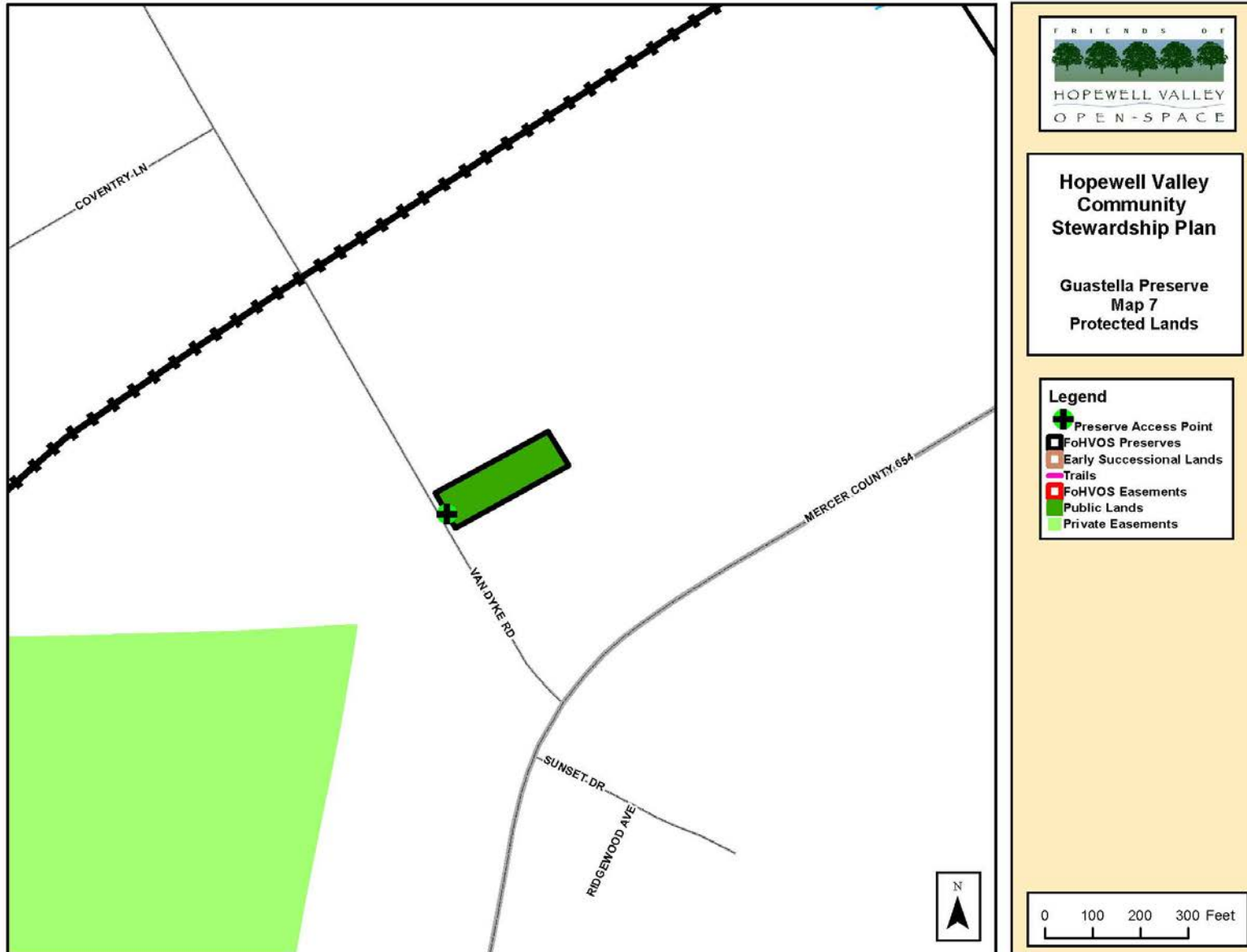




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 Friends of Hopewell Valley Open Space



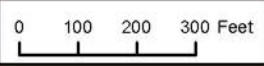
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Friends of Hopewell Valley Open Space



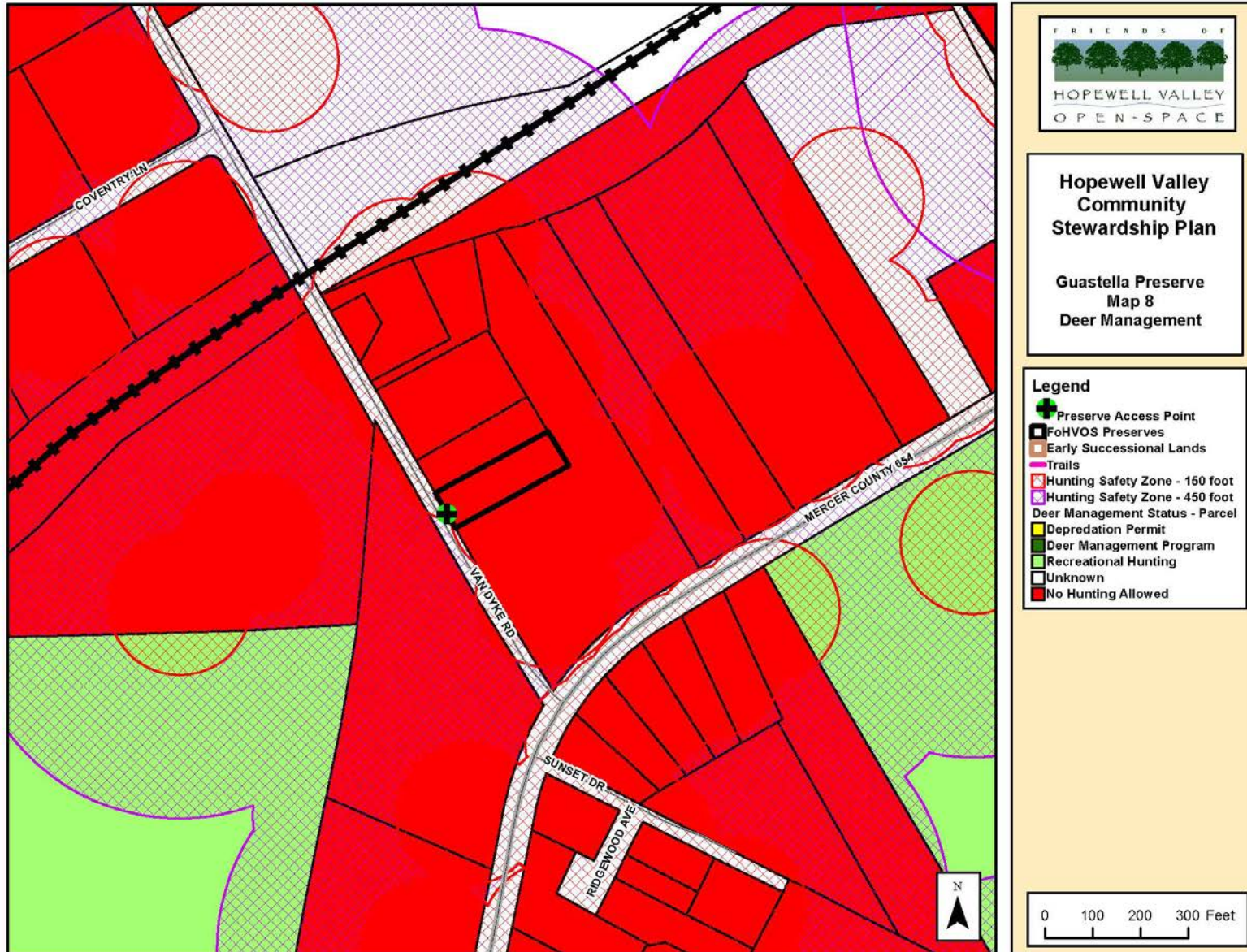
**Hopewell Valley  
Community  
Stewardship Plan**

**Guastella Preserve  
Map 7  
Protected Lands**

- Legend**
- Preserve Access Point
  - FoHVOS Preserves
  - Early Successional Lands
  - Trails
  - FoHVOS Easements
  - Public Lands
  - Private Easements

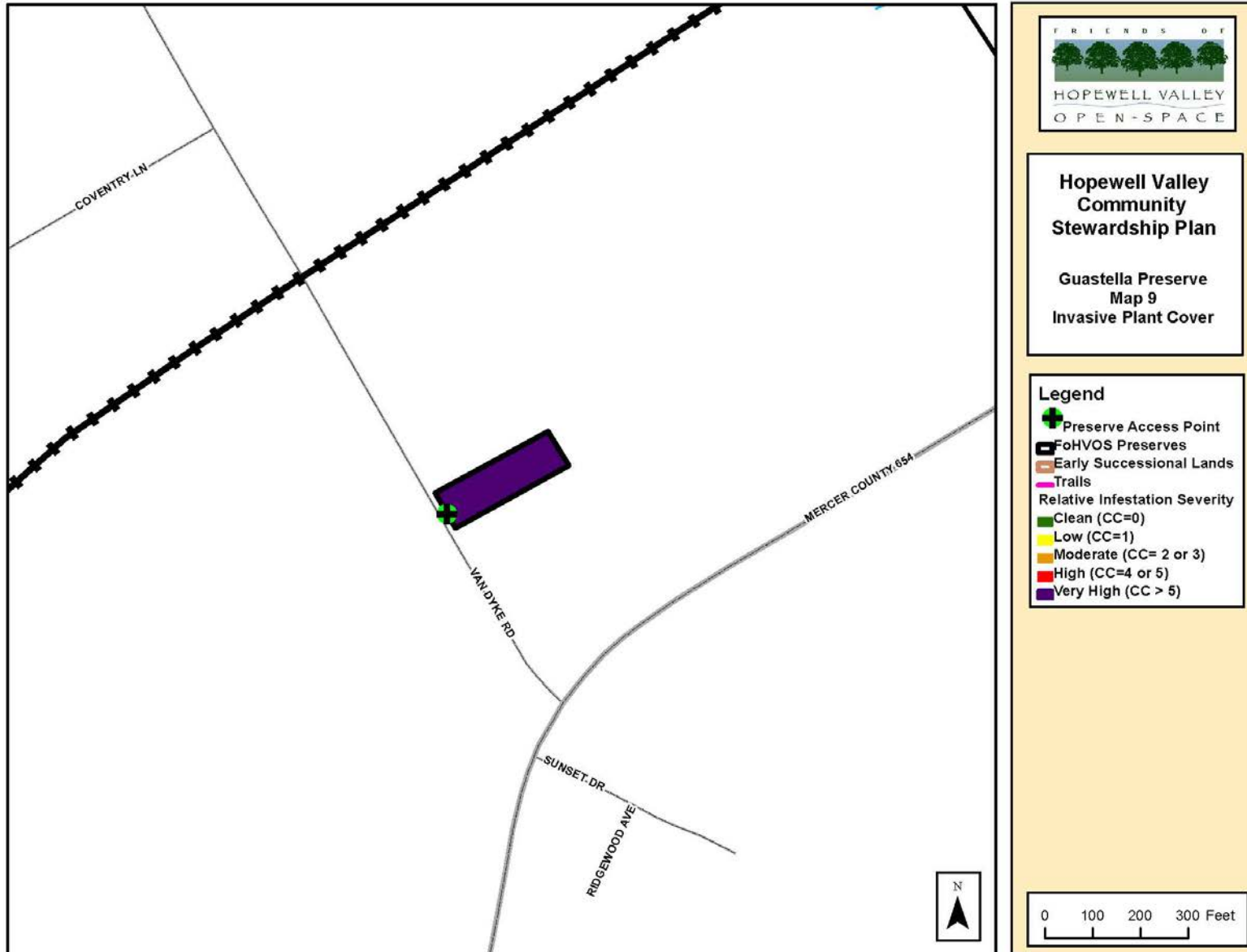


**Hopewell Valley Community Stewardship Plan  
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**Hopewell Valley Community Stewardship Plan  
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**Appendix 10.  
Heritage Preserve**

**Acreage:** 65.7

**Block and Lot:** Ewing Township - B225.03, L13  
Hopewell Township - B88, L25; B78.06, L44

**Ownership:** FoHVOS (100%)

**Year(s) Purchased:** 2008

**Location & Access:** Preserve is located on the east side of Reed Rd., 1.3 miles south of the intersection of Reed and Pennington-Washington Crossing Roads. A formal gravel parking lot is installed at the preserve entrance. Nearest street address: 1564 Reed Road, Ewing, NJ 08618.

**Structures:** None

Additional property information is summarized in Appendix W. The following Preserve maps are provided at the end of this document:

- Map 1 2007 Aerial Photography
- Map 2 1930 Aerial Photography
- Map 3 Topography
- Map 4 Bedrock Geology
- Map 5 Soils
- Map 6 Land Cover Types (2007)
- Map 7 Protected Lands
- Map 8 Deer Management
- Map 9 Invasive Plant Cover (Relative Infestation Severity for all species)

**Website Description:**

**Heritage Preserve** features a unique trail experience that takes a visitor through several stages of forest succession—meadow, forested wetlands of red maples, mature forest, and a dense stand of sweet gum. The mature forest boasts a display of spring woodland wildflowers including spring beauty, Canada mayflower, and trout lily.

**BROAD PROPERTY DESCRIPTION**

The Heritage Preserve (see Map 1) is located in south central Hopewell Township and is currently FoHVOS' only preserve in the southern tier. The preserve is bounded by residential and commercial development, forest, farmland, and two major traffic corridors: Interstate 95 and Route 31. The topography (see Map 3) slopes southward, from 120 to 80 feet above sea level.

Based upon analysis of NJDEP's 2007 Land Use/Land Cover dataset, the preserve contains four broad plant communities: Deciduous Forest (> 50% canopy) - Upland, Shrubland (< 10% canopy, > 25% shrub cover) - Upland, Deciduous Forest (> 50% canopy) - Wetland, and Shrubland (< 10% canopy, > 25% shrub cover) - Wetland. Land Use/Land Cover is summarized in Appendix X and illustrated in Map 6.

The preserve is accessed via a former farm road culvert that crosses Ewing Creek. The road leads to a highly disturbed former house site. Asiatic bittersweet, garlic mustard, periwinkle, and Japanese wisteria

## **Hopewell Valley Community Stewardship Plan Friends of Hopewell Valley Open Space**

grow in this the area. In addition, the band of forest that stretches along Reed Road is young and features red maple, sassafras, dogwood, black cherry, wild grape, autumn olive, and multiflora rose.

Immediately east of the former house site are two meadows, divided by a hedgerow. The meadows contain a mix of native and agricultural grasses, rushes and wildflowers (mugwort, reed canary grass, common milkweed, mountain mint and goldenrod) and are ringed by autumn olive and multiflora rose. Japanese wisteria vines are running from the adjacent forest patch into the northern meadow.

The forest immediately east of the meadows is comprised of red maple, sedges, rice cut grass, multiflora rose, and Japanese stiltgrass. Approximately 500 feet east of the meadows, the forest begins to diversify and includes: shagbark hickory, red oak, swamp white oak, black cherry, sweet gum (saplings), New York fern, round leaved greenbriar, maleberry, jack-in-the-pulpit, spice bush, Solomon's seal, multiflora rose, Japanese stiltgrass, and Japanese barberry. The forest herb layer further diversifies to include Canada mayflower, goldenrods, wild yamroot, lizard's tail, skunk cabbage, jewelweed, tearthumb, mad dog skullcap, false nettle, and poison ivy. Spring beauty is found throughout the preserve's forests.

Near the preserve's midpoint, the forest has species such as black oak, American beech, maple leaf viburnum, spicebush, ironwood, and witch hazel. Moister areas are rich in wildflowers such as spring beauty, Canada mayflower, and trout lily.

The easternmost sections of forest feature very wet soils. The canopy is dominated by red maple, while the understory is comprised of goldenrods, rice cut grass, sedges, and multiflora rose.

Three successional areas with moist soils are found along Route 95. The western and central successional areas consist primarily of sweet gum saplings and multiflora rose. The eastern successional area is more open with Phragmites and reed canary grass as the predominant herbaceous plants with multiflora rose and sweet gum scattered throughout.

The preserve has one type of bedrock geology--the Lockatong formation. See Map 4.

The preserve has twelve soil types (see Map 5) with Doylestown and Reaville variant silt loams, 0 to 2 percent slopes; Readington and Abbottstown silt loams, 2 to 6 percent slopes; and Readington and Abbottstown silt loams, 0 to 2 percent slopes being the three most common types. The preserve's soils are described in Appendix Y.

### **CONSERVATION VALUES**

Based on an analysis involving the ranking of ecological values and threats (See Community Stewardship Plan text), the Preserve has a weighted Ecological Value at 25-50%. See Appendix A for a description of ranking factors.

**Forest and Woodland Communities:** The forest patch found on the Preserve and surrounding area is an important stop-over habitat (spring and fall resting and feeding) for migratory species. Numerous forest interior dwelling birds were observed in the spring of 2009; however, the presence of cowbirds and the lack of a dense woodland shrub layer reduce the value for nesting and successful breeding bird species.

**Old forest:** Approximately 28 acres of the forest date to the 1930s—most of this is within the preserve's boundaries. Here, portions of the preserve (near the center) have species such as black oak, American beech, maple leaf viburnum, spicebush, ironwood, and witch hazel. Moister areas are rich in wildflowers such as spring beauty, Canada mayflower, and trout lily. See Map 2.

## **Hopewell Valley Community Stewardship Plan Friends of Hopewell Valley Open Space**

### **Early Successional Communities:**

**Shrublands:** Shrublands are located along I-95 and dominated by cool season grasses and non-native shrubs in the eastern half. In the western half of the shrubland area, sweet gum has recolonized the area.

**Meadows/Grasslands:** Meadows are heavily disturbed by past use and are predominantly hay grasses. Killdeer have been observed utilizing field 34.

**Waterbodies:** Ewing Creek passes through this area. The stream appears to have been deepened/channelized in the past. Undocumented streams and drainage channels leading from the adjacent farms wind through the center of the preserve. The elevated driveway to the south impounds water, especially in the spring, but little amphibian activity has been observed other than sparse calls of spring peepers.

### **Rare Species:**

**Rare Plants:** None documented on the Preserve. Natural Heritage grid data shows no species.

**Rare Animals:** Forested areas of the Preserve are identified as habitat for State Special Concern species. Wood thrush has been observed during nesting season.

See Appendix L for a list of species.

## **THREATS**

**Deer:** The understory is severely browsed. Regeneration of the shrub and canopy layer are nearly non-existent. Forest canopy gaps are colonized by less-palatable sweet gum and to a much lesser extent, black cherry, while the tree species immediately surrounding the canopy gaps (oak, beech, maple) are not regenerating. Forest health monitoring was performed in 2007/2008 (See main plan, Table 9).

**Invasive species:** In 2008 staff began walk-through surveys for emerging invasive species on all preserves. Mapping documented each species and its population size. Japanese wisteria, Callery pear, and English ivy were detected. See [www.njisst.org](http://www.njisst.org) for the current status of emerging invasive species at the Preserve.

In 2011 staff completed surveys for invasive plant species on all preserves (see Map 9). Mapping documented each species found and its population size (See Table 1 below). The five species with the highest infestation scores include: Japanese Stiltgrass, Multiflora Rose, Japanese Honeysuckle, Non-Native cool season grass, and Autumn Olive.

**Other:** The preserve has a history of illegal parking in no-parking areas, dumping, and ATV usage. Neighbors were contacted about parking and dumping and these issues are currently resolved. Clean Communities participants and trail volunteers cleaned up dumpsites. Access to problem areas was blocked by lock and chain. Neighbors were contacted about ATV use, but ATV issues are ongoing and severe.

## **STRATEGIES and ACTIONS**

**Forest and Woodland Habitat Stewardship:** Annual surveys for and eradication of emerging invasive species is a priority at this Preserve. Callery pear has been eradicated. Treatment of Japanese wisteria and English ivy is ongoing.

**Hopewell Valley Community Stewardship Plan**  
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No action is recommended for widespread invasive species, except for winged euonymus and Asiatic bittersweet. All fruiting plants should be treated with basal bark or cut stump (in the case of vines on trees) methods. Reduced deer density will allow the native plant communities to recover and compete with the widespread invasive species on a long-term basis.

**Early Successional Habitat Stewardship:** A biannual winter mowing or burning regime is recommended to maintain early successional habitat and remove invasive woody plants. Field 33 is quickly becoming infested by woody invasive species such as multiflora rose.

Burning and mowing may improve the species composition, but adjacent development and land use has degraded potential native seed sources. Control Canada thistle with foliar spray. All other invasive species will be controlled with field maintenance.

For habitat goals and maintenance schedule see Appendix T & U.

**Deer Management:** The preserve is enrolled in the DMP with bow and gun hunting. See Map 8 for delineations of the 150' and 450' safety zones and hunting status.

**Rare Species Management:** Maintain DMP goals to protect forest health and encourage recovery of herbaceous and shrub layers for improved nesting and foraging habitat.

**Neighboring Lands:** See Deer Management. See Map 7 for adjacent protected lands.

**Waterbodies Management:** Length of Ewing Creek and unnamed waterbodies within the preserve are too short to merit restoration.

Vernal pool activity should be monitored annually.

**Undesirable Activities Management:** Maintain presence on preserve through hiking, regular trail maintenance, and maintaining secure access points.

**Scientific Research Assessment:** The Preserve is available for scientific research.

**Recreational Opportunities Assessment:** This property currently has a 1.5 miles loop trail and parking. Currently, there are no opportunities to connect to a regional trail system—none yet exist.



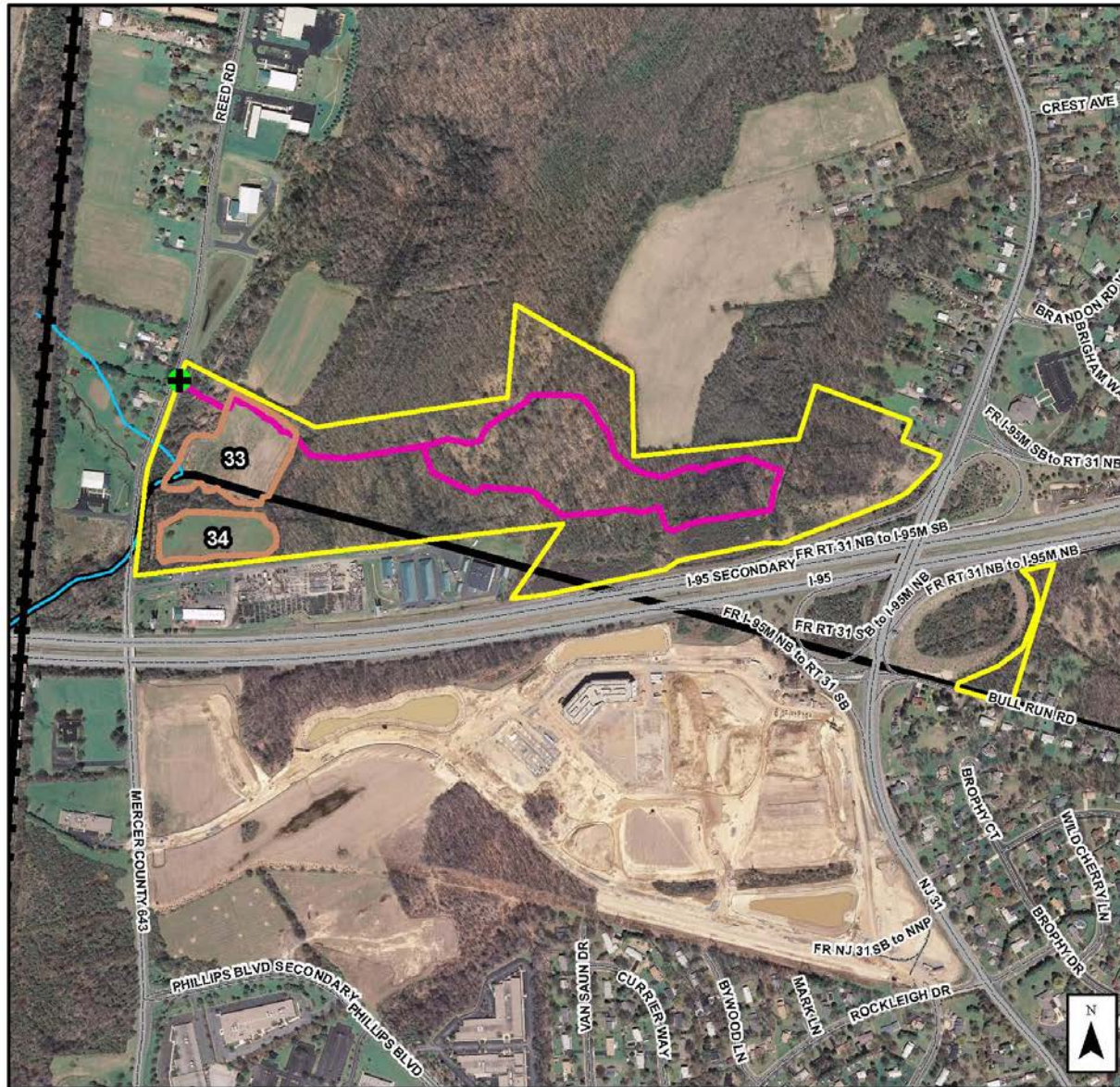
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Friends of Hopewell Valley Open Space**

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Scientific Name	Common Name	Infestation Index Score <sup>1</sup>	Total Acres Present	Percent of Preserve Area Present	Treatment Recommendation	LOE Estimate (Hours)	Acreage by Percent Ground Cover Categories						
							Category 0: 0%	Category: Trace	Category 1: 1-10%	Category 2: 10-25%	Category 3: 25-50%	Category 4: 50-75%	Category 5: 75-100%
<i>Acer palmatum</i>	Japanese Maple	0.0	0.0	0.0	N/A		64.06	0.0	0.0	0.0	0.0	0.0	0.0
<i>Acer platanoides</i>	Norway Maple	0.0	0.0	0.0	N/A		64.06	0.0	0.0	0.00	0.0	0.00	0.0
<i>Ailanthus altissima</i>	Tree-of-Heaven	0.0	0.0	0.0	N/A		64.06	0.0	0.0	0.0	0.0	0.0	0.0
<i>Alliaria petiolata</i>	Garlic Mustard	5.8	3.5	5.5	None		60.52	1.3	1.1	0.0	0.0	1.2	0.0
<i>Artemisia vulgaris</i>	Common Mugwort	6.5	6.7	10.4	Control - Field Maintenance	Strategy 3B	57.38	0.4	6.0	0.3	0.0	0.0	0.0
<i>Arthraxon hispidus</i>	Small Carpgrass	4.2	7.4	11.5	None		56.69	3.1	4.2	0.0	0.0	0.0	0.0
<i>Berberis thunbergii</i>	Japanese Barberry	11.1	17.0	26.5	None		47.07	5.9	11.1	0.0	0.0	0.0	0.0
<i>Cardamine impatiens</i>	Narrow-leaved Bittercress	0.0	0.0	0.0	N/A		64.06	0.0	0.0	0.0	0.0	0.0	0.0
<i>Catalpa bignonioides</i>	Northern Catalpa	0.0	0.0	0.0	N/A		64.06	0.0	0.0	0.0	0.0	0.0	0.0
<i>Celastrus orbiculatus</i>	Asiatic Bittersweet	1.7	7.4	11.6	Control - Treat Fruiting Plants	10	56.66	5.7	1.7	0.0	0.00	0.0	0.0
<i>Centurea sp.</i>	Knapweed sp.	0.0	0.0	0.0	N/A		64.06	0.0	0.0	0.0	0.0	0.0	0.0
<i>Cirsium arvense</i>	Canada Thistle	12.5	10.5	16.4	Control - Field Maintenance	Strategy 3B	53.54	0.4	7.7	2.4	0.0	0.0	0.0
<i>Dipsacus sylvestris</i>	Teasel	0.0	0.0	0.0	N/A		64.06	0.0	0.00	0.0	0.0	0.0	0.0
<i>Elaeagnus umbellata</i>	Autumn Olive	32.2	18.6	29.0	Control - Field Maintenance	Strategy 3B	45.51	4.5	3.2	6.7	2.6	0.0	1.6
<i>Euonymus alata</i>	Winged Burning Bush	1.2	1.2	1.8	Control - Treat Fruiting Plants	10	62.88	0.0	1.2	0.0	0.0	0.0	0.00
<i>Iris pseudoacris</i>	Yellow Iris	0.0	0.0	0.0	N/A		64.06	0.0	0.0	0.0	0.0	0.0	0.0
<i>Lespedeza cuneata</i>	Chinese Bushclover	0.0	0.0	0.0	N/A		64.06	0.0	0.0	0.0	0.0	0.0	0.0
<i>Ligustrum obtusifolium</i>	Border Privet	3.8	6.0	9.3	None		58.08	4.5	0.29	0.0	1.2	0.0	0.0
<i>Lonicera japonica</i>	Japanese Honeysuckle	48.2	32.3	50.3	None		31.81	2.2	16.7	9.7	2.5	1.1	0.0
<i>Lonicera maackii</i>	Amur Honeysuckle	0.0	0.0	0.0	N/A		64.06	0.0	0.0	0.0	0.0	0.0	0.0
<i>Lonicera Morrowii</i>	Morrow's Honeysuckle	0.0	0.0	0.0	N/A		64.06	0.0	0.0	0.0	0.00	0.0	0.0
<i>Lysimachia nummularia</i>	Moneywort	0.0	0.0	0.0	N/A		64.06	0.0	0.0	0.0	0.0	0.0	0.0
<i>Lythrum salicaria</i>	Purple Loosestrife	5.5	11.1	17.3	None - Check for biocontrol agent		52.95	5.6	5.5	0.0	0.0	0.0	0.0
<i>Malus toringo</i>	Toringo Crabapple	0.9	1.2	1.9	Control - Field Maintenance	Strategy 3B	62.83	0.3	0.9	0.0	0.0	0.0	0.0
<i>Microstegium vimineum</i>	Japanese Stiltgrass	127.9	49.2	76.8	None		14.83	11.6	0.9	12.3	7.7	4.4	12.4
N/A	Non-native, cool season grass	35.5	7.2	11.3	Control - Field Maintenance	Strategy 3B	56.85	0.0	0.0	0.0	0.3	0.0	6.9
<i>Phalaris arundinacea</i>	Reed Canary Grass	16.1	7.6	11.9	Control - Field Maintenance	Strategy 3B	56.43	0.0	3.4	0.0	4.2	0.0	0.0
<i>Phragmites australis</i>	Common Reed	2.4	2.4	3.7	Control - Field Maintenance	Strategy 3B	61.66	0.0	2.4	0.0	0.0	0.0	0.0
<i>Polygonum cuspidatum</i>	Japanese Knotweed	0.0	0.0	0.0	N/A		64.06	0.0	0.0	0.0	0.0	0.0	0.0
<i>Polygonum perforiatum</i>	Mile-a-Minute	1.2	1.2	1.8	None - Check for biocontrol agent		62.88	0.0	1.2	0.0	0.0	0.0	0.0
<i>Pyrus calleryana</i>	Callery Pear	0.0	2.6	4.1	Control - Field Maintenance	Strategy 3B	61.42	2.6	0.0	0.0	0.0	0.0	0.0
<i>Ranunculus ficaria</i>	Lesser Celandine	0.0	0.0	0.0	N/A		64.06	0.0	0.0	0.0	0.0	0.0	0.0
<i>Robinia pseudoacacia</i>	Black Locust	2.9	1.4	2.2	Control - Field Maintenance	Strategy 3B	62.62	0.0	0.0	1.4	0.0	0.0	0.0
<i>Rosa multiflora</i>	Multiflora Rose	122.3	62.2	97.1	Control - Field Maintenance	Strategy 3B	1.87	0.1	31.0	6.7	21.1	1.9	1.4
<i>Rubus pheonculusiasus</i>	Wineberry	0.0	0.0	0.0	N/A		64.06	0.0	0.0	0.0	0.0	0.0	0.0
<i>Securigera varia</i>	Crowfoot vetch	2.4	2.4	3.7	Control - Field Maintenance	Strategy 3B	61.66	0.0	2.4	0.0	0.0	0.0	0.0
<i>Viburnum dilatatum</i>	Linden Viburnum	0.0	0.0	0.0	N/A		64.06	0.0	0.0	0.0	0.0	0.0	0.0
<i>Viburnum sieboldii</i>	Siebold's Viburnum	0.0	0.0	0.0	N/A		64.06	0.0	0.0	0.0	0.0	0.0	0.0
<i>Wisteria floribunda</i>	Japanese Wisteria	8.9	4.3	6.7	Eradicate	Strategy 2A	59.77	0.0	0.02	4.1	0.0	0.2	0.0
<b>Total LOE</b>						<b>20</b>							

<sup>1</sup> The Infestation Index Score combines the extent of acreage infested and the intensity of the infestation. It was derived by multiplying the cover class number by the number of acres within each cover class.

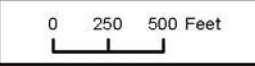
Hopewell Valley Community Stewardship Plan  
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 Community  
 Stewardship Plan**

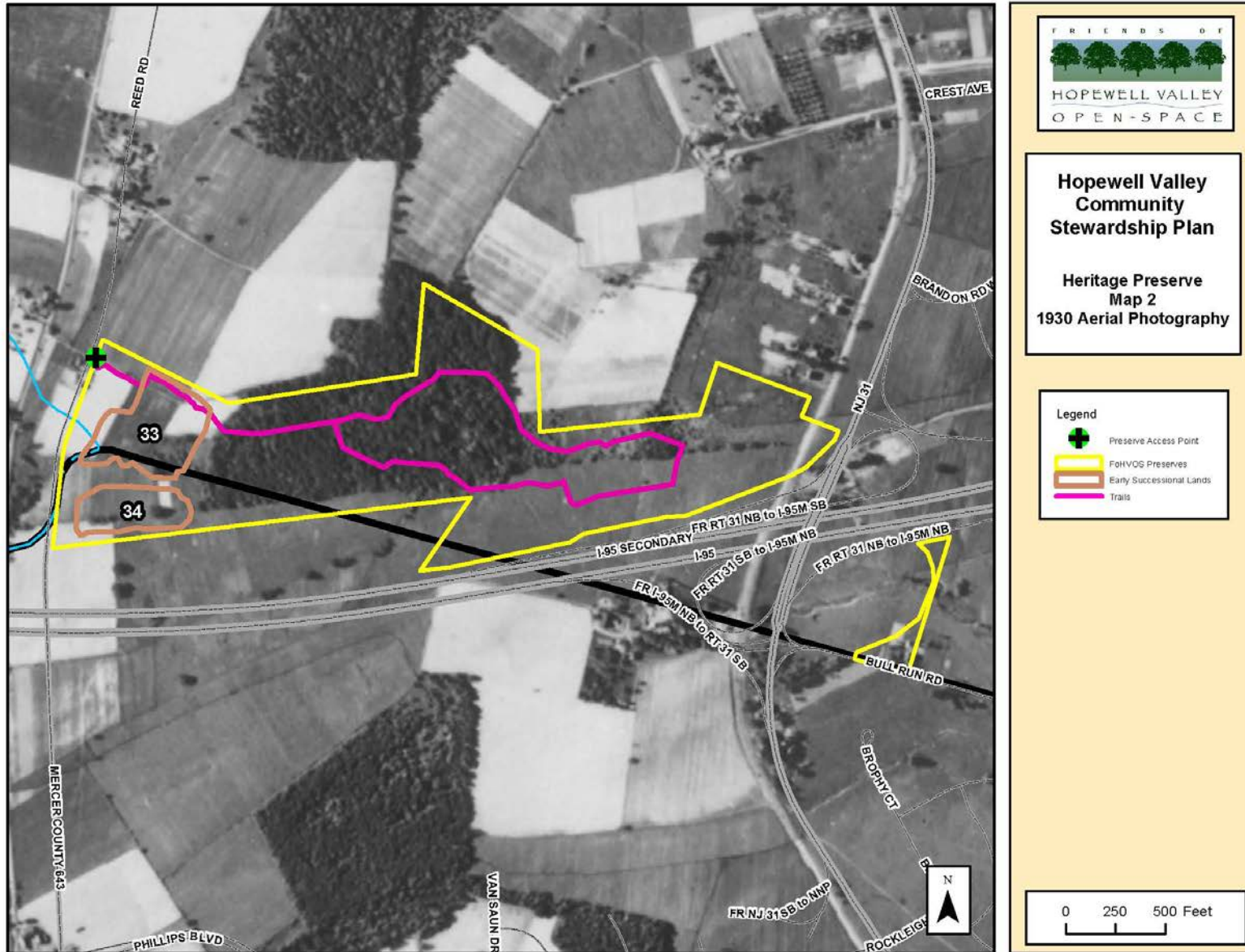
Heritage Preserve  
 Map 1  
 2007 Aerial Photography

- Legend
- Preserve Access Point
  - FoHVOS Preserves
  - Early Successional Lands
  - Trails

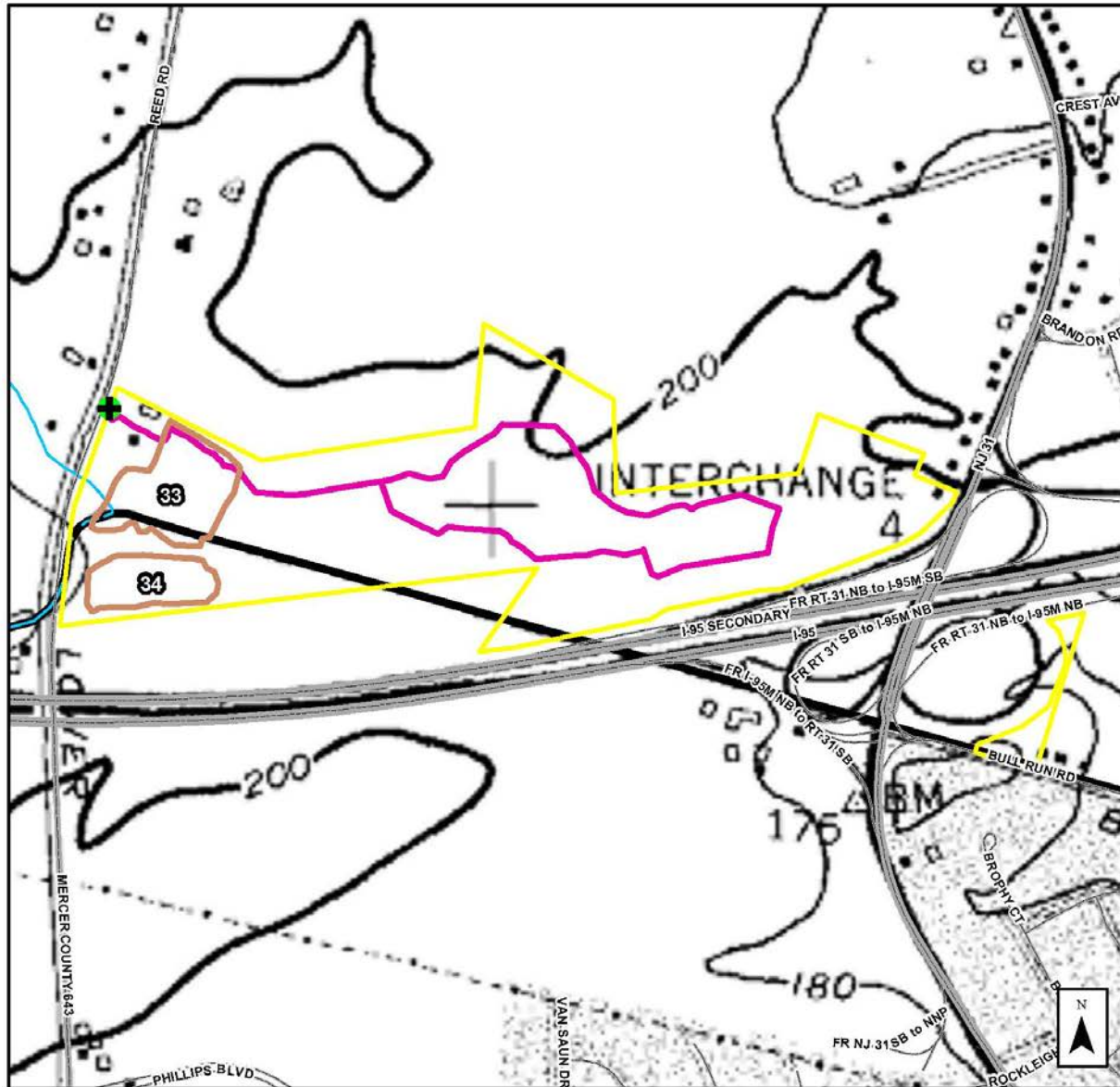




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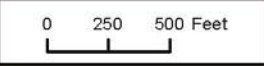


**Hopewell Valley  
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 Stewardship Plan**

**Heritage Preserve  
 Map 3  
 Topography**

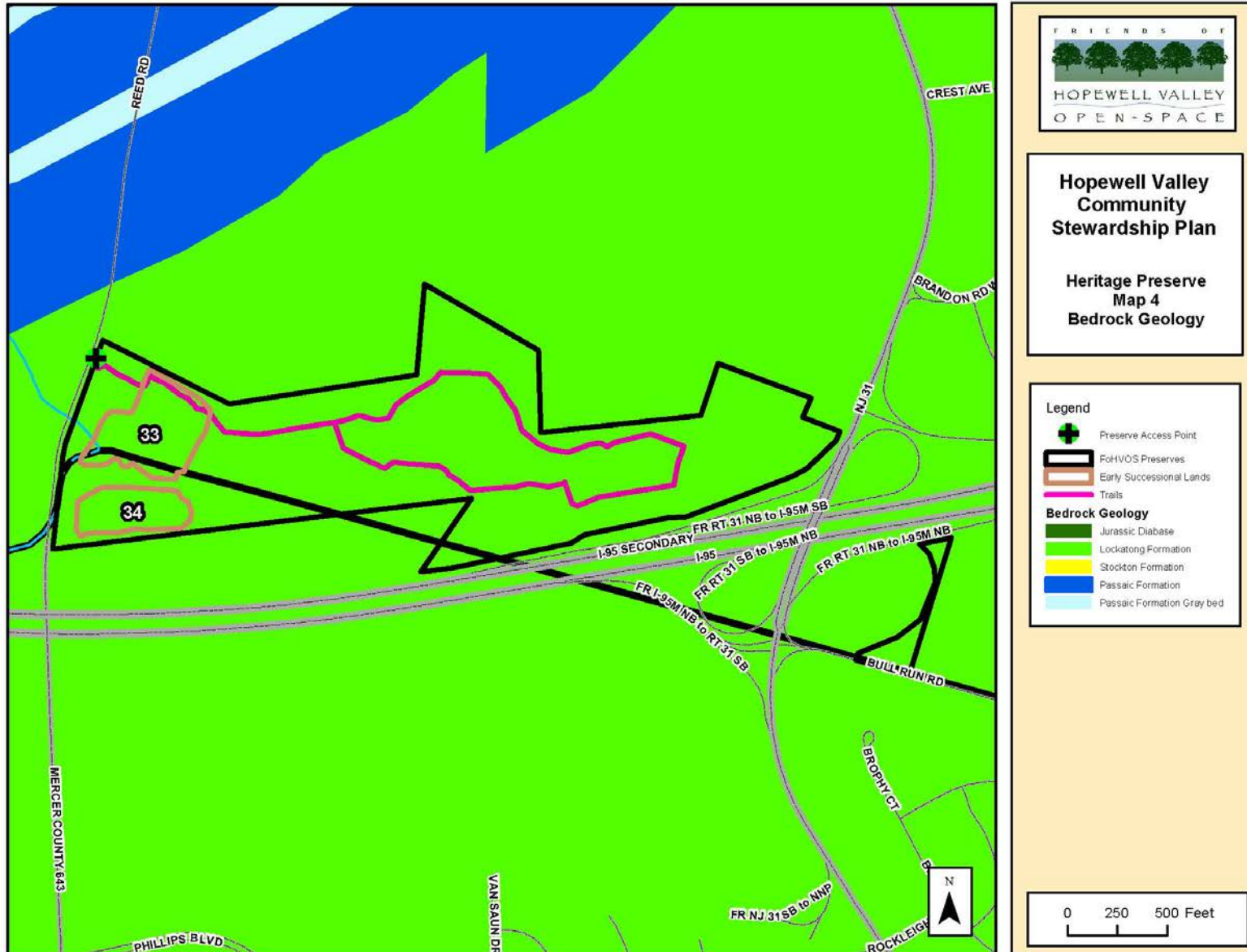
**Legend**

- Preserve Access Point
- FOHVOS Preserves
- Early Successional Lands
- Trails

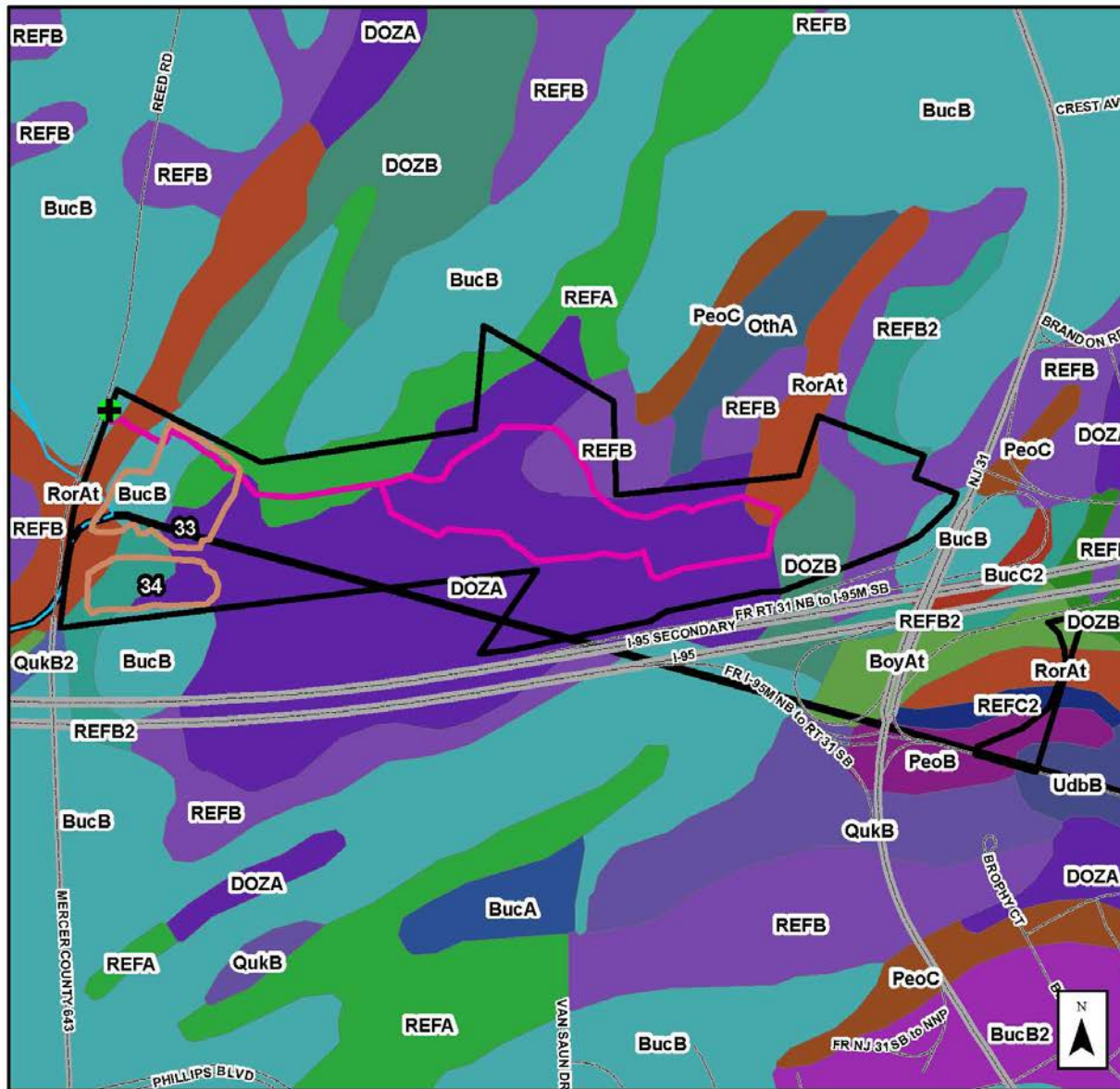




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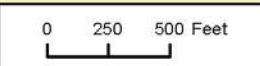


**Hopewell Valley  
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 Stewardship Plan**

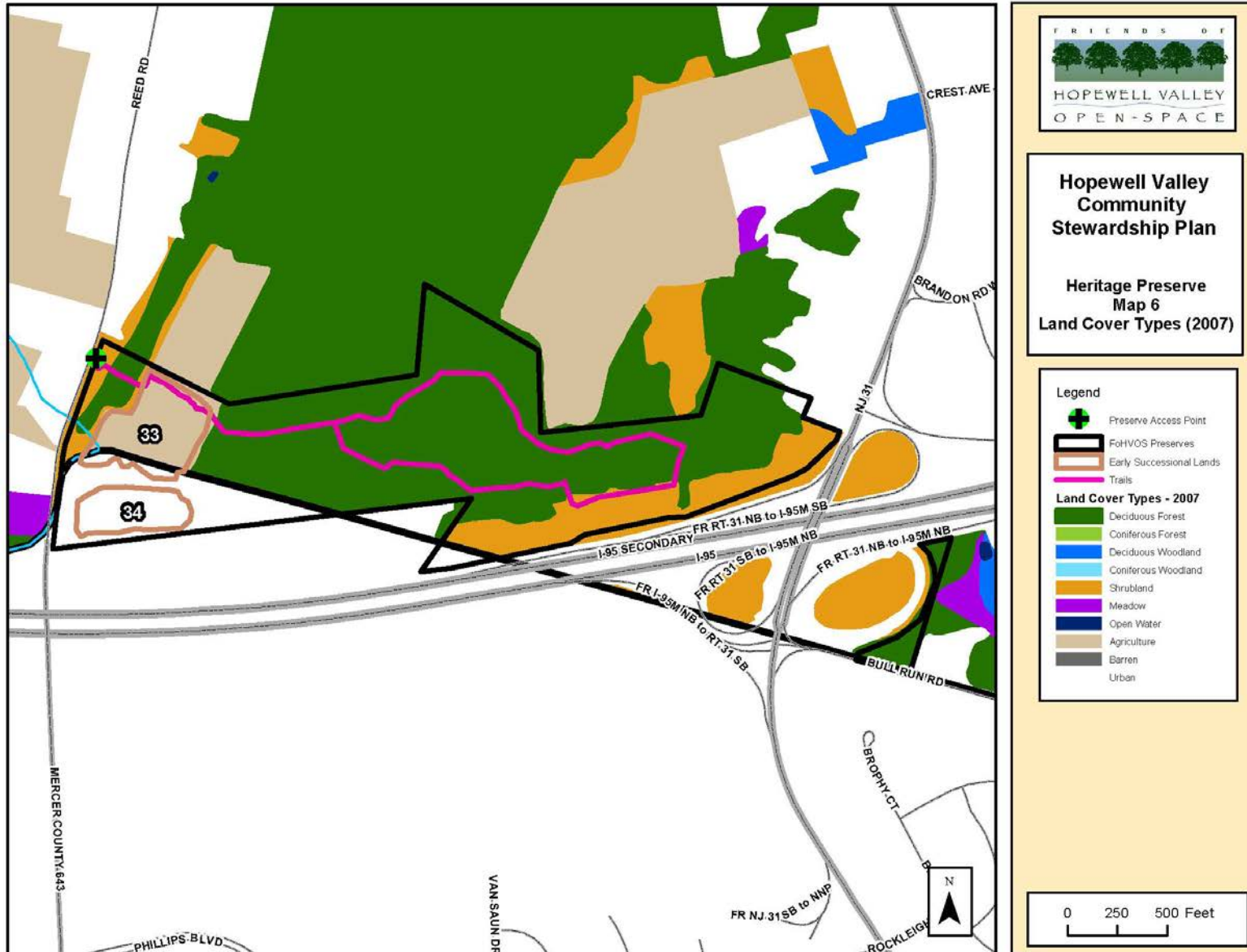
Heritage Preserve  
 Map 5  
 Soils

**Legend**

- Preserve Access Point
- FohVOS Preserves
- Early Successional Lands
- Trails

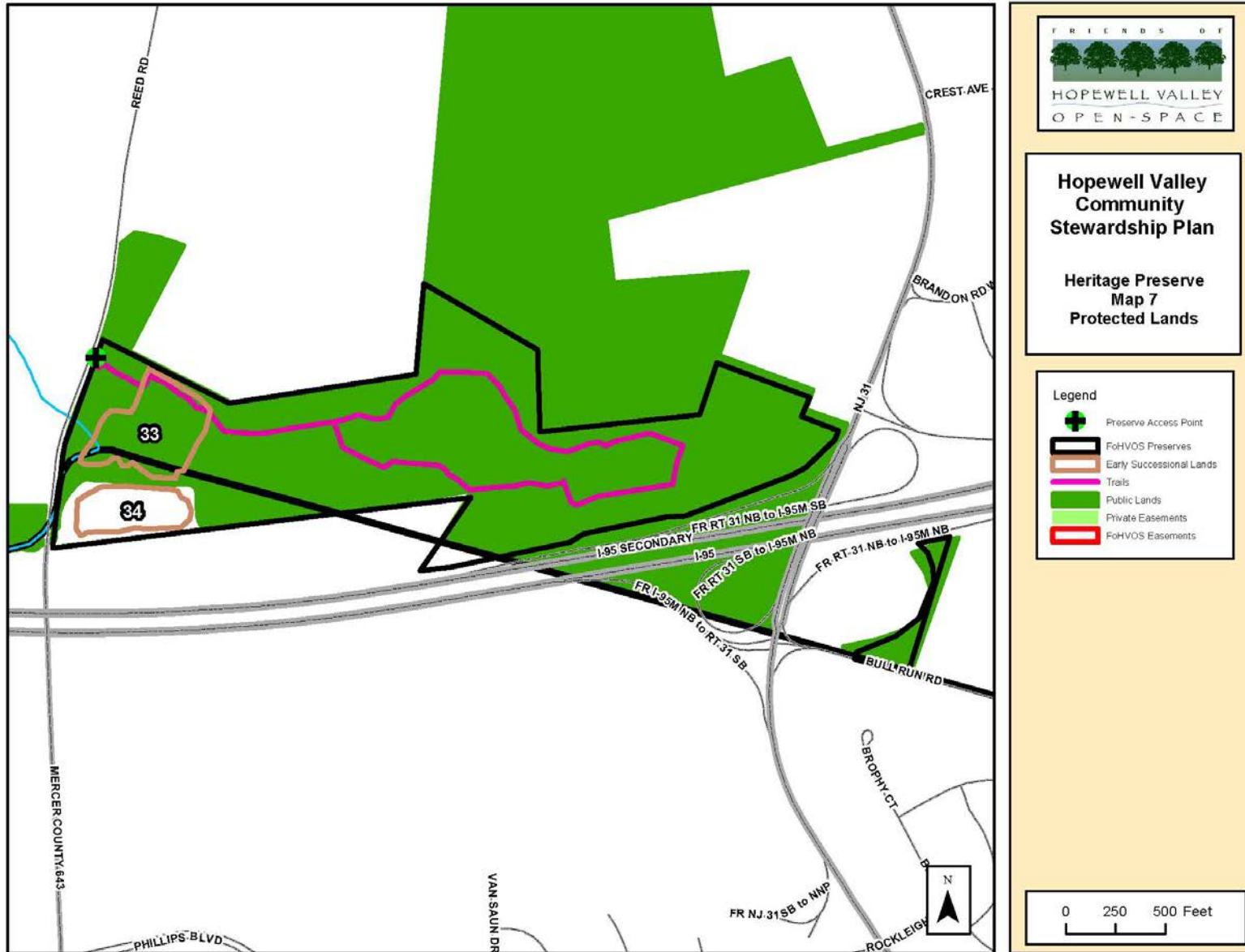


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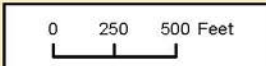
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**Hopewell Valley  
 Community  
 Stewardship Plan**

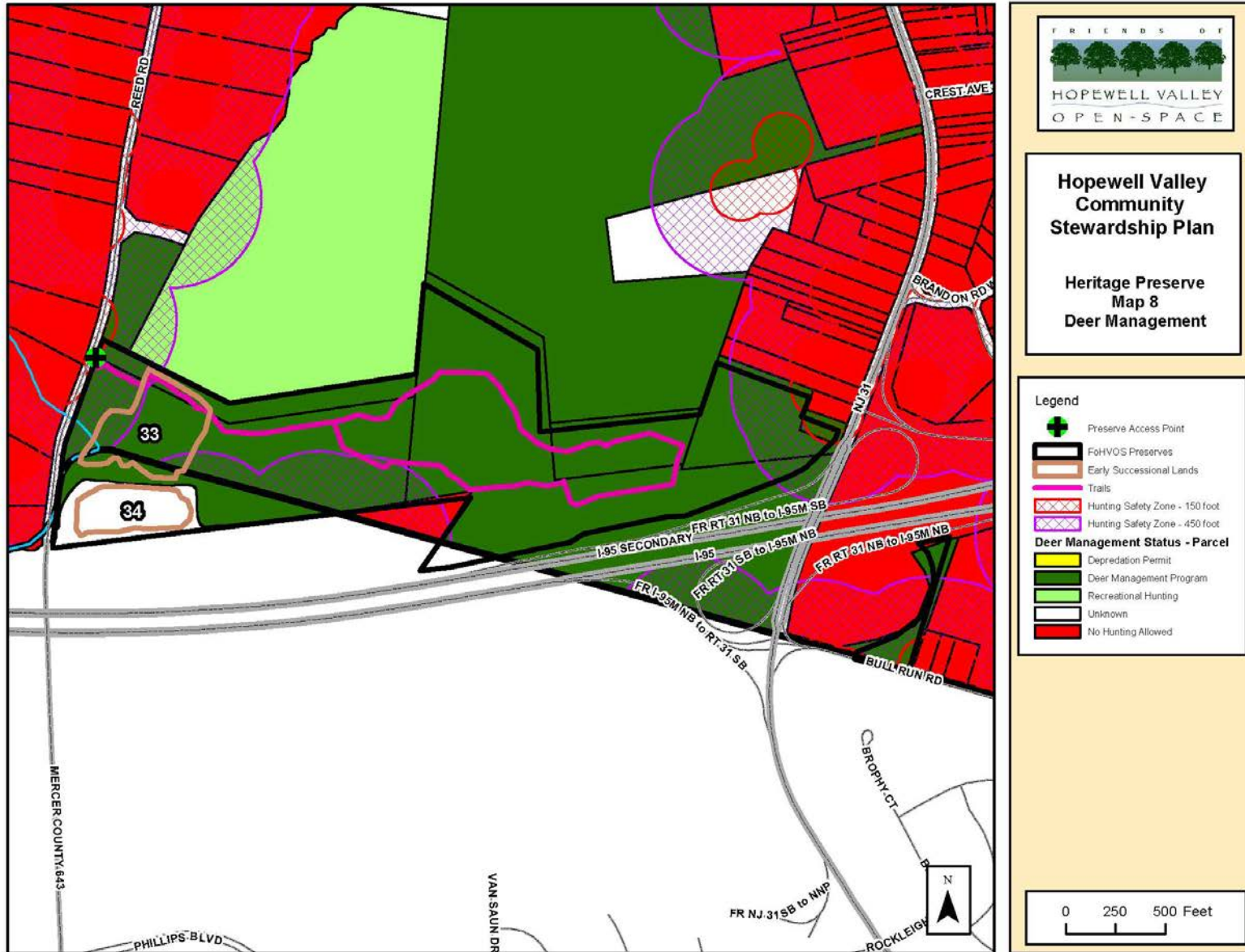
**Heritage Preserve  
 Map 7  
 Protected Lands**

- Legend**
- Preserve Access Point
  - FohVOS Preserves
  - Early Successional Lands
  - Trails
  - Public Lands
  - Private Easements
  - FohVOS Easements

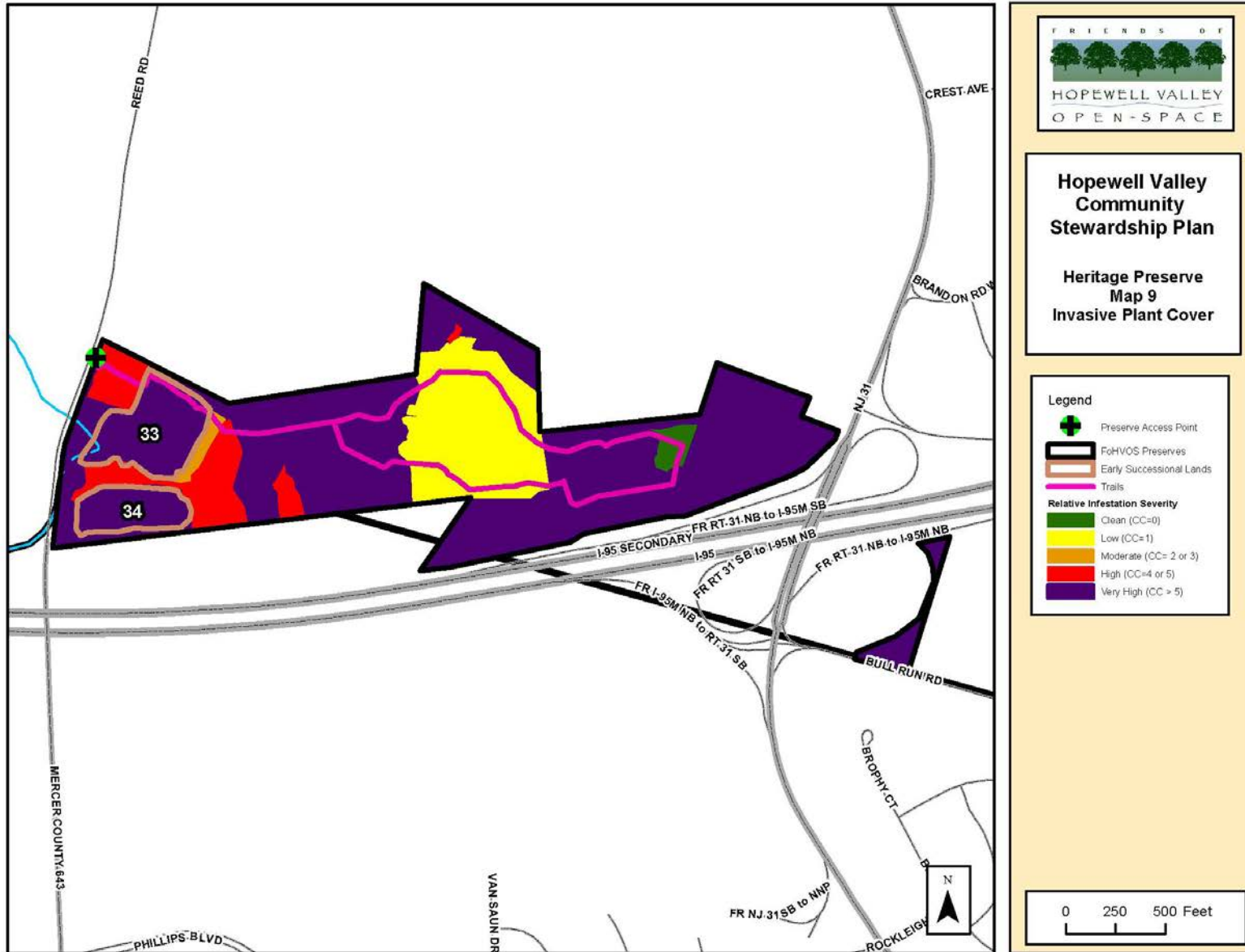




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**Appendix 11.  
Hollystone Preserve**

**Acreage:** 107.7

**Block and Lot:** B113, L14 and 13 (in part)

**Ownership:** NJDEP, Mercer County, Hopewell Township, FoHVOS.

**Year(s) Purchased:** 2010

**Location & Access:** Preserve is located on the south side of Fiddler's Creek Road, 0.2 miles east of Route 29. Currently, parking is not available at the preserve (park at the Fiddlers Creek lot at Ted Stiles Preserve at Baldpate Mountain). An access way is being developed along Fiddlers Creek Road (just west of Field 35 – See Map 1).

**Structures:** None

Additional property information is summarized in Appendix W. The following Preserve maps are provided at the end of this document:

- Map 1 2007 Aerial Photography
- Map 2 1930 Aerial Photography
- Map 3 Topography
- Map 4 Bedrock Geology
- Map 5 Soils
- Map 6 Land Cover Types (2007)
- Map 7 Protected Lands
- Map 8 Deer Management
- Map 9 Invasive Plant Cover (Relative Infestation Severity for all species)

**Website Description:**

**Hollystone Preserve** is comprised of mature upland forest along Fiddler's Creek, meadow, and second growth forest. The tract is contiguous with the Ted Stiles Preserve at Baldpate Mountain, separated only by Fiddler's Creek Road. Mercer County, Friends of Hopewell Valley Open Space, Hopewell Township, and D&R Greenway partnered to protect this land. This preserve is co-owned with New Jersey Department of Environmental Protection, Mercer County Park Commission and Hopewell Township.

**BROAD PROPERTY DESCRIPTION**

The Hollystone Preserve (see Map 1) is located in western Hopewell Township. The preserve is bounded by residential development, forest, farmland, and one major traffic corridor (Route 29). The topography (see Map 3) is mostly flat, except for steep slopes down towards Route 29 and on either side of Fiddler's Creek. See Map 3.

Based upon analysis of NJDEP's 2007 Land Use/Land Cover dataset, the preserve contains five broad communities: Deciduous Forest (>50% canopy), Deciduous Woodland, Shrubland, Agricultural Lands, and Urban Lands. Prior to acquisition in 2010, the former house site located at Field 40 was demolished, so all land designated "Urban" is now field. Land Use/Land Cover is summarized in Appendix X and illustrated in Map 6.

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The preserve contains a wide range of plant communities. The western shrublands feature open dry areas with cool season grasses, red cedar, Tree-of-Heaven, and blue curls. Moister areas with the shrublands contain ash, nettles, garlic mustard, and Allegheny monkeyflower. Flood-prone areas along Route 29 feature walnut, white snakeroot, and sycamore.

The forest along Fiddler's Creek reveals the historic native plant community, albeit disturbed by past land use (it appears that grazing animals were led through the forest to the Creek--barbed wire and domination by species like small leaf bittercress and white snakeroot) and hampered by deer browse.

Shrublands in the western portion of the preserve are heavily infested by multiflora rose, garlic mustard, and cool season grasses. This area (Field 38) will be mowed and reforested. Similarly, the more recently abandoned fields (primarily foxtail grass with scattered Chinese bushclover) will also be reforested.

The preserve has two types of bedrock geology. The Passaic formation predominates while two narrow bands of Passaic formation gray bed cut from east to west. See Map 4.

The preserve has twelve soil types with Birdsboro loam, 2 to 6 percent slopes, eroded; Klinesville channery loam, 18 to 35 percent slopes; and Penn channery silt loam, 2 to 6 percent slopes being the three most common types. See Map 5. The preserve's soils are described in Appendix Y.

### **CONSERVATION VALUES**

Based on an analysis involving the ranking of ecological values and threats (See Community Stewardship Plan text), the Preserve has a weighted Ecological Value at >75%. See Appendix A for a description of ranking factors.

**Forest and Woodland Communities:** The forest patch found on the Preserve and surrounding area is an important stop-over habitat (spring and fall resting and feeding) for migratory species. However, the presence of cowbirds and the lack of a woodland shrub layer reduces the chance of nesting and successful breeding.

**Old forest:** The forest found along the banks of Fiddler's Creek dates to the 1930s. Notably, the old forest's soil type is unique from the rest of the preserve. Steep topography appears to have been the factor limiting agricultural use. However, in two areas that are less steep the plant communities are degraded, possibly by grazing animals.

Here, species range from upland to mesic to floodplain species including sugar maple, American linden, Chestnut oak, shagbark hickory, hackberry, witch hazel, black cohosh, Christmas fern, rock cap fern, marginal wood fern, wild ginger, bladdernut, wreath goldenrod, and Virginia waterleaf. Because of excessive deer browse no populations are robust. See Map 2.

### **Early Successional Communities:**

**Shrublands:** Shrublands are heavily invaded and are comprised of primarily non-native herbs, shrubs and trees. Ash, red cedar, white snakeroot, and *Rubus* spp. are the most frequent native species.

**Meadows/Grasslands:** Meadows are heavily disturbed by past use and are predominantly foxtail grass, mullein, broomsedge, and Chinese bushclover (concentrated around field edges).

**Waterbodies:** 2700' of Fiddler's Creek and 850' of a Fiddler's Creek tributary pass through this preserve.



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**Rare Species:**

**Rare Plants:** None documented on the preserve, but Natural Heritage data shows Wild Comfrey, Aunt Lucy, Smooth Beardtongue, and Frank's Love Grass as within the Preserve's vicinity.

**Rare Animals:** The preserve has been identified as habitat for State Threatened and Special Concern species., including Wood Turtle. Federally Endangered and State Endangered and Threatened species occur within 1/4 mile of the preserve.

See Appendix L for a list of species.

**THREATS**

**Deer:** The understory is severely browsed. Regeneration of the shrub and canopy layer are non-existent. Heavy cover by invasive species is compounded by past soil disturbance (agriculture) and excessive deer browse. Forest health monitoring was performed in 2010/2011 (See main plan, Table 9).

Areas historically forested are nearly devoid of saplings, shrubs and mid-season herbs, except in areas with precipitous topography. Even here, species such as white wood aster and wreath goldenrod are found in small clusters only (<5 individuals).

**Invasive species:** In 2008 staff began walk-through surveys for emerging invasive species on all preserves. Mapping documented each species and its population size. Japanese wisteria, Callery pear, Chinese silvergrass, Oriental photinia, Chinese bushclover, mile-a-minute vine, beefsteakplant, and English ivy were detected. See [www.njisst.org](http://www.njisst.org) for the current status of emerging invasive species at the Preserve.

In 2011 staff completed surveys for invasive plant species on all preserves (see Map 9). Mapping documented each species found and its population size (See Table 1 below). The five species with the highest infestation scores include: Non-native cool season grass, Japanese Honeysuckle, Multiflora Rose, Japanese Stiltgrass, and Autumn Olive.

All habitats on the preserve are highly invaded by invasive species, except the block of old forest along Fiddlers Creek.

**Other:** N/A

**STRATEGIES and ACTIONS**

**Forest and Woodland Habitat Stewardship:** Annual surveys for and eradication of emerging invasive species is a priority at this Preserve. Selected ED/RR species will be treated. These species include: Japanese wisteria and Oriental photinia with basal bark/foiar spray, beefsteakplant by hand pulling (foiar spray before seed set if population is larger than initially detected), and English ivy by foiar spray.

No action is recommended for widespread invasive species, with three exceptions: those that fall within the forest restoration areas and all fruiting individuals of Asiatic bittersweet and winged euonymus (See Table 1 below). All fruiting plants should be treated with basal bark or cut stump (in the case of vines on trees) methods. Reduced deer density will allow the native plant communities to recover and compete with other widespread invasive species on a long-term basis.

**Early Successional Habitat Stewardship:** All habitats of this type in the eastern portion of the preserve will be reforested to increase forest cover associated with the Baldpate Mountain Ecosystem. Spot

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treatment of selected widespread invasive species as needed. The following ED/RR species will be treated also: Callery pear, Chinese silvergrass, and Chinese bushclover (restoration area only). Mile-a-minute vine will be controlled by the biological control, unless small patches are detected.

Fields/shrublands on the western side of the preserve are inaccessible for the heavy equipment required to clear the invasive species cover.

For habitat goals and maintenance schedule see Appendix T & U.

**Deer Management:** The preserve is enrolled in the Mercer County Park Commission DMP with bow and gun hunting. See Map 8 for delineations of the 150' and 450' safety zones and hunting status.

**Rare Species Management:** Survey for presence of rare species. Erect small exclosures if rare plant species are detected. Maintain DMP goals to protect forest health and encourage recovery of herbaceous and shrub layers for improved nesting and foraging habitat.

**Neighboring Lands:** Engage neighbors in Community Stewardship. See Map 7 for adjacent protected lands.

**Waterbodies Management:** No immediate action is recommended.

**Undesirable Activities Management:** N/A

**Scientific Research Assessment:** The Preserve is available for scientific research.

**Recreational Opportunities Assessment:** A trail is being developed by the Mercer County Park Commission.

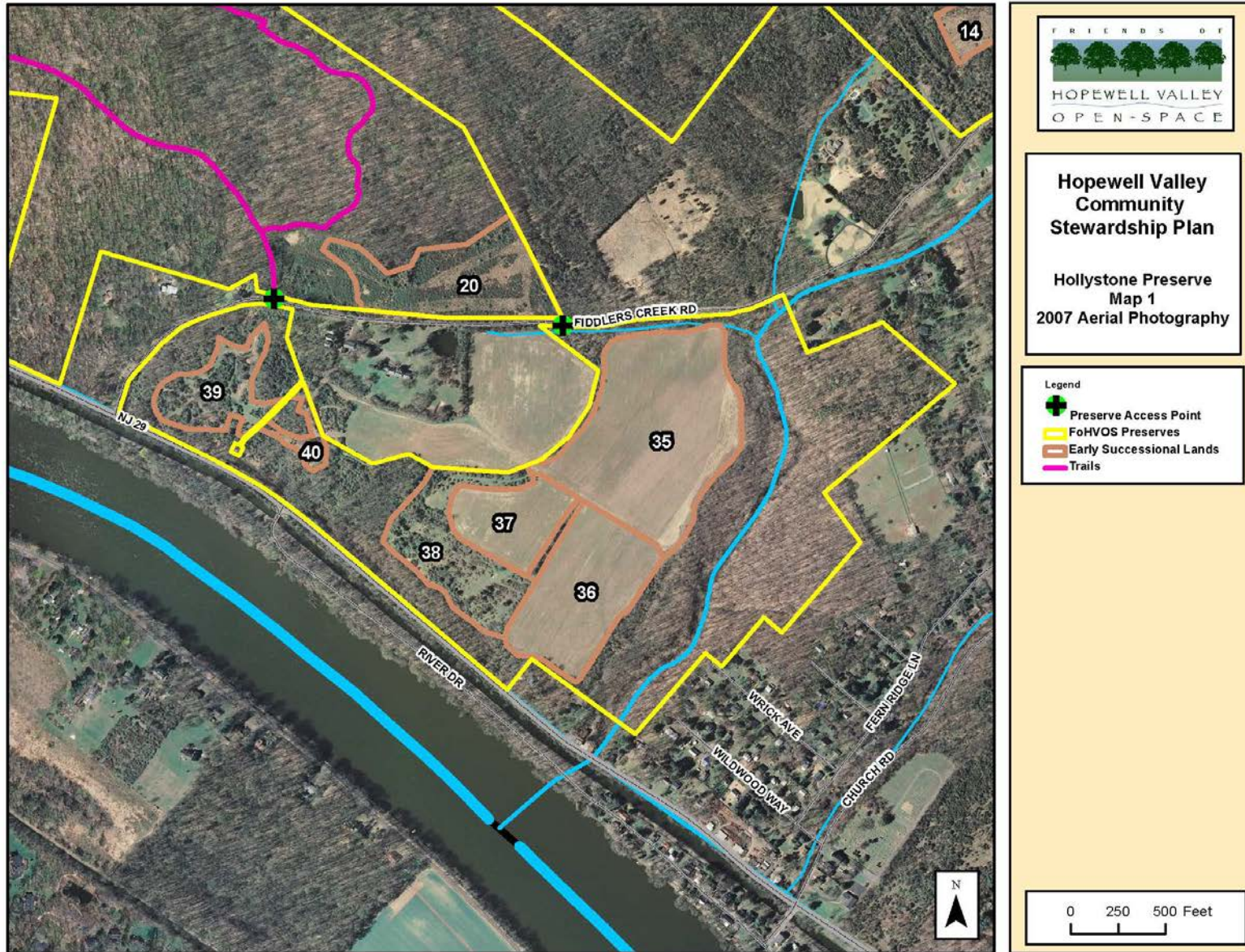
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**Table 1. Invasive Plants – Species Abundance and Treatment Recommendations**

Scientific Name	Common Name	Infestation Index Score <sup>1</sup>	Total Acres Present	Percent of Preserve Area Present	Treatment Recommendation	LOE Estimate (Hours)	Acreage by Percent Ground Cover Categories							
							Category 0: 0%	Category: Trace	Category 1: 1-10%	Category 2: 10-25%	Category 3: 25-50%	Category 4: 50-75%	Category 5: 75-100%	
<i>Acer palmatum</i>	Japanese Maple	0.0	0.0	0.0	N/A		107.77	0.0	0.0	0.0	0.0	0.0	0.0	
<i>Acer platanoides</i>	Norway Maple	0.0	0.0	0.0	N/A		107.77	0.0	0.0	0.00	0.0	0.00	0.0	
<i>Ailanthus altissima</i>	Tree-of-Heaven	12.8	9.1	8.4	Control (restoration vicinity only)	Strategy 3A	98.67	2.7	0.03	6.4	0.0	0.0	0.0	
<i>Alliaria petiolata</i>	Garlic Mustard	87.8	46.3	43.0	None		61.48	0.0	18.7	16.6	8.2	2.8	0.0	
<i>Artemisia vulgaris</i>	Common Mugwort	5.0	4.8	4.5	Control (restoration vicinity only)	Strategy 3A	102.96	1.2	3.2	0.0	0.0	0.5	0.0	
<i>Arthraxon hispidus</i>	Small Carpgrass	0.0	0.0	0.0	N/A		107.77	0.0	0.0	0.0	0.0	0.0	0.0	
<i>Berberis thunbergii</i>	Japanese Barberry	10.8	13.4	12.5	None		94.34	2.6	10.8	0.0	0.0	0.0	0.0	
<i>Cardamine impatiens</i>	Narrow-leaved Bittercress	20.7	15.6	14.5	None		92.15	0.0	13.9	0.0	0.3	1.5	0.0	
<i>Catalpa bignonioides</i>	Northern Catalpa	0.0	0.0	0.0	N/A		107.74	0.0	0.03	0.0	0.0	0.0	0.0	
<i>Celastrus orbiculatus</i>	Asiatic Bittersweet	2.5	1.7	1.5	Control - Treat Fruiting Plants	10	106.10	0.0	1.3	0.0	0.42	0.0	0.0	
<i>Centurea sp.</i>	Knawweed sp.	37.2	37.1	34.5	None		70.64	0.0	37.1	0.0	0.04	0.0	0.0	
<i>Cirsium arvense</i>	Canada Thistle	77.5	39.4	36.6	None		68.35	0.2	1.1	38.0	0.1	0.03	0.0	
<i>Dipsacus sylvestris</i>	Teasel	0.0	0.0	0.0	N/A		107.77	0.0	0.00	0.0	0.0	0.0	0.0	
<i>Eleaegnus umbellata</i>	Autumn Olive	92.5	69.3	64.3	Control (restoration vicinity only)	Strategy 3A	38.50	6.2	49.46	4.4	2.8	6.4	0.1	
<i>Euonymus alata</i>	Winged Burning Bush	2.5	2.5	2.3	Control - Treat Fruiting Plants	10	105.26	0.0	2.5	0.0	0.0	0.0	0.00	
<i>Iris pseudoacris</i>	Yellow Iris	0.0	0.0	0.0	N/A		107.77	0.0	0.0	0.0	0.0	0.0	0.0	
<i>Lespedeza cuneata</i>	Chinese Bushclover	77.4	41.9	38.9	Control (restoration vicinity only)	Strategy 3A	65.85	0.0	7.9	33.4	0.0	0.5	0.2	
<i>Ligustrum obtusifolium</i>	Border Privet	49.7	36.2	33.6	None		71.61	4.0	14.6	17.6	0.0	0.0	0.0	
<i>Lonicera japonica</i>	Japanese Honeysuckle	151.7	68.9	63.9	None		38.89	0.0	29.6	8.8	17.9	12.2	0.4	
<i>Lonicera maackii</i>	Amur Honeysuckle	0.0	0.0	0.0	N/A		107.77	0.0	0.0	0.0	0.0	0.0	0.0	
<i>Lonicera morrowii</i>	Morrow's Honeysuckle	9.9	13.1	12.1	None		94.70	3.6	9.1	0.4	0.00	0.0	0.0	
<i>Lysimachia nummularia</i>	Moneywort	0.0	0.0	0.0	N/A		107.77	0.0	0.0	0.0	0.0	0.0	0.0	
<i>Lythrum salicaria</i>	Purple Loosestrife	0.0	0.0	0.0	N/A		107.77	0.0	0.0	0.0	0.0	0.0	0.0	
<i>Malus toringo</i>	Toringo Crabapple	0.0	0.0	0.0	N/A		107.77	0.0	0.0	0.0	0.0	0.0	0.0	
<i>Microstegium vimineum</i>	Japanese Stillgrass	103.1	52.0	48.3	None		55.76	0.0	26.8	9.4	5.7	10.1	0.0	
N/A	Non-native, cool season grass	182.5	46.2	42.9	None		61.53	0.0	6.8	5.8	2.0	0.0	31.6	
<i>Phalaris arundinacea</i>	Reed Canary Grass	61.4	39.1	36.2	None		68.72	0.0	31.6	0.0	0.0	7.4	0.1	
<i>Phragmites australis</i>	Common Reed	0.0	0.0	0.0	N/A		107.77	0.0	0.0	0.0	0.0	0.0	0.0	
<i>Polygonum cuspidatum</i>	Japanese Knotweed	0.0	0.0	0.0	N/A		107.77	0.0	0.0	0.0	0.0	0.0	0.0	
<i>Polygonum perfoliatum</i>	Mile-a-Minute	0.5	1.4	1.3	None - Check for biocontrol agent		106.33	1.0	0.5	0.0	0.0	0.0	0.0	
<i>Pyrus calleryana</i>	Callery Pear	0.0	0.0	0.0	N/A		107.77	0.0	0.0	0.0	0.0	0.0	0.0	
<i>Ranunculus ficaria</i>	Lesser Celandine	0.0	0.0	0.0	N/A		107.77	0.0	0.0	0.0	0.0	0.0	0.0	
<i>Robinia pseudoacacia</i>	Black Locust	5.2	5.6	5.2	Control (restoration vicinity only)	Strategy 3A	102.15	0.4	5.2	0.0	0.0	0.0	0.0	
<i>Rosa multiflora</i>	Multiflora Rose	147.2	83.2	77.2	Control (restoration vicinity only)	Strategy 3A	24.61	3.2	49.6	7.3	15.2	2.1	5.8	
<i>Rubus pheonculusius</i>	Wineberry	63.2	42.5	39.5	None		65.24	6.0	23.0	5.6	2.8	5.2	0.0	
<i>Securigera varia</i>	Crown vetch	0.0	0.0	0.0	N/A		107.77	0.0	0.0	0.0	0.0	0.0	0.0	
<i>Viburnum dilatatum</i>	Linden Viburnum	0.0	0.0	0.0	N/A		107.77	0.0	0.0	0.0	0.0	0.0	0.0	
<i>Viburnum sieboldii</i>	Siebold's Viburnum	0.0	0.0	0.0	N/A		107.77	0.0	0.0	0.0	0.0	0.0	0.0	
<i>Wisteria floribunda</i>	Japanese Wisteria	0.0	0.0	0.0	N/A		107.77	0.0	0.0	0.0	0.0	0.0	0.0	
<b>Total LOE</b>						<b>20</b>								

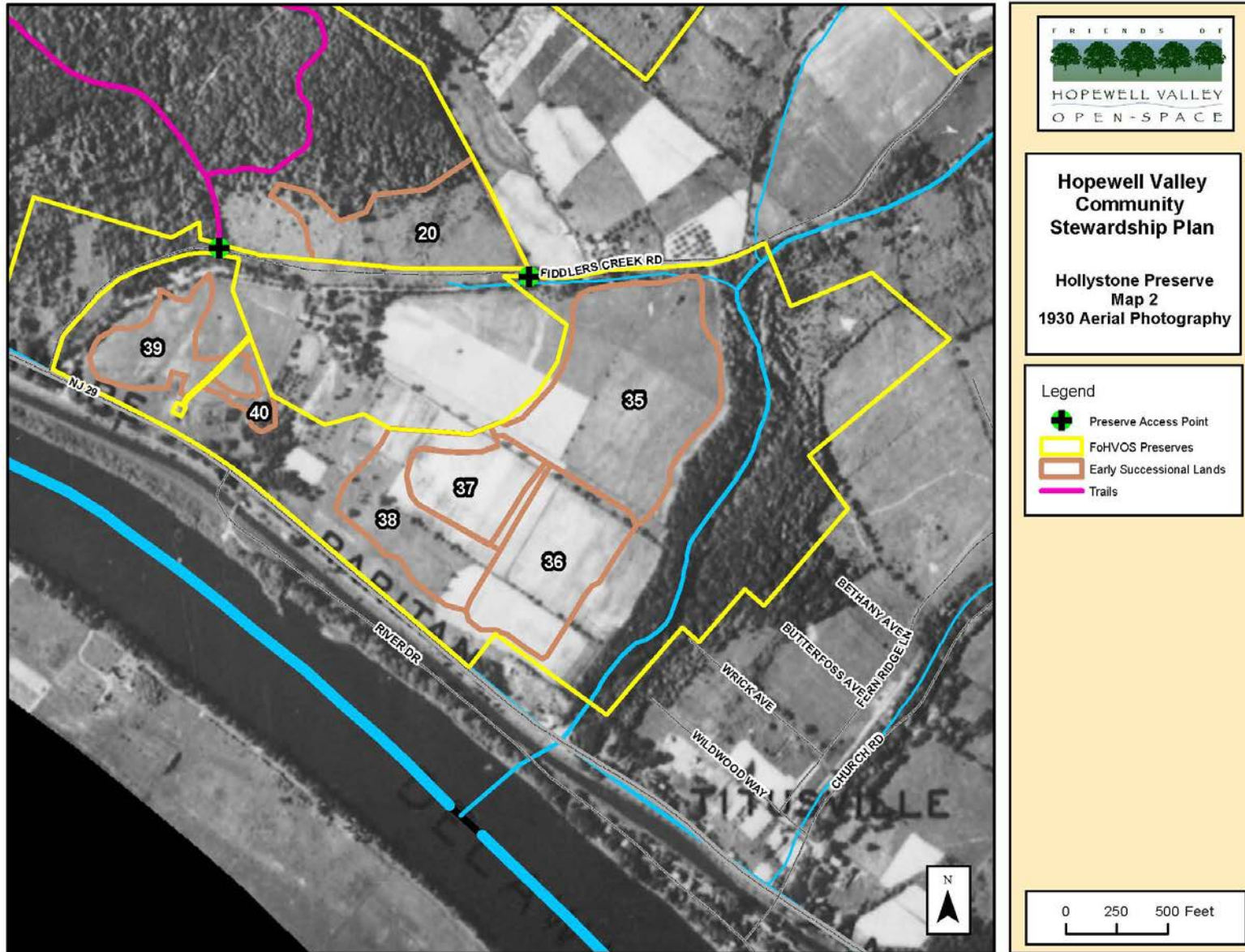
<sup>1</sup> The Infestation Index Score combines the extent of acreage infested and the intensity of the infestation. It was derived by multiplying the cover class number by the number of acres within each cover class.

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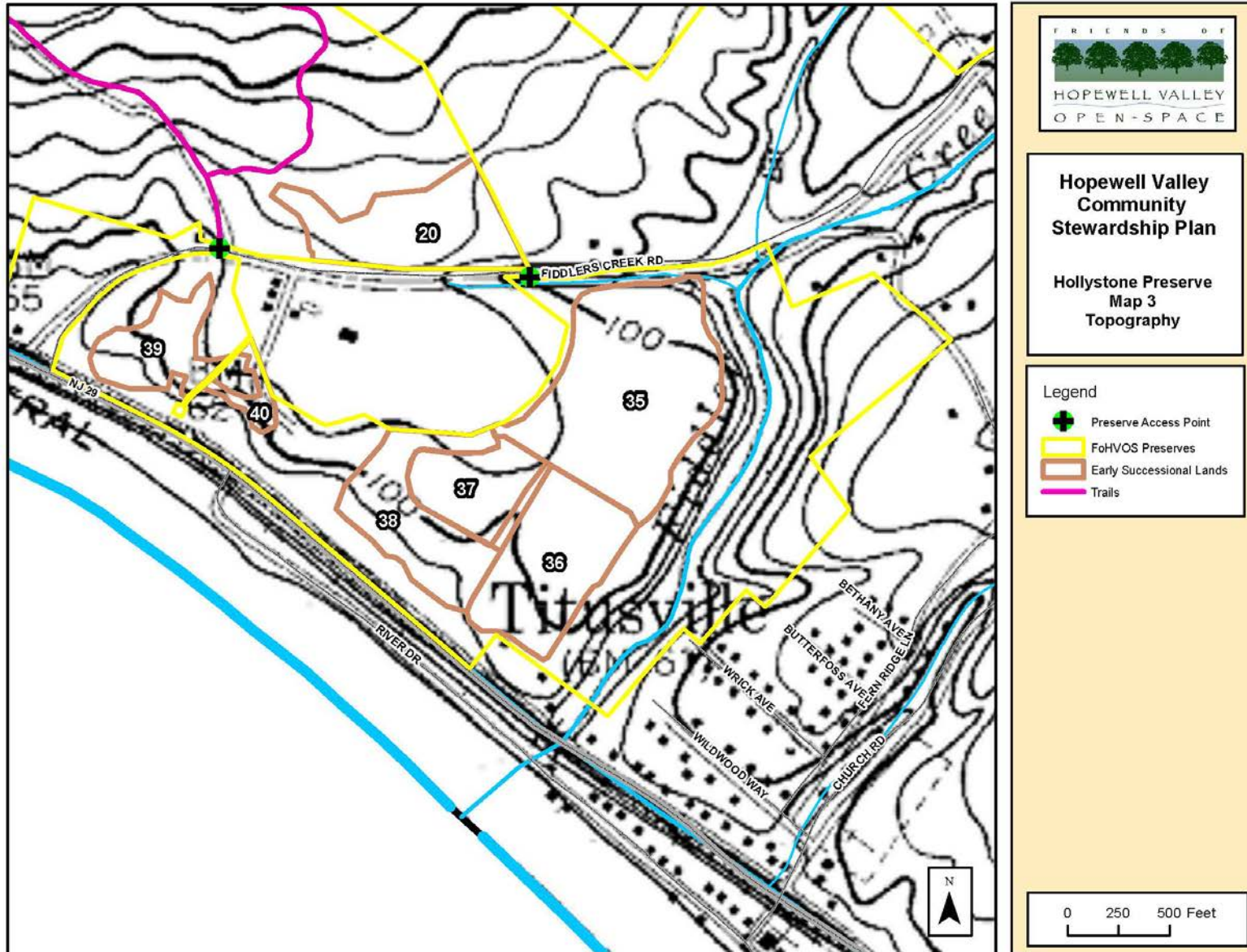




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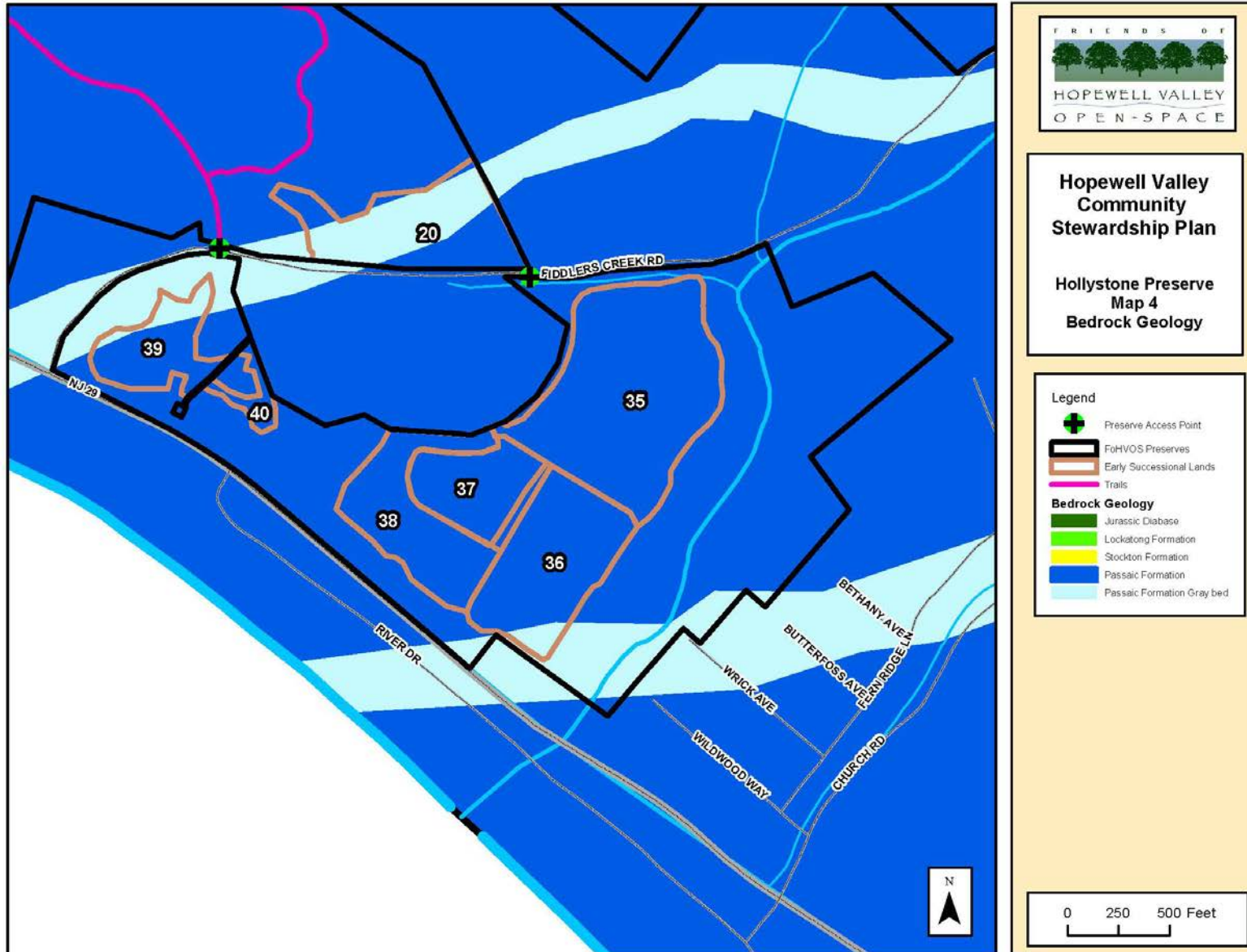


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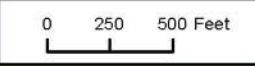
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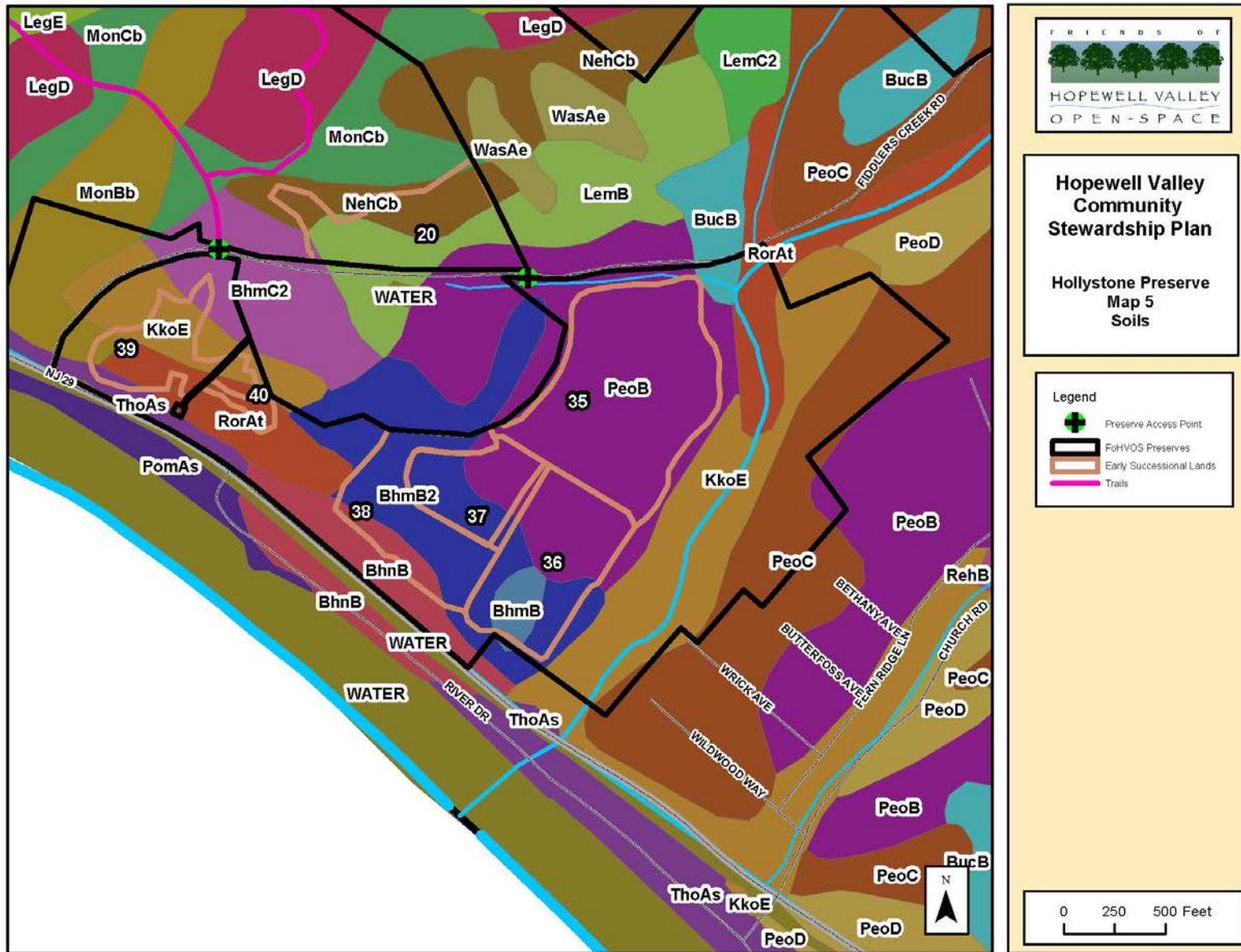
**Hopewell Valley  
 Community  
 Stewardship Plan**

**Hollystone Preserve  
 Map 4  
 Bedrock Geology**

- Legend**
- Preserve Access Point
  - FohVOS Preserves
  - Early Successional Lands
  - Trails
  - Bedrock Geology**
  - Jurassic Diabase
  - Lockatong Formation
  - Stockton Formation
  - Passaic Formation
  - Passaic Formation Gray bed



Hopewell Valley Community Stewardship Plan  
 Friends of Hopewell Valley Open Space

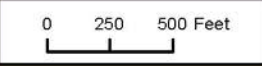


**Hopewell Valley  
 Community  
 Stewardship Plan**

**Hollystone Preserve  
 Map 5  
 Soils**

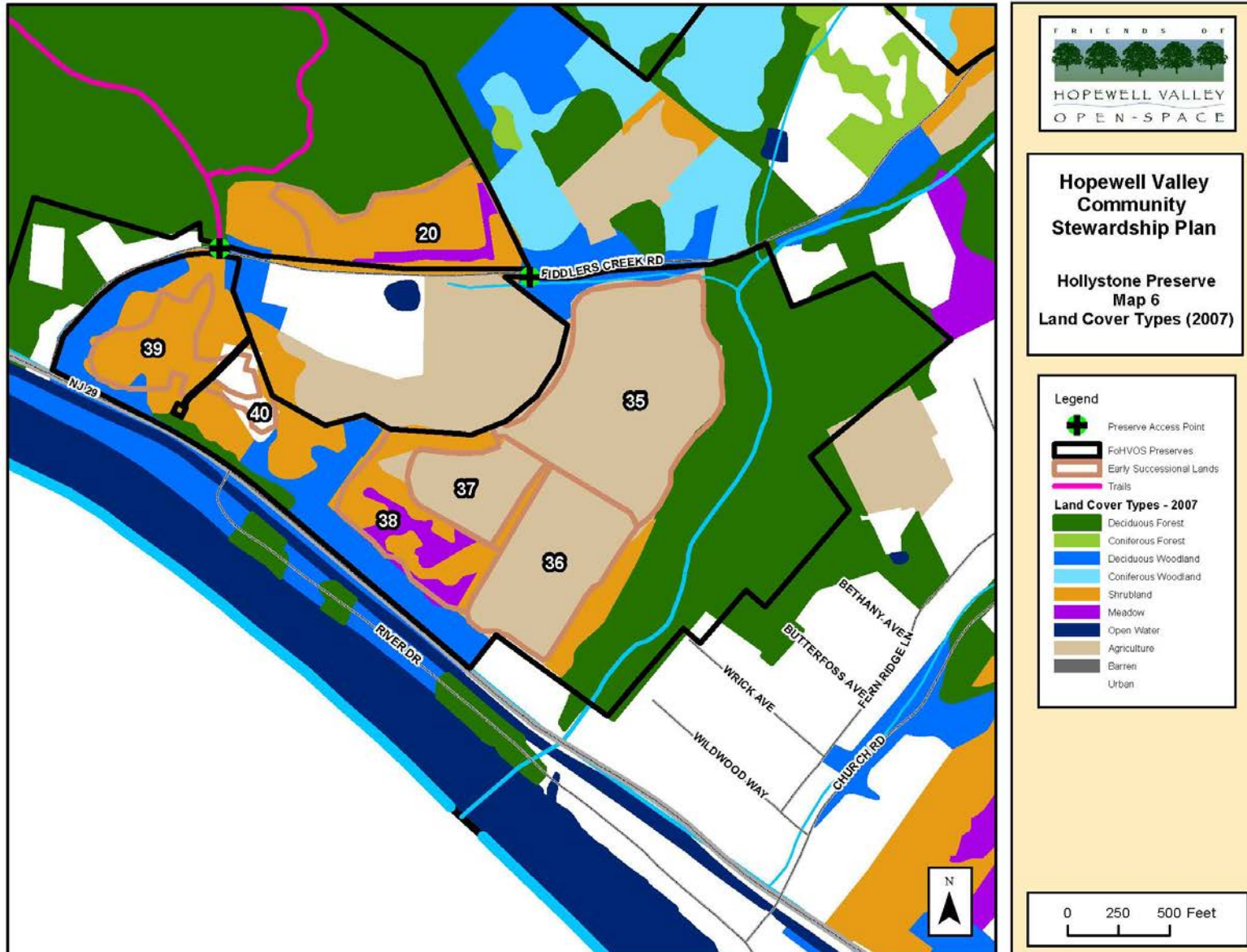
**Legend**

-  Preserve Access Point
-  FohVOS Preserves
-  Early Successional Lands
-  Trails

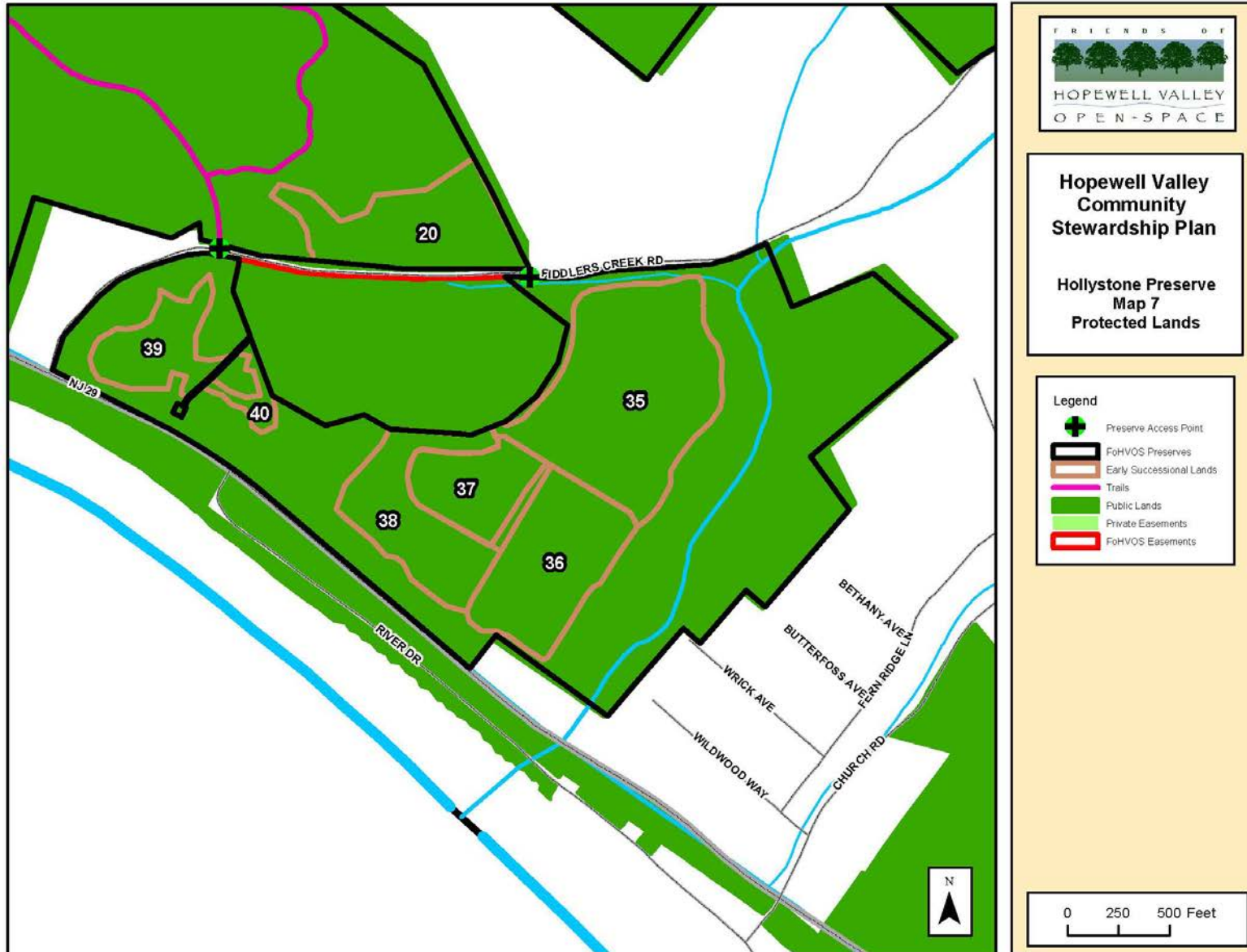




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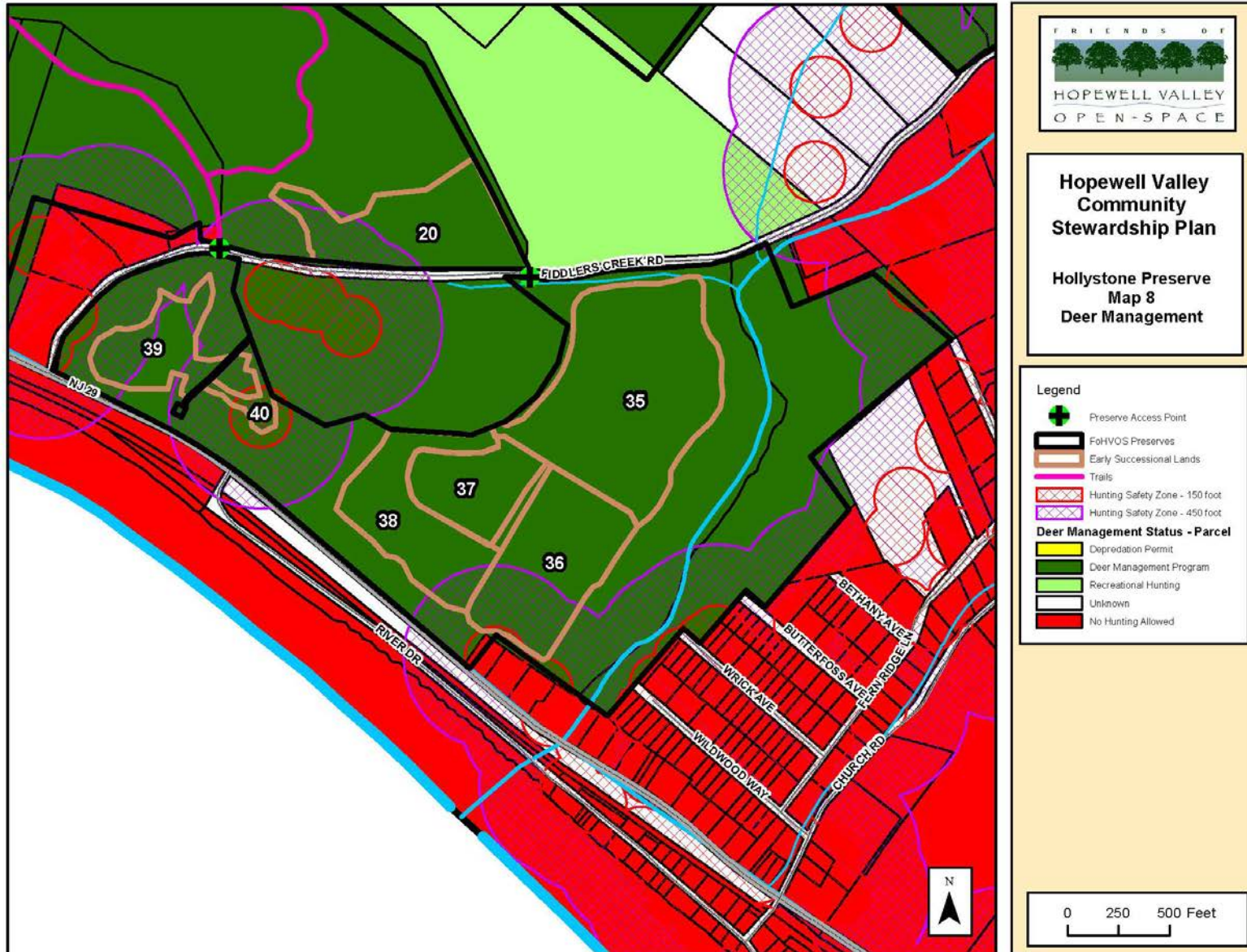


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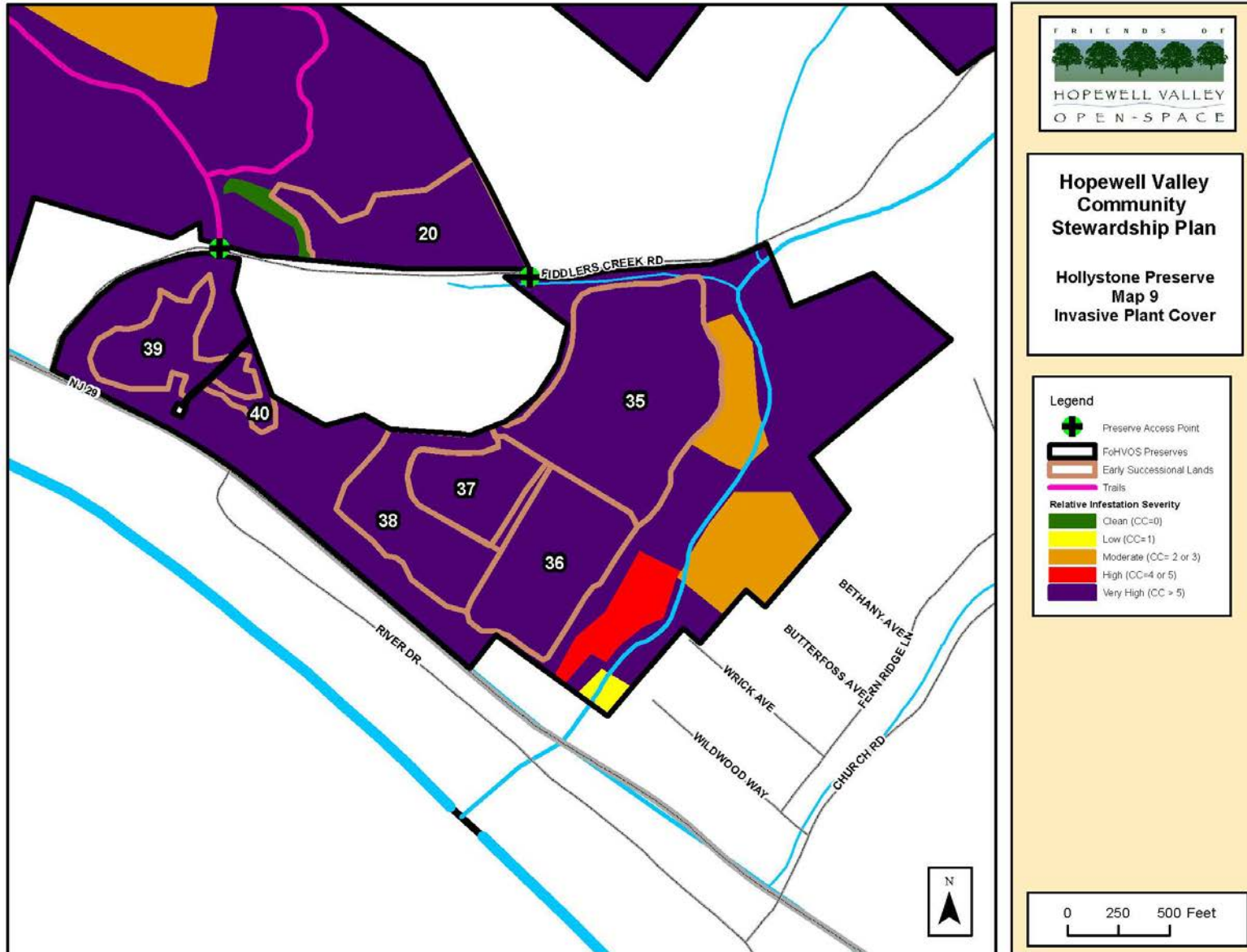




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**Hopewell Valley Community Stewardship Plan  
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**Appendix 12.  
Huber Preserve**

**Acreage:** 0.99

**Block and Lot:** B31, L75

**Ownership:** FoHVOS (100%)

**Year(s) Purchased:** 2003

**Location & Access:** Preserve is located on the south side of Harbourton-Woodsville Road. Parking access along road shoulder. Caution: Road shoulder is very narrow. Parking may be accommodated on Mr. Ridolfi's driveway with prior permission only. Nearest street address: 26 Harbourton-Woodsville Road, Pennington, NJ 08534.

**Structures:** None

Additional property information is summarized in Appendix W. The following Preserve maps are provided at the end of this document:

- Map 1 2007 Aerial Photography
- Map 2 1930 Aerial Photography
- Map 3 Topography
- Map 4 Bedrock Geology
- Map 5 Soils
- Map 6 Land Cover Types (2007)
- Map 7 Protected Lands
- Map 8 Deer Management
- Map 9 Invasive Plant Cover (Relative Infestation Severity for all species)

**Website Description:**

**Huber Preserve** is a forested tract along pastoral Harbourton Woodsville Road. Black oak, American beech, maple leaf viburnum, and black birch grow here. The parcel is located near a hub of larger FoHVOS preserves.

**BROAD PROPERTY DESCRIPTION**

The Huber Preserve (see Map 1) is located in north central Hopewell Township. The topography (see Map 3) is relatively flat with a slight slope from the southwest to the northeast.

Based upon analysis of NJDEP's 2007 Land Use/Land Cover dataset, the preserve contains two broad plant communities: Deciduous Forest (> 50% canopy) - Upland and Agricultural. Land Use/Land Cover is summarized in Appendix X and illustrated in Map 6.

The preserve is forested with black birch, red oak, shagbark hickory, black and Mazzard cherries, flowering dogwood, Virginia creeper, maple leaf viburnum, enchanter's nightshade, and jack-in-the-pulpit making up the native plant community.

The preserve has one type of bedrock geology--the Stockton formation. See Map 4.

**Hopewell Valley Community Stewardship Plan  
Friends of Hopewell Valley Open Space**

The preserve has one soil type (see Map 5)--Quakertown silt loam, 2 to 6 percent slopes. The preserve's soils are described in Appendix Y.

**CONSERVATION VALUES**

Based on an analysis involving the ranking of ecological values and threats (See Community Stewardship Plan text), the Preserve has a weighted Ecological Value at 25-50%. See Appendix A for a description of ranking factors.

**Forest and Woodland Communities:** The patch on the preserve connects to a highly fragmented forest.

**Old forest:** 0.31 acres of the preserve were forested in 1930. See Map 2.

**Early Successional Communities:**

**Shrublands:** N/A

**Meadows/Grasslands:** N/A

**Waterbodies:** N/A

**Rare Species:**

**Rare Plants:** None documented on the Preserve. Natural Heritage grid data shows no species.

**Rare Animals:** None documented on the Preserve. Forested areas of the Preserve are identified as habitat for State Threatened and Special Concern species.

**THREATS**

**Deer:** The understory is severely browsed. Regeneration of the shrub and canopy layer is nearly non-existent.

**Invasives species:** In 2008 staff began walk-through surveys for emerging invasive species on all preserves. (Mapping documented each species and its population size. No species were detected. See [www.njisst.org](http://www.njisst.org) for the current status of emerging invasive species at the Preserve.

In 2011 staff completed surveys for invasive plant species on all preserves (see Map 9). Mapping documented each species found and its population size (See Table 1 below). The five species with the highest infestation scores include: Garlic Mustard, Wineberry, Multifloral Rose, Non-native cool season grass, and Autumn Olive.

**Other:** N/A

**STRATEGIES and ACTIONS**

**Forest and Woodland Habitat Stewardship:** Annual surveys for and eradication of emerging invasive species is a high priority at this Preserve. Reduced deer density will allow the native plant communities to recover and compete with all other widespread invasive species on a long-term basis.

**Early Successional Habitat Stewardship:** N/A

**Deer Management:** The preserve is too small to be enrolled in the DMP. See Map 8 for delineations of the 150' and 450' safety zones and hunting status.

**Hopewell Valley Community Stewardship Plan  
Friends of Hopewell Valley Open Space**

**Rare Species Management:** N/A.

**Neighboring Lands:** Because of the small size of the preserve, no action is recommended. See Map 7 for adjacent protected lands.

**Waterbodies Management:** N/A

**Undesirable Activities Management:** N/A

**Scientific Research Assessment:** The Preserve is available for scientific research.

**Recreational Opportunities Assessment:** The preserve is too small to support a trail.

**Hopewell Valley Community Stewardship Plan  
Friends of Hopewell Valley Open Space**

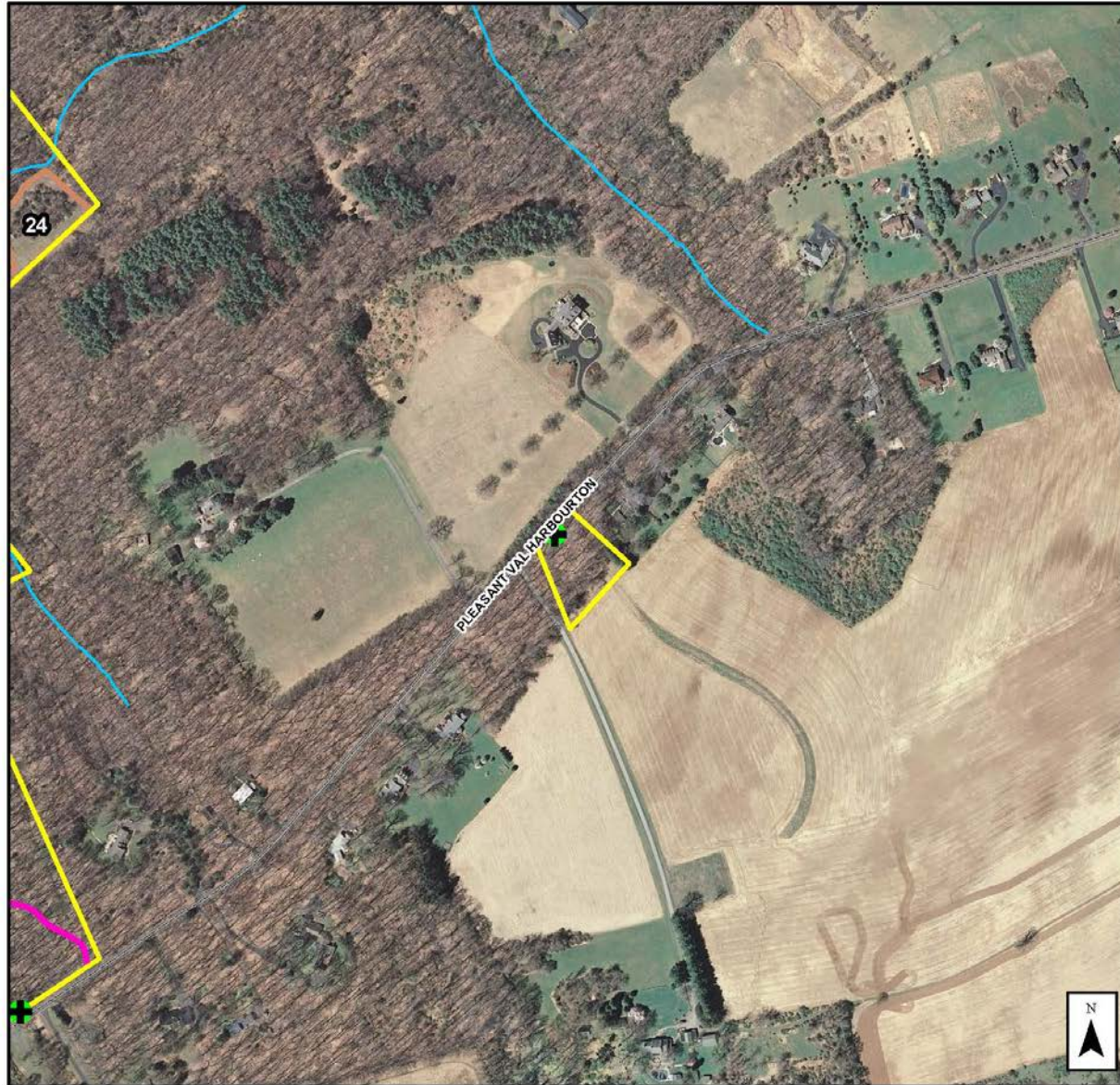
**Table 1. Invasive Plants – Species Abundance and Treatment Recommendations**

Scientific Name	Common Name	Infestation Index Score <sup>1</sup>	Total Acres Present	Percent of Preserve Area Present	Treatment Recommendation	LOE Estimate (Hours)	Acreage by Percent Ground Cover Categories						
							Category 0: 0%	Category: Trace	Category 1: 1-10%	Category 2: 10-25%	Category 3: 25-50%	Category 4: 50-75%	Category 5: 75-100%
<i>Acer palmatum</i>	Japanese Maple	0.0	0.0	0.0	N/A		0.99	0.0	0.0	0.0	0.0	0.0	0.0
<i>Acer platanoides</i>	Norway Maple	0.0	0.0	0.0	N/A		0.99	0.0	0.0	0.00	0.0	0.00	0.0
<i>Ailanthus altissima</i>	Tree-of-Heaven	0.0	0.0	0.0	N/A		0.99	0.0	0.0	0.0	0.0	0.0	0.0
<i>Alliaria petiolata</i>	Garlic Mustard	3.7	0.9	85.9	None		0.14	0.0	0.1	0.1	0.0	0.0	0.7
<i>Artemisia vulgaris</i>	Common Mugwort	0.1	0.1	11.1	None		0.88	0.0	0.1	0.0	0.0	0.0	0.0
<i>Arthraxon hispidus</i>	Small Carpgrass	0.0	0.0	0.0	N/A		0.99	0.0	0.0	0.0	0.0	0.0	0.0
<i>Berberis thunbergii</i>	Japanese Barberry	0.0	0.0	0.0	N/A		0.99	0.0	0.0	0.0	0.0	0.0	0.0
<i>Cardamine impatiens</i>	Narrow-leaved Bittercress	0.0	0.0	0.0	N/A		0.99	0.0	0.0	0.0	0.0	0.0	0.0
<i>Catalpa bignonioides</i>	Northern Catalpa	0.0	0.0	0.0	N/A		0.99	0.0	0.0	0.0	0.0	0.0	0.0
<i>Celastrus orbiculatus</i>	Asiatic Bittersweet	0.0	0.0	0.0	N/A		0.99	0.0	0.0	0.0	0.00	0.0	0.0
<i>Centurea sp.</i>	Knapsweed sp.	0.0	0.0	0.0	N/A		0.99	0.0	0.0	0.0	0.0	0.0	0.0
<i>Cirsium arvense</i>	Canada Thistle	0.0	0.0	0.0	N/A		0.99	0.0	0.0	0.0	0.0	0.0	0.0
<i>Dipsacus sylvestris</i>	Teasel	0.0	0.0	0.0	N/A		0.99	0.0	0.00	0.0	0.0	0.0	0.0
<i>Eleagnus umbellata</i>	Autumn Olive	0.7	0.7	68.7	None		0.31	0.0	0.7	0.0	0.0	0.0	0.0
<i>Euonymus alata</i>	Winged Burning Bush	0.0	0.0	0.0	N/A		0.99	0.0	0.0	0.0	0.0	0.0	0.00
<i>Iris pseudoacris</i>	Yellow Iris	0.0	0.0	0.0	N/A		0.99	0.0	0.0	0.0	0.0	0.0	0.0
<i>Lespedeza cuneata</i>	Chinese Bushclover	0.0	0.0	0.0	N/A		0.99	0.0	0.0	0.0	0.0	0.0	0.0
<i>Ligustrum obtusifolium</i>	Border Privet	0.0	0.0	0.0	N/A		0.99	0.0	0.00	0.0	0.0	0.0	0.0
<i>Lonicera japonica</i>	Japanese Honeysuckle	0.7	0.7	68.7	None		0.31	0.0	0.7	0.0	0.0	0.0	0.0
<i>Lonicera maackii</i>	Amur Honeysuckle	0.0	0.0	0.0	N/A		0.99	0.0	0.0	0.0	0.0	0.0	0.0
<i>Lonicera morrowii</i>	Morrow's Honeysuckle	0.0	0.0	0.0	N/A		0.99	0.0	0.0	0.0	0.00	0.0	0.0
<i>Lysimachia nummularia</i>	Moneywort	0.0	0.0	0.0	N/A		0.99	0.0	0.0	0.0	0.0	0.0	0.0
<i>Lythrum salicaria</i>	Purple Loosestrife	0.0	0.0	0.0	N/A		0.99	0.0	0.0	0.0	0.0	0.0	0.0
<i>Malus toringo</i>	Toringo Crabapple	0.0	0.0	0.0	N/A		0.99	0.0	0.0	0.0	0.0	0.0	0.0
<i>Microstegium vimineum</i>	Japanese Stiltgrass	0.1	0.1	6.1	None		0.93	0.0	0.0	0.1	0.0	0.0	0.0
N/A	Non-native, cool season grass	0.7	0.1	14.1	None		0.85	0.0	0.0	0.0	0.0	0.0	0.1
<i>Phalaris arundinacea</i>	Reed Canary Grass	0.0	0.0	0.0	N/A		0.99	0.0	0.0	0.0	0.0	0.0	0.0
<i>Phragmites australis</i>	Common Reed	0.0	0.0	0.0	N/A		0.99	0.0	0.0	0.0	0.0	0.0	0.0
<i>Polygonum cuspidatum</i>	Japanese Knotweed	0.0	0.0	0.0	N/A		0.99	0.0	0.0	0.0	0.0	0.0	0.0
<i>Polygonum perforatum</i>	Mile-a-Minute	0.0	0.0	0.0	N/A		0.99	0.0	0.0	0.0	0.0	0.0	0.0
<i>Pyrus calleryana</i>	Callery Pear	0.0	0.0	0.0	N/A		0.99	0.0	0.0	0.0	0.0	0.0	0.0
<i>Ranunculus ficaria</i>	Lesser Celandine	0.0	0.0	0.0	N/A		0.99	0.0	0.0	0.0	0.0	0.0	0.0
<i>Robinia pseudoacacia</i>	Black Locust	0.0	0.0	0.0	N/A		0.99	0.0	0.0	0.0	0.0	0.0	0.0
<i>Rosa multiflora</i>	Multiflora Rose	1.0	0.8	79.8	None		0.20	0.0	0.7	0.0	0.1	0.0	0.0
<i>Rubus phoenicolasius</i>	Wineberry	1.1	0.8	79.8	None		0.20	0.0	0.7	0.0	0.0	0.1	0.0
<i>Securigera varia</i>	Crown vetch	0.0	0.0	0.0	N/A		0.99	0.0	0.0	0.0	0.0	0.0	0.0
<i>Viburnum dilatatum</i>	Linden Viburnum	0.0	0.0	0.0	N/A		0.99	0.0	0.0	0.0	0.0	0.0	0.0
<i>Viburnum sieboldii</i>	Siebold's Viburnum	0.0	0.0	0.0	N/A		0.99	0.0	0.0	0.0	0.0	0.0	0.0
<i>Wisteria floribunda</i>	Japanese Wisteria	0.0	0.0	0.0	N/A		0.99	0.0	0.0	0.0	0.0	0.0	0.0
<b>Total LOE</b>						<b>0</b>							

<sup>1</sup> The Infestation Index Score combines the extent of acreage infested and the intensity of the infestation. It was derived by multiplying the cover class number by the number of acres within each cover class.



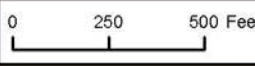
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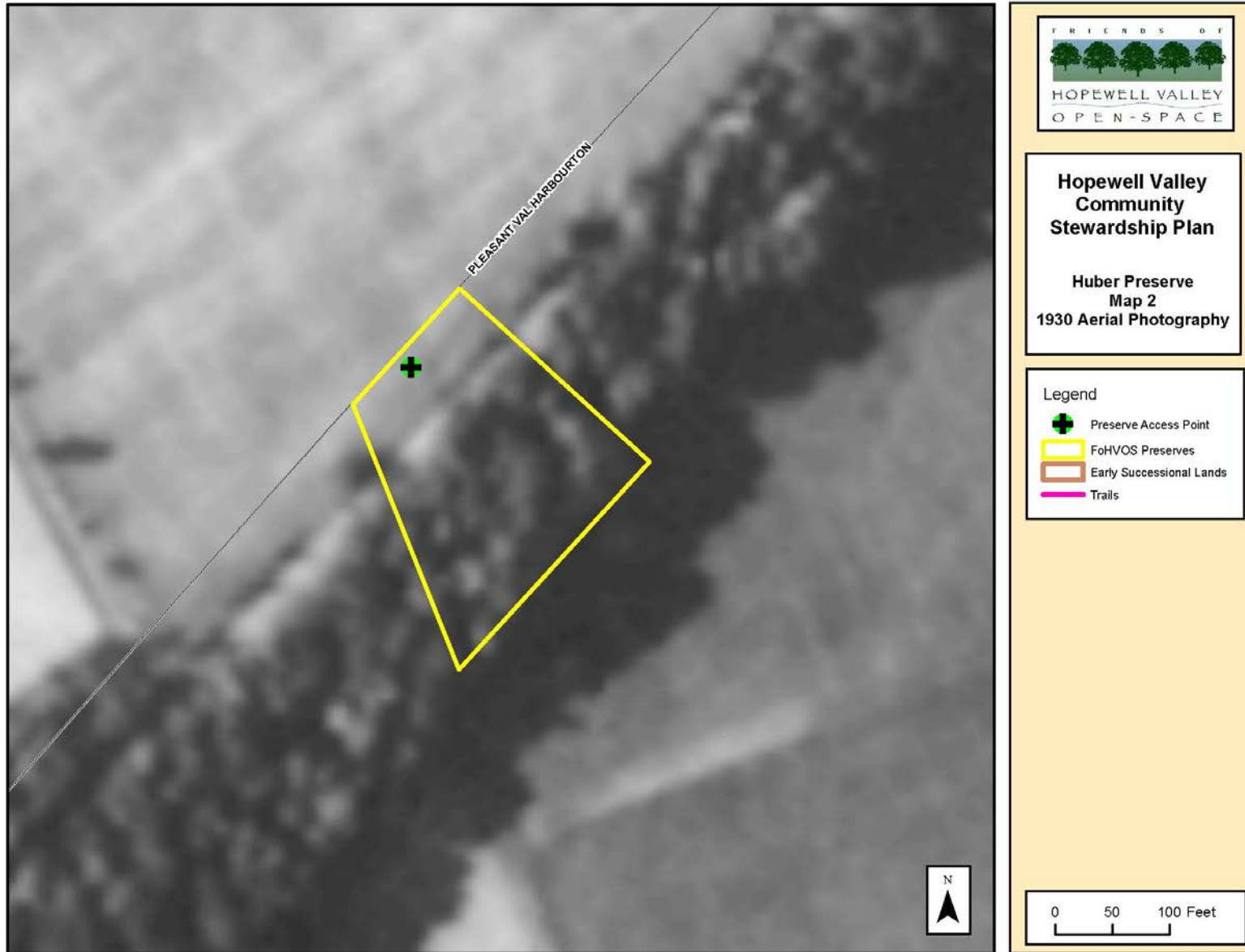
**Hopewell Valley  
Community  
Stewardship Plan**

**Huber Preserve  
Map 1  
2007 Aerial Photography**

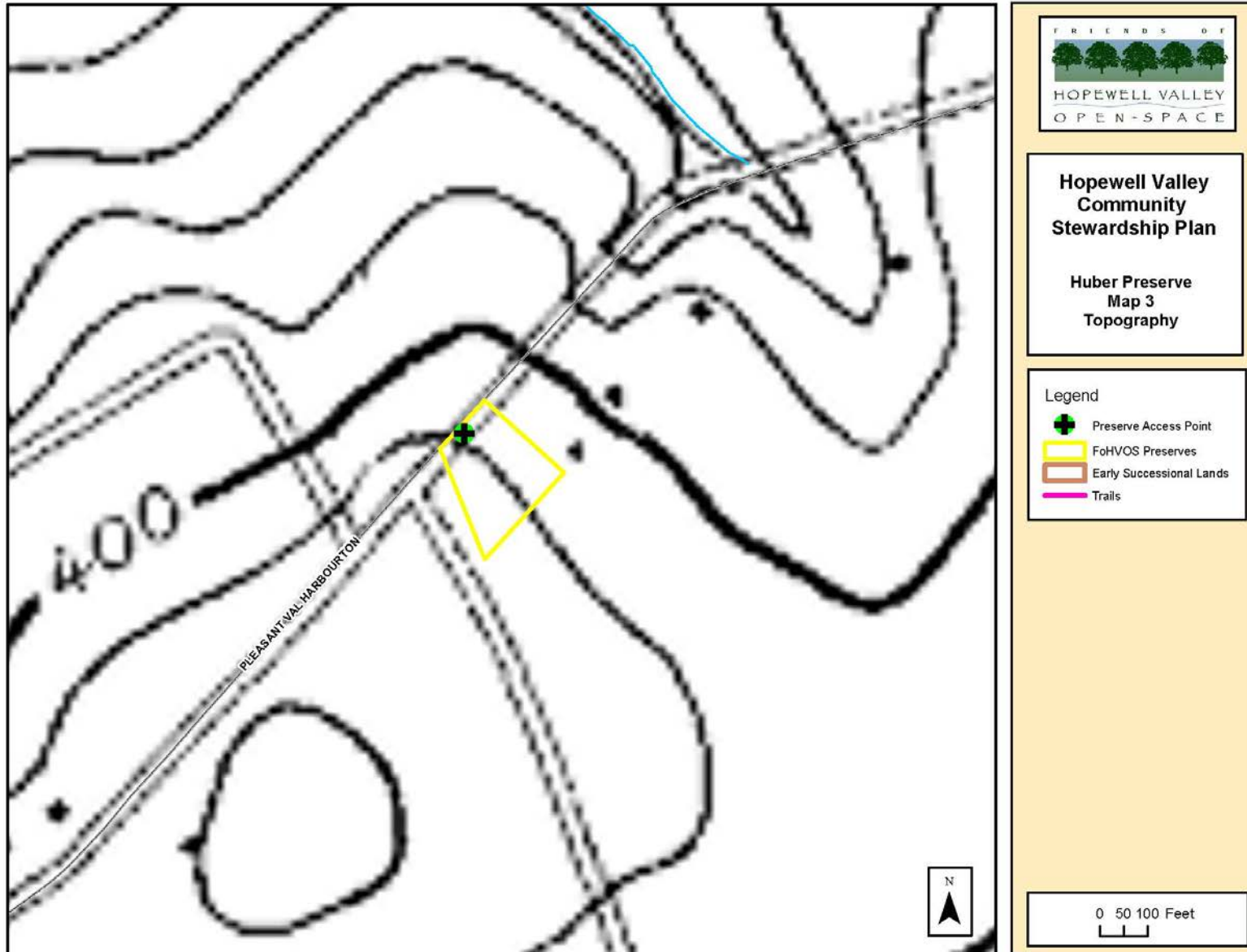
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- Preserve Access Point
  - FoHVOS Preserves
  - Early Successional Lands
  - Trails



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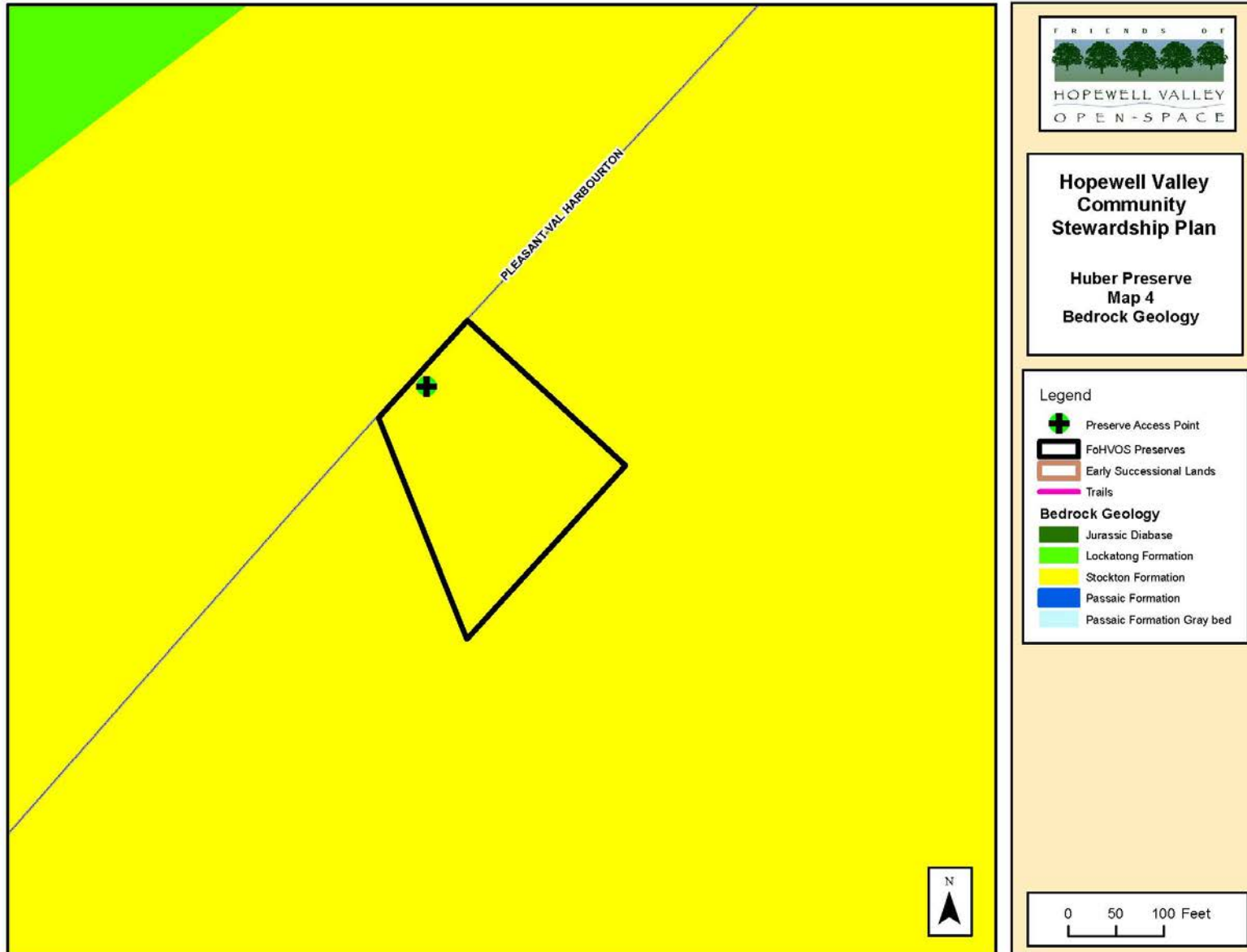


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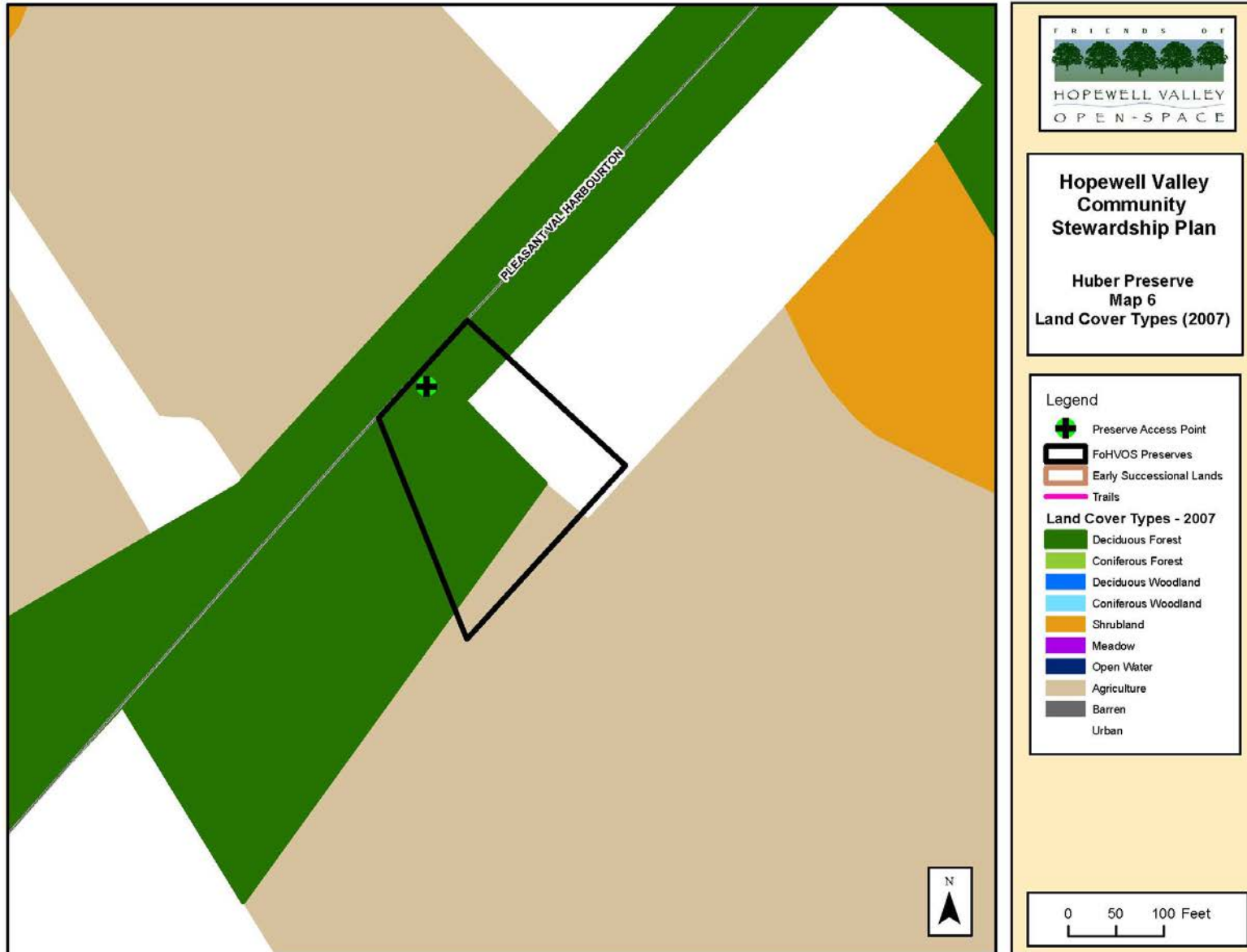




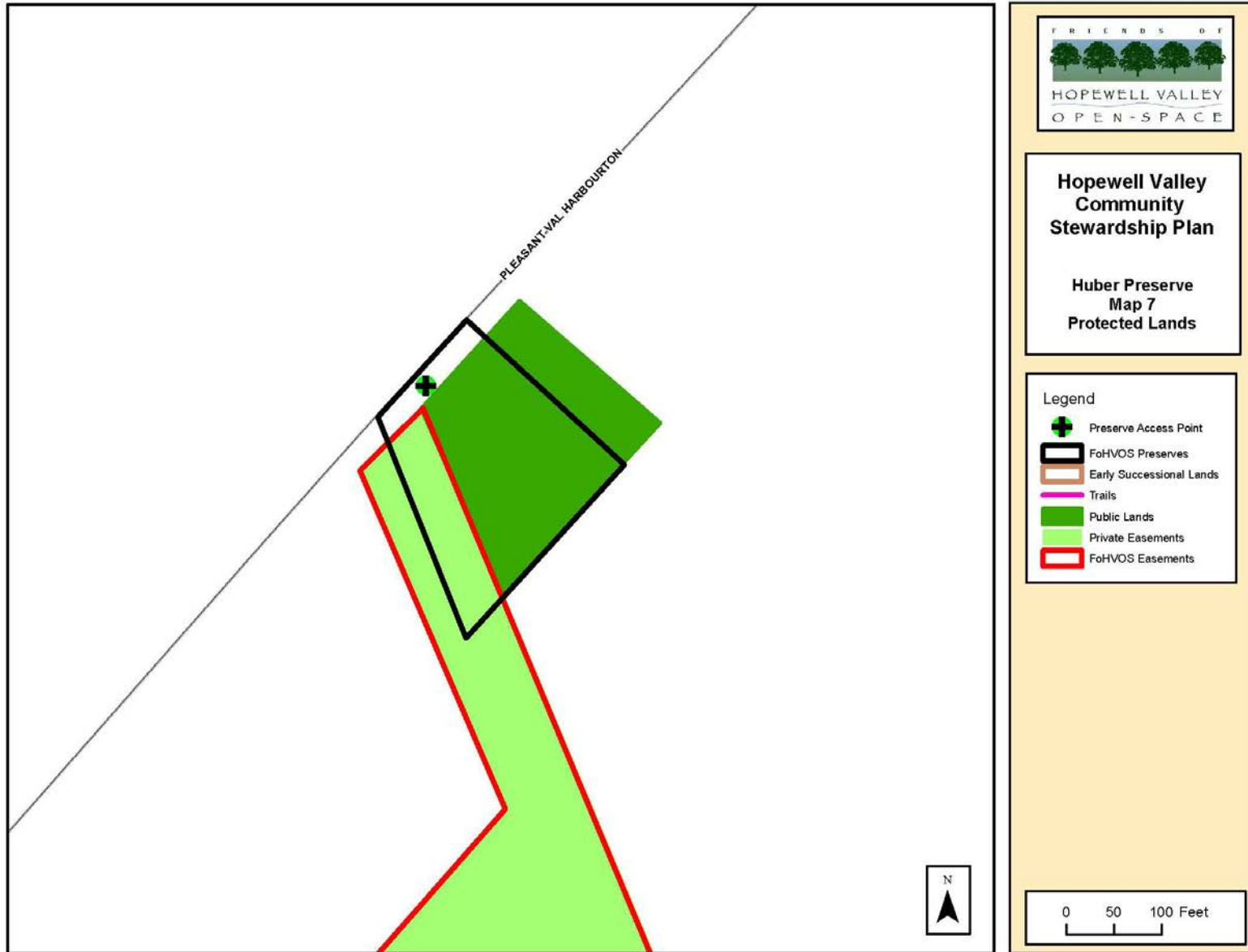
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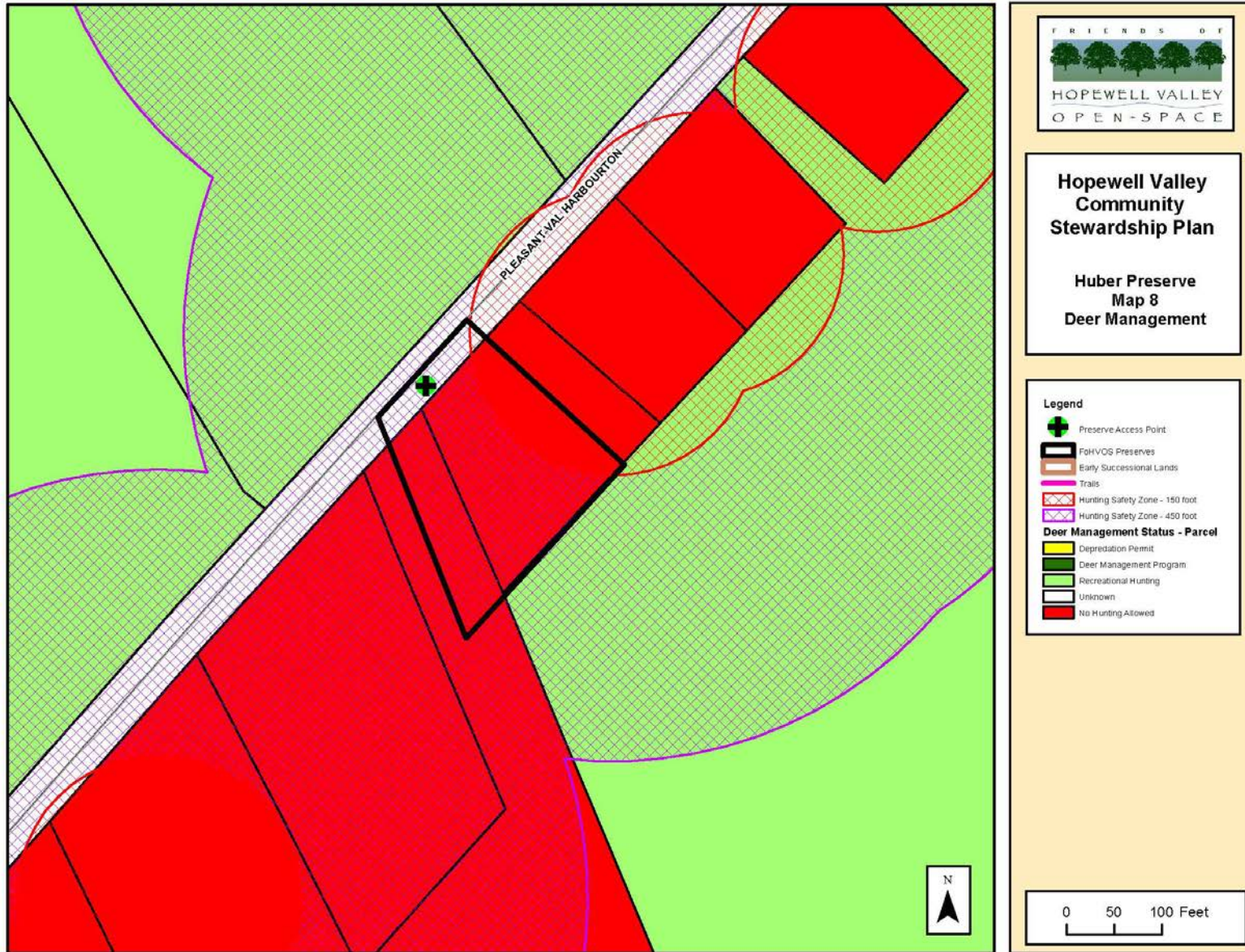
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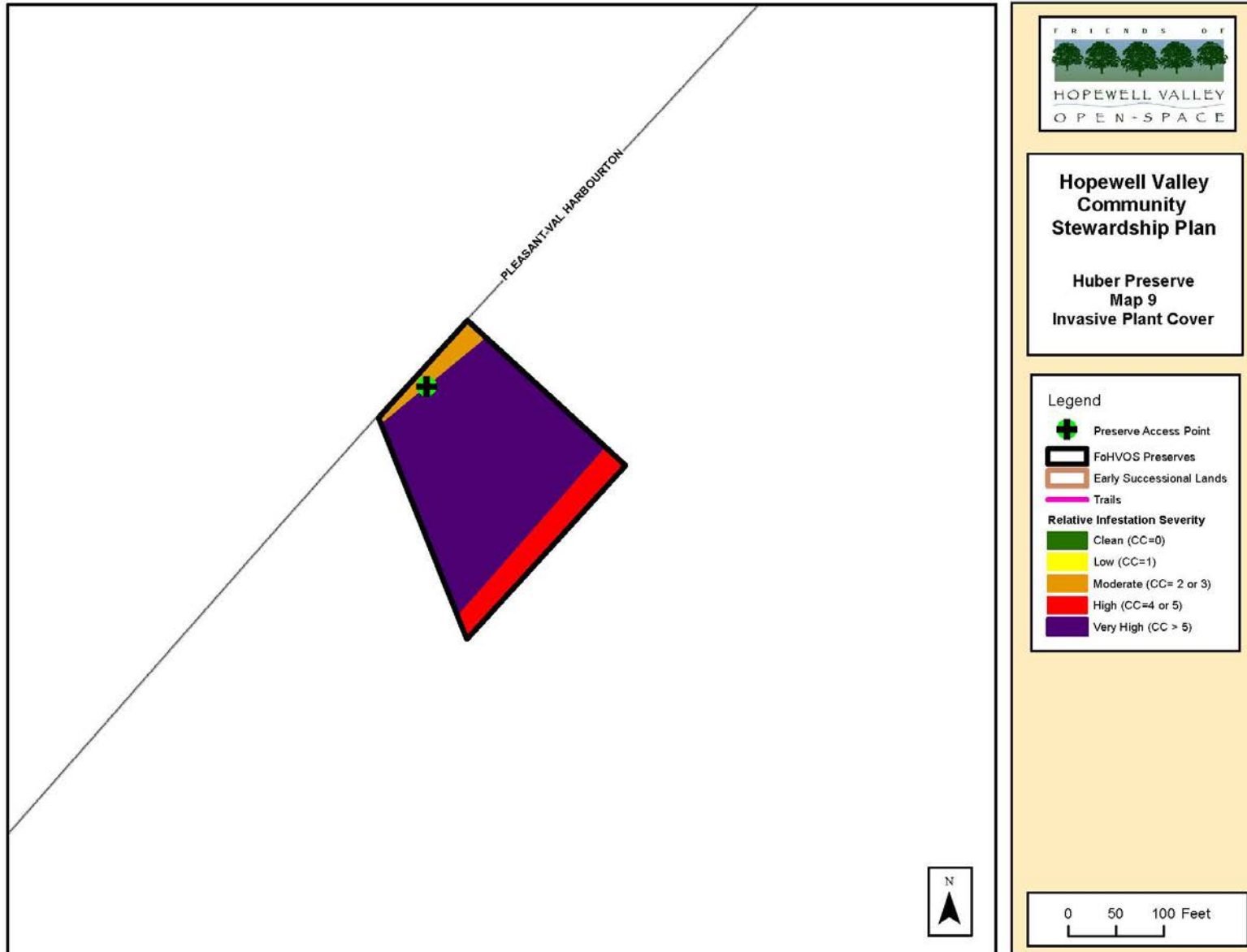


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**Appendix 13.  
Krech Preserve**

**Acreage:** 4.58

**Block and Lot:** Block 28, Lot 1.02

**Ownership:** FoHVOS (100%)

**Year(s) Purchased:** 2004

**Location & Access:** Preserve is located on the east side of Harbourton-Mount Airy Road, 0.15 mile south of Route 518. Parking access along road shoulder. **Nearest street address:** 78 Harbourton-Mt. Airy Road, Lambertville, NJ 08530.

**Structures:** None.

Additional property information is summarized in Appendix W. The following Preserve maps are provided at the end of this document:

- Map 1 2007 Aerial Photography
- Map 2 1930 Aerial Photography
- Map 3 Topography
- Map 4 Bedrock Geology
- Map 5 Soils
- Map 6 Land Cover Types (2007)
- Map 7 Protected Lands
- Map 8 Deer Management
- Map 9 Invasive Plant Cover (Relative Infestation Severity for all species)

**Website Description:**

**Krech Preserve** is part of a larger network of preserved open space in northern Hopewell Township. The parcel protects forested wetlands, shrubland, and meadow.

**BROAD PROPERTY DESCRIPTION**

The Krech Preserve (see Map 1) is located in the north central portion of Hopewell Township. The topography (see Map 3) is primarily flat. The Preserve is surrounded by residential development, agricultural lands and forest. Single home dwellings are scattered along Routes 579 and 518.

Based upon analysis of NJDEP's 2007 Land Use/Land Cover dataset, the preserve contains two broad plant communities: Meadows (< 25% shrub cover) – Upland and Deciduous Forest (> 50% canopy) - Wetland. Land Use/Land Cover is summarized in Appendix X and illustrated in Map 6.

Historically, the preserve was utilized for agriculture. The current meadow/shrubland was abandoned some time after 1930, while the forest was reverting to shrubland ca. 1930.

The preserve contains a meadow that is succeeding to shrubland. The area varies from dry to wet and contains a variety of native herbs and shrubs that reflect the diversity of soil moisture. The forest area contains a series of braided streams and also contains a variety of soil moisture levels.

The preserve has one type of bedrock geology--the Lockatong formation. See Map 4.

**Hopewell Valley Community Stewardship Plan**  
**Friends of Hopewell Valley Open Space**

The preserve has three soil types (see Map 5)--Doylestown and Reaville variant silt loams, 2 to 6 percent slopes; Doylestown and Reaville variant silt loams, 0 to 2 percent slopes; and Chalfont silt loam, 6 to 12 percent slopes, eroded. The preserve's soils are described in Appendix Y.

**CONSERVATION VALUES**

Based on Natural Heritage data, ENSP Landscape Project, 1930s forest presence/absence et al. the Preserve has the highest weighted Ecological Value at >75%. See Appendix A for a description of ranking factors.

**Forest and Woodland Communities:**

The preserve's forest falls just outside of the RHWHP Crossroads Forest Focal Area. Because of the preserve's past land use the preserve is highly invaded and serves as an infestation point for the old forest to the east. However, spicebush is relatively dense in small patches.

**Old forest:** The preserve's forest appears to have been shrubland or patchy forest in the 1930s aerial imagery. Old forest appears directly to the east of the preserve. See Map 2.

**Early Successional Communities:**

**Shrublands:** The preserve's meadow/shrubland (Field 41) contains native woody species such as bayberry and Allegheny blackberry. Native herbs include goldenrods, asters, ironweed, milkweed, cattail, rushes and sedges. The diversity of native species reflects a diversity of soil moisture levels. Invasive herbs and shrubs both have less than 25% cover.

**Meadows/Grasslands:** See above.

**Waterbodies:** None.

**Rare Species:**

**Rare Plants:** None documented on the Preserve.

**Rare Animals:** None documented on the Preserve.

**THREATS**

**Deer:** White-tailed deer have suppressed much of the native community, leaving only canopy trees and an extremely sparse herb and shrub layer. Native herbs and shrubs are so severely browsed they are unable to flower and set fruit (excluding small patches of spicebush).

**Invasive species:** In 2008 staff began walk-through surveys for emerging invasive species on all preserves. Chinese silvergrass was detected along the roadside. See [www.njisst.org](http://www.njisst.org) for the current status of emerging invasive species at the Preserve.

In 2011 staff completed surveys for invasive plant species on all preserves (see Map 9). Mapping documented each species found and its population size (See Table 1 below). The five species with the highest infestation scores include: Japanese Honeysuckle, Japanese Stiltgrass, Multiflora Rose, Small Carpgrass, and Autumn Olive.

**Other:** N/A

**Hopewell Valley Community Stewardship Plan  
Friends of Hopewell Valley Open Space**

**STRATEGIES and ACTIONS:**

**Forest and Woodland Habitat Stewardship:**

No action is recommended for widespread invasive species. Reduced deer density will allow the native plant communities to recover and compete with the widespread invasive species. While seed sources from the adjacent old forest may help improve the preserve's diversity, past land use may impede many species from establishing.

**Early Successional Habitat Stewardship:**

Guide natural succession of the meadow toward shrubland through selective treatment of invasive shrubs such as autumn olive and multiflora rose (via basal bark herbicide applications in upland areas). Foliar spray Chinese Silvergrass to prevent infestation.

For habitat goals and maintenance schedule see Appendix T & U.

**Deer Management:** The preserve is enrolled in the DMP with bow hunting. See Map 8 for delineations of the 150' and 450' safety zones and hunting status. The parcel to north is posted as "Semi-Wild" by a hunting group that maintains the fields for gamebird hunting (Weidel).

**Rare Species Management:** N/A

**Neighboring Lands:** Large blocks of land preserved farmland are located to the north and west of the Preserve. See Map 7 for adjacent protected lands.

**Waterbodies Management:** N/A

**Undesirable Activities Management:** Hunters game camera was vandalized in 2011 – outreach to neighboring landowners is required. Formerly mowed areas along the boundary and a trail through Field 41 have not been mowed in recent years (neighboring parcel has new ownership).

**Scientific Research Assessment:** The Preserve is available for scientific research.

**Recreational Opportunities Assessment:** The preserve is too small for a trail. Currently, there are no opportunities to connect to a regional trail system—none yet exist.



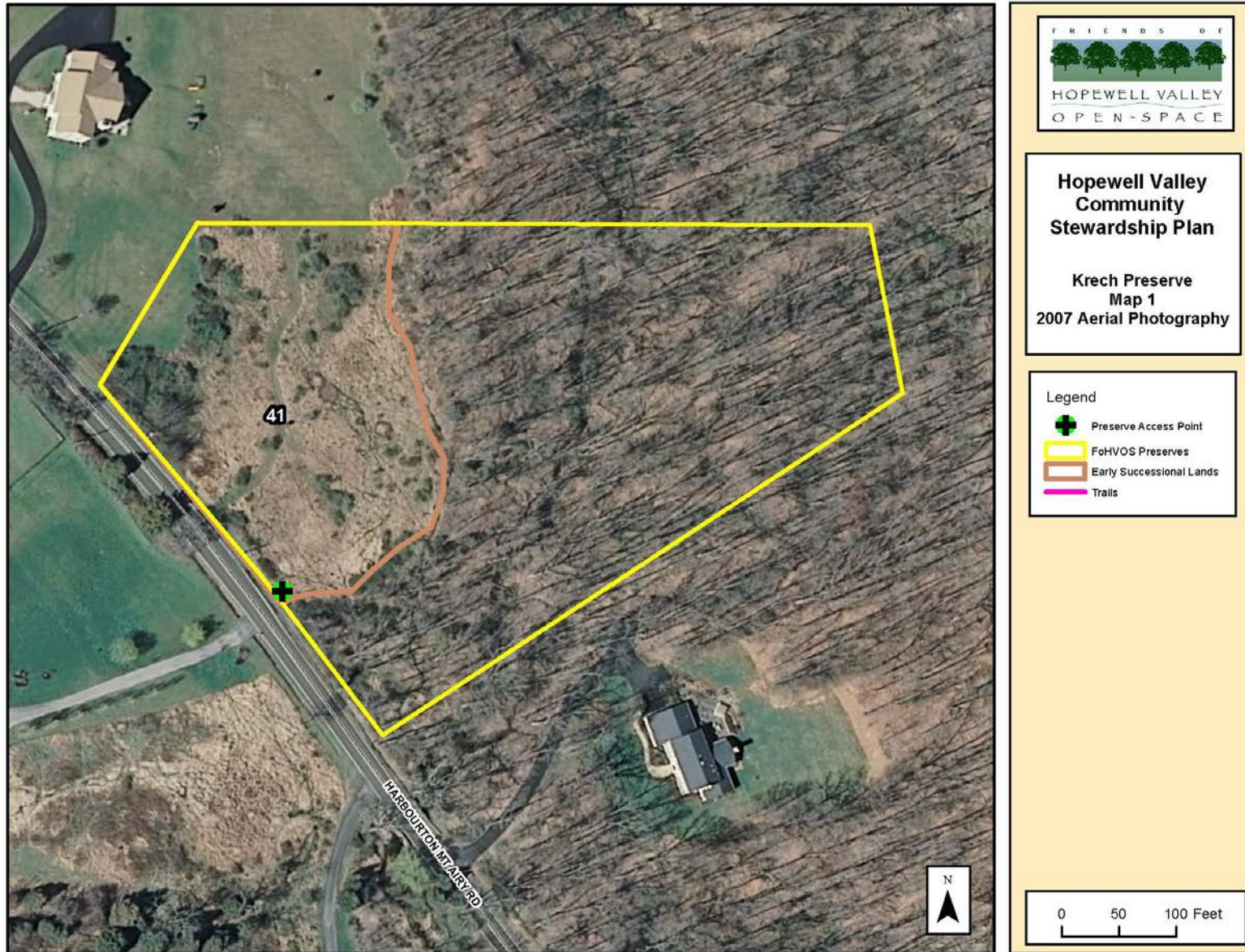
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**Table 1. Invasive Plants – Species Abundance and Treatment Recommendations**

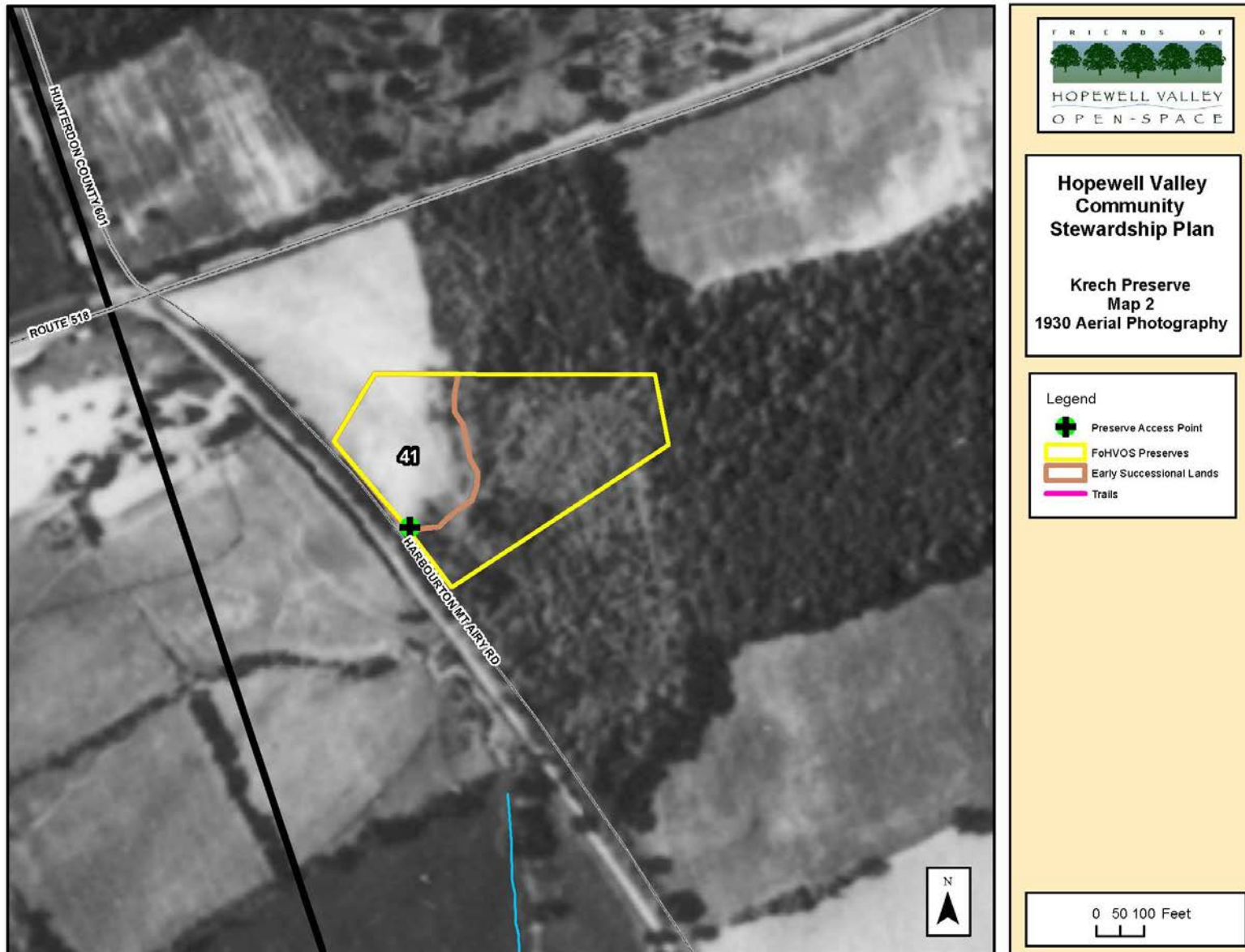
Scientific Name	Common Name	Infestation Index Score <sup>1</sup>	Total Acres Present	Percent of Preserve Area Present	Treatment Recommendation	LOE Estimate (Hours)	Acreage by Percent Ground Cover Categories						
							Category 0: 0%	Category: Trace	Category 1: 1-10%	Category 2: 10-25%	Category 3: 25-50%	Category 4: 50-75%	Category 5: 75-100%
<i>Acer palmatum</i>	Japanese Maple	0.0	0.0	0.0	N/A		4.57	0.0	0.0	0.0	0.0	0.0	0.0
<i>Acer platanoides</i>	Norway Maple	0.0	0.0	0.0	N/A		4.57	0.0	0.0	0.00	0.0	0.00	0.0
<i>Ailanthus altissima</i>	Tree-of-Heaven	0.0	0.0	0.0	N/A		4.57	0.0	0.0	0.0	0.0	0.0	0.0
<i>Alliaria petiolata</i>	Garlic Mustard	0.0	0.0	0.0	N/A		4.57	0.0	0.0	0.0	0.0	0.0	0.0
<i>Artemisia vulgaris</i>	Common Mugwort	0.0	0.0	0.0	N/A		4.57	0.0	0.0	0.0	0.0	0.0	0.0
<i>Arthraxon hispidus</i>	Small Carpgrass	3.2	1.7	37.4	None		2.86	0.0	1.2	0.0	0.0	0.5	0.0
<i>Berberis thunbergii</i>	Japanese Barberry	2.9	2.9	62.4	None		1.72	0.0	2.9	0.0	0.0	0.0	0.0
<i>Cardamine impatiens</i>	Narrow-leaved Bittercress	0.0	0.0	0.0	N/A		4.57	0.0	0.0	0.0	0.0	0.0	0.0
<i>Catalpa bignonioides</i>	Northern Catalpa	0.0	0.0	0.0	N/A		4.57	0.0	0.0	0.0	0.0	0.0	0.0
<i>Celastrus orbiculatus</i>	Asiatic Bittersweet	0.0	0.0	0.0	N/A		4.57	0.0	0.0	0.0	0.00	0.0	0.0
<i>Centurea sp.</i>	Knapsweed sp.	0.0	0.0	0.0	N/A		4.57	0.0	0.0	0.0	0.0	0.0	0.0
<i>Cirsium arvense</i>	Canada Thistle	4.57	0.0	0.0	N/A		4.57	0.0	0.0	0.0	0.0	0.0	0.0
<i>Dipsacus sylvestris</i>	Teasel	0.0	0.0	0.0	N/A		4.57	0.0	0.00	0.0	0.0	0.0	0.0
<i>Eleagnus umbellata</i>	Autumn Olive	2.9	1.7	37.4	Control (Field #41 only)	Strategy 3B	2.86	0.0	0.5	1.2	0.0	0.0	0.0
<i>Euonymus alata</i>	Winged Burning Bush	0.0	0.0	0.0	N/A		4.57	0.0	0.0	0.0	0.0	0.0	0.00
<i>Iris pseudoacris</i>	Yellow Iris	0.0	0.0	0.0	N/A		4.57	0.0	0.0	0.0	0.0	0.0	0.0
<i>Lespedeza cuneata</i>	Chinese Bushclover	0.0	0.0	0.0	N/A		4.57	0.0	0.0	0.0	0.0	0.0	0.0
<i>Ligustrum obtusifolium</i>	Border Privet	0.0	0.0	0.0	N/A		4.57	0.0	0.00	0.0	0.0	0.0	0.0
<i>Lonicera japonica</i>	Japanese Honeysuckle	14.3	2.9	62.4	None		1.72	0.0	0.0	0.0	0.0	0.0	2.9
<i>Lonicera maackii</i>	Amur Honeysuckle	0.0	0.0	0.0	N/A		4.57	0.0	0.0	0.0	0.0	0.0	0.0
<i>Lonicera morrowii</i>	Morrow's Honeysuckle	0.0	0.0	0.0	N/A		4.57	0.0	0.0	0.0	0.00	0.0	0.0
<i>Lysimachia nummularia</i>	Moneywort	0.0	0.0	0.0	N/A		4.57	0.0	0.0	0.0	0.0	0.0	0.0
<i>Lythrum salicaria</i>	Purple Loosestrife	0.0	0.0	0.0	N/A		4.57	0.0	0.0	0.0	0.0	0.0	0.0
<i>Malus toringo</i>	Toringo Crabapple	0.0	0.0	0.0	N/A		4.57	0.0	0.0	0.0	0.0	0.0	0.0
<i>Microstegium vimineum</i>	Japanese Stiltgrass	12.6	4.1	89.1	None		0.50	0.0	1.2	0.0	0.0	2.9	0.0
N/A	Non-native, cool season grass	0.0	0.0	0.0	N/A		4.57	0.0	0.0	0.0	0.0	0.0	0.0
<i>Phalaris arundinacea</i>	Reed Canary Grass	0.0	0.0	0.0	N/A		4.57	0.0	0.0	0.0	0.0	0.0	0.0
<i>Phragmites australis</i>	Common Reed	0.0	0.0	0.0	N/A		4.57	0.0	0.0	0.0	0.0	0.0	0.0
<i>Polygonum cuspidatum</i>	Japanese Knotweed	0.0	0.0	0.0	N/A		4.57	0.0	0.0	0.0	0.0	0.0	0.0
<i>Polygonum perforiatum</i>	Mile-a-Minute	0.0	0.0	0.0	N/A		4.57	0.0	0.0	0.0	0.0	0.0	0.0
<i>Pyrus calleryana</i>	Callery Pear	0.0	0.0	0.0	N/A		4.57	0.0	0.0	0.0	0.0	0.0	0.0
<i>Ranunculus ficaria</i>	Lesser Celandine	0.0	0.0	0.0	N/A		4.57	0.0	0.0	0.0	0.0	0.0	0.0
<i>Robinia pseudoacacia</i>	Black Locust	0.0	0.0	0.0	N/A		4.57	0.0	0.0	0.0	0.0	0.0	0.0
<i>Rosa multiflora</i>	Multiflora Rose	6.9	4.1	88.6	Control (Field #41 only)	Strategy 3B	0.52	0.0	1.2	2.9	0.0	0.0	0.0
<i>Rubus phoenicolasius</i>	Wineberry	0.0	0.0	0.0	N/A		4.57	0.0	0.0	0.0	0.0	0.0	0.0
<i>Securigera varia</i>	Crown vetch	0.0	0.0	0.0	N/A		4.57	0.0	0.0	0.0	0.0	0.0	0.0
<i>Viburnum dilatatum</i>	Linden Viburnum	0.0	0.0	0.0	N/A		4.57	0.0	0.0	0.0	0.0	0.0	0.0
<i>Viburnum sieboldii</i>	Siebold's Viburnum	0.0	0.0	0.0	N/A		4.57	0.0	0.0	0.0	0.0	0.0	0.0
<i>Wisteria floribunda</i>	Japanese Wisteria	0.0	0.0	0.0	N/A		4.57	0.0	0.0	0.0	0.0	0.0	0.0
<b>Total LOE</b>						<b>0</b>							

<sup>1</sup> The Infestation Index Score combines the extent of acreage infested and the intensity of the infestation. It was derived by multiplying the cover class number by the number of acres within each cover class.

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


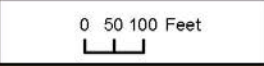
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Community  
Stewardship Plan**

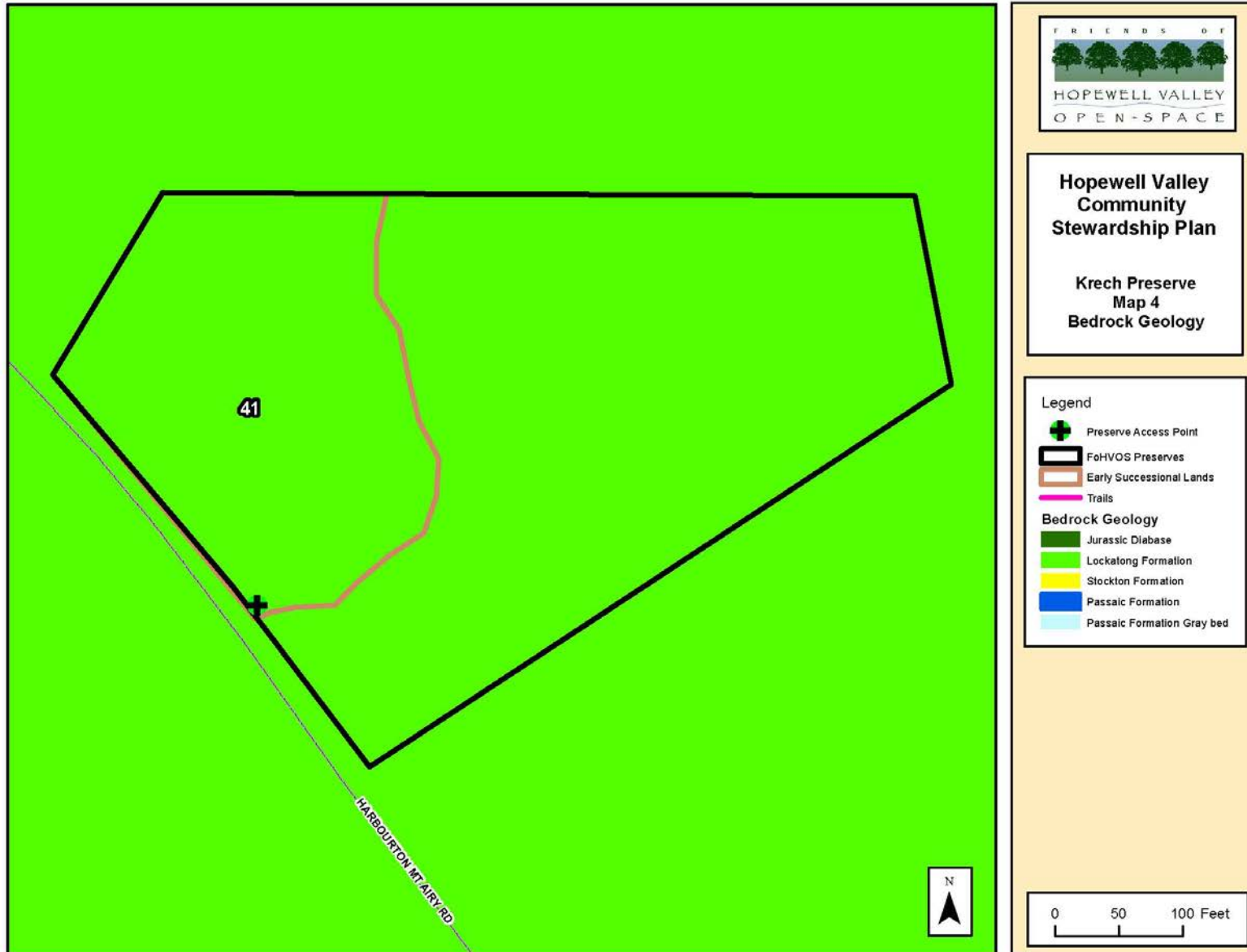
**Krech Preserve  
Map 3  
Topography**

- Legend
-  Preserve Access Point
  -  FoHVOS Preserves
  -  Early Successional Lands
  -  Trails

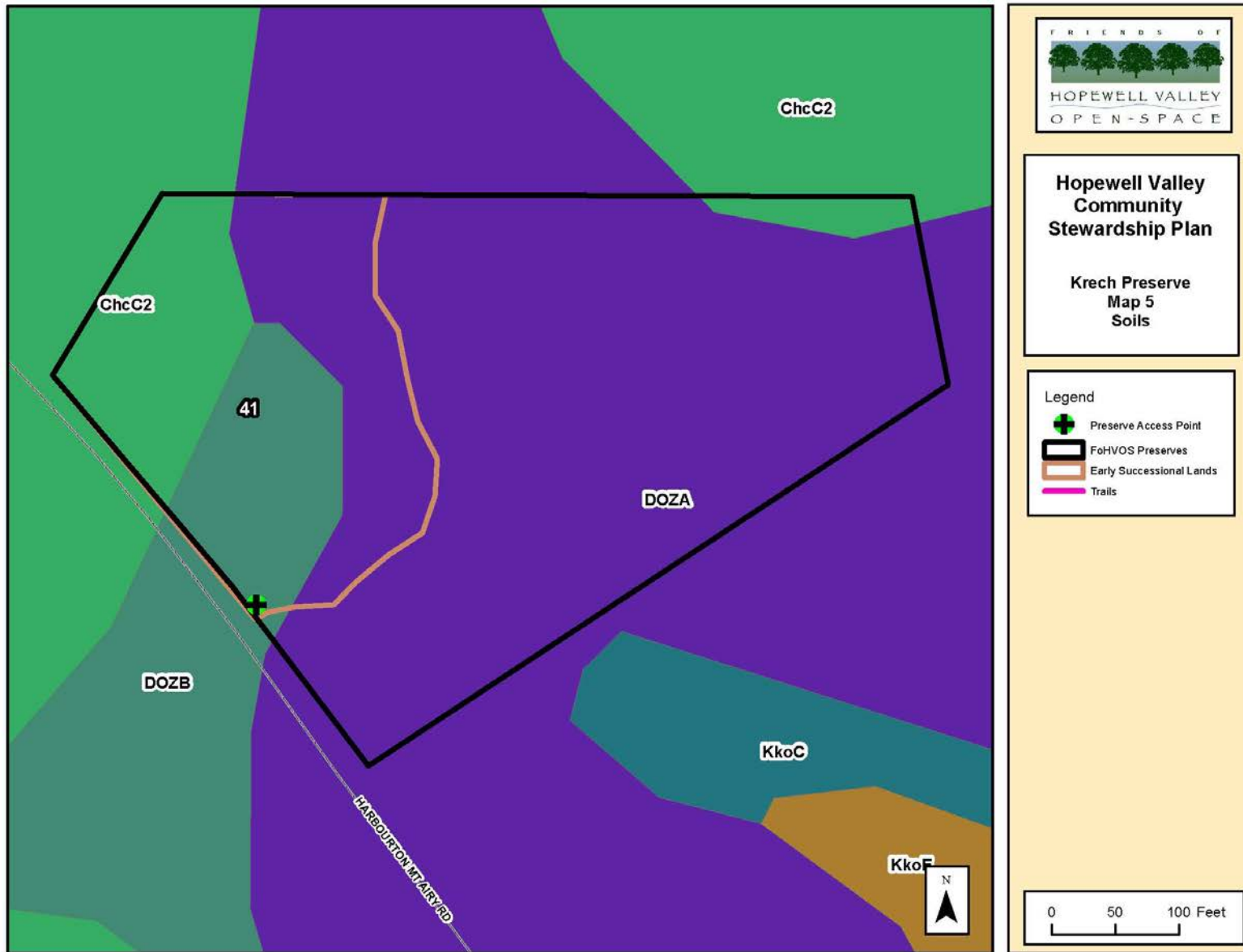




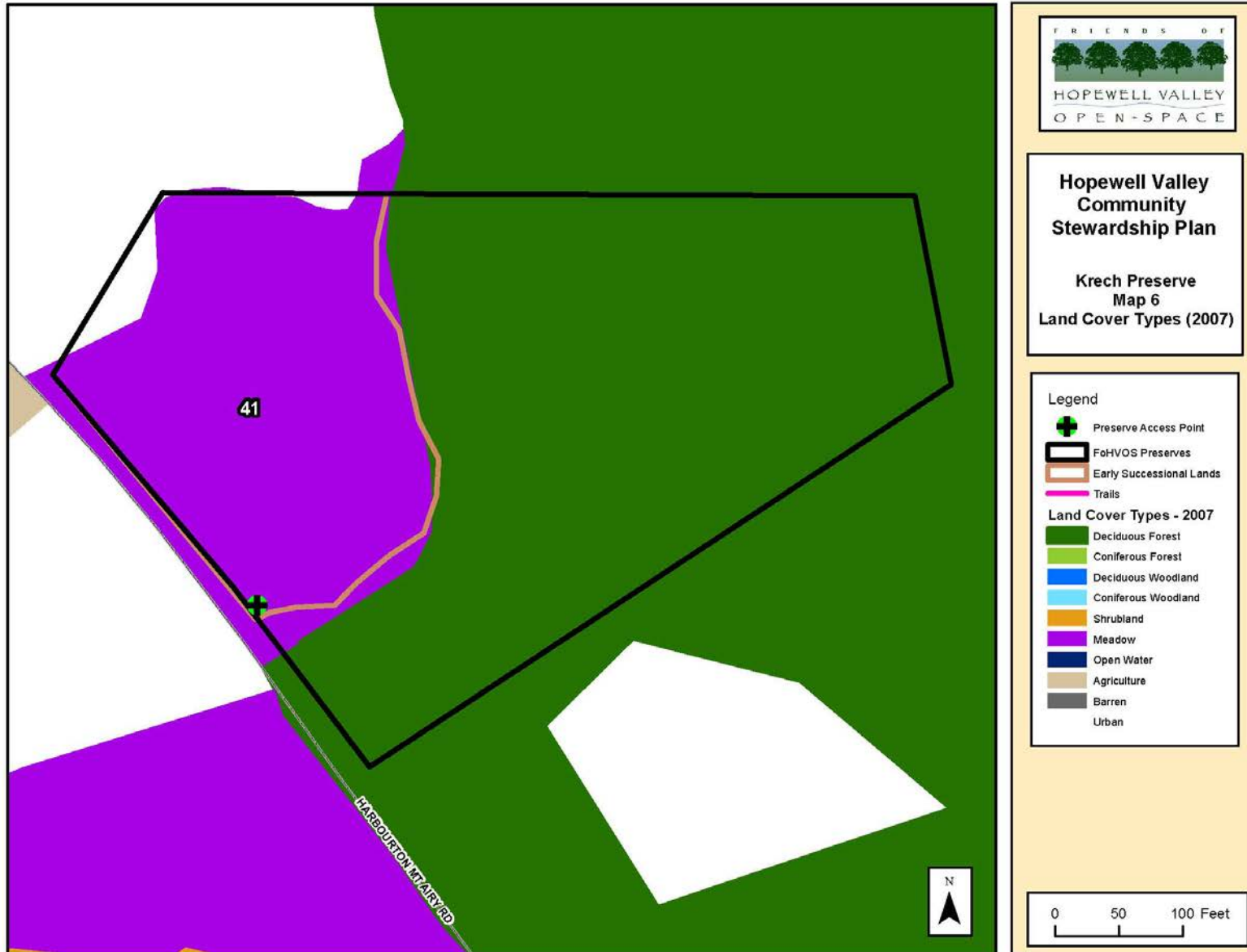
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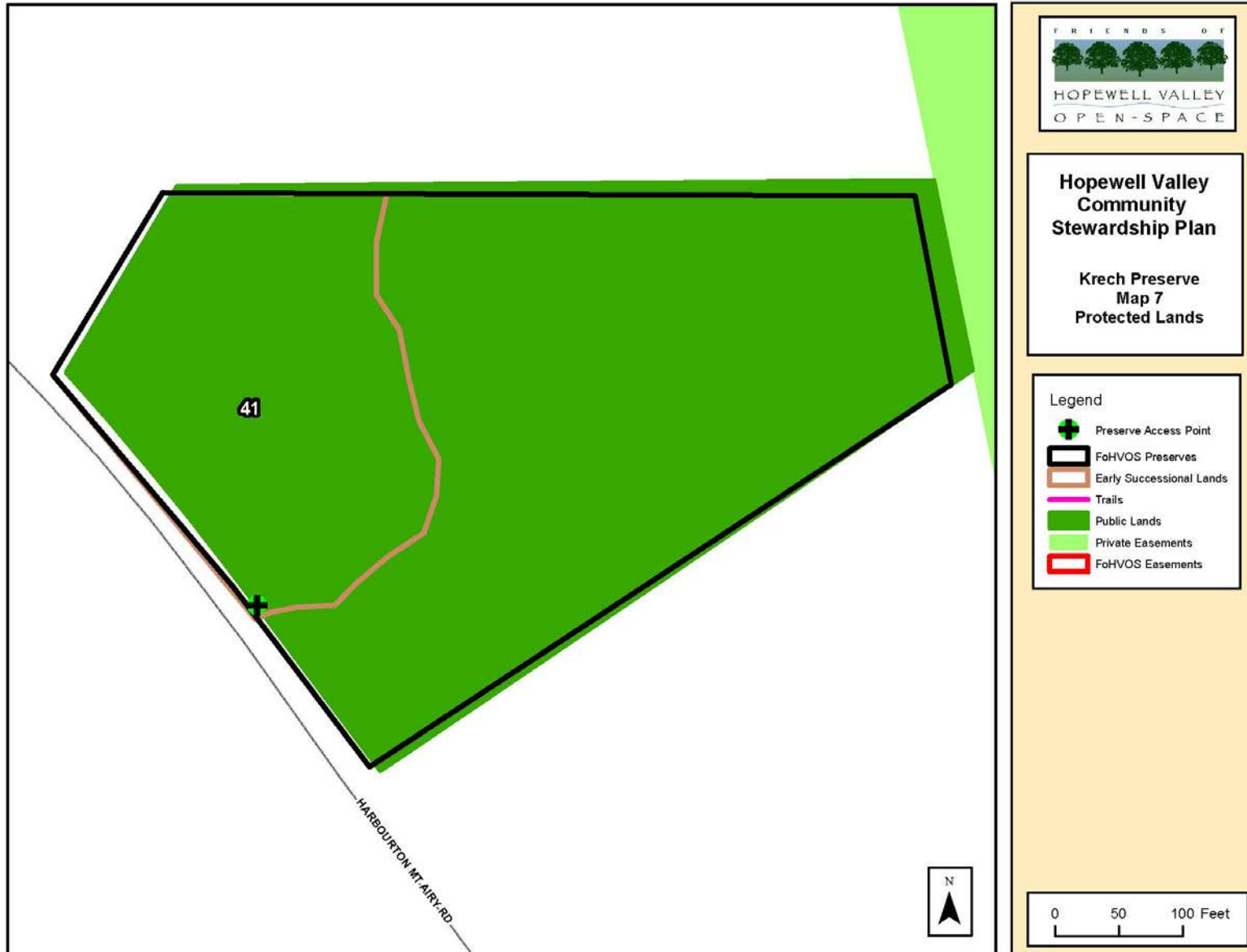
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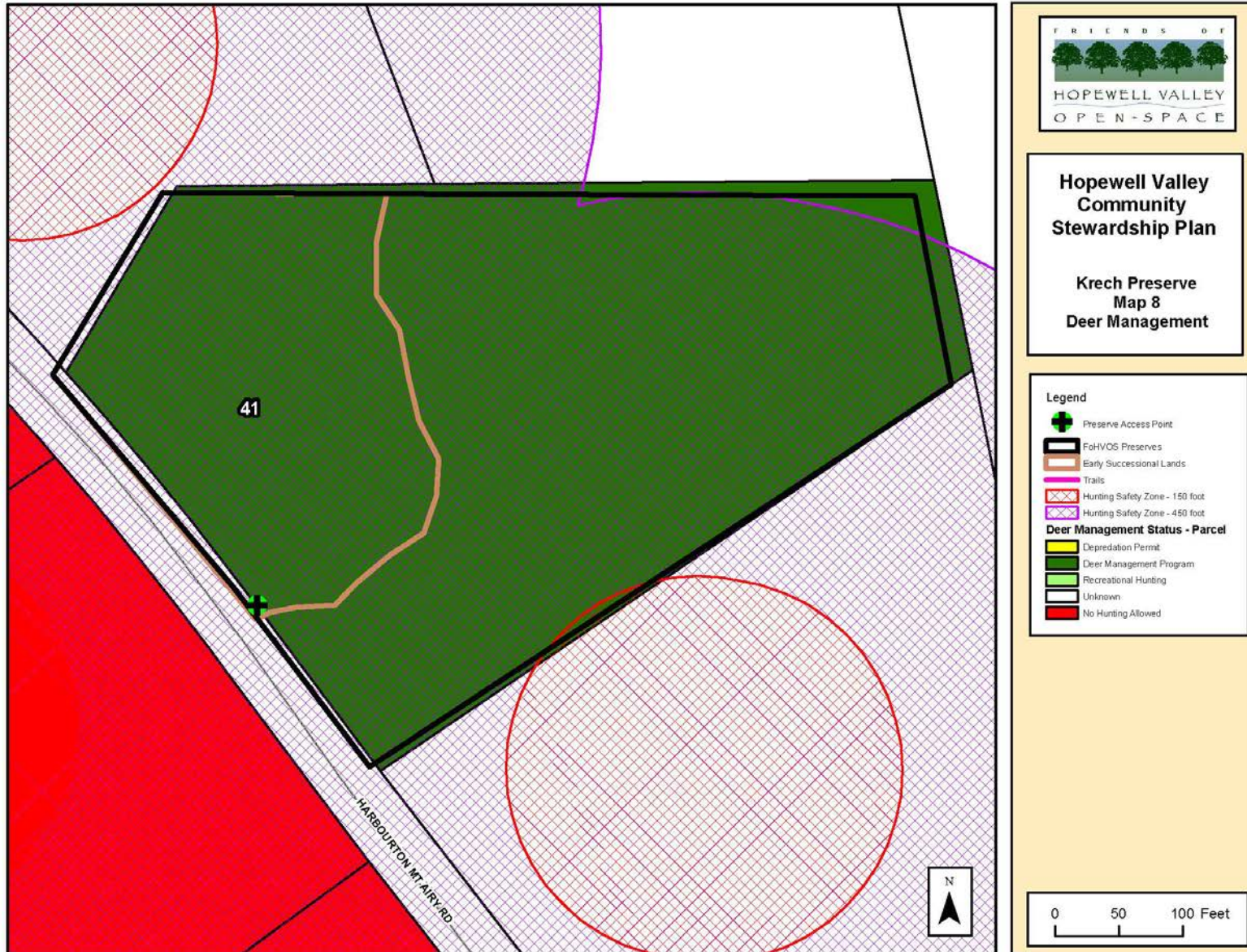


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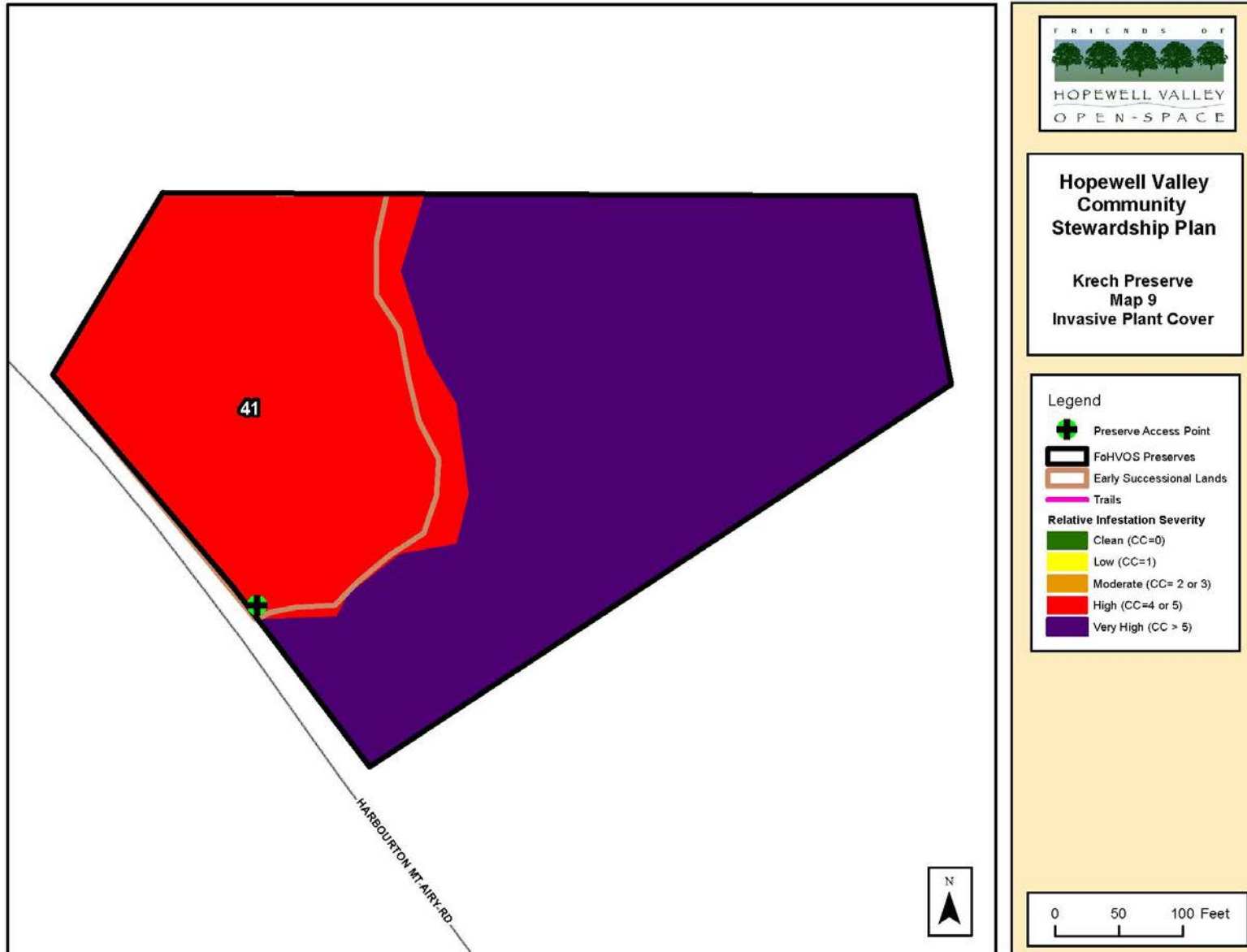




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**Appendix 14.  
Kulak and Lawrence Preserves**

**Acreage:** 70.22 (Lawrence 13.84 acres, Kulak 56.38 acres)

**Block and Lot:** Multiple. B4, L1.01 (Lawrence); B4, L16, 18, 41 (Kulak)

**Ownership:** Lawrence - FoHVOS (100%); Kulak - FoHVOS and D&R Greenway Land Trust

**Year(s) Purchased:** 2003 (Lawrence); 2008 (Kulak)

**Location & Access:** Lawrence Preserve is located on the southern side of Mountain Church Road. Parking access along road shoulder. Preserve entrance is a dirt road that can be muddy following rain events. **Nearest street address:** 48 Mountain Church Road, Hopewell, NJ 08525 (actual Preserve address). Kulak Preserve is located on the north side of Featherbed Lane. Parking is available in a gravel lot. **Nearest street address:** 63 Featherbed Lane, Hopewell, NJ 08525. The two preserve pieces are separated by the D&R Greenway Land Trust's Sourland Ecosystem Preserve.

**Structures:** None

Additional property information is summarized in Appendix W. The following Preserve maps are provided at the end of this document:

- Map 1 2007 Aerial Photography
- Map 2 1930 Aerial Photography
- Map 3 Topography
- Map 4 Bedrock Geology
- Map 5 Soils
- Map 6 Land Cover Types (2007)
- Map 7 Protected Lands
- Map 8 Deer Management
- Map 9 Invasive Plant Cover (Relative Infestation Severity for all species)

**Website Description:**

**Kulak and Lawrence Preserves** can be found in Hopewell's Sourland Mountain region. The Lawrence Preserve protects core forest essential to forest interior birds. Spicebush is abundant on the preserve. Kulak, co-owned with D&R Greenway Land Trust, features open fields and second growth forest of red maple and highbush blueberry. A through trail connects the preserves and traverses a section of the Stony Brook.

**BROAD PROPERTY DESCRIPTION**

The Kulak and Lawrence Preserves (Map 1) are located north of Hopewell Borough in the Sourland Mountain region. The topography (see Map 3) is flat at 130 feet above sea level. The two preserve pieces are separated by the D&R Greenway Land Trust's Sourland Ecosystem Preserve.

Based upon analysis of NJDEP's 2007 Land Use/Land Cover dataset, the preserve contains seven broad plant communities: Deciduous Forest (> 50% canopy) - Upland, Shrubland (< 10% canopy, > 25% shrub cover) - Upland, Meadows (< 25% shrub cover) - Upland, Deciduous Forest (> 50% canopy) - Wetland, Open water, Agricultural lands, and Urban lands. The preserve is surrounded by primarily forest and minimal residential development. Though designated as agricultural land, no fields are in active

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agriculture. Urban land refers to the parking lot. Land Use/Land Cover is summarized in Appendix X and illustrated in Map 6.

The Kulak - Lawrence preserve is at the boundary of Locaktong and diabase geologies and the plant communities and land use history reflect this geologic boundary.

Kulak's forest harbors a mesic to moist plant community: red maple, pin oak, ash, American beech, black cherry, and swamp white oak in the canopy; Pinxterbloom azalea, highbush blueberry, multiflora rose, and Japanese barberry in the subcanopy and shrub layer; wood reed grass and sedges in the herbaceous layer. A stone row that passes through the northern section of Kulak demarks the transition to diabase geology, as well as forest present in the 1930s aerial photography. The remainder of the preserve was utilized for pasture and/or cropping.

The fields on the Kulak preserve contain mountain mint, goldenrods, swamp milkweed, showy skullcap, sedges and grasses, hay grasses, reed canary grass, Japanese stiltgrass, and others. A population of a dozen cardinal flower plants can be found along the Stony Brook tributary that separates the northeastern and southeastern fields. The field in the northeast was restored in 2011 (deer enclosure fencing and planted with native woody species).

Lawrence's forest is mesic to moist with white oak, ash, shagbark hickory, blackhaw, *Rubus* sp., ironwood, spicebush, winterberry holly, multiflora rose, Japanese barberry, rice cut grass, wild yamroot, jack-in-the-pulpit, enchanter's nightshade, cinquefoil, violet species, hog peanut, Virginia jumpseed, New York fern, sensitive fern, white geum, and wild licorice. In the eastern portion of the forest is a stand of sugar maple, which the previous owner had tapped for syrup. The southeastern corner having been forested the 1930s includes: red oak, American beech, hop horn beam, witch hazel, sugar maple, skunk cabbage, Indian pipe, false Solomon's seal, turtlehead, doll's eyes, white wood aster, and *Prenanthes* sp. The Stony Brook contains populations of lizard's tail. Two heavily invaded canopy gaps are found along the eastern edge, within the thickets of invasive species, wild geranium, may apple, and ironwood can be found.

The Kulak Preserve has one type of bedrock geology--the Lockatong formation. The Lawrence Preserve has one type of bedrock geology--the Jurassic formation. See Map 4.

The preserve has nine soil types (see Map 5) with Chalfont silt loam, 2 to 6 percent slopes; Chalfont silt loam, 0 to 2 percent slopes; and Mount Lucas and Neshaminy soils, 0 to 12 percent slopes, very rubbly, being the three most common types. The preserve's soils are described in Appendix Y.

### **CONSERVATION VALUES**

Based on an analysis involving the ranking of ecological values and threats (See Community Stewardship Plan text), the Preserve has a weighted Ecological Value of >75%. See Appendix A for a description of ranking factors.

**Forest and Woodland Communities:** The Preserve is a part of the core forest of the Sourland Mountain region and the RHWHP Sourlands South Forest Focal Area. The preserve's forest serves a buffer for the vernal pools found on the adjacent D&R Greenway preserve. Sections of Lawrence's understory, particularly in the north and central areas have thick spicebush cover, which serves as woodland bird nesting habitat and rich migration food.

**Old forest:** Based upon analysis of 1930 aerial photography, the preserve contains nearly eight acres of land that has been forested since at least the 1930s. See Map 2.



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**Early Successional Communities:**

**Shrublands:** Shrublands that border the western fields on Kulak contain native fruit-bearing shrubs, including gray dogwood.

**Meadows/Grasslands:** The small field (Field 45) on the eastern edge of Lawrence is a former pasture with moist soils. It is currently undergoing succession.

**Waterbodies:** 80' of the Stony Brook passes through Lawrence and 150' of a Stony Brook tributary passes through Kulak.

**Rare Species:**

**Rare Plants:** None documented on the Preserve, but Natural Heritage grid data shows winged monkeyflower (*Mimulus alatus*), as present in the grid.

**Rare Animals:** The Landscape Project has identified the Preserve as ranked for species of State Endangered, Threatened, and Special Concern Species. A female box turtle was observed in July 2011. The Preserve has suitable wood turtle habitat.

See Appendix L for a list of species.

**THREATS**

**Deer:** The understory and herb layers are severely browsed. The suckering sprouts on spicebush thickets on Lawrence are not able to outpace the deer. Though immediately adjacent to rich native seed sources, canopy gaps are dominated by invasive species, rather than native woody and herbaceous plants.

**Invasive species:** In 2008 staff began walk-through surveys for emerging invasive species on all preserves. Mapping documented each species and its population size. No species were detected. See [www.njisst.org](http://www.njisst.org) for the current status of emerging invasive species at the Preserve.

In 2011 staff completed surveys for invasive plant species on all preserves (see Map 9). Mapping documented each species found and its population size (See Table 1 below). The five species with the highest infestation scores include: Multiflora Rose, Japanese Stiltgrass, Non-native cool season grass, Autumn Olive, and Small Carpgrass.

**Other:** ATV use has been an ongoing issue on Lawrence, leading to soil erosion and rutting of the trail and stream banks.

**STRATEGIES and ACTIONS**

**Forest and Woodland Habitat Stewardship:** Annual surveys for and eradication of emerging invasive species is a high priority at this Preserve.

No action is recommended for widespread invasive species, except winged burning bush (See Table 1 below). Reduced deer density will allow the native plant communities to recover and compete with all other widespread invasive species on a long-term basis.

**Early Successional Habitat Stewardship:** Field 45 will be allowed to succeed into forest. Fields 43 and 44 will be restored to fill in gaps in the Sourlands core forest pending future grant funding. Field 42 was

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restored in 2011 and requires maintenance of woody invasive plants and potentially dominate invasive herbs (See Table 1 below). For habitat goals and maintenance schedule see Appendix T & U.

**Deer Management:** The Lawrence Preserve is enrolled in the FoHVOS DMP and Kulak in the D&R Greenway DMP, both with bow and gun hunting. See Map 8 for delineations of the 150' and 450' safety zones and hunting status.

**Rare Species Management:** Survey for presence of rare species. Searches for winged monkeyflower should be concentrated along riparian corridors. Maintain and expand forest habitat for rare species.

**Neighboring Lands:** See Deer Management. See Map 7 for adjacent protected lands.

**Waterbodies Management:** Sections of the Stony Brook's banks are damaged by ATV use. Compaction and repeated use has left sections of the banks bare soil. Restoration to minimize erosion and re-colonization by invasive species is recommended.

**Undesirable Activities Management:** Contact neighbors about ATV issues.

**Scientific Research Assessment:** The preserve is available for scientific research.

**Recreational Opportunities Assessment:** Kulak - Lawrence Preserve contains a one-way trail that connects between Featherbed Lane and Mountain Church Road. This trail is maintained by the D&R Greenway Land Trust as a part of their Sourlands Ecosystem Preserve regional trail network.

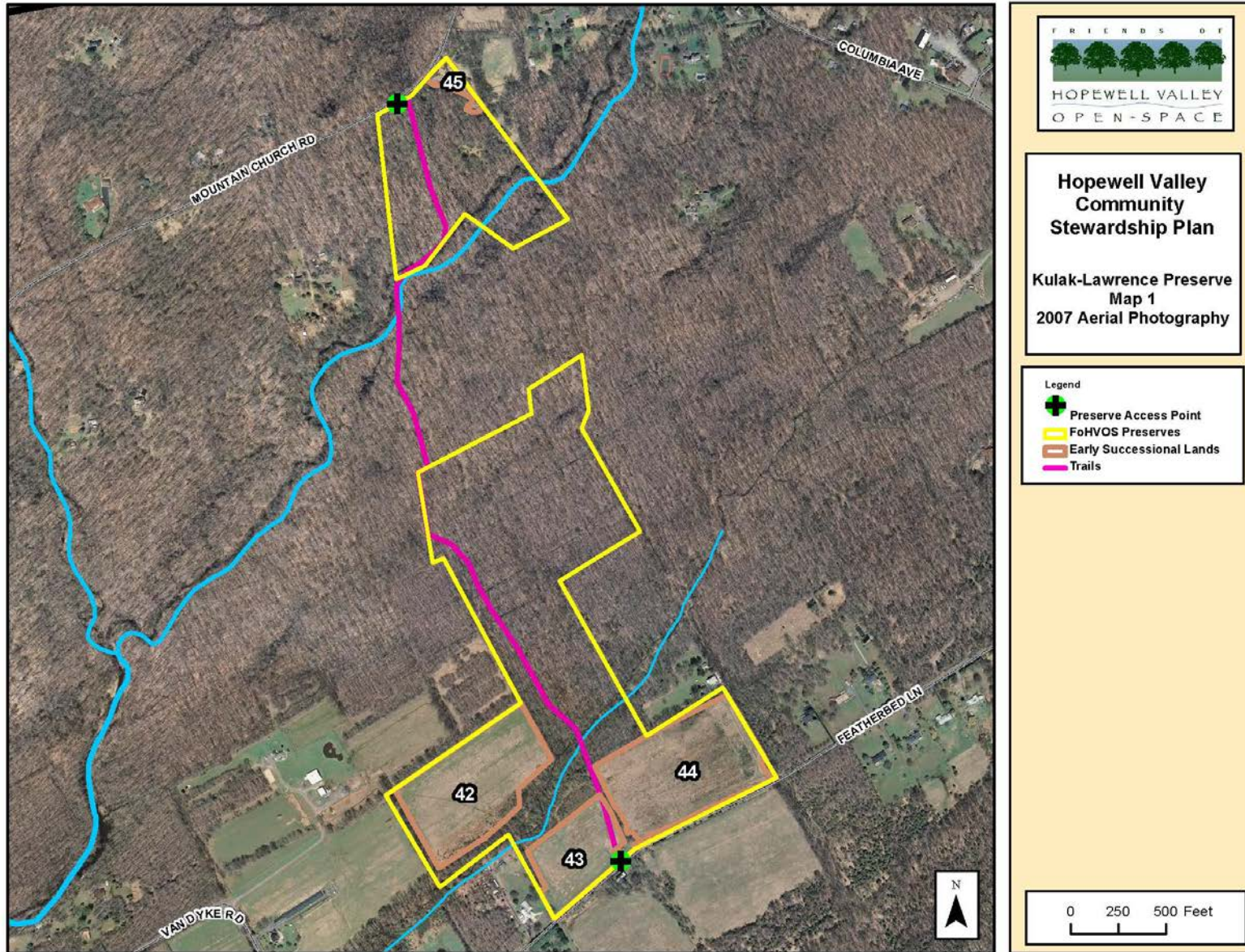
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**Table 1. Invasive Plants – Species Abundance and Treatment Recommendations**

Scientific Name	Common Name	Infestation Index Score <sup>1</sup>	Total Acres Present	Percent of Preserve Area Present	Treatment Recommendation	LOE Estimate (Hours)	Acreage by Percent Ground Cover Categories						
							Category 0: 0%	Category: Trace	Category 1: 1-10%	Category 2: 10-25%	Category 3: 25-50%	Category 4: 50-75%	Category 5: 75-100%
<i>Acer palmatum</i>	Japanese Maple	0.0	0.0	0.0	N/A		70.44	0.0	0.0	0.0	0.0	0.0	0.0
<i>Acer platanoides</i>	Norway Maple	0.0	0.0	0.0	N/A		70.44	0.0	0.0	0.00	0.0	0.00	0.0
<i>Ailanthus altissima</i>	Tree-of-Heaven	0.0	0.0	0.0	N/A		70.44	0.0	0.0	0.0	0.0	0.0	0.0
<i>Alliaria petiolata</i>	Garlic Mustard	0.0	0.0	0.0	N/A		70.44	0.0	0.0	0.0	0.0	0.0	0.0
<i>Artemisia vulgaris</i>	Common Mugwort	0.0	0.0	0.0	N/A		70.44	0.0	0.0	0.0	0.0	0.0	0.0
<i>Arthraxon hispidus</i>	Small Carpgrass	38.2	18.9	26.8	None		51.55	0.2	0.2	18.0	0.0	0.5	0.0
<i>Berberis thunbergii</i>	Japanese Barberry	34.3	23.5	33.4	None		46.93	8.1	2.8	7.4	4.8	0.3	0.3
<i>Cardamine impatiens</i>	Narrow-leaved Bittercress	0.0	0.0	0.0	N/A		70.44	0.0	0.0	0.0	0.0	0.0	0.0
<i>Catalpa bignonioides</i>	Northern Catalpa	0.0	0.0	0.0	N/A		70.44	0.0	0.0	0.0	0.0	0.0	0.0
<i>Celastrus orbiculatus</i>	Asiatic Bittersweet	0.0	0.0	0.0	N/A		70.44	0.0	0.0	0.0	0.00	0.0	0.0
<i>Centurea sp.</i>	Knapweed sp.	0.0	0.0	0.0	N/A		70.44	0.0	0.0	0.0	0.0	0.0	0.0
<i>Cirsium arvense</i>	Canada Thistle	0.0	3.4	4.9	None		67.00	3.4	0.0	0.0	0.0	0.0	0.0
<i>Dipsacus sylvestris</i>	Teasel	0.0	0.0	0.0	N/A		70.44	0.0	0.00	0.0	0.0	0.0	0.0
<i>Eleagnus umbellata</i>	Autumn Olive	48.7	33.9	48.1	Control (restoration vicinity only)	Strategy 3A	36.55	9.1	13.7	1.0	8.7	0.2	1.3
<i>Euonymus alata</i>	Winged Burning Bush	0.0	5.7	8.1	Control - Treat Fruiting Plants	5	64.74	5.7	0.0	0.0	0.0	0.0	0.00
<i>Iris pseudoacris</i>	Yellow Iris	0.0	0.0	0.0	N/A		70.44	0.0	0.0	0.0	0.0	0.0	0.0
<i>Lespedeza cuneata</i>	Chinese Bushclover	0.3	0.3	0.4	Eradicate	Strategy 2A	70.13	0.0	0.3	0.0	0.0	0.0	0.0
<i>Ligustrum obtusifolium</i>	Border Privet	0.0	0.4	0.6	None		70.02	0.4	0.00	0.0	0.0	0.0	0.0
<i>Lonicera japonica</i>	Japanese Honeysuckle	36.4	34.1	48.4	None		36.35	7.6	16.9	9.4	0.3	0.0	0.0
<i>Lonicera maackii</i>	Amur Honeysuckle	0.0	0.0	0.0	N/A		70.44	0.0	0.0	0.0	0.0	0.0	0.0
<i>Lonicera morrowii</i>	Morrow's Honeysuckle	0.0	0.0	0.0	N/A		70.44	0.0	0.0	0.0	0.00	0.0	0.0
<i>Lysimachia nummularia</i>	Moneywort	0.0	0.0	0.0	N/A		70.44	0.0	0.0	0.0	0.0	0.0	0.0
<i>Lythrum salicaria</i>	Purple Loosestrife	0.3	0.3	0.4	None - Check for biocontrol agent		70.15	0.0	0.3	0.0	0.0	0.0	0.0
<i>Malus toringo</i>	Toringo Crabapple	0.0	0.0	0.0	N/A		70.44	0.0	0.0	0.0	0.0	0.0	0.0
<i>Microstegium vimineum</i>	Japanese Stiltgrass	112.8	49.3	69.9	None		21.17	1.7	15.7	9.7	11.6	9.9	0.7
N/A	Non-native, cool season grass	64.6	18.8	26.7	None		51.61	0.0	0.0	8.7	0.0	3.4	6.7
<i>Phalaris arundinacea</i>	Reed Canary Grass	13.6	12.1	17.2	Control (restoration vicinity only)	Strategy 3A	58.35	0.0	11.3	0.0	0.8	0.0	0.0
<i>Phragmites australis</i>	Common Reed	0.0	0.0	0.0	N/A		70.44	0.0	0.0	0.0	0.0	0.0	0.0
<i>Polygonum cuspidatum</i>	Japanese Knotweed	0.0	0.0	0.0	N/A		70.44	0.0	0.0	0.0	0.0	0.0	0.0
<i>Polygonum perfoliatum</i>	Mile-a-Minute	0.0	0.0	0.0	N/A		70.44	0.0	0.0	0.0	0.0	0.0	0.0
<i>Pyrus calleryana</i>	Callery Pear	0.0	0.0	0.0	N/A		70.44	0.0	0.0	0.0	0.0	0.0	0.0
<i>Ranunculus ficaria</i>	Lesser Celandine	0.0	0.0	0.0	N/A		70.44	0.0	0.0	0.0	0.0	0.0	0.0
<i>Robinia pseudoacacia</i>	Black Locust	0.0	0.0	0.0	N/A		70.44	0.0	0.0	0.0	0.0	0.0	0.0
<i>Rosa multiflora</i>	Multiflora Rose	151.9	53.9	76.5	Control (restoration vicinity only)	Strategy 3A	16.54	1.8	18.6	3.8	10.5	1.7	17.4
<i>Rubus pheonculusius</i>	Wineberry	5.8	6.8	9.6	None		63.67	1.0	5.8	0.0	0.0	0.0	0.0
<i>Securigera varia</i>	Crown vetch	0.0	0.0	0.0	N/A		70.44	0.0	0.0	0.0	0.0	0.0	0.0
<i>Viburnum dilatatum</i>	Linden Viburnum	0.0	0.0	0.0	N/A		70.44	0.0	0.0	0.0	0.0	0.0	0.0
<i>Viburnum sieboldii</i>	Siebold's Viburnum	0.0	0.0	0.0	N/A		70.44	0.0	0.0	0.0	0.0	0.0	0.0
<i>Wisteria floribunda</i>	Japanese Wisteria	0.0	0.0	0.0	N/A		70.44	0.0	0.0	0.0	0.0	0.0	0.0
<b>Total LOE</b>						<b>5</b>							

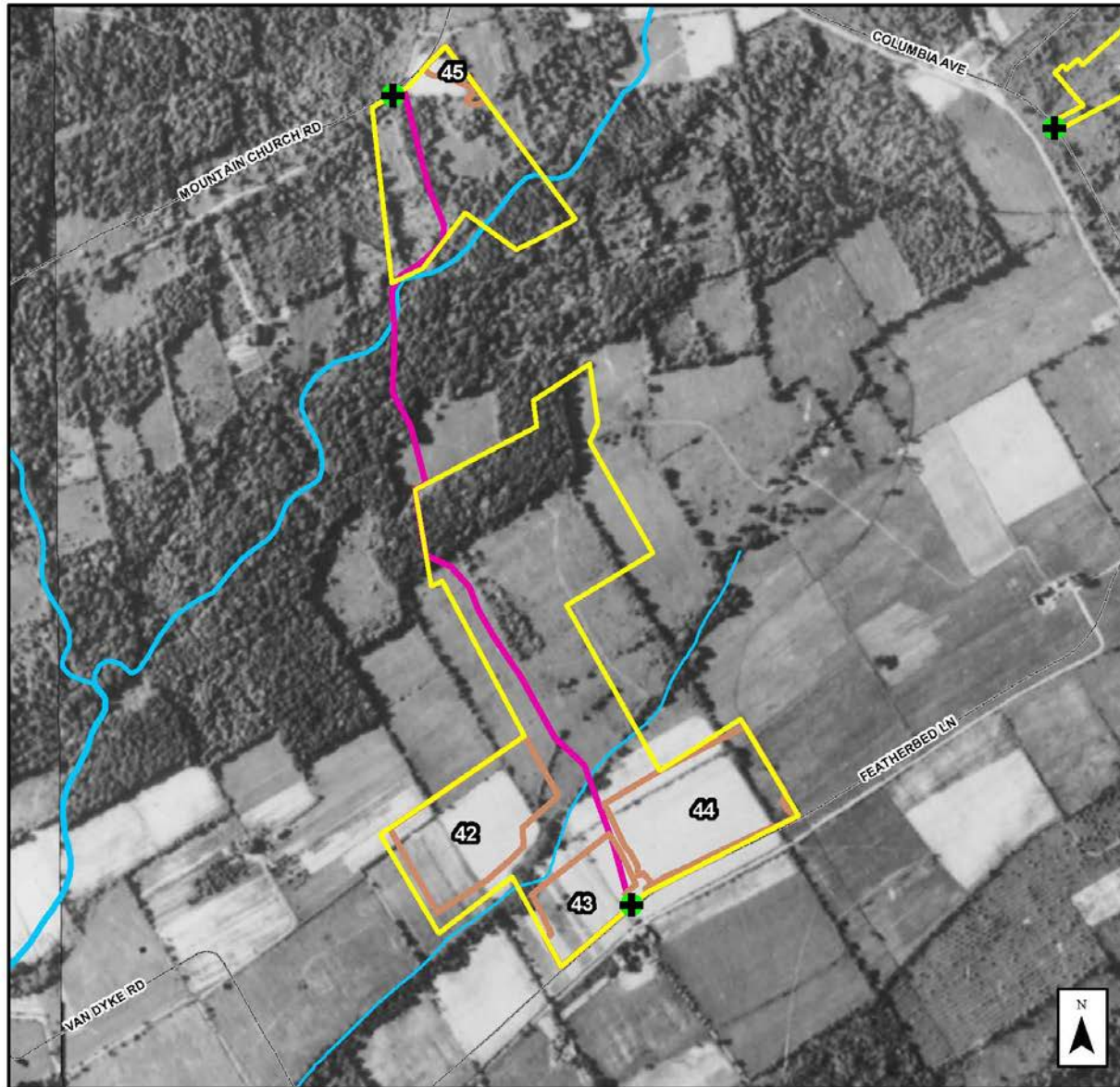
<sup>1</sup> The Infestation Index Score combines the extent of acreage infested and the intensity of the infestation. It was derived by multiplying the cover class number by the number of acres within each cover class.

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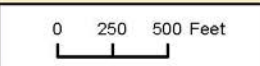


**Hopewell Valley  
Community  
Stewardship Plan**

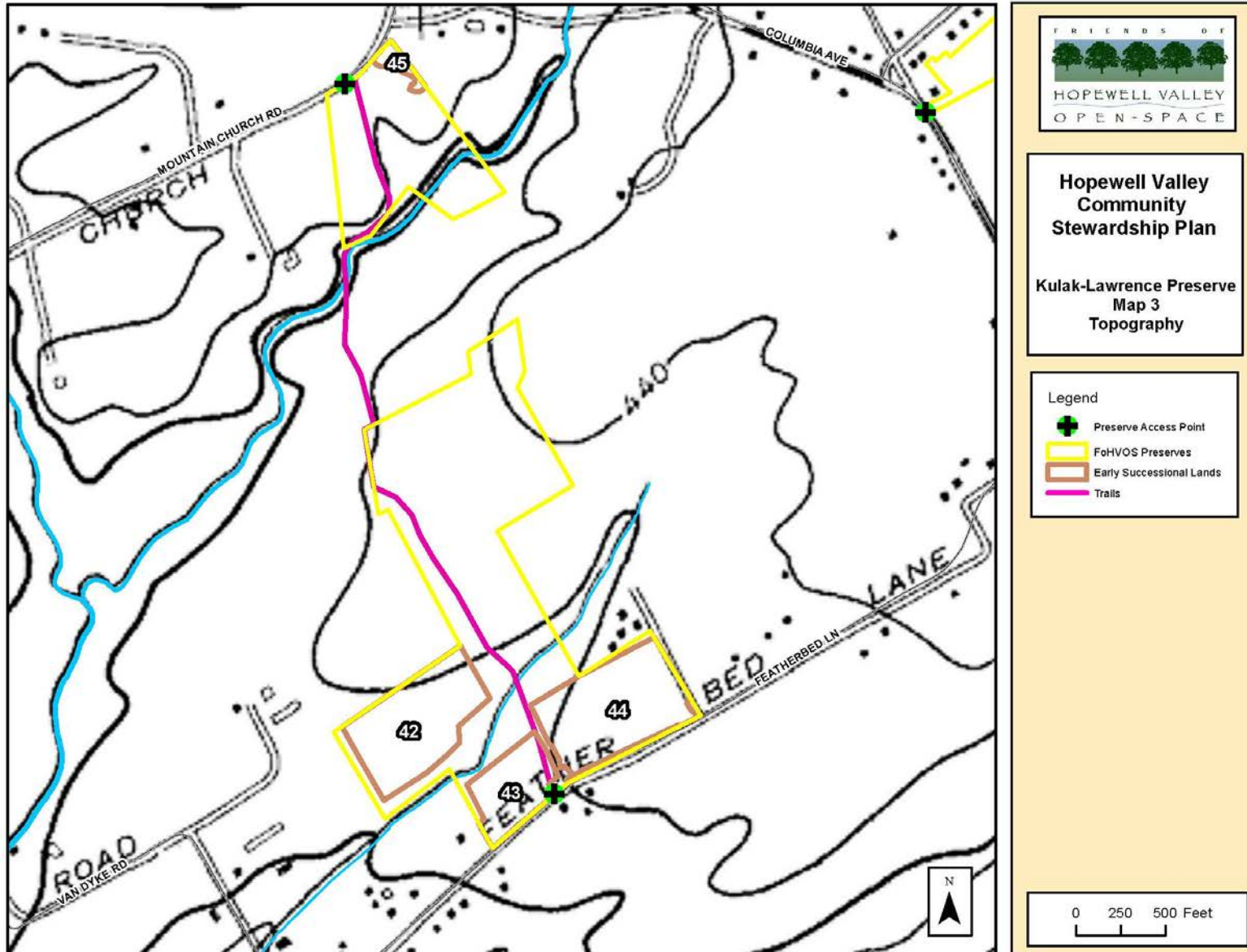
**Kulak-Lawrence Preserve  
Map 2  
1930 Aerial Photography**

Legend

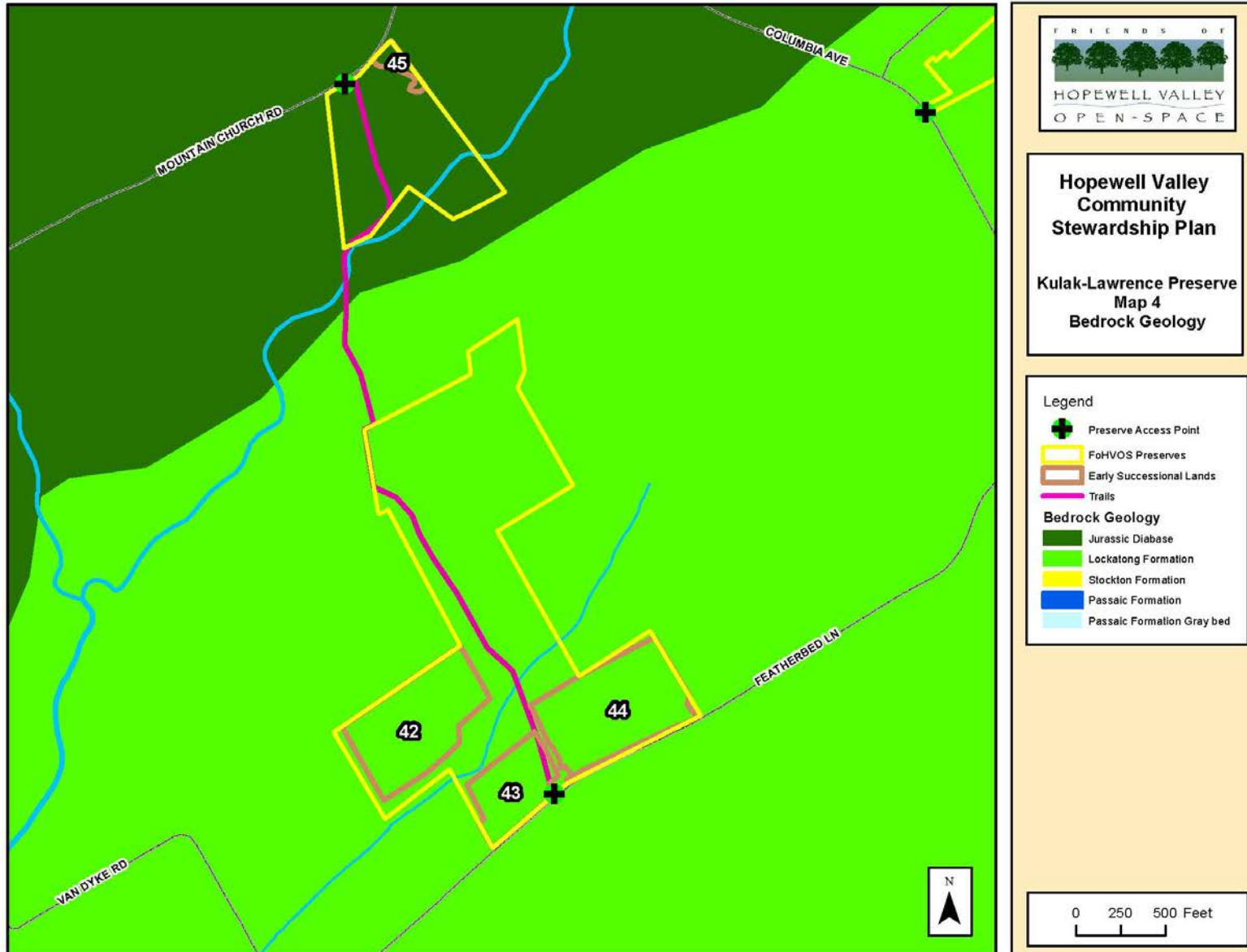
- Preserve Access Point
- FoHVOS Preserves
- Early Successional Lands
- Trails



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Hopewell Valley Community Stewardship Plan  
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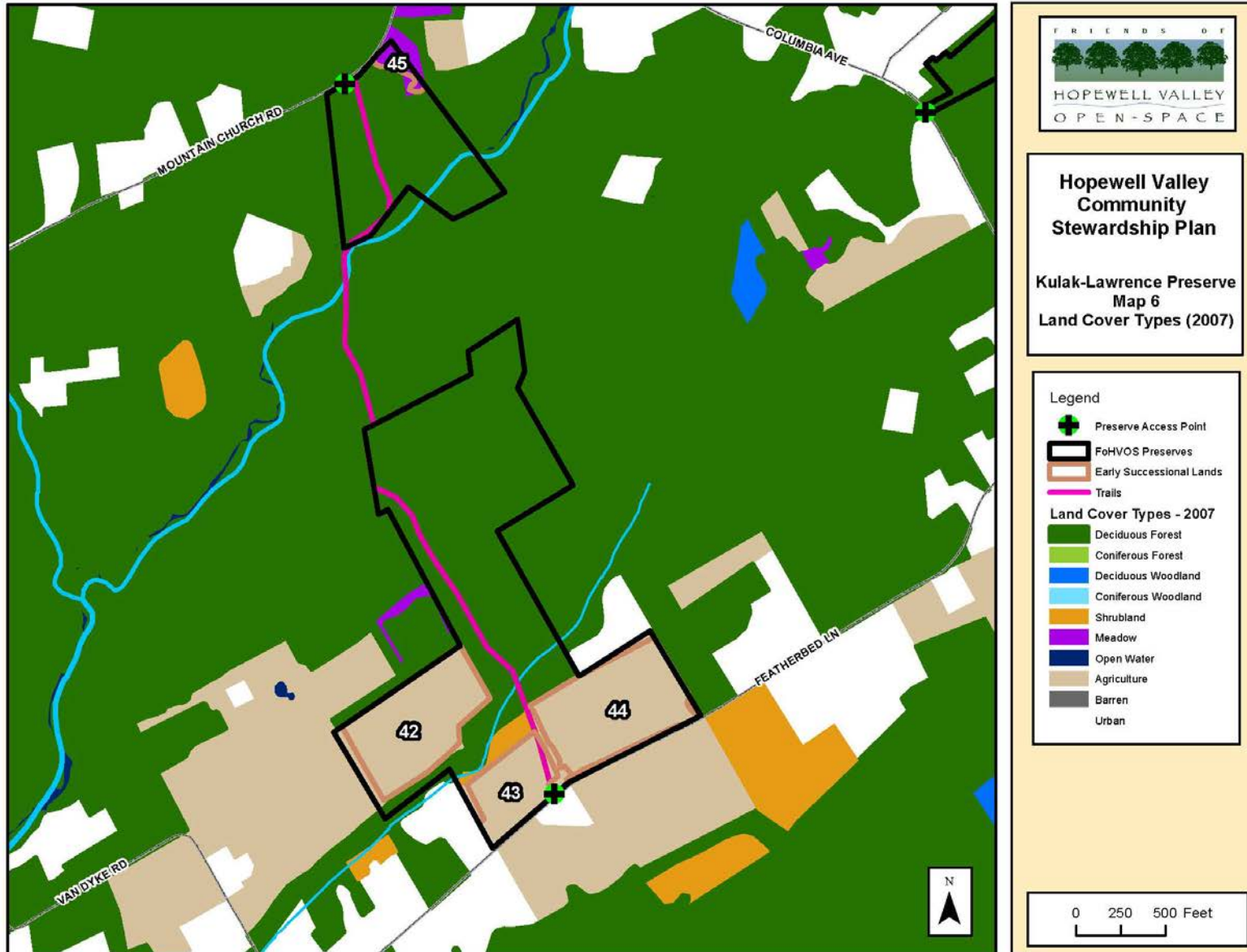




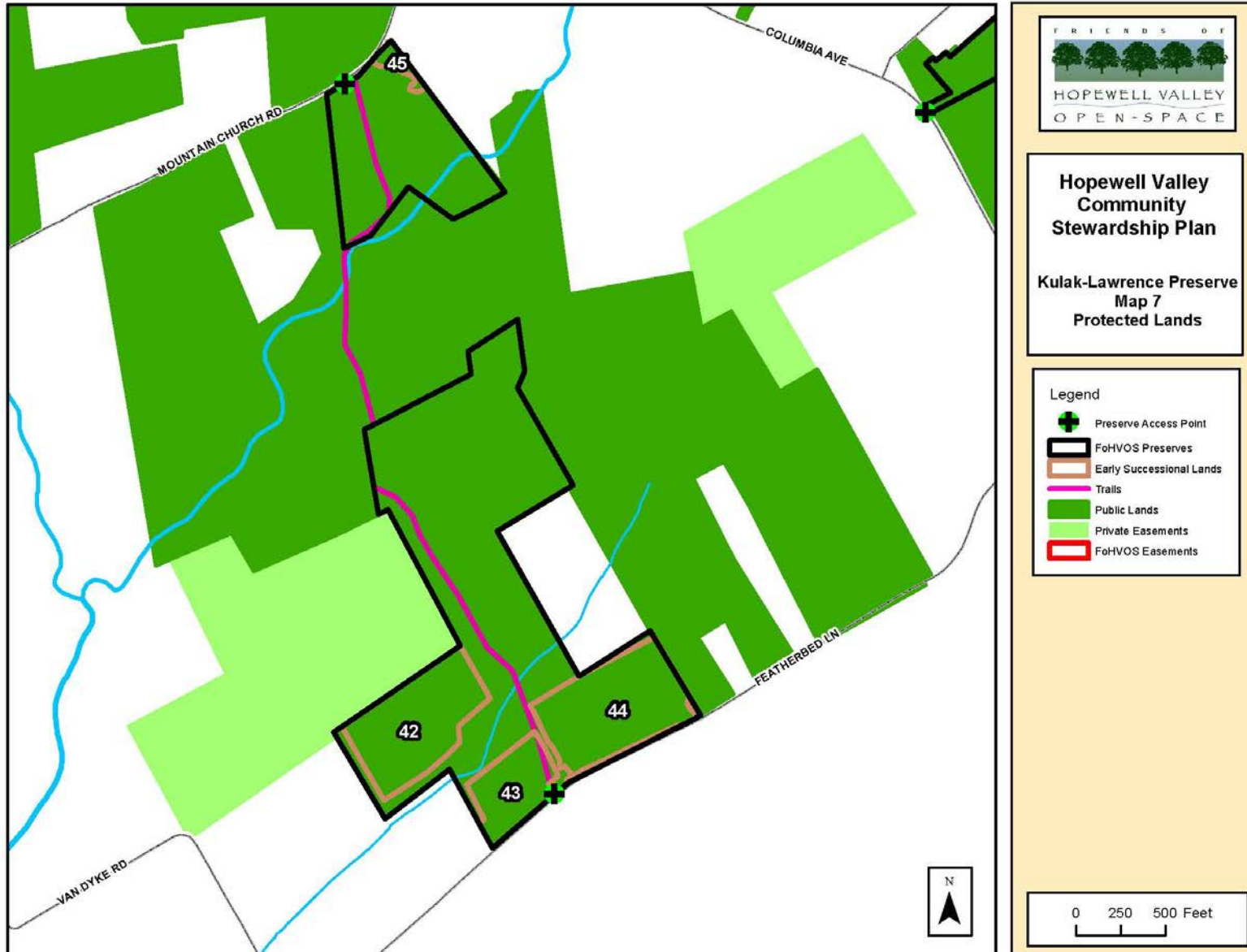




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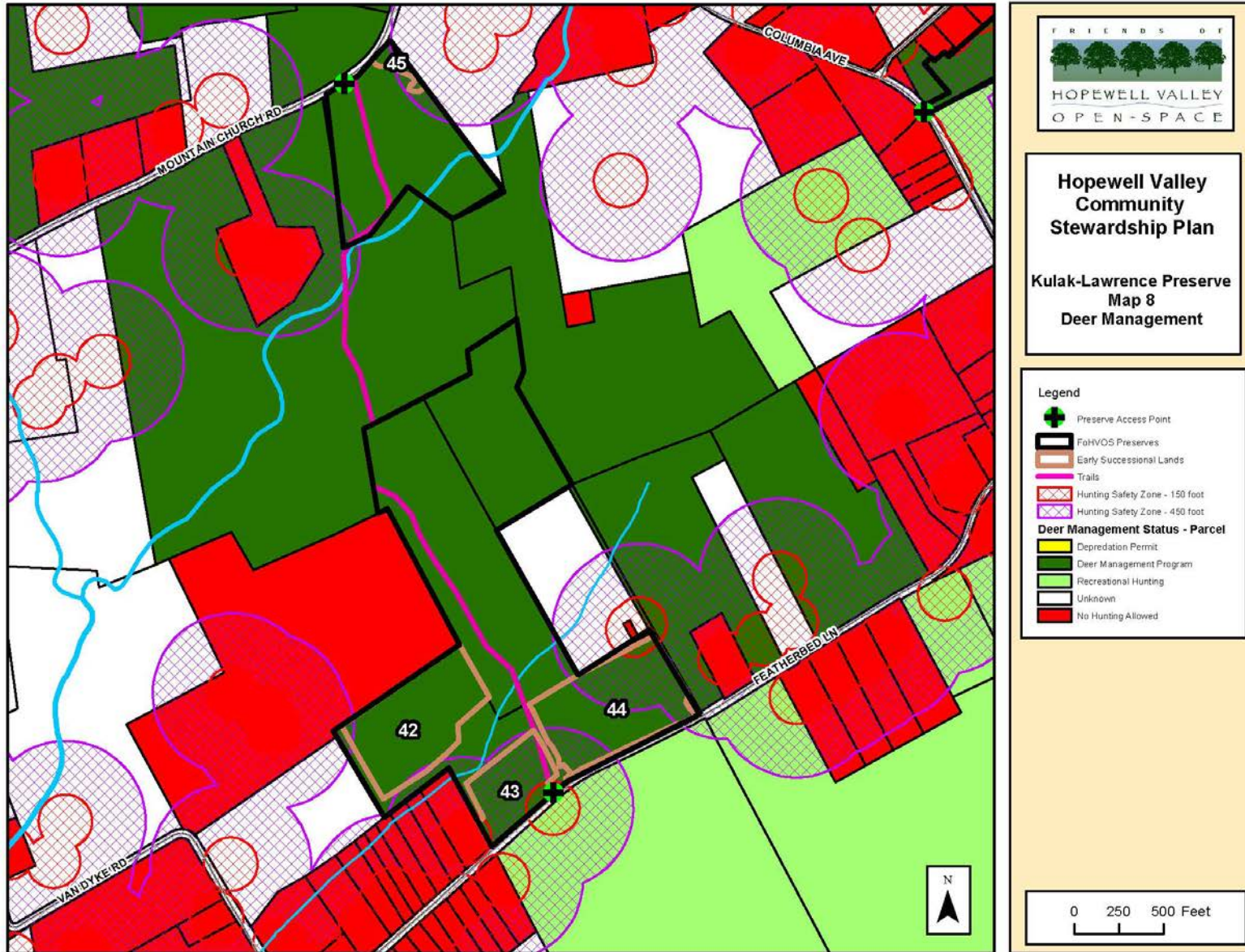


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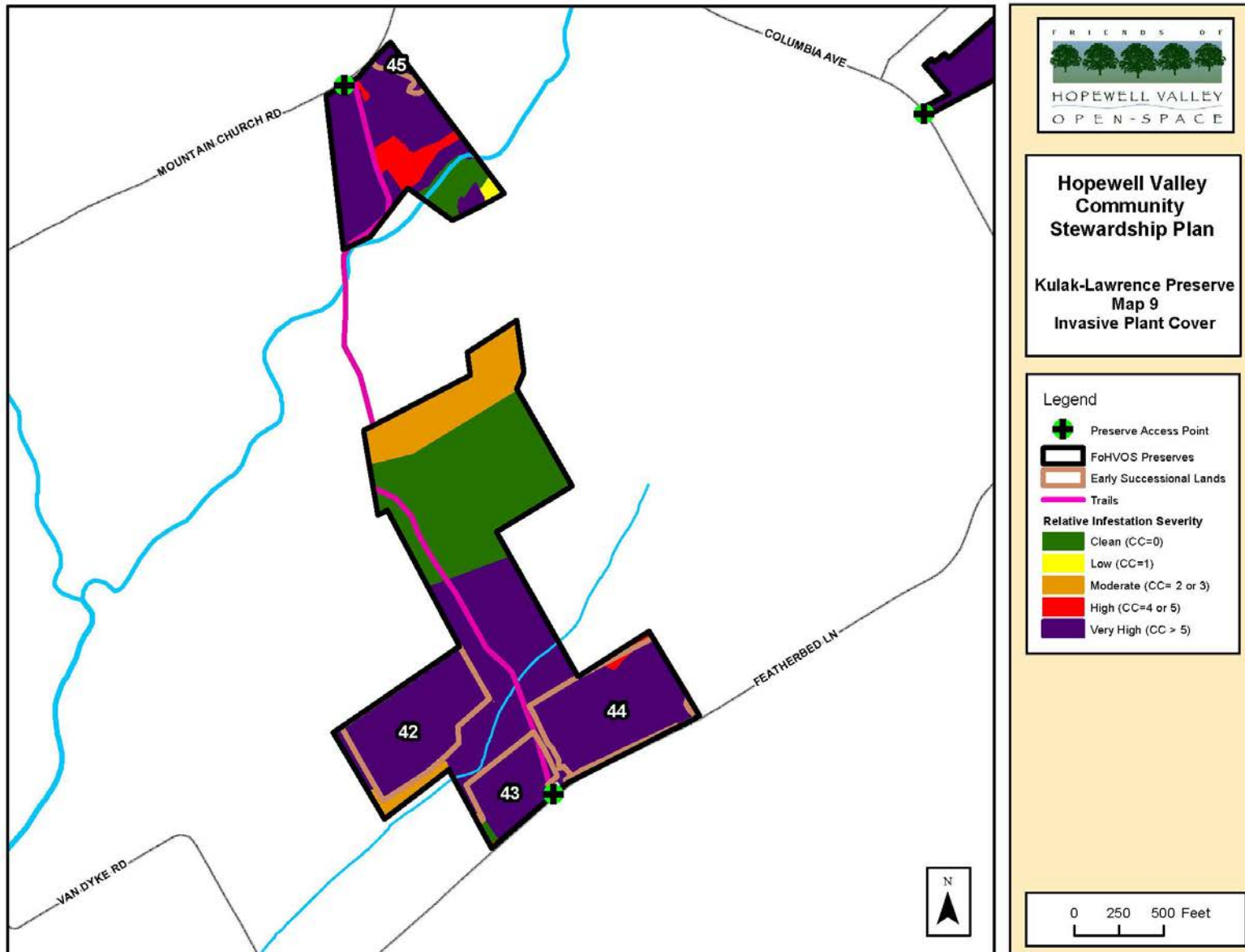




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**Appendix 15.  
Lipp/Lewellen Preserve**

**Acreage:** 3.856

**Block and Lot:** B18, L20

**Ownership:** FoHVOS (100%)

**Year(s) Purchased:** 1998

**Location & Access:** The preserve is located on the north side of Crusher Road, approximately 2.0 miles east of the Route 654. **Nearest street address:** 106 Crusher Road, Hopewell, NJ 08525. Parking is available along the road, but shoulder is narrow. NOTE: Preserve is land-locked and does not have any road frontage on Crusher Road.

**Structures:** None

Additional property information is summarized in Appendix W. The following Preserve maps are provided at the end of this document:

- Map 1 2007 Aerial Photography
- Map 2 1930 Aerial Photography
- Map 3 Topography
- Map 4 Bedrock Geology
- Map 5 Soils
- Map 6 Land Cover Types (2007)
- Map 7 Protected Lands
- Map 8 Deer Management
- Map 9 Invasive Plant Cover (Relative Infestation Severity for all species)

**Website Description:**

**Lipp Lewellen Preserve** protects a portion of the Mount Rose region's upland forest. Spicebush, maple leaf viburnum grow under a canopy of American beech, American linden and tulip tree.

**BROAD PROPERTY DESCRIPTION**

The Lipp Lewellen Preserve (see Map 1) is located in eastern Hopewell Township. The topography (see Map 3) is flat at about 280 feet above sea level.

Based upon analysis of NJDEP's 2007 Land Use/Land Cover dataset, the preserve contains one broad plant community: Deciduous Forest (> 50% canopy) – Upland. The preserve is surrounded by forest, farmland, and residential parcels. Land Use/Land Cover is summarized in Appendix X and illustrated in Map 6.

The forest's native species composition is comprised of tulip tree, ash, Virginia creeper, maple leaf viburnum, spicebush, black cohosh, and sedges. Herbaceous plants are found only in small populations.

The preserve has one type of bedrock geology--the Jurassaic formation. See Map 4.

The preserve has one soil type (see Map 5) -- Neshaminy silt loam, 6 to 12 percent slopes, very stony. The preserve's soils are described in Appendix Y.

**Hopewell Valley Community Stewardship Plan  
Friends of Hopewell Valley Open Space**

**CONSERVATION VALUES**

Based on an analysis involving the ranking of ecological values and threats (See Community Stewardship Plan text), the Preserve has a weighted Ecological Value of 25-50%. See Appendix A for a description of ranking factors.

**Forest and Woodland Communities:** The preserve is part of the Mount Rose large forest patch.

The forest patch found on the Preserve and surrounding area is an important stop-over habitat (spring and fall resting and feeding) for migratory species. The relatively thick shrub layer (primarily spicebush with small patches of maple leaved viburnum) increases the chance of nesting and successful breeding. However, the shrub layer is being rapidly reduced by deer browse (based upon visual observations over the last five years).

**Old forest:** The entirety of the preserve was forested in the 1930s. See Map 2.

**Early Successional Communities:**

**Shrublands:** N/A

**Meadows/Grasslands:** N/A

**Waterbodies:** N/A

**Rare Species:**

**Rare Plants:** None.

**Rare Animals:** The Landscape Project has identified the Preserve as ranked for species of State Endangered, Threatened, and Special Concern Species. The Preserve has suitable wood turtle habitat in the eastern areas.

See Appendix L for a list of species.

**THREATS**

**Deer:** The understory and herb layers are robust (but declining) - suckering stems are heavily browsed. Regeneration of maple leaf viburnum is minimal.

**Invasive species:** In 2008 staff began walk-through surveys for emerging invasive species on all preserves. Mapping documented each species and its population size. There were no emerging species detected at the Preserve. See [www.njisst.org](http://www.njisst.org) for the current status of emerging invasive species at the Preserve.

In 2011 staff completed surveys for invasive plant species on all preserves (see Map 9). Mapping documented each species found and its population size (See Table 1 below). The three species with the highest infestation scores include: Japanese Barberry, Japanese Stiltgrass, and Wineberry. Asiatic bittersweet and Winged burning bush were detected in trace amounts.

**Other:** N/A

**Hopewell Valley Community Stewardship Plan**  
**Friends of Hopewell Valley Open Space**

**STRATEGIES and ACTIONS**

**Forest and Woodland Habitat Stewardship:** Annual surveys for and eradication of emerging invasive species is a high priority at this Preserve.

No action is recommended for widespread invasive species, except for winged burning bush and Asiatic bittersweet. All fruiting and flowering individuals should be treated with basal bark or cut stump (in the case of vines on trees) methods. Reduced deer density will allow the native plant communities to recover and compete with all other widespread invasive species on a long-term basis.

**Early Successional Habitat Stewardship:** N/A

**Deer Management:** The preserve is not enrolled in the DMP. There is no access to the preserve, except across private land. If feasible, improve access through adjacent lands. See Map 8 for delineations of the 150' and 450' safety zones and hunting status.

**Rare Species Management:** N/A

**Neighboring Lands:** See Map 7 for adjacent protected lands.

**Waterbodies Management:** N/A

**Undesirable Activities Management:** N/A

**Scientific Research Assessment:** The Preserve is available for scientific research.

**Recreational Opportunities Assessment:** The preserve does not have road frontage and is too small to support a trail.

**Hopewell Valley Community Stewardship Plan  
Friends of Hopewell Valley Open Space**

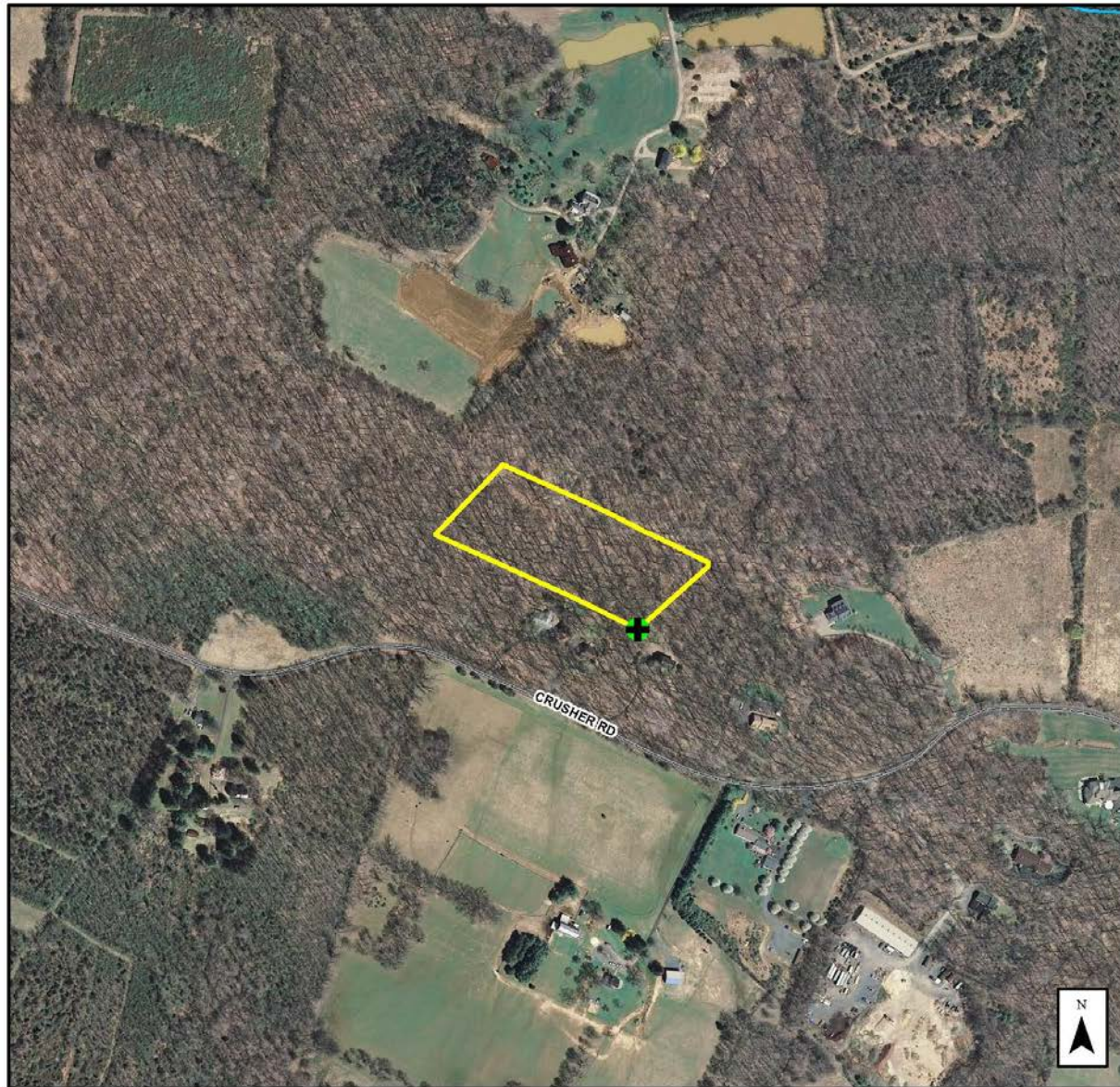
**Table 1. Invasive Plants – Species Abundance and Treatment Recommendations**

Scientific Name	Common Name	Infestation Index Score <sup>1</sup>	Total Acres Present	Percent of Preserve Area Present	Treatment Recommendation	LOE Estimate (Hours)	Acreage by Percent Ground Cover Categories						
							Category 0: 0%	Category: Trace	Category 1: 1-10%	Category 2: 10-25%	Category 3: 25-50%	Category 4: 50-75%	Category 5: 75-100%
<i>Acer palmatum</i>	Japanese Maple	0.0	0.0	0.0	N/A		4.48	0.0	0.0	0.0	0.0	0.0	0.0
<i>Acer platanoides</i>	Norway Maple	0.0	0.0	0.0	N/A		4.48	0.0	0.0	0.00	0.0	0.00	0.0
<i>Ailanthus altissima</i>	Tree-of-Heaven	0.0	0.0	0.0	N/A		4.48	0.0	0.0	0.0	0.0	0.0	0.0
<i>Alliaria petiolata</i>	Garlic Mustard	0.0	4.5	100.0	None		0.00	4.5	0.0	0.0	0.0	0.0	0.0
<i>Artemisia vulgaris</i>	Common Mugwort	0.0	0.0	0.0	N/A		4.48	0.0	0.0	0.0	0.0	0.0	0.0
<i>Arthraxon hispidus</i>	Small Carpgrass	0.0	0.0	0.0	N/A		4.48	0.0	0.0	0.0	0.0	0.0	0.0
<i>Berberis thunbergii</i>	Japanese Barberry	4.5	4.5	100.0	None		0.00	0.0	4.5	0.0	0.0	0.0	0.0
<i>Cardamine impatiens</i>	Narrow-leaved Bittercress	0.0	0.0	0.0	N/A		4.48	0.0	0.0	0.0	0.0	0.0	0.0
<i>Catalpa bignonioides</i>	Northern Catalpa	0.0	0.0	0.0	N/A		4.48	0.0	0.0	0.0	0.0	0.0	0.0
<i>Celastrus orbiculatus</i>	Asiatic Bittersweet	0.0	4.5	100.0	Control - Treat Fruiting Plants	1	0.00	4.5	0.0	0.0	0.00	0.0	0.0
<i>Centurea sp.</i>	Knapweed sp.	0.0	0.0	0.0	N/A		4.48	0.0	0.0	0.0	0.0	0.0	0.0
<i>Cirsium arvense</i>	Canada Thistle	0.0	0.0	0.0	N/A		4.48	0.0	0.0	0.0	0.0	0.0	0.0
<i>Dipsacus sylvestris</i>	Teasel	0.0	0.0	0.0	N/A		4.48	0.0	0.00	0.0	0.0	0.0	0.0
<i>Eleaagnus umbellata</i>	Autumn Olive	0.0	4.5	100.0	None		0.00	4.5	0.0	0.0	0.0	0.0	0.0
<i>Euonymus alata</i>	Winged Burning Bush	0.0	4.5	100.0	Control - Treat Fruiting Plants	4	0.00	4.5	0.0	0.0	0.0	0.0	0.00
<i>Iris pseudoacris</i>	Yellow Iris	0.0	0.0	0.0	N/A		4.48	0.0	0.0	0.0	0.0	0.0	0.0
<i>Lespedeza cuneata</i>	Chinese Bushclover	0.0	0.0	0.0	N/A		4.48	0.0	0.0	0.0	0.0	0.0	0.0
<i>Ligustrum obtusifolium</i>	Border Privet	0.0	0.0	0.0	N/A		4.48	0.0	0.00	0.0	0.0	0.0	0.0
<i>Lonicera japonica</i>	Japanese Honeysuckle	0.0	0.0	0.0	N/A		4.48	0.0	0.0	0.0	0.0	0.0	0.0
<i>Lonicera maackii</i>	Amur Honeysuckle	0.0	0.0	0.0	N/A		4.48	0.0	0.0	0.0	0.0	0.0	0.0
<i>Lonicera morrowii</i>	Morrow's Honeysuckle	0.0	0.0	0.0	N/A		4.48	0.0	0.0	0.0	0.00	0.0	0.0
<i>Lysimachia nummularia</i>	Moneywort	0.0	0.0	0.0	N/A		4.48	0.0	0.0	0.0	0.0	0.0	0.0
<i>Lythrum salicaria</i>	Purple Loosestrife	0.0	0.0	0.0	N/A		4.48	0.0	0.0	0.0	0.0	0.0	0.0
<i>Malus toringo</i>	Toringo Crabapple	0.0	0.0	0.0	N/A		4.48	0.0	0.0	0.0	0.0	0.0	0.0
<i>Microstegium vimineum</i>	Japanese Stiltgrass	4.5	4.5	100.0	None		0.00	0.0	4.5	0.0	0.0	0.0	0.0
N/A	Non-native, cool season grass	0.0	0.0	0.0	N/A		4.48	0.0	0.0	0.0	0.0	0.0	0.0
<i>Phalaris arundinacea</i>	Reed Canary Grass	0.0	0.0	0.0	N/A		4.48	0.0	0.0	0.0	0.0	0.0	0.0
<i>Phragmites australis</i>	Common Reed	0.0	0.0	0.0	N/A		4.48	0.0	0.0	0.0	0.0	0.0	0.0
<i>Polygonum cuspidatum</i>	Japanese Knotweed	0.0	0.0	0.0	N/A		4.48	0.0	0.0	0.0	0.0	0.0	0.0
<i>Polygonum perfoliatum</i>	Mile-a-Minute	0.0	0.0	0.0	N/A		4.48	0.0	0.0	0.0	0.0	0.0	0.0
<i>Pyrus calleryana</i>	Callery Pear	0.0	0.0	0.0	N/A		4.48	0.0	0.0	0.0	0.0	0.0	0.0
<i>Ranunculus ficaria</i>	Lesser Celandine	0.0	0.0	0.0	N/A		4.48	0.0	0.0	0.0	0.0	0.0	0.0
<i>Robinia pseudoacacia</i>	Black Locust	0.0	0.0	0.0	N/A		4.48	0.0	0.0	0.0	0.0	0.0	0.0
<i>Rosa multiflora</i>	Multiflora Rose	0.0	4.5	100.0	None		0.00	4.5	0.0	0.0	0.0	0.0	0.0
<i>Rubus phoenicolasius</i>	Wineberry	4.5	4.5	100.0	None		0.00	0.0	4.5	0.0	0.0	0.0	0.0
<i>Securigera varia</i>	Crown vetch	0.0	0.0	0.0	N/A		4.48	0.0	0.0	0.0	0.0	0.0	0.0
<i>Viburnum dilatatum</i>	Linden Viburnum	0.0	0.0	0.0	N/A		4.48	0.0	0.0	0.0	0.0	0.0	0.0
<i>Viburnum sieboldii</i>	Siebold's Viburnum	0.0	0.0	0.0	N/A		4.48	0.0	0.0	0.0	0.0	0.0	0.0
<i>Wisteria floribunda</i>	Japanese Wisteria	0.0	0.0	0.0	N/A		4.48	0.0	0.0	0.0	0.0	0.0	0.0
<b>Total LOE</b>						<b>5</b>							

<sup>1</sup> The Infestation Index Score combines the extent of acreage infested and the intensity of the infestation. It was derived by multiplying the cover class number by the number of acres within each cover class.



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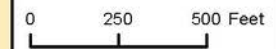


**Hopewell Valley  
Community  
Stewardship Plan**

**Lipp/Lewellen Preserve  
Map 1  
2007 Aerial Photography**

**Legend**

-  Preserve Access Point
-  FohVOS Preserves
-  Early Successional Lands
-  Trails



**Hopewell Valley Community Stewardship Plan  
Friends of Hopewell Valley Open Space**

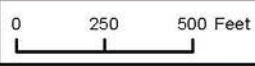


**Hopewell Valley  
Community  
Stewardship Plan**

**Lipp/Lewellen Preserve  
Map 2  
1930 Aerial Photography**

**Legend**

-  Preserve Access Point
-  FohVOS Preserves
-  Early Successional Lands
-  Trails





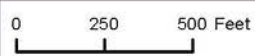
Hopewell Valley Community Stewardship Plan  
Friends of Hopewell Valley Open Space



**Hopewell Valley  
Community  
Stewardship Plan**

**Lipp/Lewellen Preserve  
Map 3  
Topography**

- Legend**
- Preserve Access Point
  - FoHVOS Preserves
  - Early Successional Lands
  - Trails

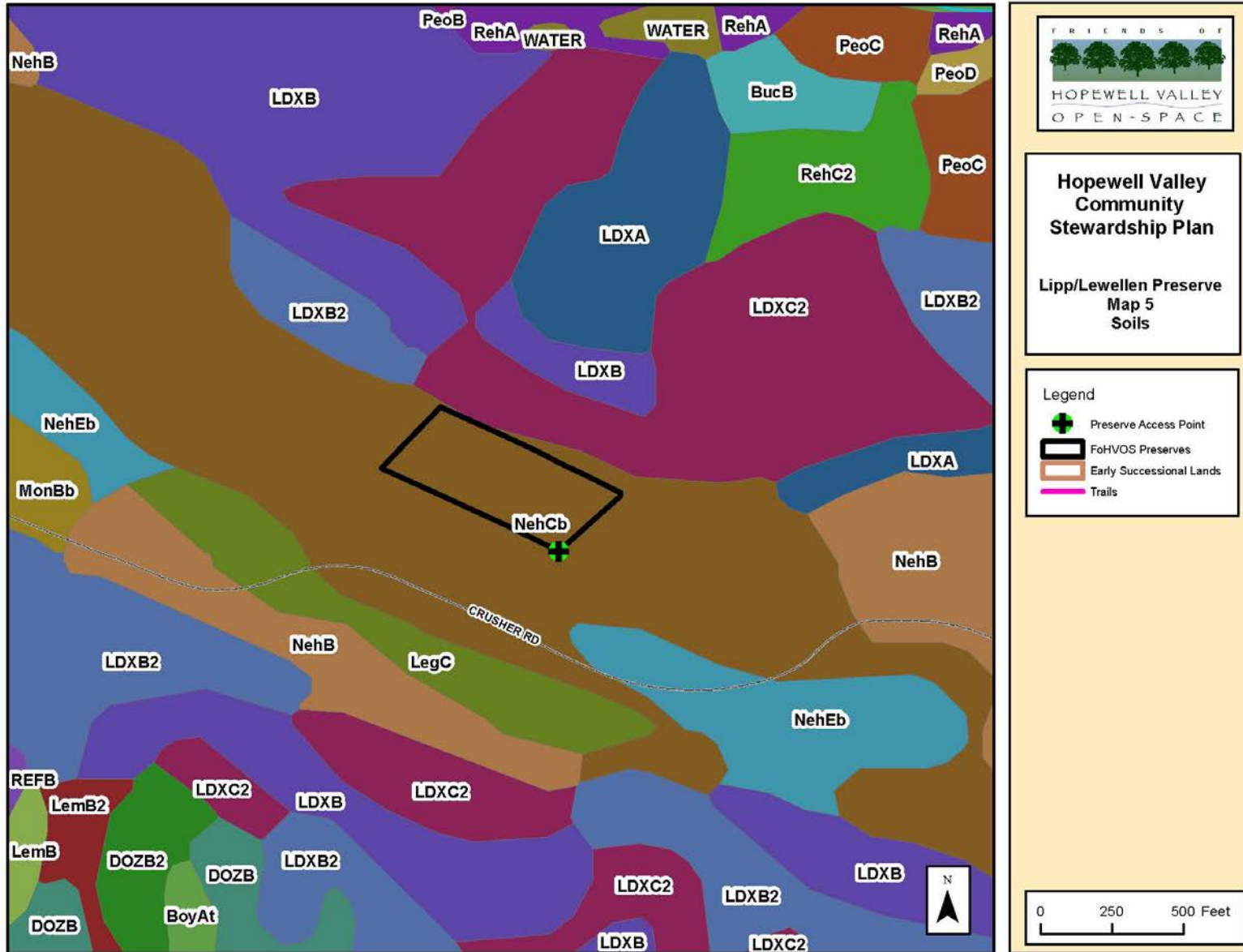


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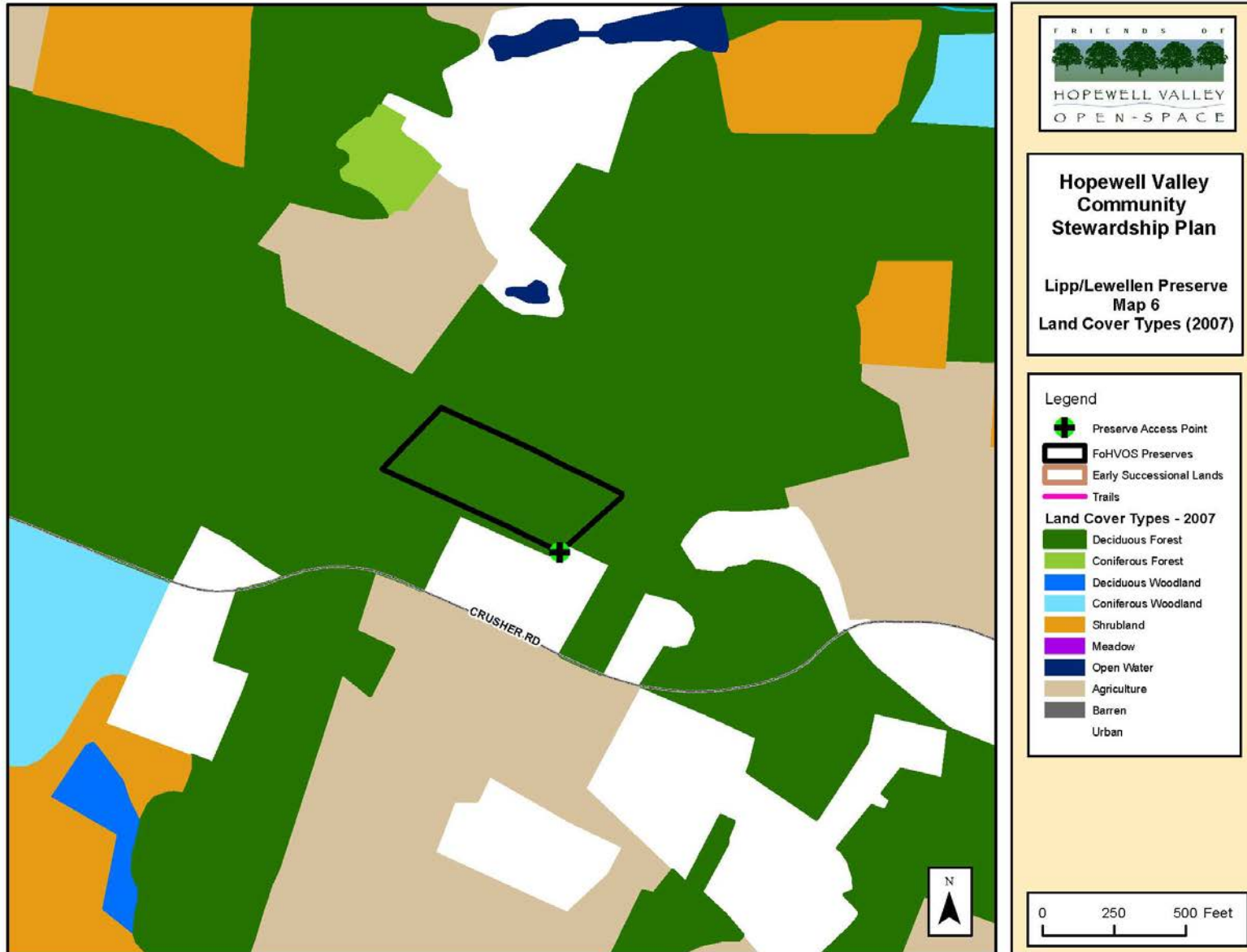




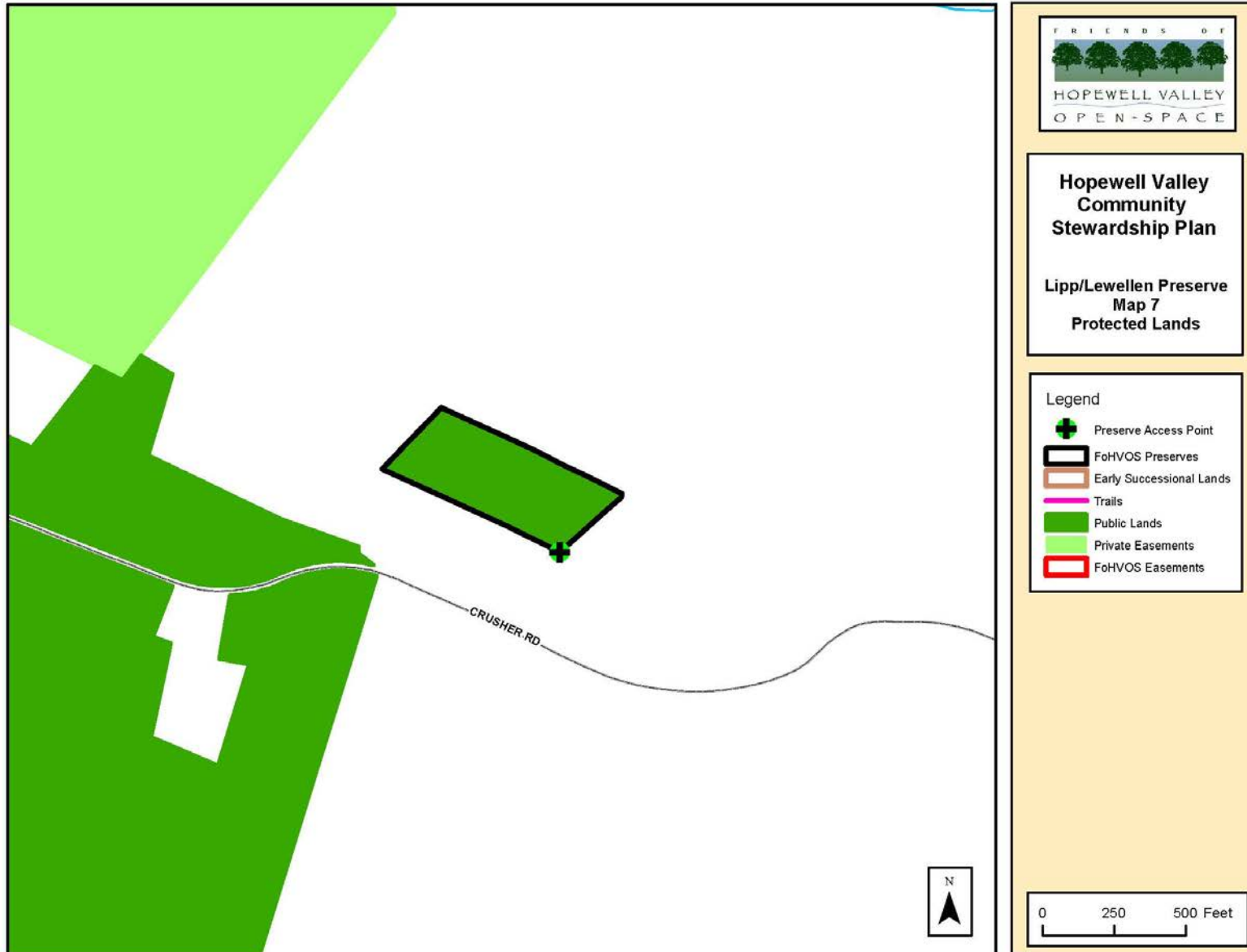
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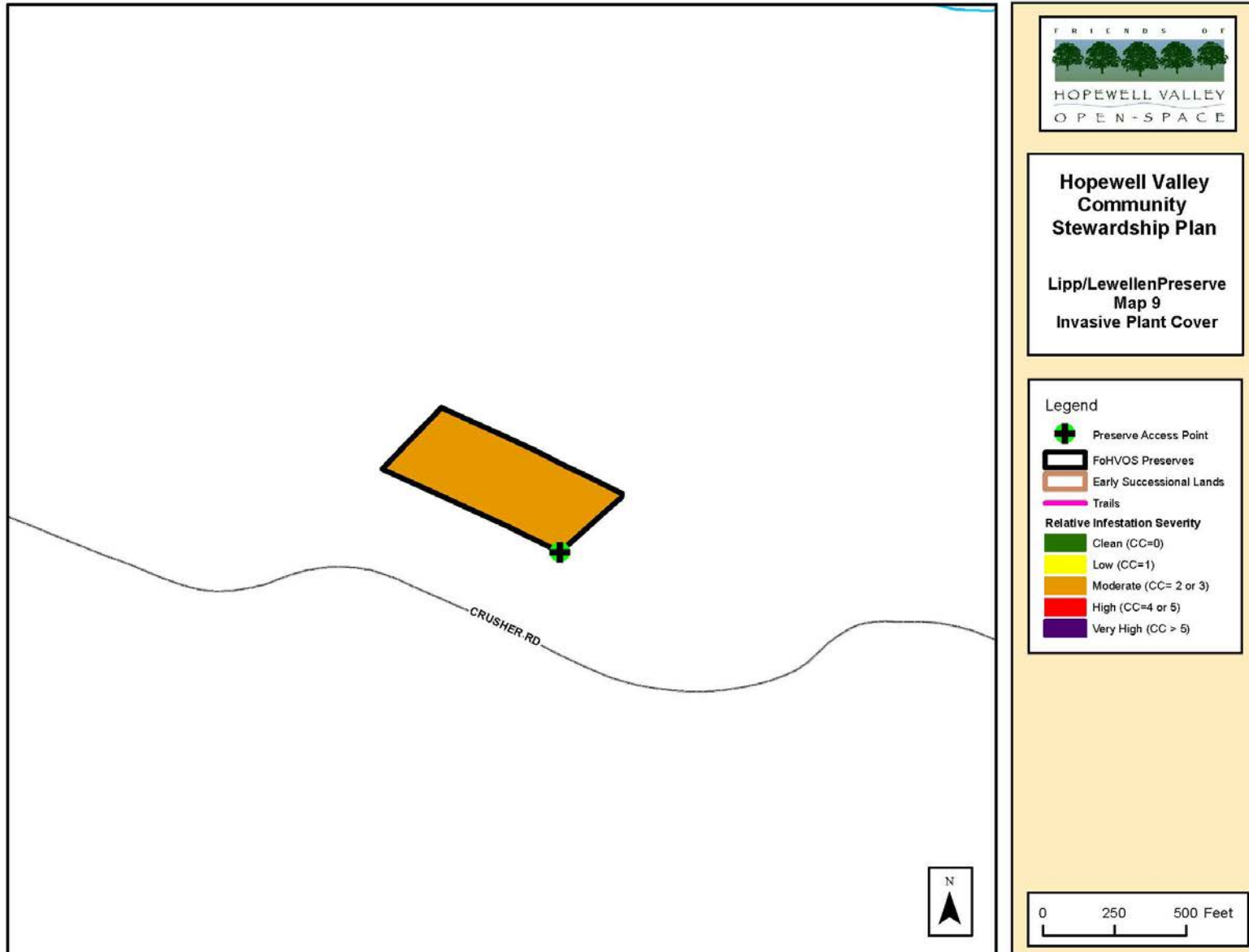


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**Appendix 16.  
Mount Preserve**

**Acreage:** < 0.1

**Block and Lot:** B31, L41

**Ownership:** FoHVOS (100%)

**Year(s) Purchased:** 2002

**Location & Access:** Preserve is located on the south side of Marshall's Corner-Woodsville Road/Route 612. Access and parking is along the road. Nearest street address: 180 Marshall's Corner-Woodsville Road/Route 612, Pennington, NJ 08534.

**Structures:** None

Additional property information is summarized in Appendix W. The following Preserve maps are provided at the end of this document:

- Map 1 2007 Aerial Photography
- Map 2 1930 Aerial Photography
- Map 3 Topography
- Map 4 Bedrock Geology
- Map 5 Soils
- Map 6 Land Cover Types (2007)
- Map 7 Protected Lands
- Map 8 Deer Management
- Map 9 Invasive Plant Cover (Relative Infestation Severity for all species)

**Website Description:**

**Mount Preserve** protects a very small tract of grassland adjacent to preserved farmland.

**BROAD PROPERTY DESCRIPTION**

The Mount Preserve (see Map 1) is located in north central Hopewell Township. The preserve is bounded by residential development and farmland. The topography (see Map 3) is flat at 100 feet above sea level.

Based upon analysis of NJDEP's 2007 Land Use/Land Cover dataset, the preserve contains one broad plant community: Agricultural. Because the preserve is not in active agriculture, the plant community can be accurately described as: Meadow (< 25% shrub cover) - Upland. Land Use/Land Cover is summarized in Appendix X and illustrated in Map 6.

The plant community is comprised of non-native grasses, thistles, and autumn olive. Historically, the Mount Preserve and adjacent lands have been in agriculture since at least 1930.

The preserve has one type of bedrock geology--the Stockton formation. See Map 4.

The preserve has one soil type (see Map 5) -- Bucks silt loam, 6 to 12 percent slopes, eroded. The preserve's soils are described in Appendix Y.

**Hopewell Valley Community Stewardship Plan  
Friends of Hopewell Valley Open Space**

**CONSERVATION VALUES**

The habitat patch on the preserve is too small to support habitat of wildlife or any significant native plant community.

Based on Natural Heritage data, ENSP Landscape Project, 1930s forest presence/absence et al. the Preserve has a weighted Ecological Value at 25%. See Appendix A for a description of ranking factors.

**Forest and Woodland Communities:** N/A

**Old forest:** None. See Map 2.

**Early Successional Communities:**

**Shrublands:** N/A

**Meadows/Grasslands:** Meadows are heavily disturbed by past use and are predominantly hay grasses.

**Waterbodies:** N/A

**Rare Species:**

**Rare Plants:** None documented on the Preserve. Natural Heritage grid data shows no species.

**Rare Animals:** The Preserve is identified as habitat for State Special Concern species.

**THREATS**

**Deer:** The preserve is so small that it does not serve as a significant habitat for deer.

**Invasive species:** In 2008 staff began walk-through surveys for emerging invasive species on all preserves. Mapping documented each species and its population size. No species were detected. See [www.njisst.org](http://www.njisst.org) for the current status of emerging invasive species at the Preserve.

In 2011 staff completed surveys for invasive plant species on all preserves (see Map 9). Mapping documented each species found and its population size (See Table 1 below). The four species with the highest infestation scores include: Non-native cool season grass, Canada thistle, multiflora rose, and autumn olive.

**Other:** N/A

**STRATEGIES and ACTIONS**

**Forest and Woodland Habitat Stewardship:** N/A

**Early Successional Habitat Stewardship:** Because of the small size of the preserve, no action is recommended.

**Deer Management:** The preserve is not enrolled in the DMP. Because of the preserve's size, deer management is not feasible. See Map 8 for delineations of the 150' and 450' safety zones and hunting status.

**Rare Species Management:** N/A

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**Neighboring Lands:** N/A. See Map 7 for adjacent protected lands.

**Waterbodies Management:** N/A

**Undesirable Activities Management:** N/A

**Scientific Research Assessment:** N.A

**Recreational Opportunities Assessment:** The preserve is too small to support a trail.



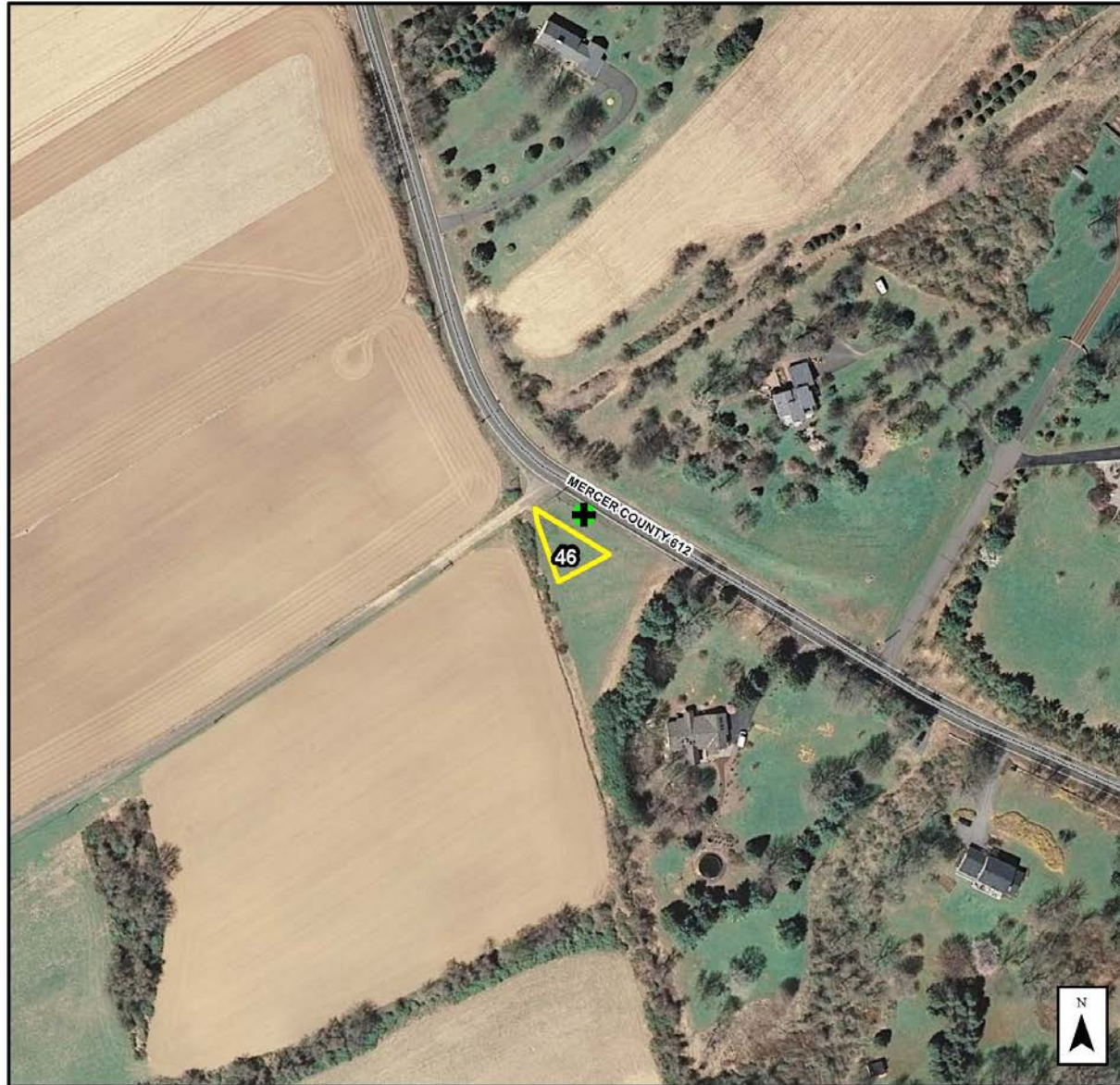
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**Table 1. Invasive Plants – Species Abundance and Treatment Recommendations**

Scientific Name	Common Name	Infestation Index Score <sup>1</sup>	Total Acres Present	Percent of Preserve Area Present	Treatment Recommendation	LOE Estimate (Hours)	Acreage by Percent Ground Cover Categories						
							Category 0: 0%	Category: Trace	Category 1: 1-10%	Category 2: 10-25%	Category 3: 25-50%	Category 4: 50-75%	Category 5: 75-100%
<i>Acer palmatum</i>	Japanese Maple	0.0	0.0	0.0	N/A		0.08	0.0	0.0	0.0	0.0	0.0	0.0
<i>Acer platanoides</i>	Norway Maple	0.0	0.0	0.0	N/A		0.08	0.0	0.0	0.00	0.0	0.00	0.0
<i>Ailanthus altissima</i>	Tree-of-Heaven	0.0	0.0	0.0	N/A		0.08	0.0	0.0	0.0	0.0	0.0	0.0
<i>Alliaria petiolata</i>	Garlic Mustard	0.0	0.0	0.0	N/A		0.08	0.0	0.0	0.0	0.0	0.0	0.0
<i>Artemisia vulgaris</i>	Common Mugwort	0.0	0.0	0.0	N/A		0.08	0.0	0.0	0.0	0.0	0.0	0.0
<i>Arthraxon hispidus</i>	Small Carpgrass	0.0	0.0	0.0	N/A		0.08	0.0	0.0	0.0	0.0	0.0	0.0
<i>Berberis thunbergii</i>	Japanese Barberry	0.0	0.0	0.0	N/A		0.08	0.0	0.0	0.0	0.0	0.0	0.0
<i>Cardamine impatiens</i>	Narrow-leaved Bittercress	0.0	0.0	0.0	N/A		0.08	0.0	0.0	0.0	0.0	0.0	0.0
<i>Catalpa bignonioides</i>	Northern Catalpa	0.0	0.0	0.0	N/A		0.08	0.0	0.0	0.0	0.0	0.0	0.0
<i>Celastrus orbiculatus</i>	Asiatic Bittersweet	0.0	0.0	0.0	N/A		0.08	0.0	0.0	0.0	0.00	0.0	0.0
<i>Centurea sp.</i>	Knapsweed sp.	0.0	0.0	0.0	N/A		0.08	0.0	0.0	0.0	0.0	0.0	0.0
<i>Cirsium arvense</i>	Canada Thistle	0.2	0.1	100.0	None		0.00	0.0	0.0	0.0	0.1	0.0	0.0
<i>Dipsacus sylvestris</i>	Teasel	0.0	0.0	0.0	N/A		0.08	0.0	0.00	0.0	0.0	0.0	0.0
<i>Eleagnus umbellata</i>	Autumn Olive	0.1	0.1	100.0	None		0.00	0.0	0.1	0.0	0.0	0.0	0.0
<i>Euonymus alata</i>	Winged Burning Bush	0.0	0.0	0.0	N/A		0.08	0.0	0.0	0.0	0.0	0.0	0.00
<i>Iris pseudoacris</i>	Yellow Iris	0.0	0.0	0.0	N/A		0.08	0.0	0.0	0.0	0.0	0.0	0.0
<i>Lespedeza cuneata</i>	Chinese Bushclover	0.0	0.0	0.0	N/A		0.08	0.0	0.0	0.0	0.0	0.0	0.0
<i>Ligustrum obtusifolium</i>	Border Privet	0.0	0.0	0.0	N/A		0.08	0.0	0.00	0.0	0.0	0.0	0.0
<i>Lonicera japonica</i>	Japanese Honeysuckle	0.0	0.0	0.0	N/A		0.08	0.0	0.0	0.0	0.0	0.0	0.0
<i>Lonicera maackii</i>	Amur Honeysuckle	0.0	0.0	0.0	N/A		0.08	0.0	0.0	0.0	0.0	0.0	0.0
<i>Lonicera morrowii</i>	Morrow's Honeysuckle	0.0	0.0	0.0	N/A		0.08	0.0	0.0	0.0	0.00	0.0	0.0
<i>Lysimachia nummularia</i>	Moneywort	0.0	0.0	0.0	N/A		0.08	0.0	0.0	0.0	0.0	0.0	0.0
<i>Lythrum salicaria</i>	Purple Loosestrife	0.0	0.0	0.0	N/A		0.08	0.0	0.0	0.0	0.0	0.0	0.0
<i>Malus toringo</i>	Toringo Crabapple	0.0	0.0	0.0	N/A		0.08	0.0	0.0	0.0	0.0	0.0	0.0
<i>Microstegium vimineum</i>	Japanese Stiltgrass	0.0	0.0	0.0	N/A		0.08	0.0	0.0	0.0	0.0	0.0	0.0
N/A	Non-native, cool season grass	0.4	0.1	100.0	None		0.00	0.0	0.0	0.0	0.0	0.0	0.1
<i>Phalaris arundinacea</i>	Reed Canary Grass	0.0	0.0	0.0	N/A		0.08	0.0	0.0	0.0	0.0	0.0	0.0
<i>Phragmites australis</i>	Common Reed	0.0	0.0	0.0	N/A		0.08	0.0	0.0	0.0	0.0	0.0	0.0
<i>Polygonum cuspidatum</i>	Japanese Knotweed	0.0	0.0	0.0	N/A		0.08	0.0	0.0	0.0	0.0	0.0	0.0
<i>Polygonum perfoliatum</i>	Mile-a-Minute	0.0	0.0	0.0	N/A		0.08	0.0	0.0	0.0	0.0	0.0	0.0
<i>Pyrus calleryana</i>	Callery Pear	0.0	0.0	0.0	N/A		0.08	0.0	0.0	0.0	0.0	0.0	0.0
<i>Ranunculus ficaria</i>	Lesser Celandine	0.0	0.0	0.0	N/A		0.08	0.0	0.0	0.0	0.0	0.0	0.0
<i>Robinia pseudoacacia</i>	Black Locust	0.0	0.0	0.0	N/A		0.08	0.0	0.0	0.0	0.0	0.0	0.0
<i>Rosa multiflora</i>	Multiflora Rose	0.2	0.1	100.0	None		0.00	0.0	0.0	0.0	0.1	0.0	0.0
<i>Rubus phoenicolasius</i>	Wineberry	0.0	0.0	0.0	N/A		0.08	0.0	0.0	0.0	0.0	0.0	0.0
<i>Securigera varia</i>	Crown vetch	0.0	0.0	0.0	N/A		0.08	0.0	0.0	0.0	0.0	0.0	0.0
<i>Viburnum dilatatum</i>	Linden Viburnum	0.0	0.0	0.0	N/A		0.08	0.0	0.0	0.0	0.0	0.0	0.0
<i>Viburnum sieboldii</i>	Siebold's Viburnum	0.0	0.0	0.0	N/A		0.08	0.0	0.0	0.0	0.0	0.0	0.0
<i>Wisteria floribunda</i>	Japanese Wisteria	0.0	0.0	0.0	N/A		0.08	0.0	0.0	0.0	0.0	0.0	0.0
<b>Total LOE</b>						<b>0</b>							

<sup>1</sup> The Infestation Index Score combines the extent of acreage infested and the intensity of the infestation. It was derived by multiplying the cover class number by the number of acres within each cover class.

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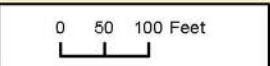


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Community  
Stewardship Plan**

**Mount Preserve  
Map 1  
2007 Aerial Photography**

**Legend**

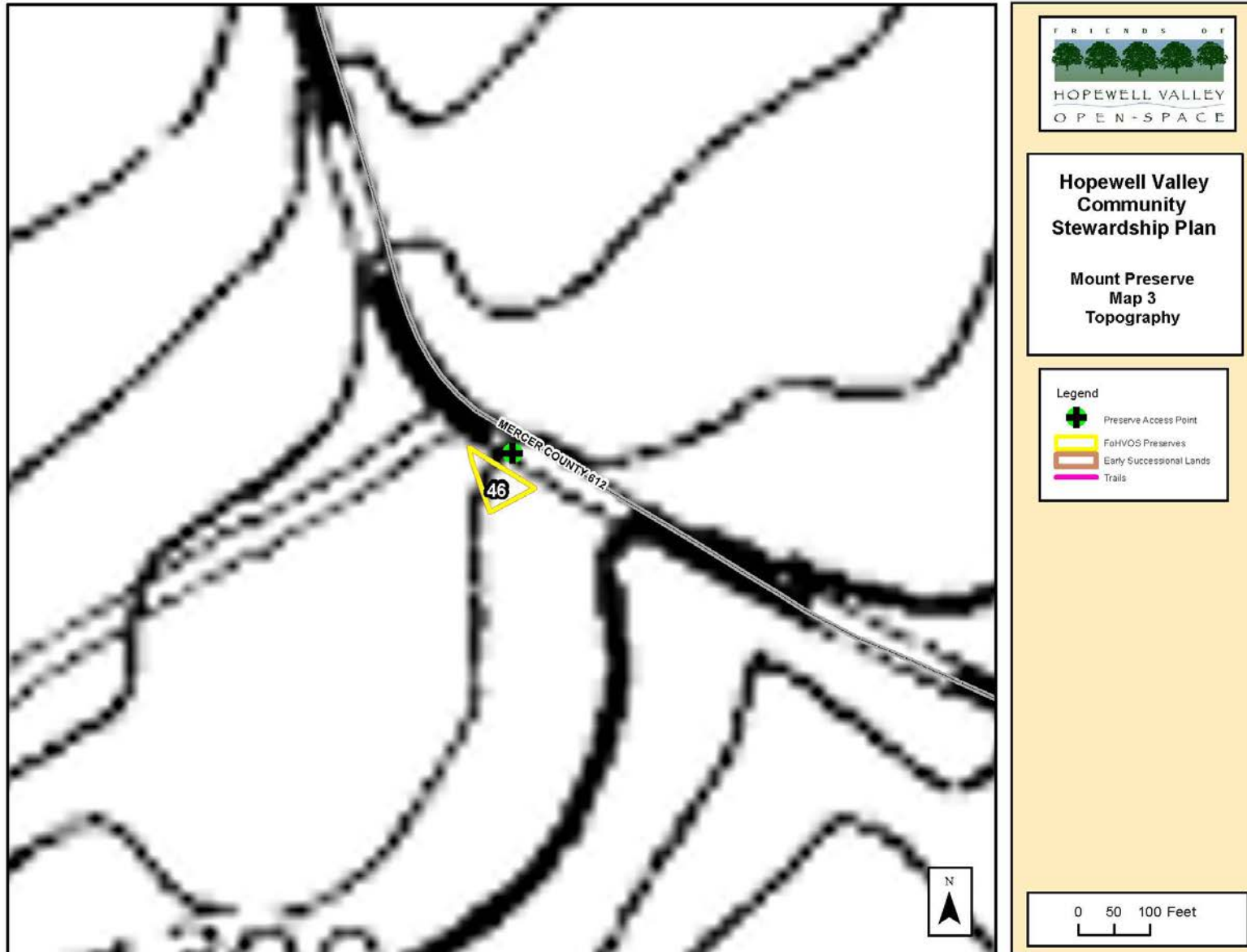
-  Preserve Access Point
-  FohVOS Preserves
-  Early Successional Lands
-  Trails



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Friends of Hopewell Valley Open Space**



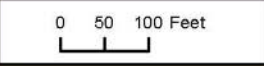
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Friends of Hopewell Valley Open Space**



**Hopewell Valley  
Community  
Stewardship Plan**

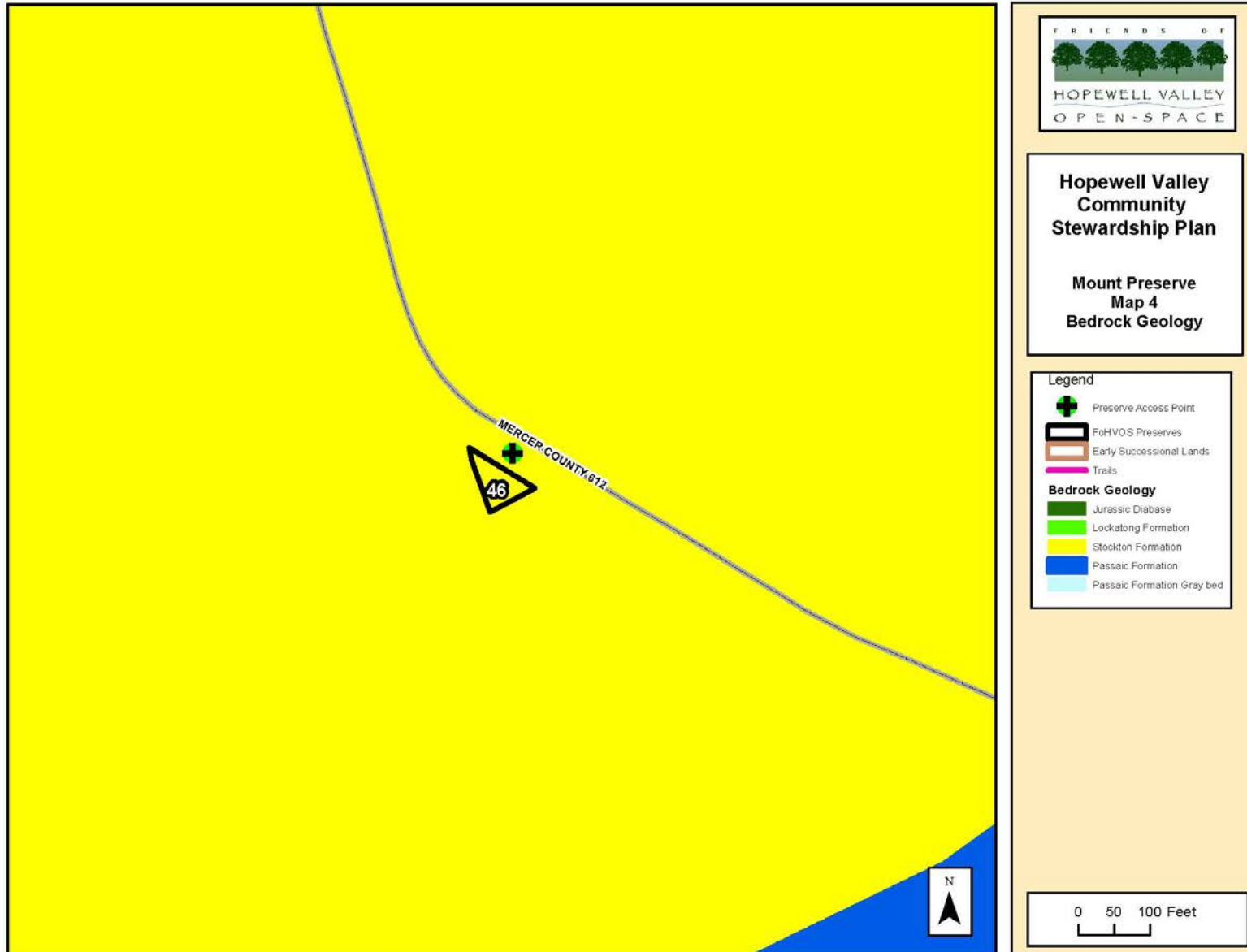
**Mount Preserve  
Map 3  
Topography**

- Legend**
- Preserve Access Point
  - FoHVOS Preserves
  - Early Successional Lands
  - Trails

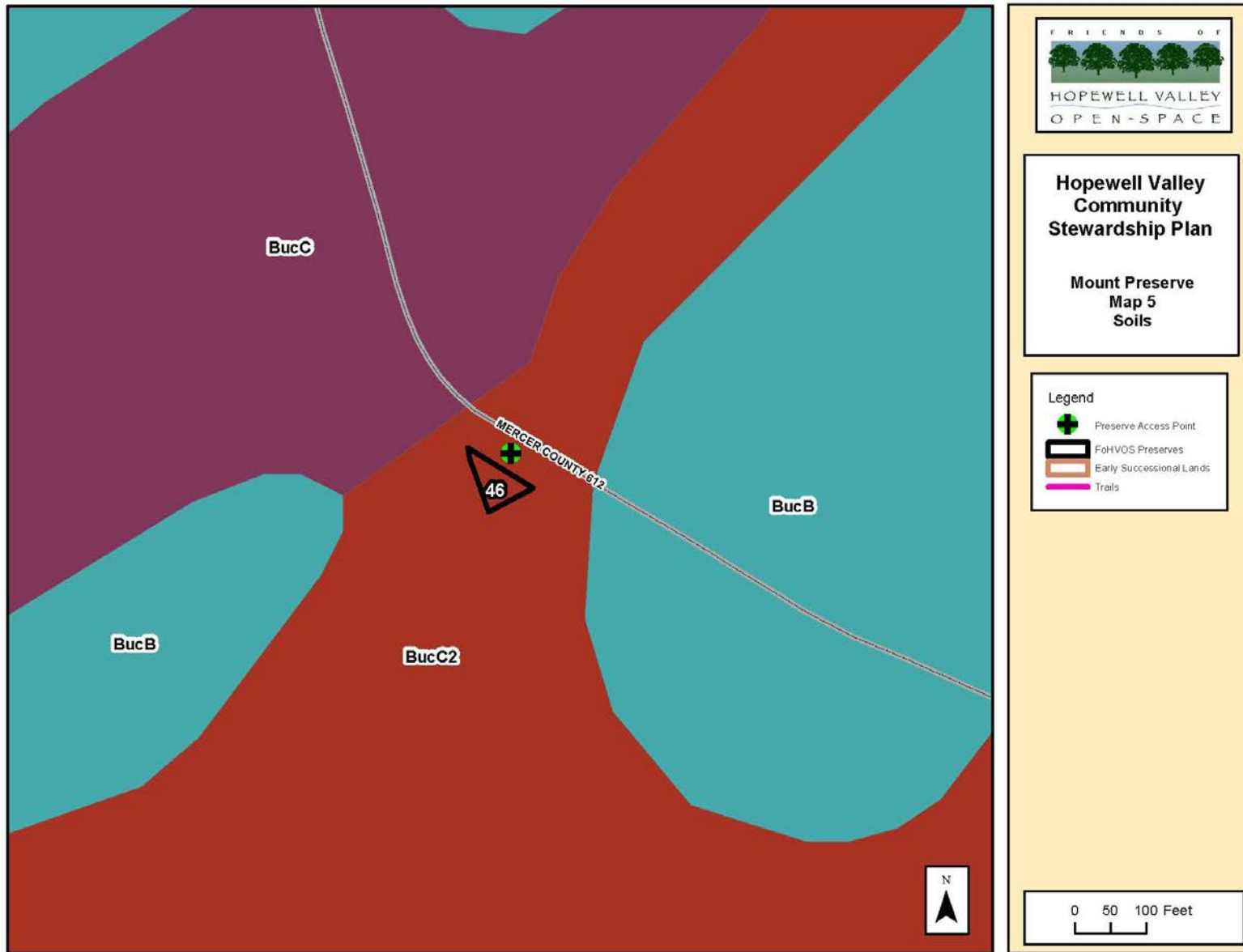




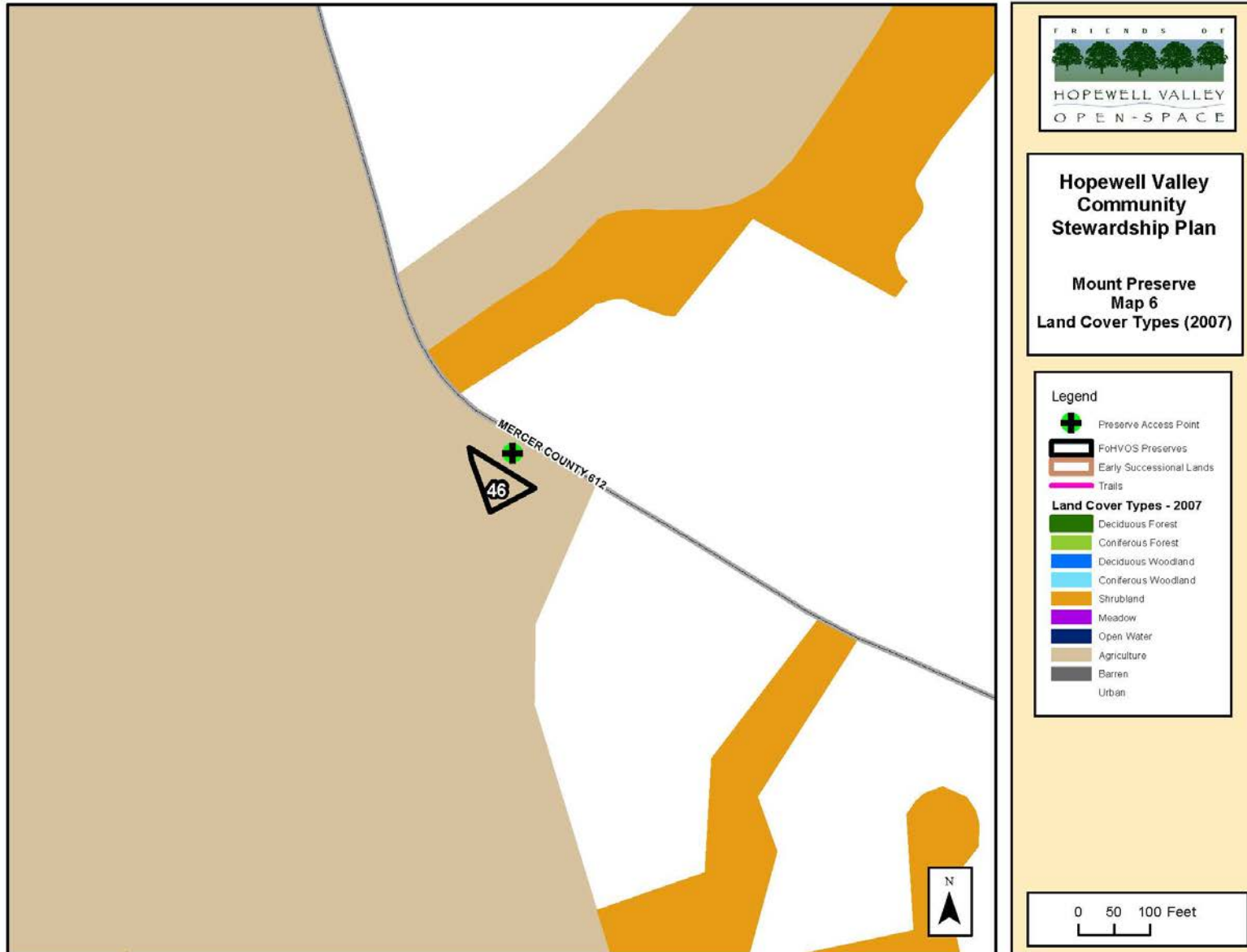
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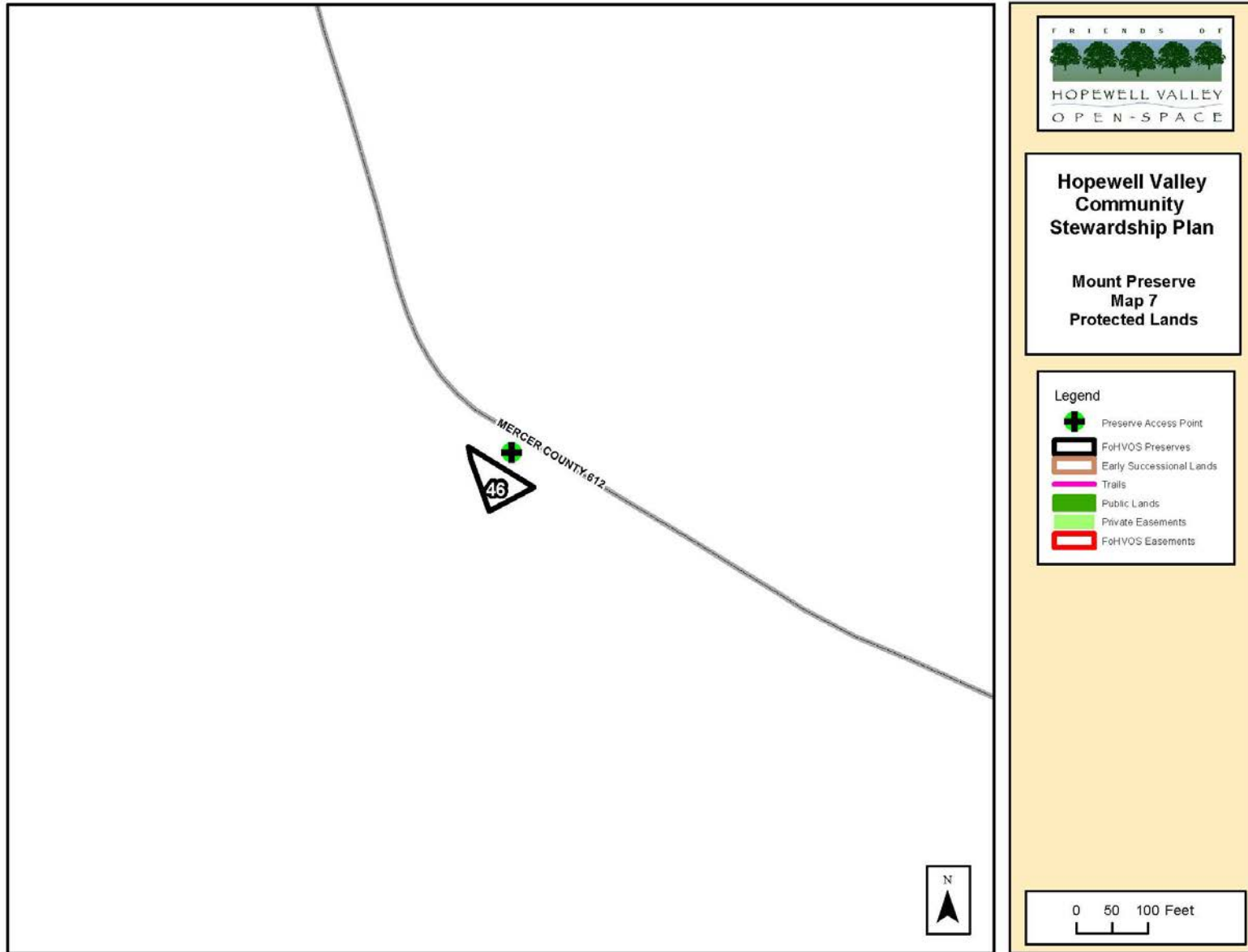
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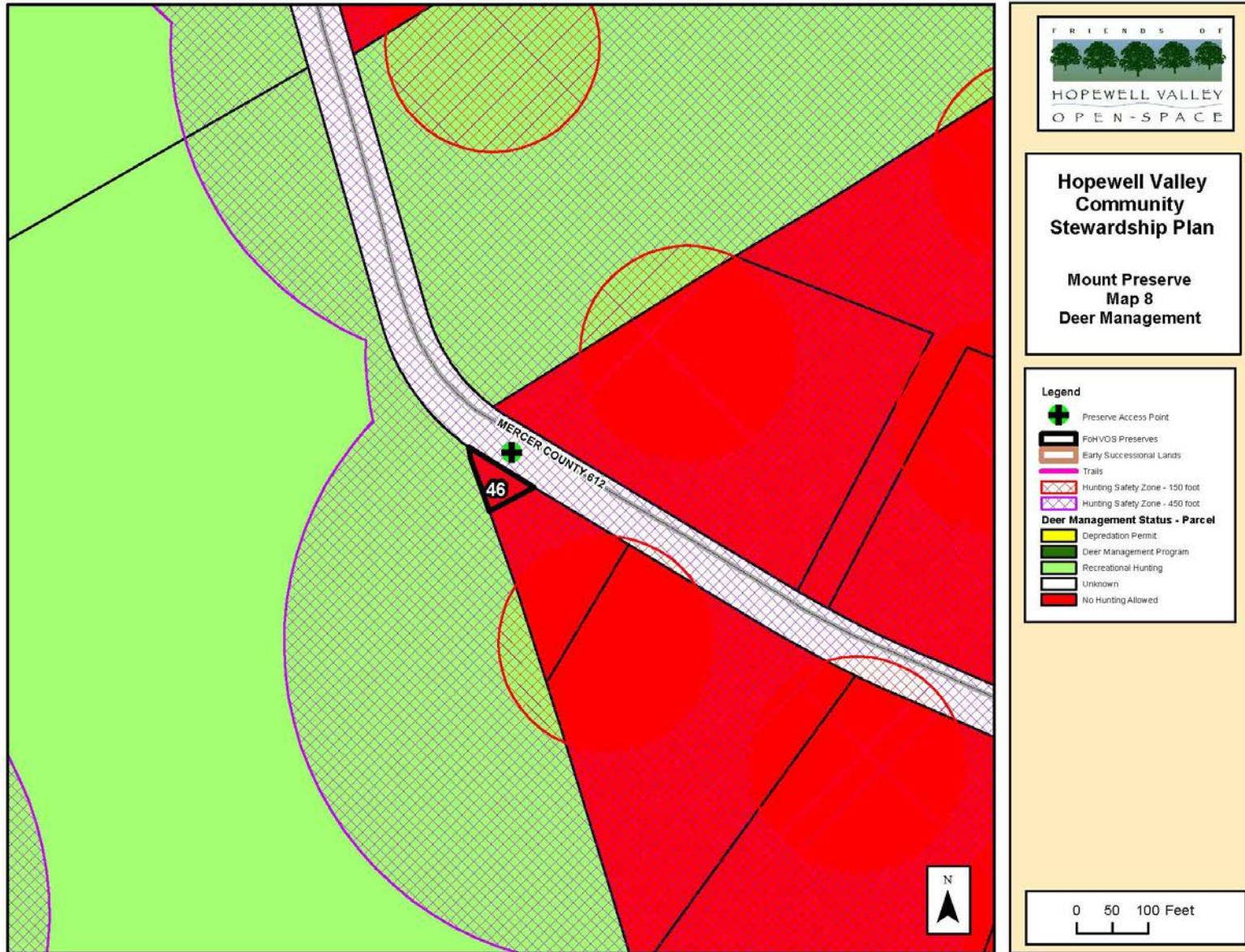


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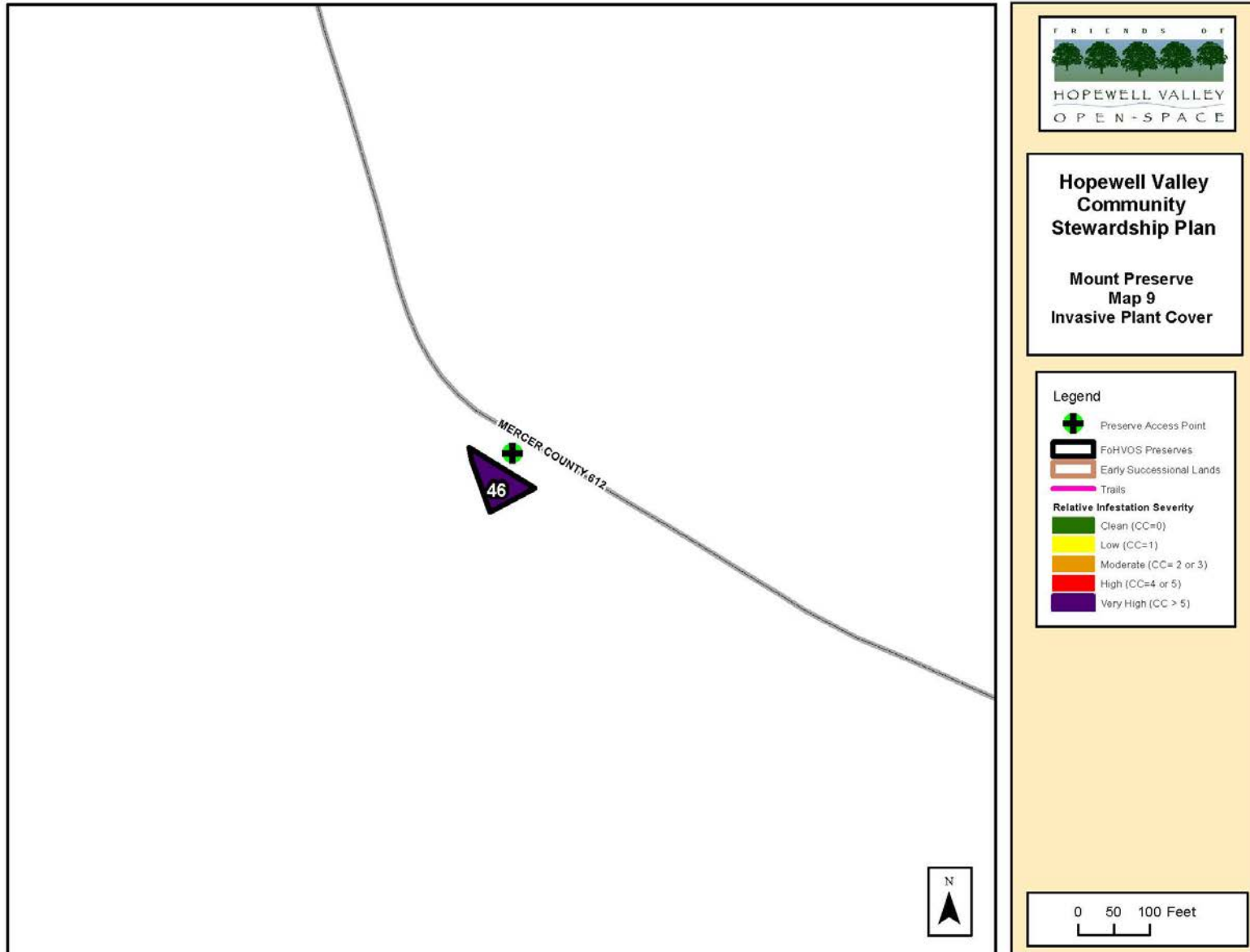




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Community  
Stewardship Plan**

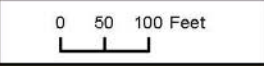
**Mount Preserve  
Map 9  
Invasive Plant Cover**

**Legend**

- Preserve Access Point
- FoHVOS Preserves
- Early Successional Lands
- Trails

**Relative Infestation Severity**

- Clean (CC=0)
- Low (CC=1)
- Moderate (CC= 2 or 3)
- High (CC=4 or 5)
- Very High (CC > 5)



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**Appendix 17.  
Nayfield Preserve**

**Acreage:** 56.86

**Block and Lot:** B25, L3.01

**Ownership:** FoHVOS (73%) and NJDEP (27%)

**Year(s) Purchased:** 2006

**Location & Access:** Preserve is located on the north side of Route 518, 0.5 miles west of Route 579. Preserve entrance is a dirt road with a gravel three car parking area. Nearest street address: 312 Route 518/Lambertville-Hopewell Road, Lambertville, NJ 08530.

**Structures:** None.

Additional property information is summarized in Appendix W. The following Preserve maps are provided at the end of this document:

- Map 1 2007 Aerial Photography
- Map 2 1930 Aerial Photography
- Map 3 Topography
- Map 4 Bedrock Geology
- Map 5 Soils
- Map 6 Land Cover Types (2007)
- Map 7 Protected Lands
- Map 8 Deer Management
- Map 9 Invasive Plant Cover (Relative Infestation Severity for all species)

**Website Description:**

**Nayfield Preserve** was historically used for agriculture, including cropland and white pine plantation. However, the northeastern and northwestern corners were forested in 1930 and harbor an array of tree species, woodland wildflowers and shrubs such as American beech, toothwort, bloodroot, mayapple, witch hazel and maple leaf viburnum. A trail loops through the preserve's meadow and forest habitats. It is co-owned with the New Jersey Department of Environmental Protection.

**BROAD PROPERTY DESCRIPTION**

The Nayfield Preserve (see Map 1) is located at the north-central section of the township. The topography (see Map 3) is primarily flat at 90 feet above sea level.

Based upon analysis of NJDEP's 2007 Land Use/Land Cover dataset, the preserve contains eight broad plant communities: Coniferous Forest (> 50% canopy) - Upland, Deciduous Forest (> 50% canopy) - Upland, Coniferous Woodland (10-50% canopy) - Upland, Deciduous Woodland (10-50% canopy) - Upland, Shrubland (< 10% canopy, > 25% shrub cover) - Upland, Deciduous Forest (> 50% canopy) - Wetland, Agricultural Lands and Urban Lands. Land Use/Land Cover is summarized in Appendix X and illustrated in Map 6.

Historically, Nayfield preserve was primarily used for agriculture. The Preserve was purchased from the Hunt family by Ronald Nayfield in the late 1950's. Portions of the property were used, in rotation, for various agricultural crops including corn and hay. Cows were maintained on the property and were

## **Hopewell Valley Community Stewardship Plan Friends of Hopewell Valley Open Space**

allowed to graze pastures. The current wet meadow had primarily been used as a hayfield in recent years. However, corn was attempted on this field within the recent past (< 10 years ago). Severe deer browse led to abandonment of this activity by a local farmer (Sansone).

The northeastern and northwestern corners were forested in 1930. These small areas are part of larger 1930s forested tracts of approximately 30 and 43 acres, respectively. These areas contain the highest density of native plant species with a canopy of beech and understory of witch hazel and maple leaf viburnum.

The younger forest patches consist of ash and red maple with an understory of shrubby honeysuckle, mayapple, blackhaw, autumn olive, multiflora rose, and Japanese barberry. Most recently established forests consist of red cedar, Asiatic bittersweet and autumn olive. The white pine plantation was an understory of ash seedlings and garlic mustard. The current white pine plantations were planted in the early 1960's on former corn fields. Forestry activities appear to have occurred within the last 10 years along the western boundary of the Preserve. Additional forestry activities are ongoing along the eastern Preserve boundary (numerous marked trees).

The meadow (Field 47, 4.1 acres) has been mowed annually for the last several years to minimize woody species. The species composition includes goldenrods, swamp rose, dogbane, purple loosestrife, boneset, elderberry, *Rubus* sp., and soft rush. Multiflora rose, autumn olive, shrub honeysuckle, red cedar, and blackhaw viburnum ring the meadow. The southeastern corner of the field is privately owned, and has not been mowed in several years.

The preserve has one type of bedrock geology--the Lockatong formation. See Map 4.

The preserve has five soil types (see Map 5) with Chalfont silt loam, 0 to 2 percent slopes; Doylestown and Reaville variant silt loams, 0 to 2 percent slopes; and Quakertown silt loam, 2 to 6 percent slopes being the three most common types. The preserve's soils are described in Appendix Y.

### **CONSERVATION VALUES**

Based on Natural Heritage data, ENSP Landscape Project, 1930s forest presence/absence et al. the Preserve has the highest weighted Ecological Value at >75%. See Appendix A for a description of ranking factors.

**Forest and Woodland Communities:** The forest patch found on the Preserve and surrounding area is an important stop-over habitat (spring and fall resting and feeding) for migratory species. The fragmented nature of the forest and the lack of a woodland shrub layer reduces the chance of nesting and successful breeding.

The understory of this preserve shows a remarkable diversity and regeneration of native herbs and woody species. The deer-preferred maple leaf viburnum has been observed in flower on the preserve. However, woody understory vegetation and herbs remain far below desired levels.

**Old forest:** Based upon analysis of 1930 aerial photography, the northeastern and northwestern corners were forested in 1930. These small areas are part of larger 1930s forested tracts of approximately 30 and 43 acres, respectively. These areas contain the highest density of native plant species with a canopy of beech and understory of witch hazel and maple leaf viburnum. See Map 2.



## **Hopewell Valley Community Stewardship Plan Friends of Hopewell Valley Open Space**

### **Early Successional Communities:**

**Shrublands:** The shrubland is composed of invasive species.

**Meadows/Grasslands:** The meadow is diverse and includes goldenrods, asters, mountain mint, beardtongue, milkweed, blue vervain, ironweed, Indian grass, agrimony, ragwort and jewelweed. Blue winged warbler has identified by call during spring breeding/migration in the meadow's edge. Bluebird boxes have been installed in the field and have been occupied.

**Waterbodies:** A tributary of the Stony Brook flows northeast and roughly parallel to the entire length of the northern boundary of the Preserve. Very small feeder streams (unmapped) and overland flow join to initiate the tributary at Harbourton-Rocktown Road (County Route 579) approximately ¼ mile southwest of the Preserve boundary. After traveling through the Preserve, the tributary flows approximately ¾ mile northeast before reaching the main branch of the Stony Brook. The tributary flows seasonally and its bed consists of large, flat rocks with little fine material (indicating a history of strong flows removing small stones and loose sand/silt). It contains several small pools that remain filled during relatively dry periods. There is a much smaller tributary located south and east of the main tributary, which flows to the northeast and joins the larger tributary approximately 0.1 miles from the eastern Preserve boundary. This smaller tributary is fed by very small feeder streams and overland flow primarily from lands on the Preserve and adjacent properties to the west.

Wood frog activity has been observed in the former farm drainage ditches along the northern border of the meadow and in an undocumented vernal pool near the brook (accessible from the preserve's trail). Within the preserve is a possible vernal pool, in which wood frog eggs have been laid. Success of the eggs is unknown, as the pool seems to dry early.

### **Rare Species:**

**Rare Plants:** None documented on the Preserve. Natural Heritage shows no species.

**Rare Animals:** The Landscape Project suggests habitat for State Special Concern species. The following species have been observed at the Preserve: box turtle (male), Water thrush (species not identified) browsing in the Stony Brook tributary, blue winged warbler was identified by call during spring breeding/migration in the meadow's edge, wood thrush observed on nest, while an additional wood thrush made alarm calls from a nearby tree.

See Appendix L for a list of species.

## **THREATS**

**Deer:** White-tailed deer have suppressed much of the native community. However, parts of the preserve (excluding the plantation and young cedar forest) show promising recovery of the herbaceous and understory layer. Forest health monitoring was performed in 2006/2007 and 2010/2011 (See main plan, Table 9). Results suggest a significant decrease of deer browse on planted tree seedlings (from 62 to 18%) in recent years, but the woody understory remains relatively low across the Preserve (approximately 20%).

**Invasive species:** In 2008 staff began walk-through surveys for emerging invasive species on all preserves. Mapping documented each species and its population size. No species were detected. See [www.njisst.org](http://www.njisst.org) for the current status of emerging invasive species at the Preserve.

In 2011 staff completed surveys for invasive plant species on all preserves (see Map 9). Mapping documented each species found and its population size (See Table 1 below). The five species with the

**Hopewell Valley Community Stewardship Plan**  
**Friends of Hopewell Valley Open Space**

highest infestation scores include: Multiflora Rose, Japanese Stiltgrass, Japanese Honeysuckle, Wineberry, and Garlic Mustard.

**Other:** ATV trails were cut through portions of the preserve and adjacent private land. Letters were sent to neighbors and Township police were called. Trespass issues have ceased.

**STRATEGIES and ACTIONS:**

**Forest and Woodland Habitat Stewardship:** The forest offers an opportunity to preserve the rich native plant communities still present, but diminished, in the preserve's forest. To this end, annual surveys for and eradication of emerging invasive species should continue.

No action is recommended for widespread invasive species, except for winged burning bush and Asiatic bittersweet. All fruiting and flowering individuals should be treated with basal bark or cut stump (in the case of vines on trees) methods. Reduced deer density will allow the native plant communities to recover and compete with the widespread invasive species over time.

**Early Successional Habitat Stewardship:** A biannual winter mowing or burning regime is recommended to maintain early successional habitat and remove invasive woody plants. Selective control of invasive species is recommended (See Table 1 below).

The mowing regime coupled with the presence of the purple loosestrife biocontrol (beetle already present upon release of additional beetles by Phillip Alampi Beneficial Insect Rearing Laboratory in 2009) should improve the species composition over time. Intensive restoration activities are unnecessary, considering the existing native species composition.

Presence of native woody plants such as swamp rose, elderberry, and blackhaw viburnum support the presence of edge nesting birds like the blue-winged warbler.

For habitat goals and maintenance schedule see Appendix T & U.

**Deer Management:** The preserve is enrolled in the DMP with bow and gun hunting. See Map 8 for delineations of the 150' and 450' safety zones and hunting status.

**Rare Species Management:** All native plant communities should be maintained to provide habitat. Determine breeding status of species present.

**Neighboring Lands:** See Map 7 for adjacent protected lands.

**Waterbodies Management:** The tributary of the Stony Brook within the Preserve is too short to merit restoration efforts.

**Undesirable Activities Management:** An unknown Preserve visitor appears to run dogs through the Preserve ahead of peak hunting activities in December. Special monitoring of the Preserve is recommended, especially on Sundays in December, to prevent this activity, which only temporarily moves deer off the Preserve and prevents harvesting that will improve forest health.

**Scientific Research Assessment:** The Preserve is available for scientific research.

**Recreational Opportunities Assessment:** This property currently has a 1.5 mile loop trail and parking. Currently, there are no opportunities to connect to a regional trail system—none yet exist

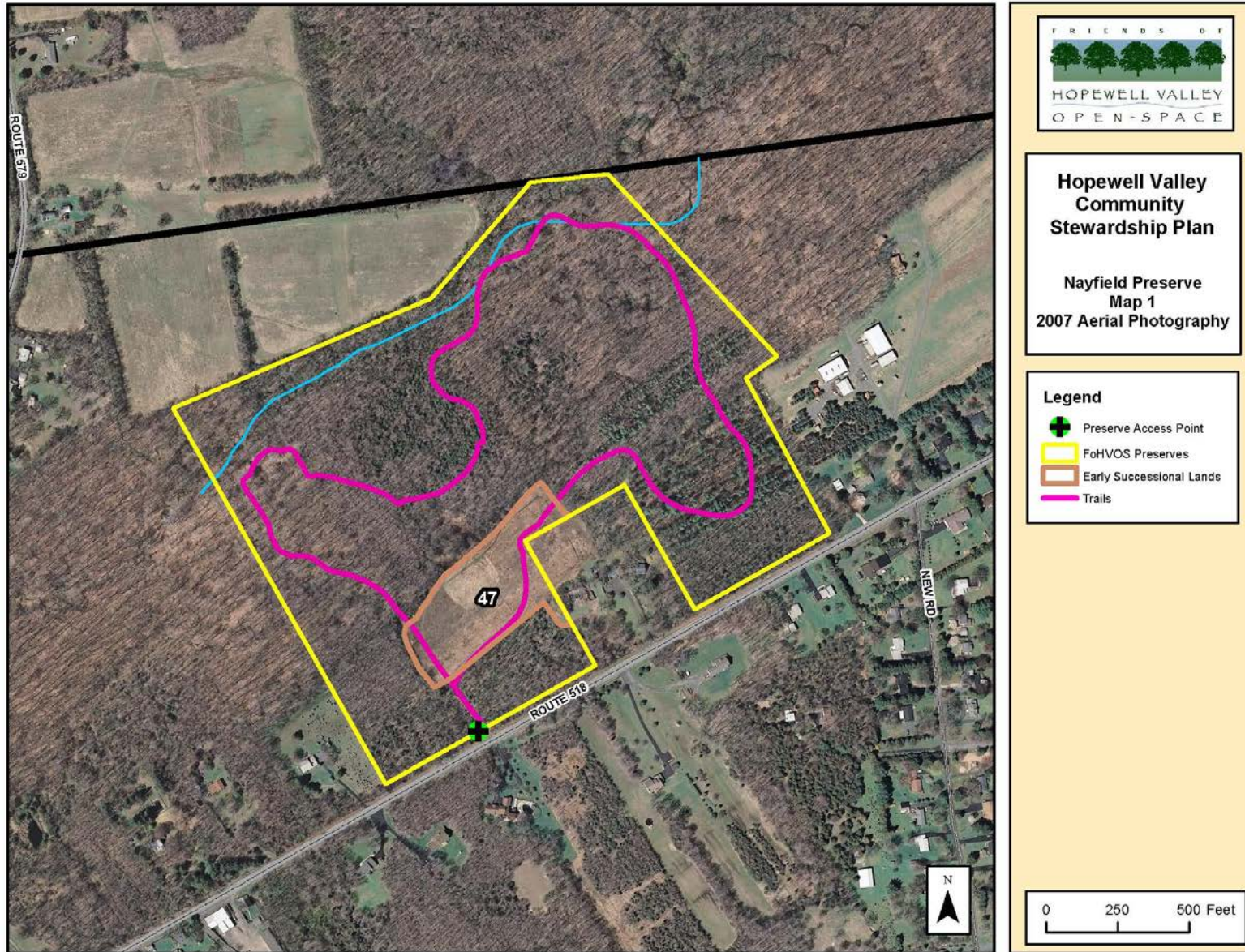
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**Table 1. Invasive Plants – Species Abundance and Treatment Recommendations**

Scientific Name	Common Name	Infestation Index Score <sup>1</sup>	Total Acres Present	Percent of Preserve Area Present	Treatment Recommendation	LOE Estimate (Hours)	Acreage by Percent Ground Cover Categories						
							Category 0: 0%	Category: Trace	Category 1: 1-10%	Category 2: 10-25%	Category 3: 25-50%	Category 4: 50-75%	Category 5: 75-100%
<i>Acer palmatum</i>	Japanese Maple	0.0	0.0	0.0	N/A		56.90	0.0	0.0	0.0	0.0	0.0	0.0
<i>Acer platanoides</i>	Norway Maple	0.0	0.0	0.0	N/A		56.90	0.0	0.0	0.00	0.0	0.00	0.0
<i>Ailanthus altissima</i>	Tree-of-Heaven	0.0	0.0	0.0	N/A		56.90	0.0	0.0	0.0	0.0	0.0	0.0
<i>Alliaria petiolata</i>	Garlic Mustard	16.4	12.8	22.4	None		44.13	2.0	8.0	0.0	2.8	0.0	0.0
<i>Artemisia vulgaris</i>	Common Mugwort	4.0	4.0	7.0	Control - Field Maintenance	Strategy 3B	52.93	0.0	4.0	0.0	0.0	0.0	0.0
<i>Arthraxon hispidus</i>	Small Carpgrass	0.0	0.0	0.0	N/A		56.90	0.0	0.0	0.0	0.0	0.0	0.0
<i>Berberis thunbergii</i>	Japanese Barberry	3.3	6.4	11.3	None		50.48	3.2	3.3	0.0	0.0	0.0	0.0
<i>Cardamine impatiens</i>	Narrow-leaved Bittercress	0.0	0.0	0.0	N/A		56.90	0.0	0.0	0.0	0.0	0.0	0.0
<i>Catalpa bignonioides</i>	Northern Catalpa	0.0	0.0	0.0	N/A		56.90	0.0	0.0	0.0	0.0	0.0	0.0
<i>Celastrus orbiculatus</i>	Asiatic Bittersweet	0.0	5.2	9.1	Control - Treat Fruiting Plants	5	51.72	5.2	0.0	0.0	0.00	0.0	0.0
<i>Centurea sp.</i>	Knapweed sp.	0.0	0.0	0.0	N/A		56.90	0.0	0.0	0.0	0.0	0.0	0.0
<i>Cirsium arvense</i>	Canada Thistle	0.0	0.0	0.0	N/A		56.90	0.0	0.0	0.0	0.0	0.0	0.0
<i>Dipsacus sylvestris</i>	Teasel	0.0	0.0	0.0	N/A		56.90	0.0	0.00	0.0	0.0	0.0	0.0
<i>Eleagnus umbellata</i>	Autumn Olive	3.7	12.1	21.2	Control - Field Maintenance	Strategy 3B	44.84	8.8	3.2	0.0	0.0	0.0	0.1
<i>Euonymus alata</i>	Winged Burning Bush	2.8	17.6	30.9	Control - Treat Fruiting Plants	15	39.29	14.8	2.8	0.0	0.0	0.0	0.00
<i>Iris pseudoacris</i>	Yellow Iris	0.0	0.0	0.0	N/A		56.90	0.0	0.0	0.0	0.0	0.0	0.0
<i>Lespedeza cuneata</i>	Chinese Bushclover	0.0	0.0	0.0	N/A		56.90	0.0	0.0	0.0	0.0	0.0	0.0
<i>Ligustrum obtusifolium</i>	Border Privet	2.4	8.1	14.2	None		48.81	5.7	2.38	0.0	0.0	0.0	0.0
<i>Lonicera japonica</i>	Japanese Honeysuckle	59.1	35.7	62.7	None		21.24	3.6	11.7	13.6	6.7	0.0	0.0
<i>Lonicera maackii</i>	Amur Honeysuckle	0.0	0.0	0.0	N/A		56.90	0.0	0.0	0.0	0.0	0.0	0.0
<i>Lonicera morrowii</i>	Morrow's Honeysuckle	14.6	16.5	29.1	None		40.37	4.3	9.8	2.4	0.00	0.0	0.0
<i>Lysimachia nummularia</i>	Moneywort	0.0	0.0	0.0	N/A		56.90	0.0	0.0	0.0	0.0	0.0	0.0
<i>Lythrum salicaria</i>	Purple Loosestrife	7.9	4.0	7.0	None - Check for biocontrol agent		52.93	0.0	0.0	4.0	0.0	0.0	0.0
<i>Malus toringo</i>	Toringo Crabapple	2.1	2.1	3.7	Control - Field Maintenance	Strategy 3B	54.80	0.0	2.1	0.0	0.0	0.0	0.0
<i>Microstegium vimineum</i>	Japanese Stiltgrass	118.9	56.8	99.8	None		0.10	3.5	24.3	7.9	9.5	7.7	3.9
N/A	Non-native, cool season grass	0.0	0.0	0.0	N/A		56.90	0.0	0.0	0.0	0.0	0.0	0.0
<i>Phalaris arundinacea</i>	Reed Canary Grass	0.0	0.0	0.0	N/A		56.90	0.0	0.0	0.0	0.0	0.0	0.0
<i>Phragmites australis</i>	Common Reed	0.0	0.0	0.0	N/A		56.90	0.0	0.0	0.0	0.0	0.0	0.0
<i>Polygonum cuspidatum</i>	Japanese Knotweed	0.0	0.0	0.0	N/A		56.90	0.0	0.0	0.0	0.0	0.0	0.0
<i>Polygonum perforatum</i>	Mile-a-Minute	0.0	0.0	0.0	N/A		56.90	0.0	0.0	0.0	0.0	0.0	0.0
<i>Pyrus calleryana</i>	Callery Pear	0.0	0.0	0.0	N/A		56.90	0.0	0.0	0.0	0.0	0.0	0.0
<i>Ranunculus ficaria</i>	Lesser Celandine	0.0	0.0	0.0	N/A		56.90	0.0	0.0	0.0	0.0	0.0	0.0
<i>Robinia pseudoacacia</i>	Black Locust	0.0	0.0	0.0	N/A		56.90	0.0	0.0	0.0	0.0	0.0	0.0
<i>Rosa multiflora</i>	Multiflora Rose	155.9	55.4	97.3	Control - Field Maintenance	Strategy 3B	1.54	7.6	13.0	3.6	8.3	3.4	19.4
<i>Rubus pheonculusius</i>	Wineberry	18.3	16.0	28.0	Control - Field Maintenance	Strategy 3B	40.95	0.0	13.6	2.4	0.0	0.0	0.0
<i>Securigera varia</i>	Crowfoot	0.0	0.0	0.0	N/A		56.90	0.0	0.0	0.0	0.0	0.0	0.0
<i>Viburnum dilatatum</i>	Linden Viburnum	0.0	0.0	0.0	N/A		56.90	0.0	0.0	0.0	0.0	0.0	0.0
<i>Viburnum sieboldii</i>	Siebold's Viburnum	0.0	0.0	0.0	N/A		56.90	0.0	0.0	0.0	0.0	0.0	0.0
<i>Wisteria floribunda</i>	Japanese Wisteria	0.0	0.0	0.0	N/A		56.90	0.0	0.0	0.0	0.0	0.0	0.0
<b>Total LOE</b>						<b>20</b>							

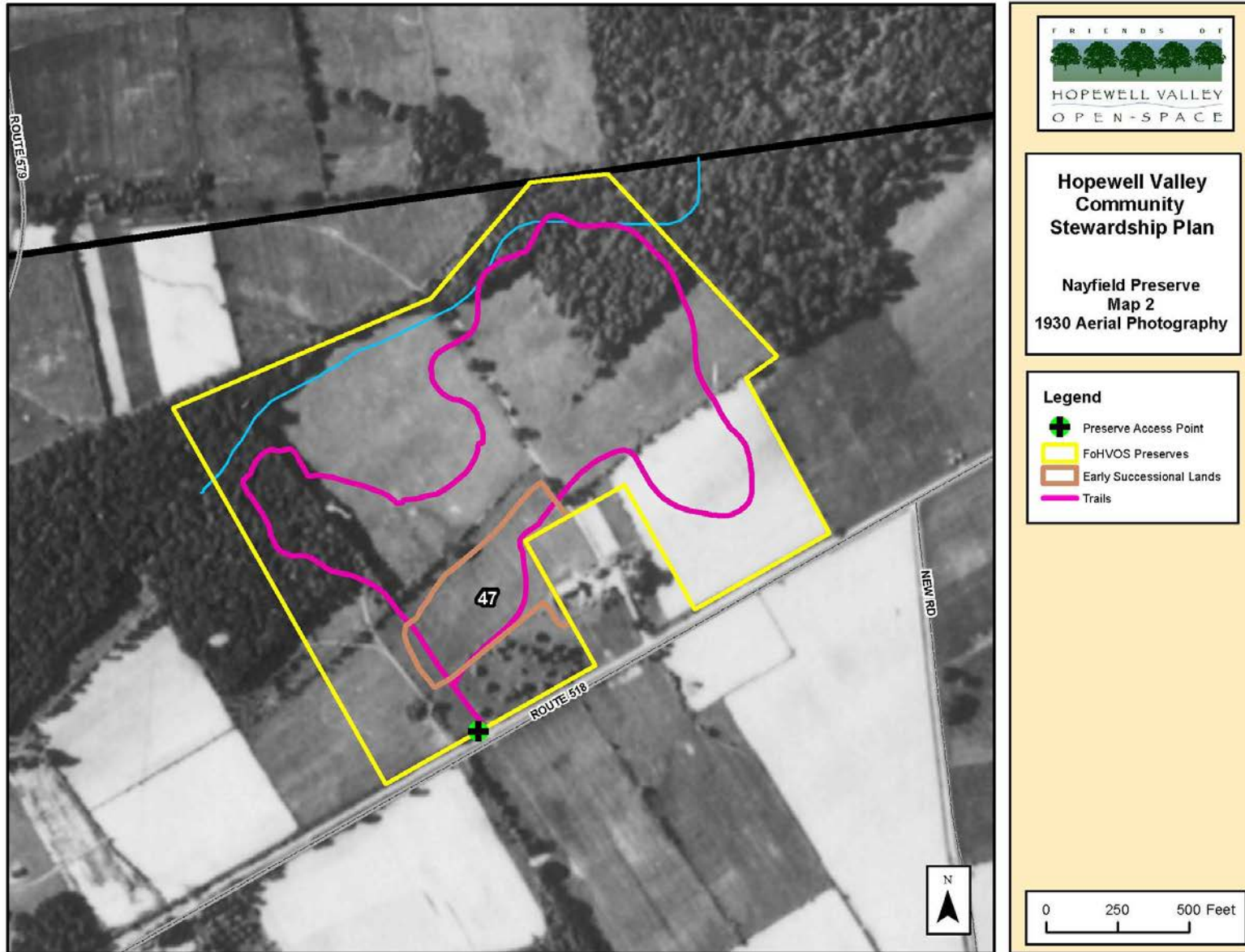
<sup>1</sup>The Infestation Index Score combines the extent of acreage infested and the intensity of the infestation. It was derived by multiplying the cover class number by the number of acres within each cover class.

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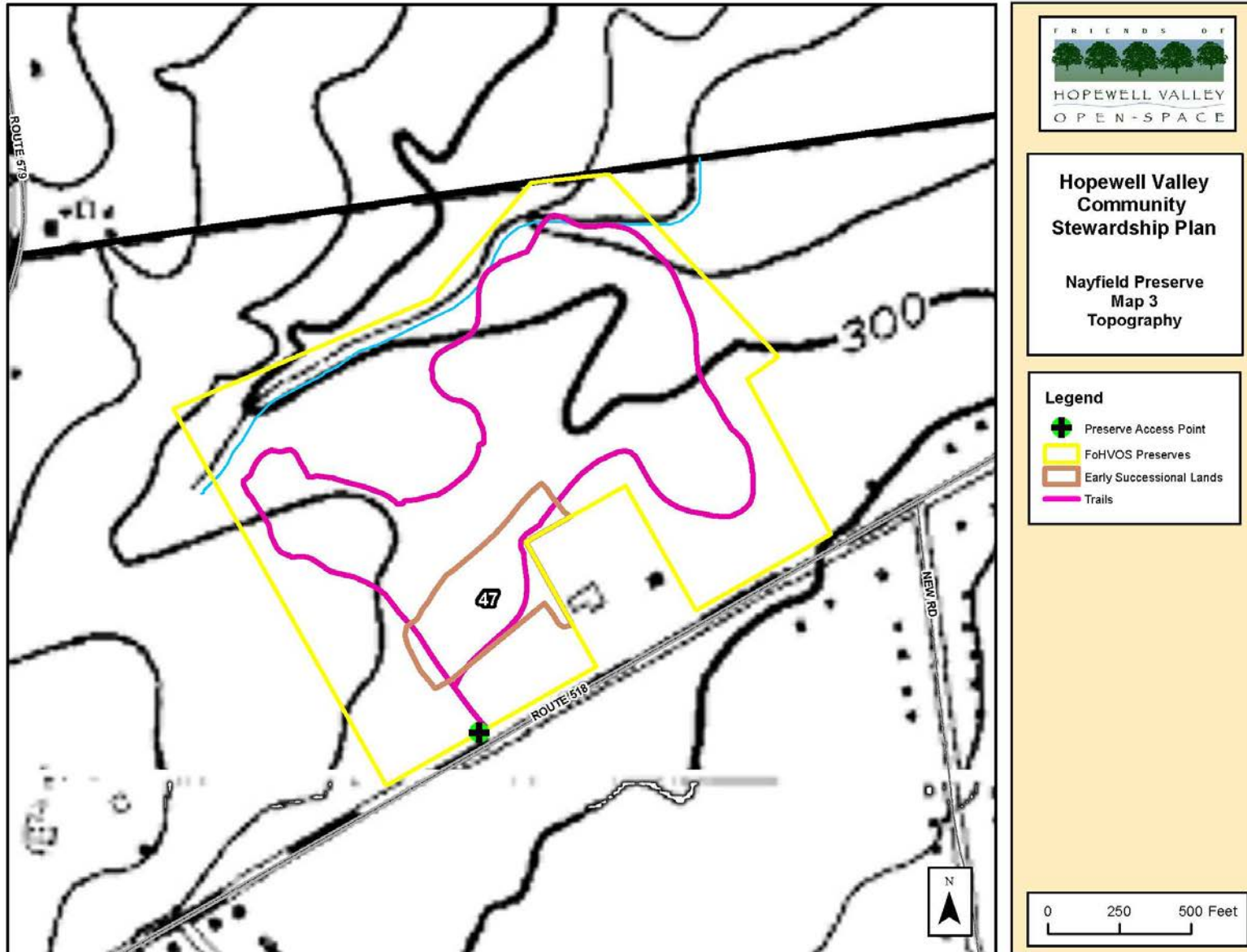




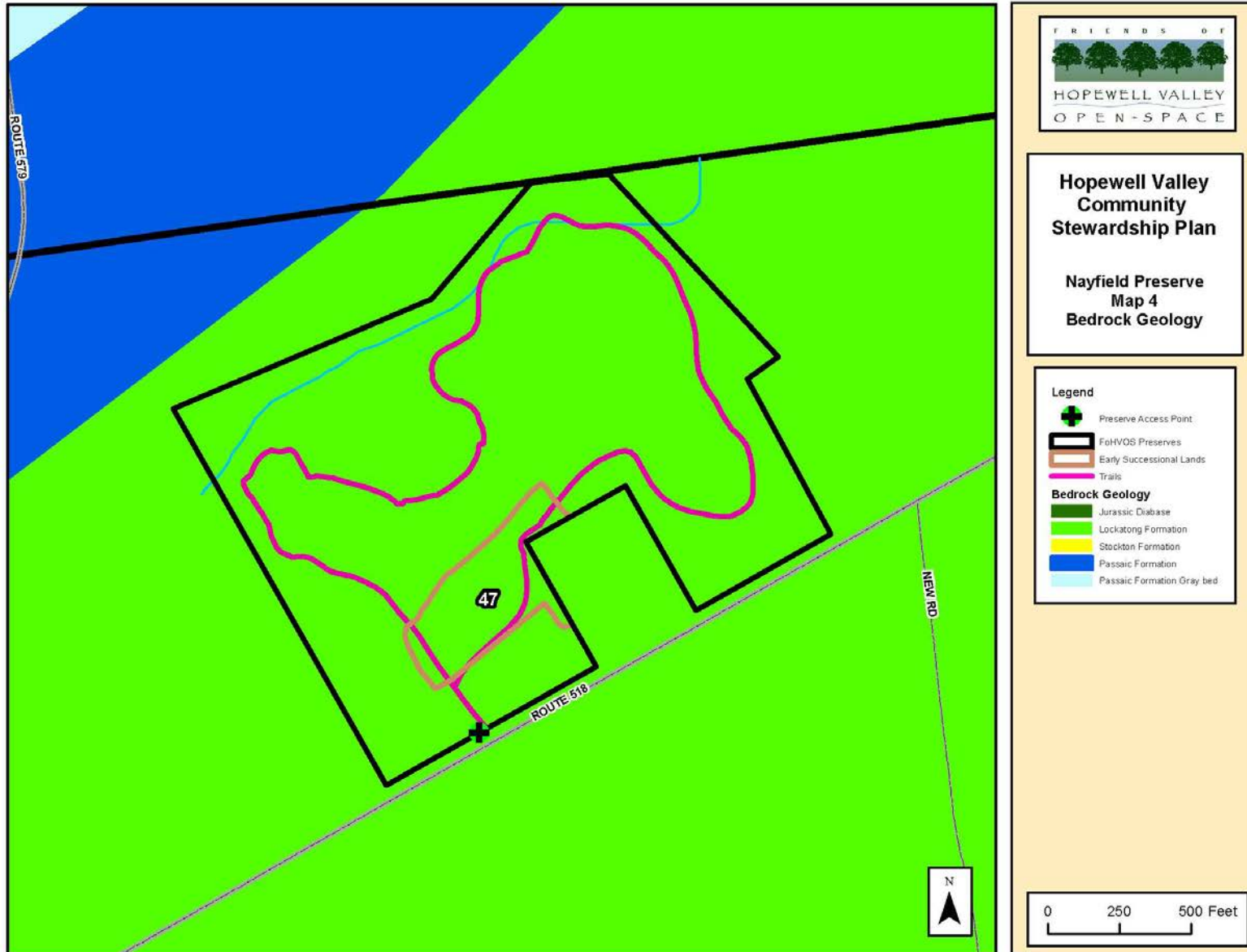
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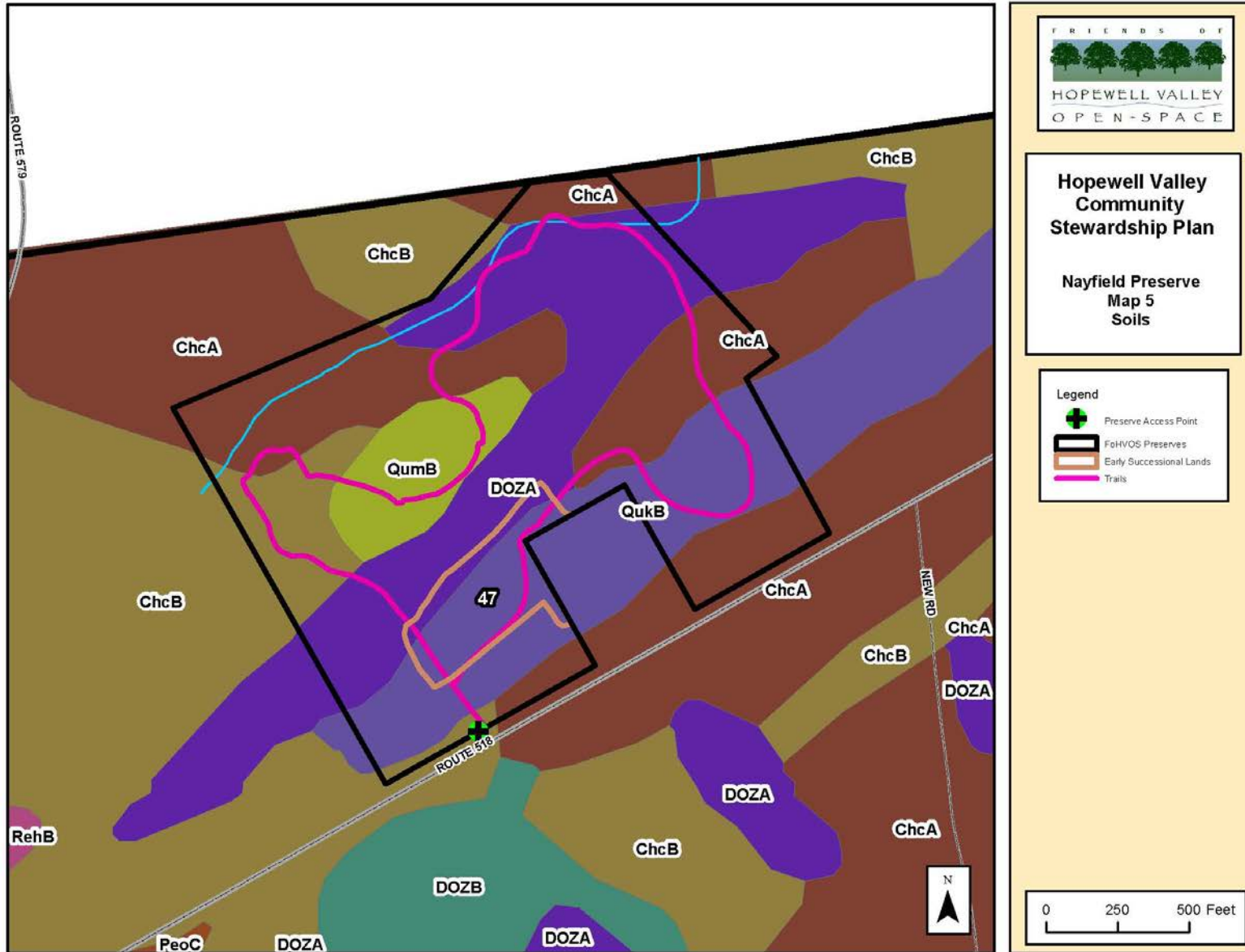


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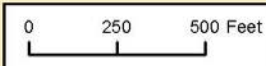
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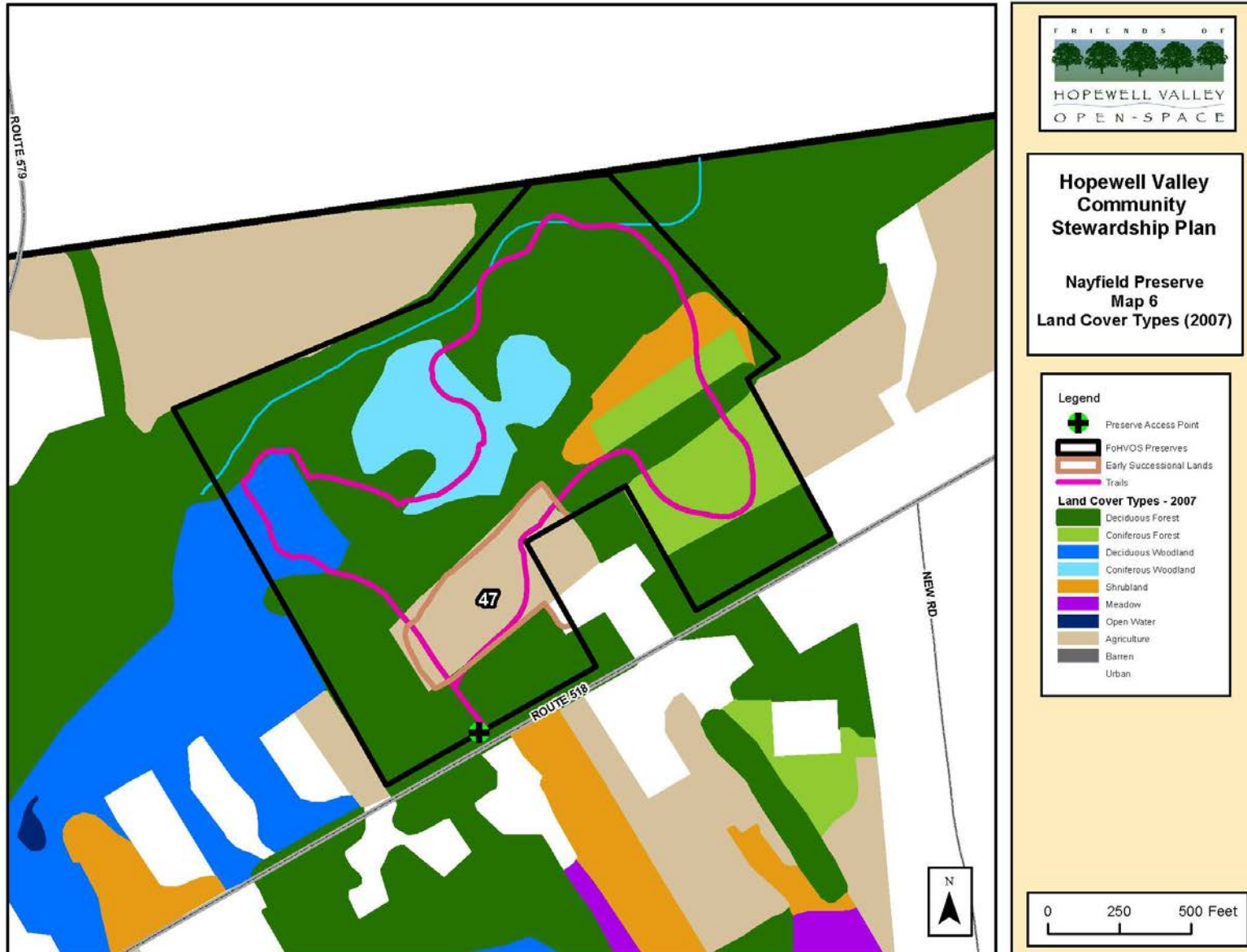
**Nayfield Preserve  
Map 5  
Soils**

- Legend**
- Preserve Access Point
  - FohVOS Preserves
  - Early Successional Lands
  - Trails





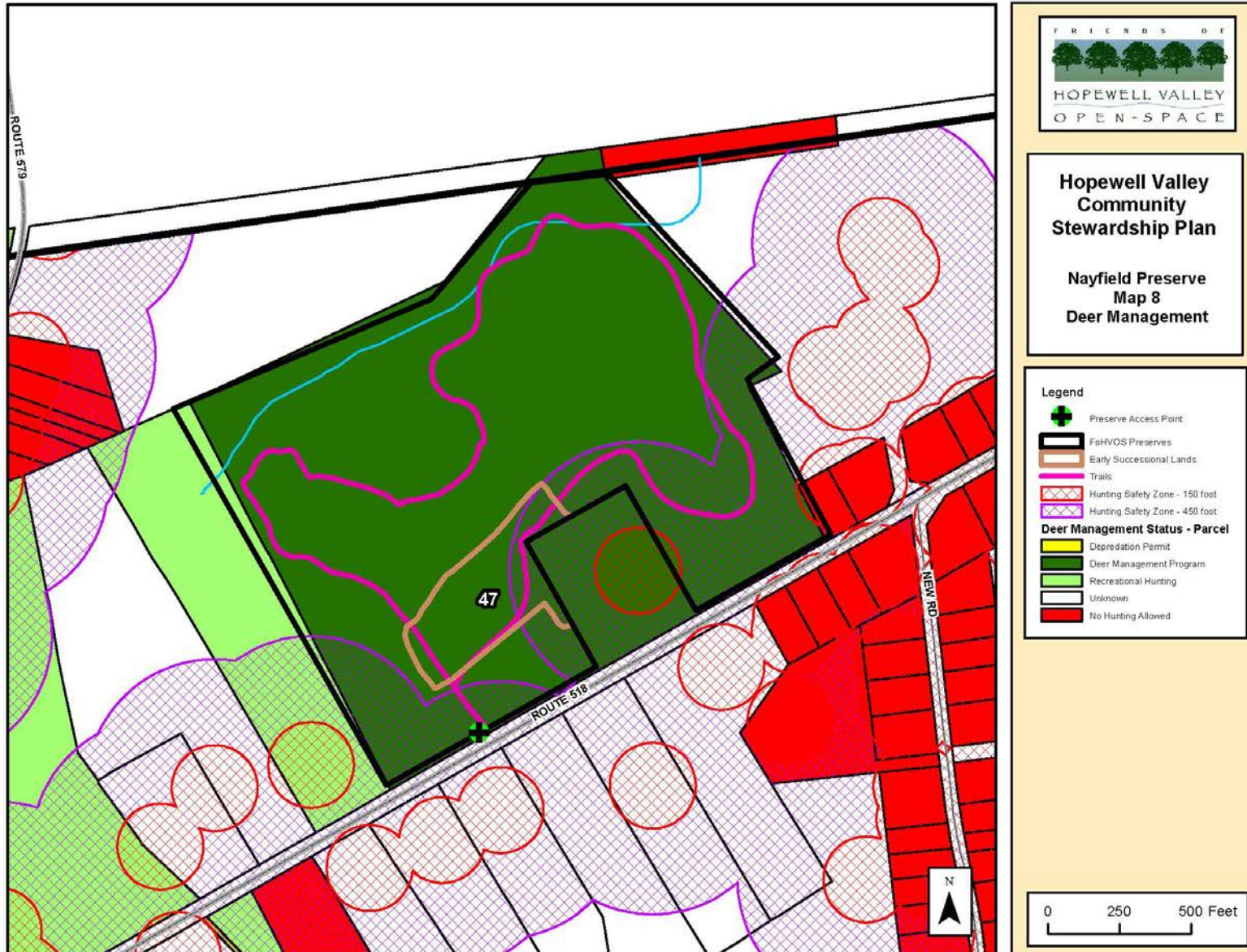
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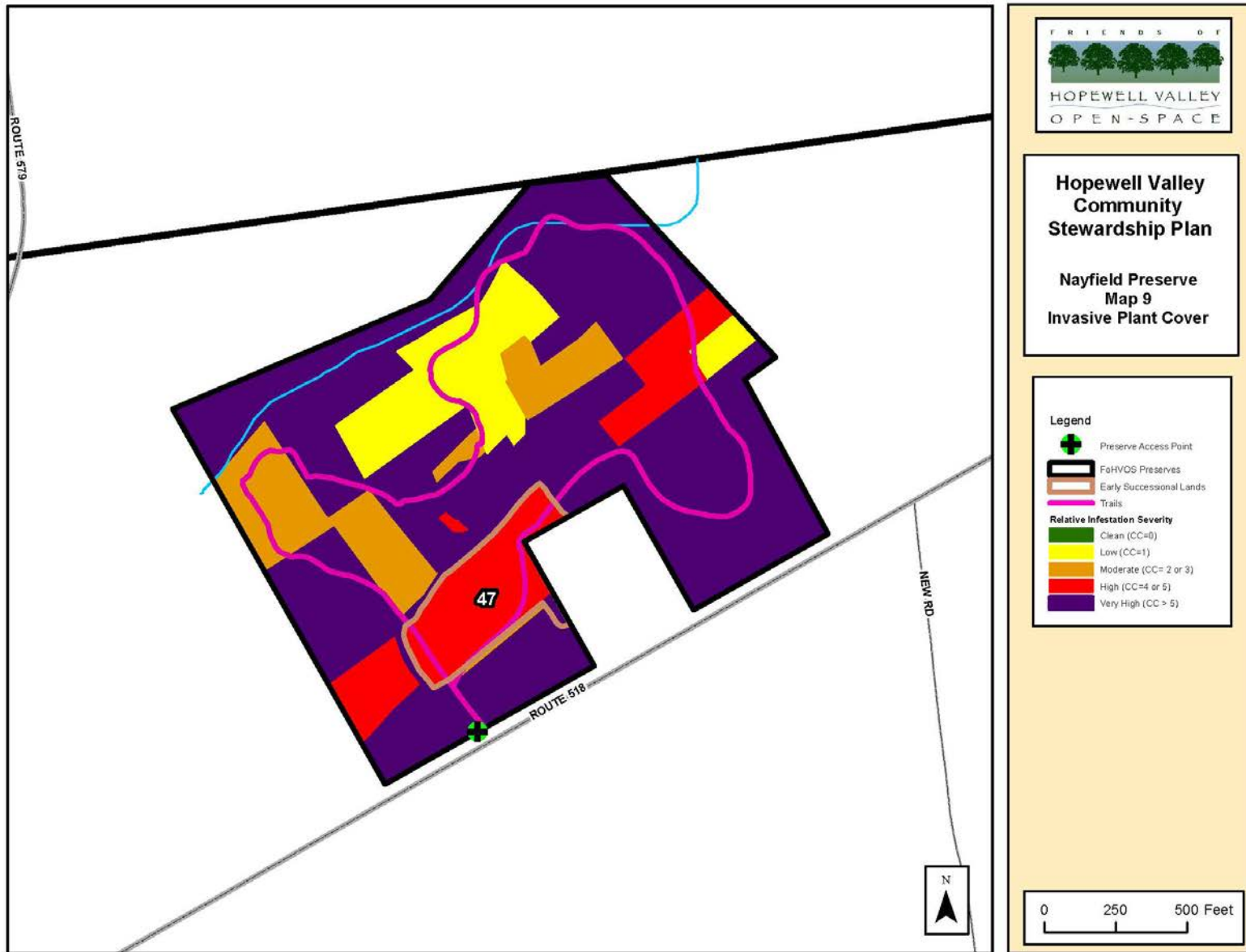


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**Appendix 18.  
Nexus Preserve**

**Acreage:** 24.52

**Block and Lot:** Multiple. B62; L12.04, 12.07, 12.08; B 62.01, L80.15

**Ownership:** FoHVOS (100%)

**Year(s) Purchased:** 2001

**Location & Access:** Preserve is located approximately one mile east of Bear Tavern Road/Route 579 on Pennington-Harbourton Road. Parking access along road shoulder. Additional roadside access along Hallett Way and Baker Way along the detention basins owned by FoHVOS (but managed by High Pointe at Hopewell Homeowners Association). **Nearest street address:** 350 Pennington Harbourton Road, Pennington, NJ 08534.

**Structures:** None.

Additional property information is summarized in Appendix W. The following Preserve maps are provided at the end of this document:

- Map 1 2007 Aerial Photography
- Map 2 1930 Aerial Photography
- Map 3 Topography
- Map 4 Bedrock Geology
- Map 5 Soils
- Map 6 Land Cover Types (2007)
- Map 7 Protected Lands
- Map 8 Deer Management
- Map 9 Invasive Plant Cover (Relative Infestation Severity for all species)

**Website Description:**

**Nexus Preserve** marks one end of the Jacob's Creek trail where several tributaries of Jacob's Creek converge. The Creek's floodplain is bounded by a steep wooded slope. An upland forest patch of black oak and American beech is visible from Baker Way.

**BROAD PROPERTY DESCRIPTION**

The Nexus Preserve (Map 1) is located at the central Hopewell Township. The topography (see Map 3) is slopes down to Jacob's Creek from 50' to 60' above sea level.

Based upon analysis of NJDEP's 2007 Land Use/Land Cover dataset, the preserve contains seven broad plant communities: Deciduous Forest (> 50% canopy) - Upland, Coniferous Woodland (10-50% canopy) - Upland, Meadows (<25% shrub cover) - Upland, Deciduous Forest (> 50% canopy) - Wetland, Open Water, Agricultural Lands and Urban Lands. Land Use/Land Cover is summarized in Appendix X and illustrated in Map 6.

The preserve's natural plant communities fall into two categories: shrubland and mature forest. Shrublands are dominated by crabapple species, autumn olive, Japanese stiltgrass, shrub honeysuckle, white snakeroot, and Chinese silvergrass. There are two mature forest types. One upland community can

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be found along Hallett Way and is comprised of black oak, American beech and sedges. The mature forest along the banks of the Creek is comprised of sugar maple, Norway maple, ash, spicebush, skunk cabbage (within the floodplain), and lesser celandine. A small patch of stone root (*Collinsonia canadensis*) hints at a richer herb layer before deer overabundance. Two detention basins are maintained as mowed lawn.

The preserve has two types of bedrock geology--the Passaic and Passaic Gray bed formation. See Map 4.

The preserve has eight soil types (see Map 5) with Penn channery silt loam, 6 to 12 percent slopes; Rowland silt loam, 0 to 2 percent slopes, frequently flooded; and Klinesville channery loam, 18 to 35 percent slopes being the three most common types. The preserve's soils are described in Appendix Y.

**CONSERVATION VALUES**

Based on Natural Heritage data, ENSP Landscape Project, 1930s forest presence/absence et al. the Preserve has a weighted Ecological Value at 25-50%. See Appendix A for a description of ranking factors.

**Forest and Woodland Communities:** The forest patch found on the Preserve and surrounding area is an important stop-over habitat (spring and fall resting and feeding) for migratory species. The fragmented nature of the forest and the lack of a woodland shrub layer reduces the chance of nesting and successful breeding.

The forest serves as a narrow buffer to Jacob's Creek. The preserve's forest lacks biodiversity and is largely isolated from more diverse plant communities, though a richer seed bank may be present but suppressed.

**Old forest:** A small upland patch occurs west of Field 48 and a floodplain forest occurred along Jacobs Creek in the southern portion of the Preserve. See Map 2.

**Early Successional Communities:**

**Shrublands:** Shrublands on the preserve are small and dominated by invasive species.

**Meadows/Grasslands:** Detention basins, as they currently stand, have minimal ecological value.

**Waterbodies:** Approximately 2000' of the Jacob's Creek are protected by the preserve. Green heron (WAP Priority Species) was observed foraging in Jacob's Creek near the powerline ROW.

**Rare Species:**

**Rare Plants:** None documented on the Preserve. Natural Heritage shows no species.

**Rare Animals:** The Landscape Project has the as habitat for State Special Concern species.

See Appendix L for a list of species.

**THREATS**

**Deer:** White-tailed deer have suppressed much of the native community. Regeneration of native woody plants is non-existent.

**Invasive species:** In 2008 staff began walk-through surveys for emerging invasive species on all preserves. Mapping documented each species and its population size. Chinese silvergrass and yellow iris

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were detected. The latter species was detected just outside the preserve's boundary. See [www.njisst.org](http://www.njisst.org) for the current status of emerging invasive species at the Preserve.

In 2011 staff completed surveys for invasive plant species on all preserves (see Map 9). Mapping documented each species found and its population size (See Table 1 below). The five species with the highest infestation scores include: Lesser Celandine, Multiflora Rose, Japanese Honeysuckle, Garlic Mustard, and Non-native cool season grass.

Winged euonymus was detected in 2008; mature individuals were treated with cut stump methods.

Forest soils appear highly erosive and lack a humus layer, possibly due to invasive earthworms.

**Other:** ATV trails were cut through portions of the preserve. Letters were sent to neighbors and Township police were called. Trespass issues have ceased in recent years but continue on surrounding properties. Trespass by large vehicles has occurred in the past and communications with neighboring property owners are ongoing.

**STRATEGIES and ACTIONS:**

**Forest and Woodland Habitat Stewardship:** The forest should be maintained as a stream buffer. To this end, biannual surveys for and eradication of emerging invasive species should continue.

No action is recommended for widespread invasive species, except winged euonymus - mature individuals should be treated with basal bark applications as detected. Reduced deer density will allow the native plant communities to recover and compete with the widespread invasive species.

**Early Successional Habitat Stewardship:** Conversion of the detention basins (Fields 48 & 49) to a native wildflower meadow is highly desirable, but will require grant funding following outreach with the homeowner's association. For habitat goals and maintenance schedule see Appendix T & U.

**Deer Management:** The preserve is enrolled in the DMP with bow hunting. See Map 8 for delineations of the 150' and 450' safety zones and hunting status.

**Rare Species Management:** Maintain forest habitat.

**Neighboring Lands:** Seek engagement of homeowner's association in usage of trails. See Map 7 for adjacent protected lands.

**Waterbodies Management:** No activities are recommended.

**Undesirable Activities Management:** Maintain presence on Preserve through hiking, regular trail maintenance, and maintaining secure access points.

**Scientific Research Assessment:** The Preserve is available for scientific research.

**Recreational Opportunities Assessment:** The Preserve contains a portion of the regional Jacob's Creek Trail. Roadside parking access occurs along Pennington-Harbourton Road.

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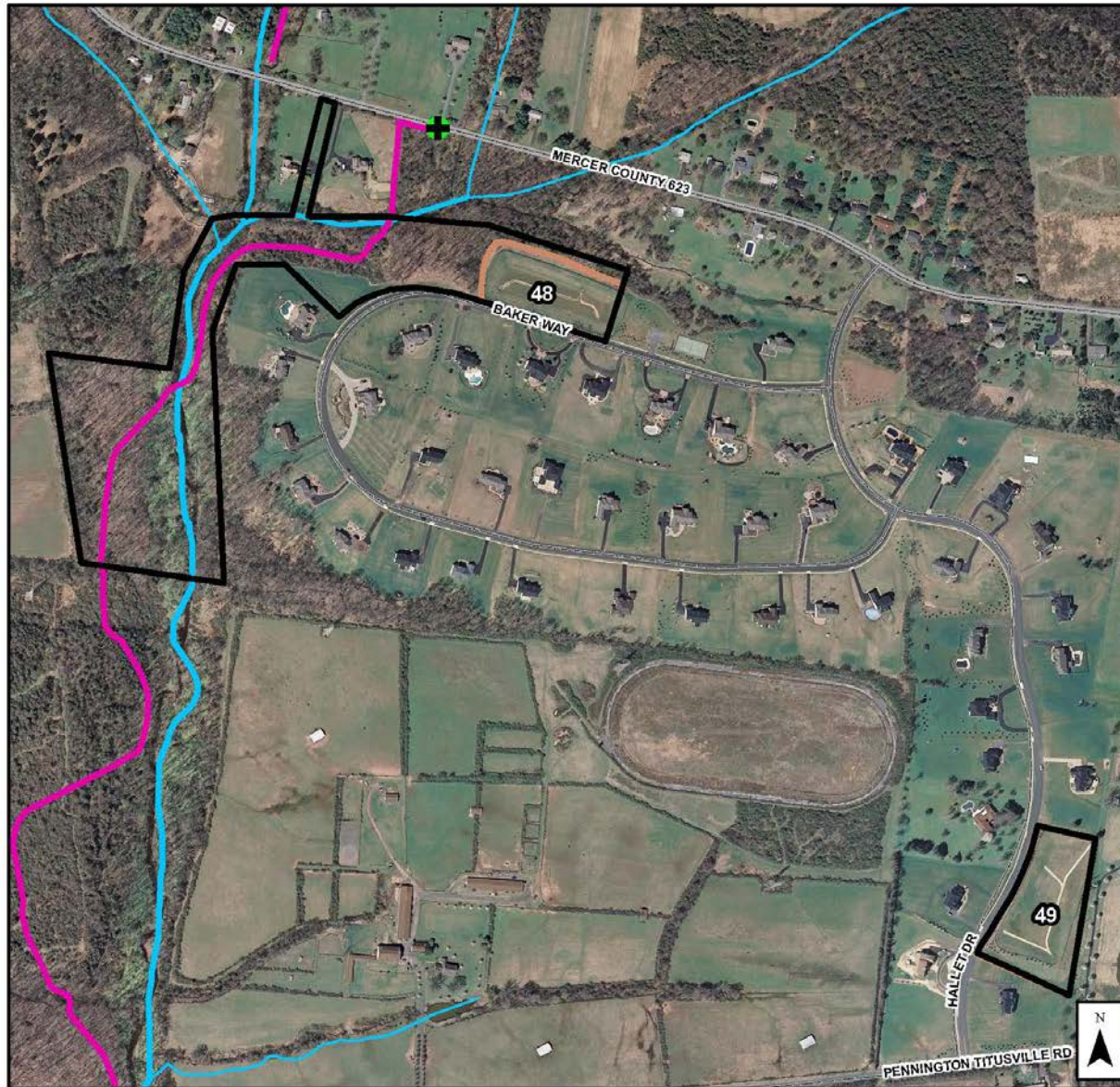
**Table 1. Invasive Plants – Species Abundance and Treatment Recommendations**

Scientific Name	Common Name	Infestation Index Score <sup>1</sup>	Total Acres Present	Percent of Preserve Area Present	Treatment Recommendation	LOE Estimate (Hours)	Acreage by Percent Ground Cover Categories						
							Category 0: 0%	Category: Trace	Category 1: 1-10%	Category 2: 10-25%	Category 3: 25-50%	Category 4: 50-75%	Category 5: 75-100%
<i>Acer palmatum</i>	Japanese Maple	0.0	0.0	0.0	N/A		24.55	0.0	0.0	0.0	0.0	0.0	0.0
<i>Acer platanoides</i>	Norway Maple	0.0	0.0	0.0	N/A		24.55	0.0	0.0	0.00	0.0	0.00	0.0
<i>Ailanthus altissima</i>	Tree-of-Heaven	0.0	0.0	0.0	N/A		24.55	0.0	0.0	0.0	0.0	0.0	0.0
<i>Alliaria petiolata</i>	Garlic Mustard	37.4	17.1	69.5	None		7.49	0.0	7.8	0.9	5.6	2.7	0.0
<i>Artemisia vulgaris</i>	Common Mugwort	0.0	0.0	0.0	N/A		24.55	0.0	0.0	0.0	0.0	0.0	0.0
<i>Arthraxon hispidus</i>	Small Carpgrass	0.0	0.0	0.0	N/A		24.55	0.0	0.0	0.0	0.0	0.0	0.0
<i>Berberis thunbergii</i>	Japanese Barberry	0.0	2.8	11.3	None		21.78	2.8	0.0	0.0	0.0	0.0	0.0
<i>Cardamine impatiens</i>	Narrow-leaved Bittercress	0.0	0.0	0.0	N/A		24.55	0.0	0.0	0.0	0.0	0.0	0.0
<i>Catalpa bignonioides</i>	Northern Catalpa	0.0	0.0	0.0	N/A		24.55	0.0	0.0	0.0	0.0	0.0	0.0
<i>Celastrus orbiculatus</i>	Asiatic Bittersweet	0.0	0.0	0.0	N/A		24.55	0.0	0.0	0.0	0.00	0.0	0.0
<i>Centurea sp.</i>	Knapsweed sp.	0.0	0.0	0.0	N/A		24.55	0.0	0.0	0.0	0.0	0.0	0.0
<i>Cirsium arvense</i>	Canada Thistle	0.9	0.9	3.5	None		23.68	0.0	0.9	0.0	0.0	0.0	0.0
<i>Dipsacus sylvestris</i>	Teasel	0.0	0.0	0.0	N/A		24.55	0.0	0.00	0.0	0.0	0.0	0.0
<i>Eleagnus umbellata</i>	Autumn Olive	20.9	10.3	41.8	None		14.28	0.0	4.4	1.1	4.8	0.0	0.0
<i>Euonymus alata</i>	Winged Burning Bush	0.0	0.0	0.0	N/A		24.55	0.0	0.0	0.0	0.0	0.0	0.00
<i>Iris pseudoacris</i>	Yellow Iris	0.0	0.0	0.0	N/A		24.55	0.0	0.0	0.0	0.0	0.0	0.0
<i>Lespedeza cuneata</i>	Chinese Bushclover	0.0	0.0	0.0	N/A		24.55	0.0	0.0	0.0	0.0	0.0	0.0
<i>Ligustrum obtusifolium</i>	Border Privet	4.8	5.0	20.4	None		19.53	0.3	4.76	0.0	0.0	0.0	0.0
<i>Lonicera japonica</i>	Japanese Honeysuckle	47.9	17.3	70.5	None		7.23	0.0	3.5	5.5	0.0	8.4	0.0
<i>Lonicera maackii</i>	Amur Honeysuckle	0.3	0.3	1.1	None		24.29	0.0	0.3	0.0	0.0	0.0	0.0
<i>Lonicera morrowii</i>	Morrow's Honeysuckle	9.5	6.1	24.8	None		18.46	0.0	5.3	0.0	0.00	0.0	0.8
<i>Lysimachia nummularia</i>	Moneywort	4.4	4.4	17.8	None		20.17	0.0	4.4	0.0	0.0	0.0	0.0
<i>Lythrum salicaria</i>	Purple Loosestrife	0.0	0.0	0.0	N/A		24.55	0.0	0.0	0.0	0.0	0.0	0.0
<i>Malus toringo</i>	Toringo Crabapple	0.0	0.0	0.0	N/A		24.55	0.0	0.0	0.0	0.0	0.0	0.0
<i>Microstegium vimineum</i>	Japanese Stiltgrass	16.8	8.4	34.1	None		16.17	2.8	0.0	0.0	5.6	0.0	0.0
N/A	Non-native, cool season grass	36.2	7.2	29.5	None		17.31	0.0	0.0	0.0	0.0	0.0	7.2
<i>Phalaris arundinacea</i>	Reed Canary Grass	0.0	0.0	0.0	N/A		24.55	0.0	0.0	0.0	0.0	0.0	0.0
<i>Phragmites australis</i>	Common Reed	0.0	0.0	0.0	N/A		24.55	0.0	0.0	0.0	0.0	0.0	0.0
<i>Polygonum cuspidatum</i>	Japanese Knotweed	0.0	0.0	0.0	N/A		24.55	0.0	0.0	0.0	0.0	0.0	0.0
<i>Polygonum perfoliatum</i>	Mile-a-Minute	0.0	0.0	0.0	N/A		24.55	0.0	0.0	0.0	0.0	0.0	0.0
<i>Pyrus calleryana</i>	Callery Pear	0.0	0.0	0.0	N/A		24.55	0.0	0.0	0.0	0.0	0.0	0.0
<i>Ranunculus ficaria</i>	Lesser Celandine	49.4	9.9	40.2	None		14.67	0.0	0.0	0.0	0.0	0.0	9.9
<i>Robinia pseudoacacia</i>	Black Locust	0.0	0.0	0.0	N/A		24.55	0.0	0.0	0.0	0.0	0.0	0.0
<i>Rosa multiflora</i>	Multiflora Rose	49.3	17.3	70.5	None		7.24	2.8	0.7	1.7	7.8	0.0	4.4
<i>Rubus phoenicolasius</i>	Wineberry	5.3	5.3	21.4	None		19.30	0.0	5.3	0.0	0.0	0.0	0.0
<i>Securigera varia</i>	Crown vetch	0.0	0.0	0.0	N/A		24.55	0.0	0.0	0.0	0.0	0.0	0.0
<i>Viburnum dilatatum</i>	Linden Viburnum	0.0	0.0	0.0	N/A		24.55	0.0	0.0	0.0	0.0	0.0	0.0
<i>Viburnum sieboldii</i>	Siebold's Viburnum	0.0	0.0	0.0	N/A		24.55	0.0	0.0	0.0	0.0	0.0	0.0
<i>Wisteria floribunda</i>	Japanese Wisteria	0.0	0.0	0.0	N/A		24.55	0.0	0.0	0.0	0.0	0.0	0.0
<b>Total LOE</b>						<b>0</b>							

<sup>1</sup> The Infestation Index Score combines the extent of acreage infested and the intensity of the infestation. It was derived by multiplying the cover class number by the number of acres within each cover class.



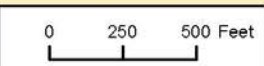
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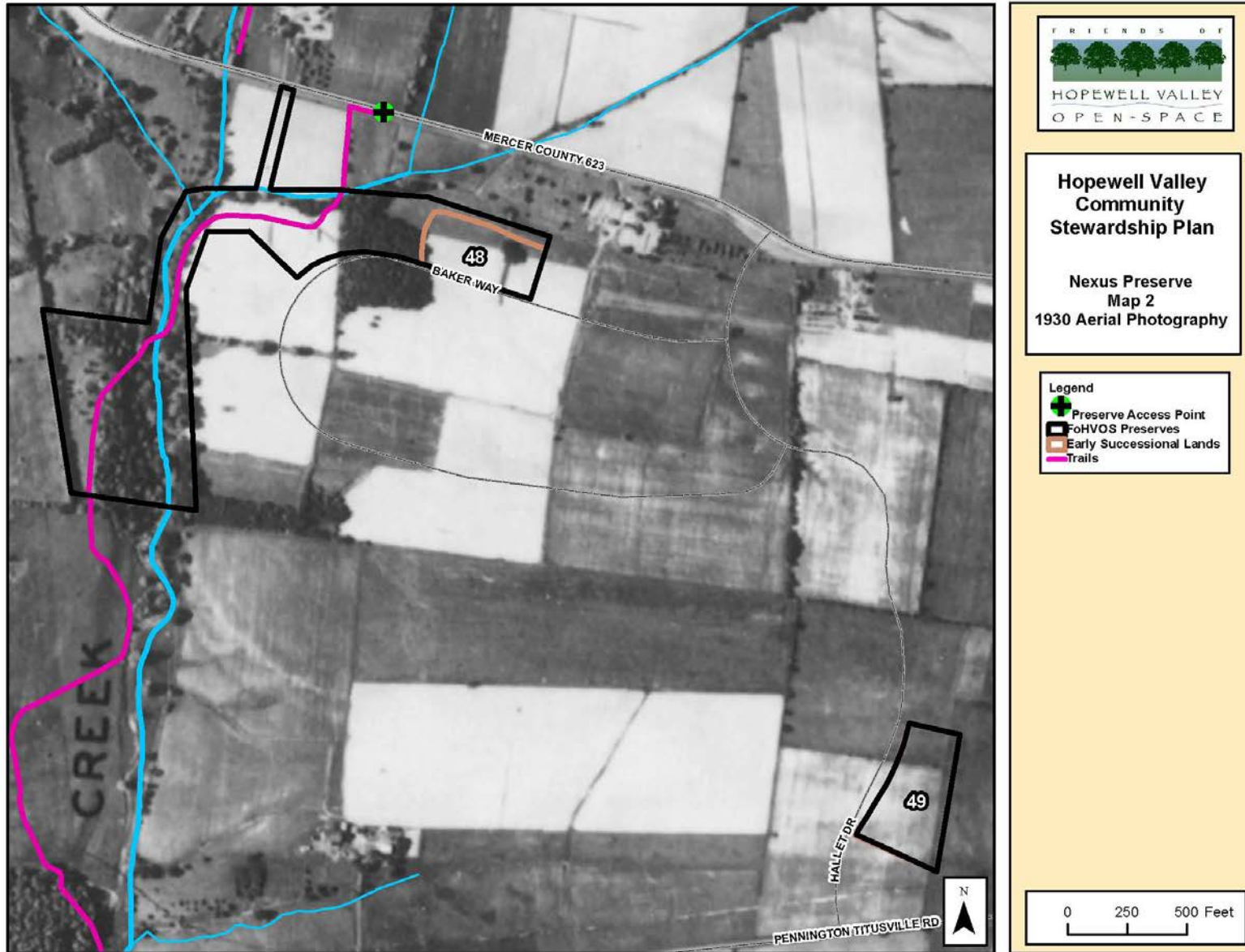
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Community  
Stewardship Plan**

Nexus Preserve  
Map 1  
2007 Aerial Photography

- Legend
- Preserve Access Point
  - FoHVOS Preserves
  - Early Successional Lands
  - Trails

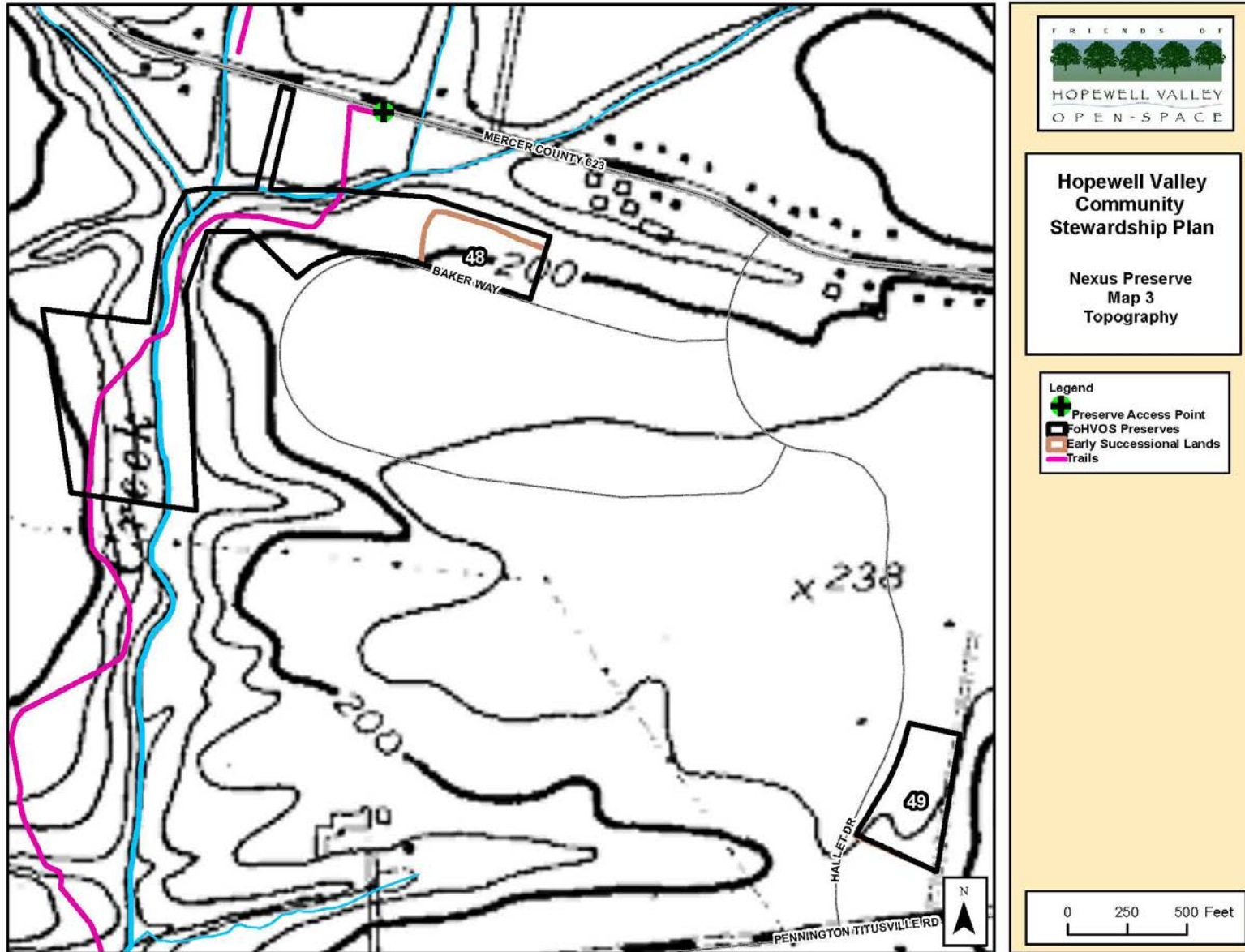


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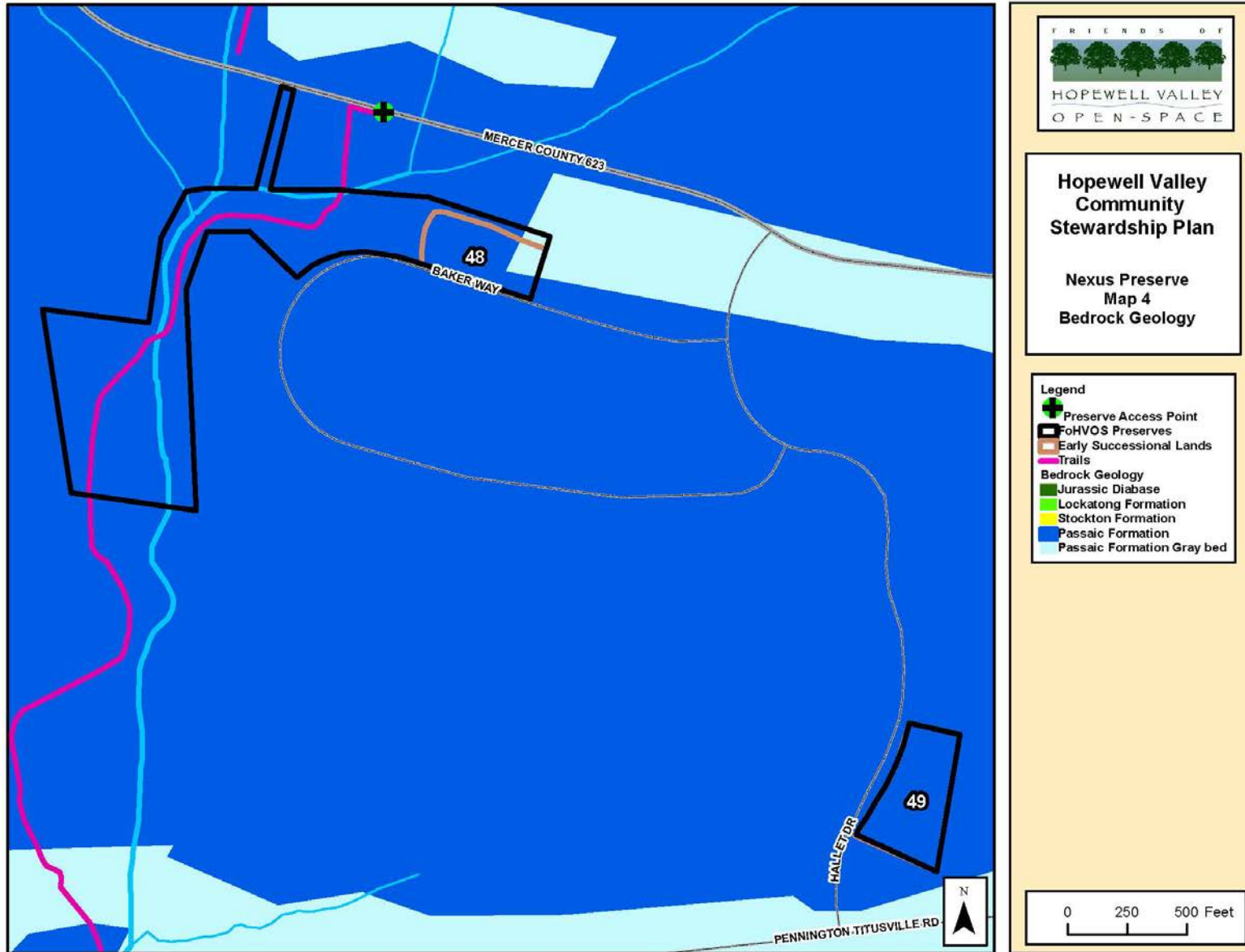




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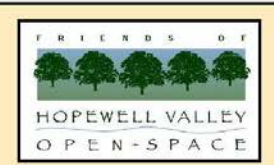
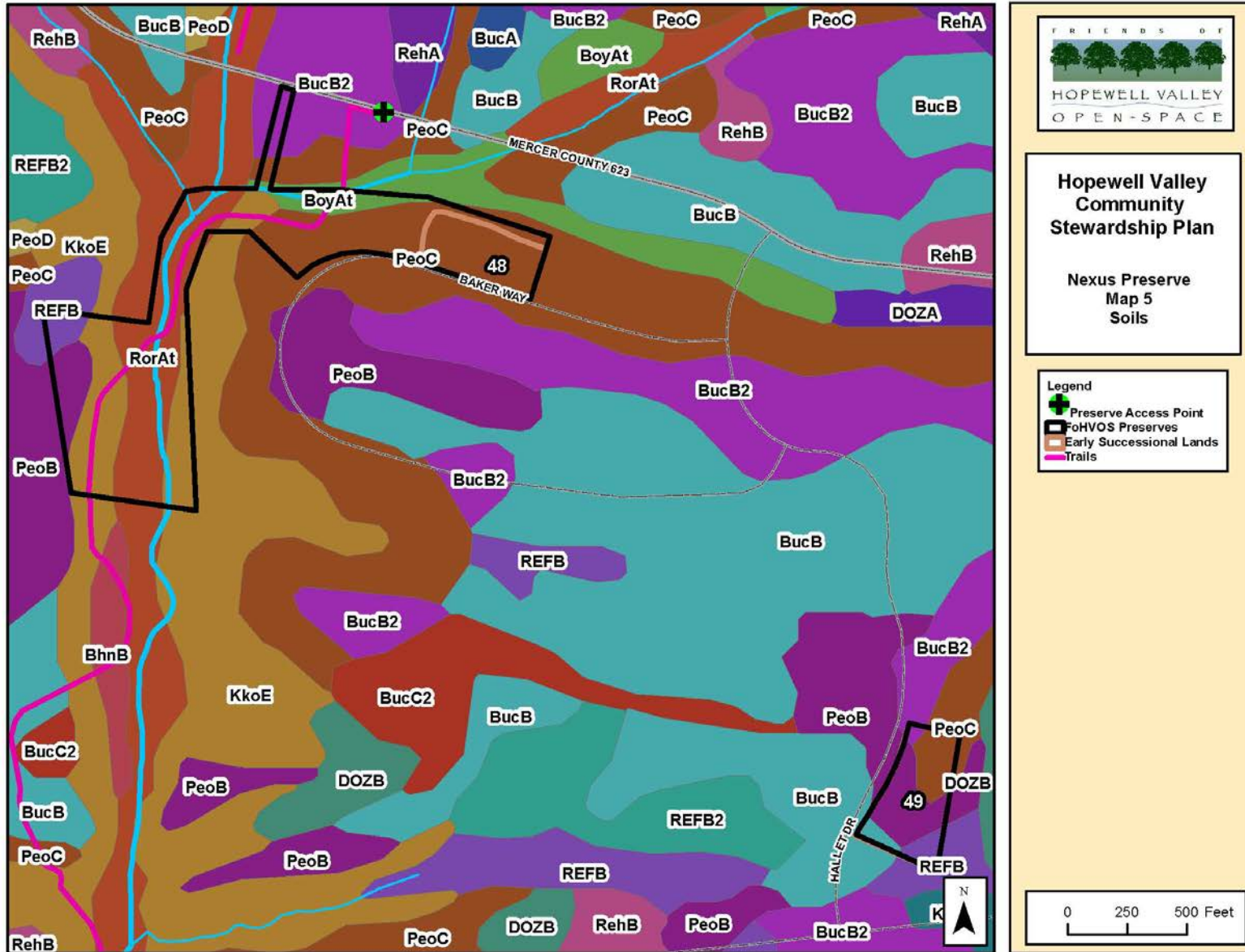


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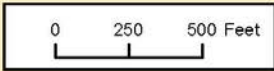
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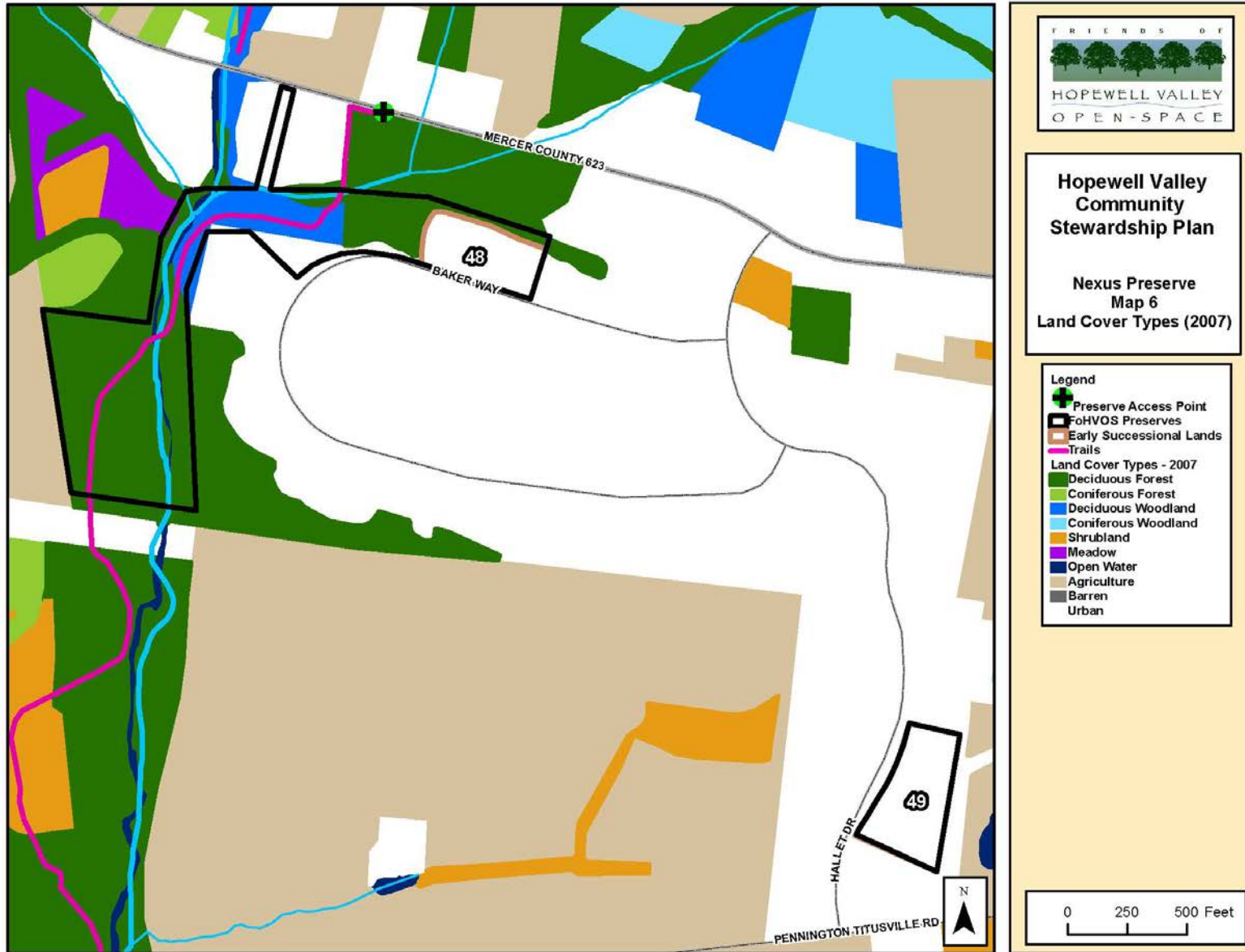
**Hopewell Valley  
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Nexus Preserve  
 Map 5  
 Soils

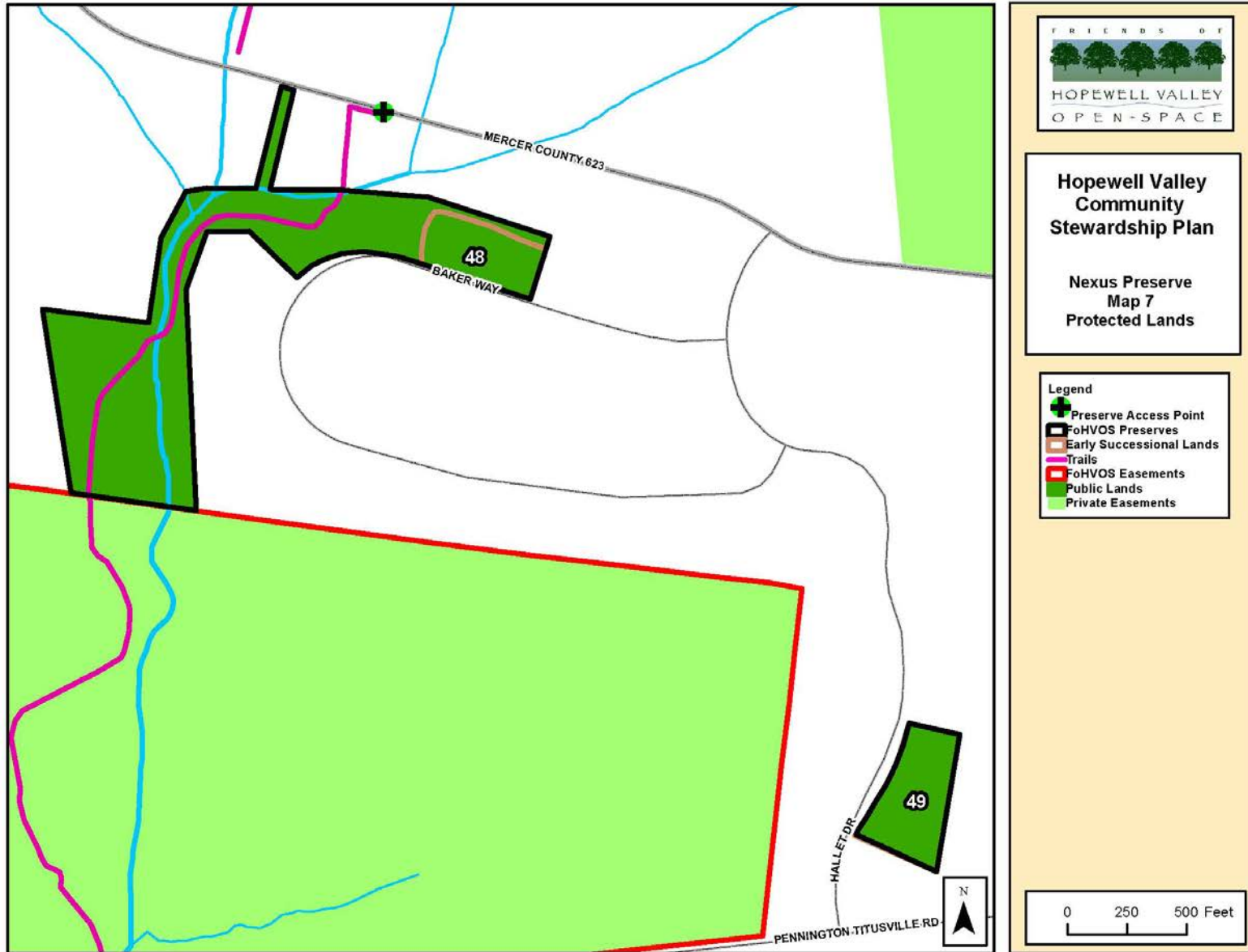
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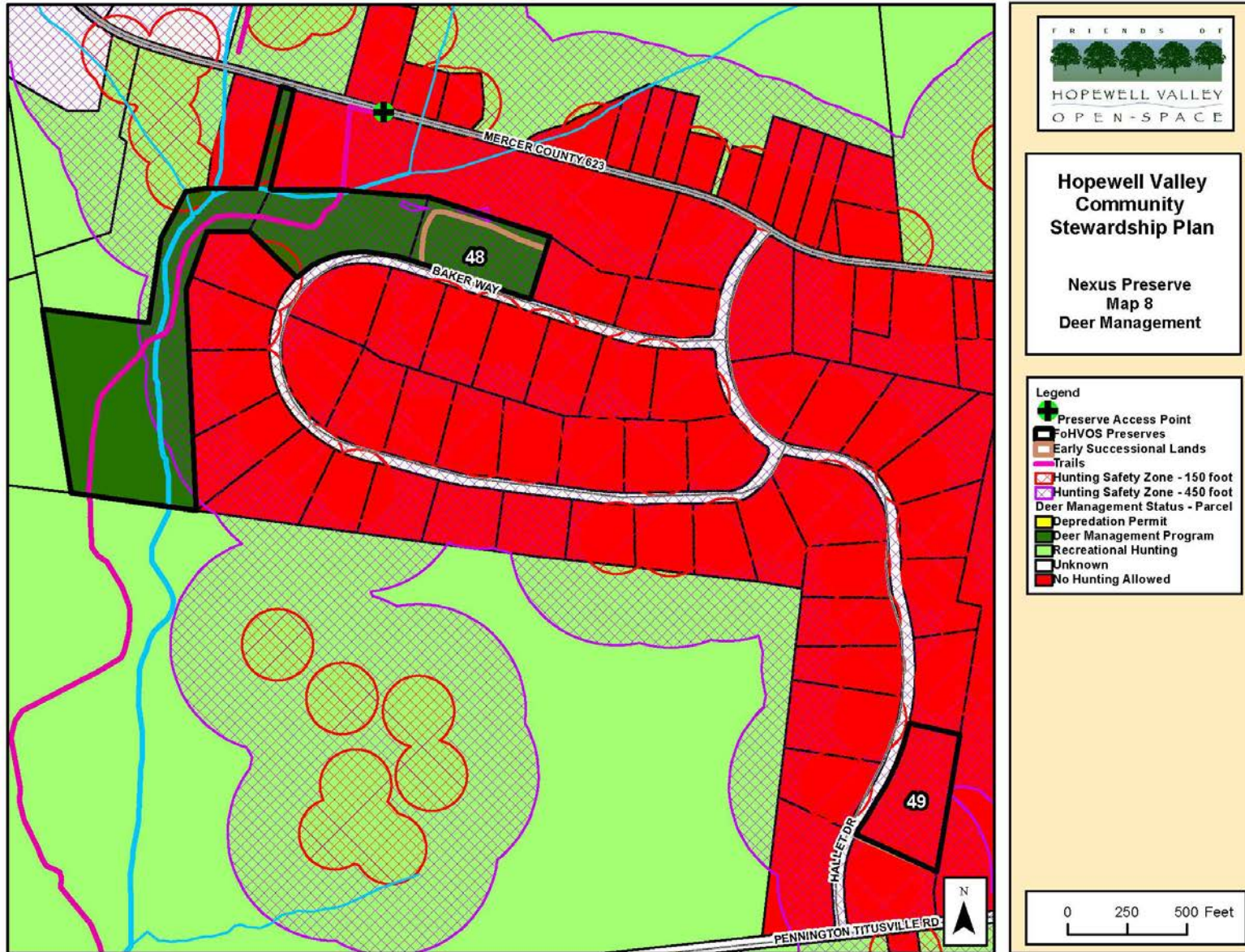


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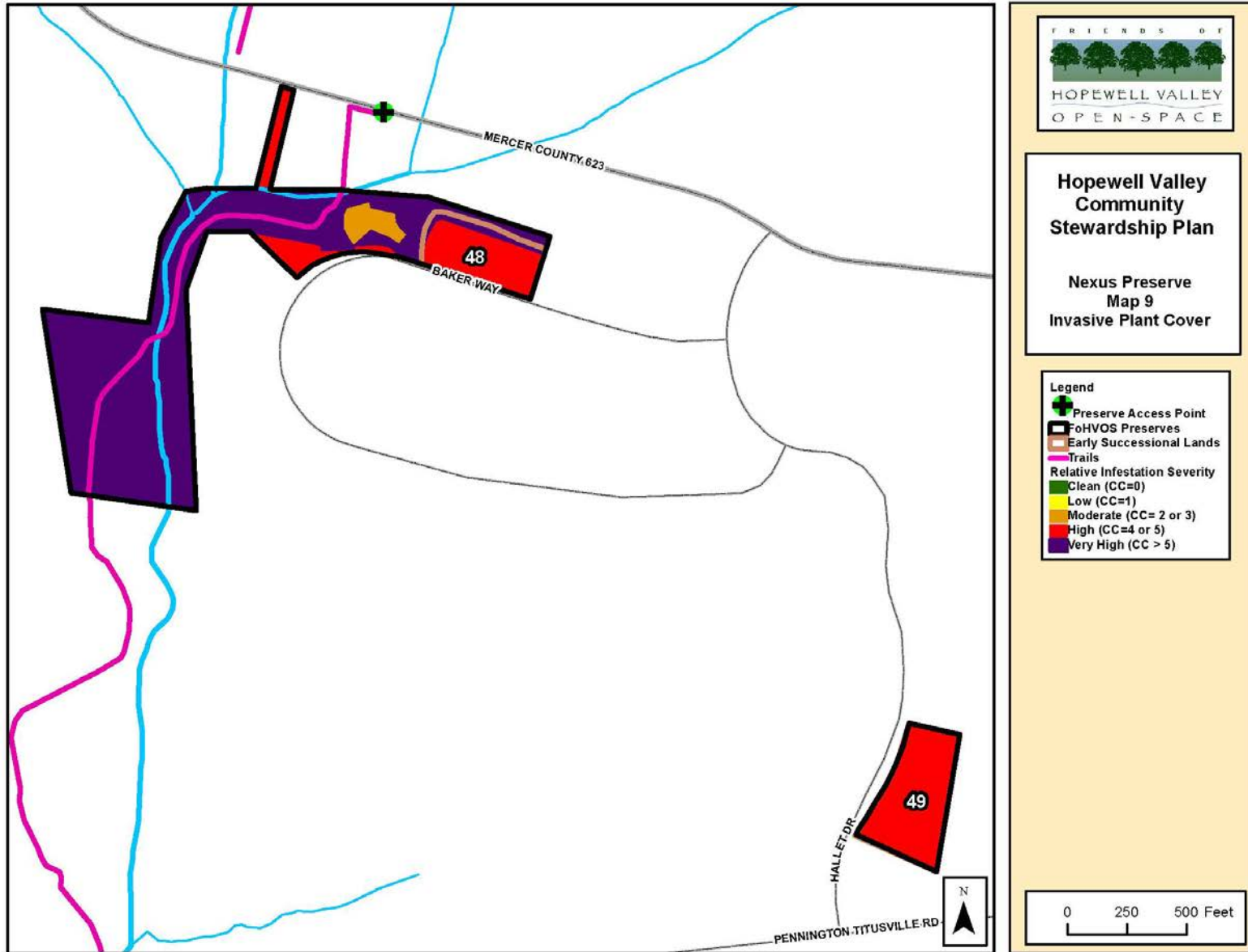


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**Appendix 19.  
Perkins Preserve**

**Acreage:** 5.09

**Block and Lot:** B39, L56 & 21

**Ownership:** FoHVOS (100%)

**Year(s) Purchased:** 2003

**Location & Access:** Preserve is located on the west side of Carter Road. 0.4 miles from Elm Ridge Road. Parking access along road shoulder. CAUTION: Steady traffic and steep embankment makes access very difficult. **Nearest street address:** 311 Carter Road, Princeton, NJ 08540.

**Structures:** None

Additional property information is summarized in Appendix W. The following Preserve maps are provided at the end of this document:

- Map 1 2007 Aerial Photography
- Map 2 1930 Aerial Photography
- Map 3 Topography
- Map 4 Bedrock Geology
- Map 5 Soils
- Map 6 Land Cover Types (2007)
- Map 7 Protected Lands
- Map 8 Deer Management
- Map 9 Invasive Plant Cover (Relative Infestation Severity for all species)

**Website Description:**

**Perkins Preserve** is an entirely forested parcel near the Township's eastern border. Planted white pine line the roadway, while a mix of hardwoods comprise the forest.

**BROAD PROPERTY DESCRIPTION**

The Perkins Preserve (see Map 1) is located in east central Hopewell Township. The preserve is bounded by forest, farmland, and residential development. The topography (see Map 3) is relatively flat, at about 200 feet above sea level.

Based upon analysis of NJDEP's 2007 Land Use/Land Cover dataset, the preserve contains one broad plant community: Deciduous Forest (> 50% canopy) - Upland. Land Use/Land Cover is summarized in Appendix X and illustrated in Map 6.

The forest cover at the Preserve consists primarily of red maple with very sparse shrub cover. Herbaceous species cover is relatively high (primarily grasses including Japanese stiltgrass, wood reed and rushes & sedges). The Preserve should be considered a wetland.

The preserve has one type of bedrock geology--the Passaic formation. See Map 4.

The preserve has one soil type (see Map 5) -- Reaville silt loam, 2 to 6 percent slopes. The preserve's soils are described in Appendix Y.

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**CONSERVATION VALUES**

Based on an analysis involving the ranking of ecological values and threats (See Community Stewardship Plan text), the Preserve has a weighted Ecological Value at 25-50%. See Appendix A for a description of ranking factors.

**Forest and Woodland Communities:** The preserve is located west of the Rocky Hill large forest patch. It is separated from the patch by roads and development.

The forest patch found on the Preserve is too small and fragmented to provide significant habitat. The forest patch found on the Preserve and surrounding area is an important stop-over habitat (spring and fall resting and feeding) for migratory species.

**Old forest:** None. See Map 2.

**Early Successional Communities:**

**Shrublands:** N/A

**Meadows/Grasslands:** N/A

**Waterbodies:** N/A

**Rare Species:**

**Rare Plants:** None documented on the Preserve. Natural Heritage grid data shows no species.

**Rare Animals:** The Landscape Project has identified the Preserve as ranked for species of State Endangered, Threatened, and Special Concern Species.

**THREATS**

**Deer:** The preserve serves as habitat for ‘pocket deer’.

**Invasive species:** In 2008 staff began walk-through surveys for emerging invasive species on all preserves. Mapping documented each species and its population size. No species were detected. See [www.njisst.org](http://www.njisst.org) for the current status of emerging invasive species at the Preserve.

In 2011 staff completed surveys for invasive plant species on all preserves (see Map 9). Mapping documented each species found and its population size (See Table 1 below). The only species detected was Japanese stiltgrass.

**Other:** N/A

**STRATEGIES and ACTIONS**

**Forest and Woodland Habitat Stewardship:** Bi-annual surveys for and eradication of emerging invasive species is the highest priority at this Preserve.

No action is recommended for widespread invasive species. Reduced deer density will allow the native plant communities to recover and compete with the widespread invasive species on a long-term basis.

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**Early Successional Habitat Stewardship:** N/A

**Deer Management:** The preserve is not enrolled in the DMP. It falls completely within the 450' but only partially into 150' safety zones. In the future, we will seek written permission to allow bow hunting. See Map 8 for delineations of the 150' and 450' safety zones and hunting status. The presence of a deer stand along the Preserve boundary suggests hunting by neighboring land owners.

**Rare Species Management:** N/A

**Neighboring Lands:** See Map 7 for adjacent protected lands.

**Waterbodies Management:** N/A

**Undesirable Activities Management:** N/A

**Scientific Research Assessment:** The Preserve is available for scientific research.

**Recreational Opportunities Assessment:** The preserve is too small to merit a trail. Currently, there are no opportunities to connect to a regional trail system—none yet exist.



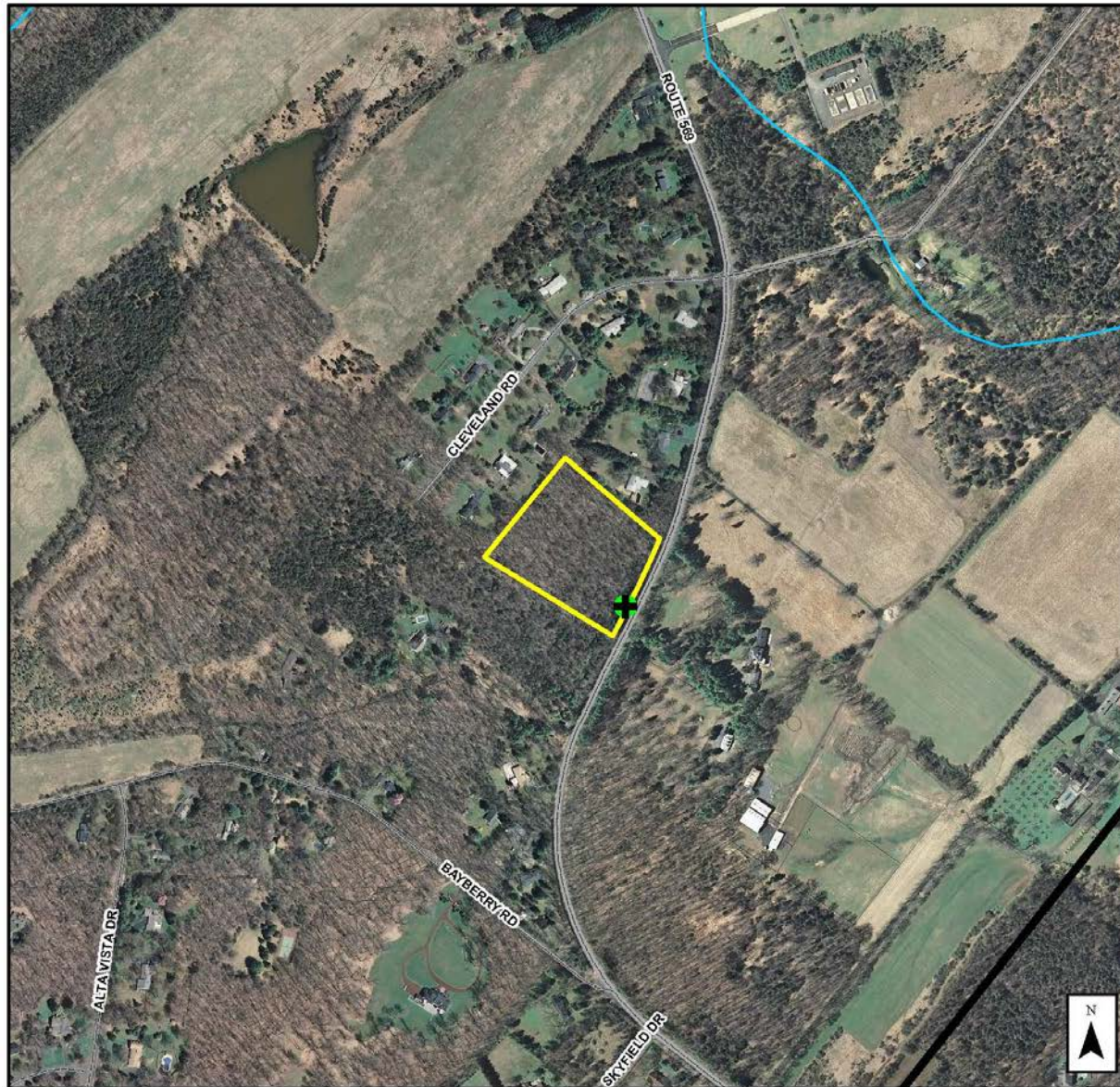
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**Table 1. Invasive Plants – Species Abundance and Treatment Recommendations**

Scientific Name	Common Name	Infestation Index Score <sup>1</sup>	Total Acres Present	Percent of Preserve Area Present	Treatment Recommendation	LOE Estimate (Hours)	Acreage by Percent Ground Cover Categories						
							Category 0: 0%	Category: Trace	Category 1: 1-10%	Category 2: 10-25%	Category 3: 25-50%	Category 4: 50-75%	Category 5: 75-100%
<i>Acer palmatum</i>	Japanese Maple	0.0	0.0	0.0	N/A		4.99	0.0	0.0	0.0	0.0	0.0	0.0
<i>Acer platanoides</i>	Norway Maple	0.0	0.0	0.0	N/A		4.99	0.0	0.0	0.00	0.0	0.00	0.0
<i>Ailanthus altissima</i>	Tree-of-Heaven	0.0	0.0	0.0	N/A		4.99	0.0	0.0	0.0	0.0	0.0	0.0
<i>Alliaria petiolata</i>	Garlic Mustard	0.0	0.0	0.0	N/A		4.99	0.0	0.0	0.0	0.0	0.0	0.0
<i>Artemisia vulgaris</i>	Common Mugwort	0.0	0.0	0.0	N/A		4.99	0.0	0.0	0.0	0.0	0.0	0.0
<i>Arthraxon hispidus</i>	Small Carpgrass	0.0	0.0	0.0	N/A		4.99	0.0	0.0	0.0	0.0	0.0	0.0
<i>Berberis thunbergii</i>	Japanese Barberry	0.0	0.0	0.0	N/A		4.99	0.0	0.0	0.0	0.0	0.0	0.0
<i>Cardamine impatiens</i>	Narrow-leaved Bittercress	0.0	0.0	0.0	N/A		4.99	0.0	0.0	0.0	0.0	0.0	0.0
<i>Catalpa bignonioides</i>	Northern Catalpa	0.0	0.0	0.0	N/A		4.99	0.0	0.0	0.0	0.0	0.0	0.0
<i>Celastrus orbiculatus</i>	Asiatic Bittersweet	0.0	0.0	0.0	N/A		4.99	0.0	0.0	0.0	0.00	0.0	0.0
<i>Centurea sp.</i>	Knapsweed sp.	0.0	0.0	0.0	N/A		4.99	0.0	0.0	0.0	0.0	0.0	0.0
<i>Cirsium arvense</i>	Canada Thistle	0.0	0.0	0.0	N/A		4.99	0.0	0.0	0.0	0.0	0.0	0.0
<i>Dipsacus sylvestris</i>	Teasel	0.0	0.0	0.0	N/A		4.99	0.0	0.00	0.0	0.0	0.0	0.0
<i>Eleagnus umbellata</i>	Autumn Olive	0.0	0.0	0.0	N/A		4.99	0.0	0.0	0.0	0.0	0.0	0.0
<i>Euonymus alata</i>	Winged Burning Bush	0.0	0.0	0.0	N/A		4.99	0.0	0.0	0.0	0.0	0.0	0.00
<i>Iris pseudoacris</i>	Yellow Iris	0.0	0.0	0.0	N/A		4.99	0.0	0.0	0.0	0.0	0.0	0.0
<i>Lespedeza cuneata</i>	Chinese Bushclover	0.0	0.0	0.0	N/A		4.99	0.0	0.0	0.0	0.0	0.0	0.0
<i>Ligustrum obtusifolium</i>	Border Privet	0.0	5.0	100.0	None		0.00	5.0	0.00	0.0	0.0	0.0	0.0
<i>Lonicera japonica</i>	Japanese Honeysuckle	0.0	5.0	100.0	None		0.00	5.0	0.0	0.0	0.0	0.0	0.0
<i>Lonicera maackii</i>	Amur Honeysuckle	0.0	0.0	0.0	N/A		4.99	0.0	0.0	0.0	0.0	0.0	0.0
<i>Lonicera morrowii</i>	Morrow's Honeysuckle	0.0	0.0	0.0	N/A		4.99	0.0	0.0	0.0	0.00	0.0	0.0
<i>Lysimachia nummularia</i>	Moneywort	0.0	0.0	0.0	N/A		4.99	0.0	0.0	0.0	0.0	0.0	0.0
<i>Lythrum salicaria</i>	Purple Loosestrife	0.0	0.0	0.0	N/A		4.99	0.0	0.0	0.0	0.0	0.0	0.0
<i>Malus toringo</i>	Toringo Crabapple	0.0	0.0	0.0	N/A		4.99	0.0	0.0	0.0	0.0	0.0	0.0
<i>Microstegium vimineum</i>	Japanese Stiltgrass	25.0	5.0	100.0	None		0.00	0.0	0.0	0.0	0.0	0.0	5.0
N/A	Non-native, cool season grass	0.0	0.0	0.0	N/A		4.99	0.0	0.0	0.0	0.0	0.0	0.0
<i>Phalaris arundinacea</i>	Reed Canary Grass	0.0	0.0	0.0	N/A		4.99	0.0	0.0	0.0	0.0	0.0	0.0
<i>Phragmites australis</i>	Common Reed	0.0	0.0	0.0	N/A		4.99	0.0	0.0	0.0	0.0	0.0	0.0
<i>Polygonum cuspidatum</i>	Japanese Knotweed	0.0	0.0	0.0	N/A		4.99	0.0	0.0	0.0	0.0	0.0	0.0
<i>Polygonum perforatum</i>	Mile-a-Minute	0.0	0.0	0.0	N/A		4.99	0.0	0.0	0.0	0.0	0.0	0.0
<i>Pyrus calleryana</i>	Callery Pear	0.0	0.0	0.0	N/A		4.99	0.0	0.0	0.0	0.0	0.0	0.0
<i>Ranunculus ficaria</i>	Lesser Celandine	0.0	0.0	0.0	N/A		4.99	0.0	0.0	0.0	0.0	0.0	0.0
<i>Robinia pseudoacacia</i>	Black Locust	0.0	0.0	0.0	N/A		4.99	0.0	0.0	0.0	0.0	0.0	0.0
<i>Rosa multiflora</i>	Multiflora Rose	0.0	0.0	0.0	N/A		4.99	0.0	0.0	0.0	0.0	0.0	0.0
<i>Rubus phoenicolasius</i>	Wineberry	0.0	0.0	0.0	N/A		4.99	0.0	0.0	0.0	0.0	0.0	0.0
<i>Securigera varia</i>	Crown vetch	0.0	0.0	0.0	N/A		4.99	0.0	0.0	0.0	0.0	0.0	0.0
<i>Viburnum dilatatum</i>	Linden Viburnum	0.0	0.0	0.0	N/A		4.99	0.0	0.0	0.0	0.0	0.0	0.0
<i>Viburnum sieboldii</i>	Siebold's Viburnum	0.0	0.0	0.0	N/A		4.99	0.0	0.0	0.0	0.0	0.0	0.0
<i>Wisteria floribunda</i>	Japanese Wisteria	0.0	0.0	0.0	N/A		4.99	0.0	0.0	0.0	0.0	0.0	0.0
<b>Total LOE</b>						<b>0</b>							

<sup>1</sup> The Infestation Index Score combines the extent of acreage infested and the intensity of the infestation. It was derived by multiplying the cover class number by the number of acres within each cover class.

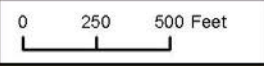
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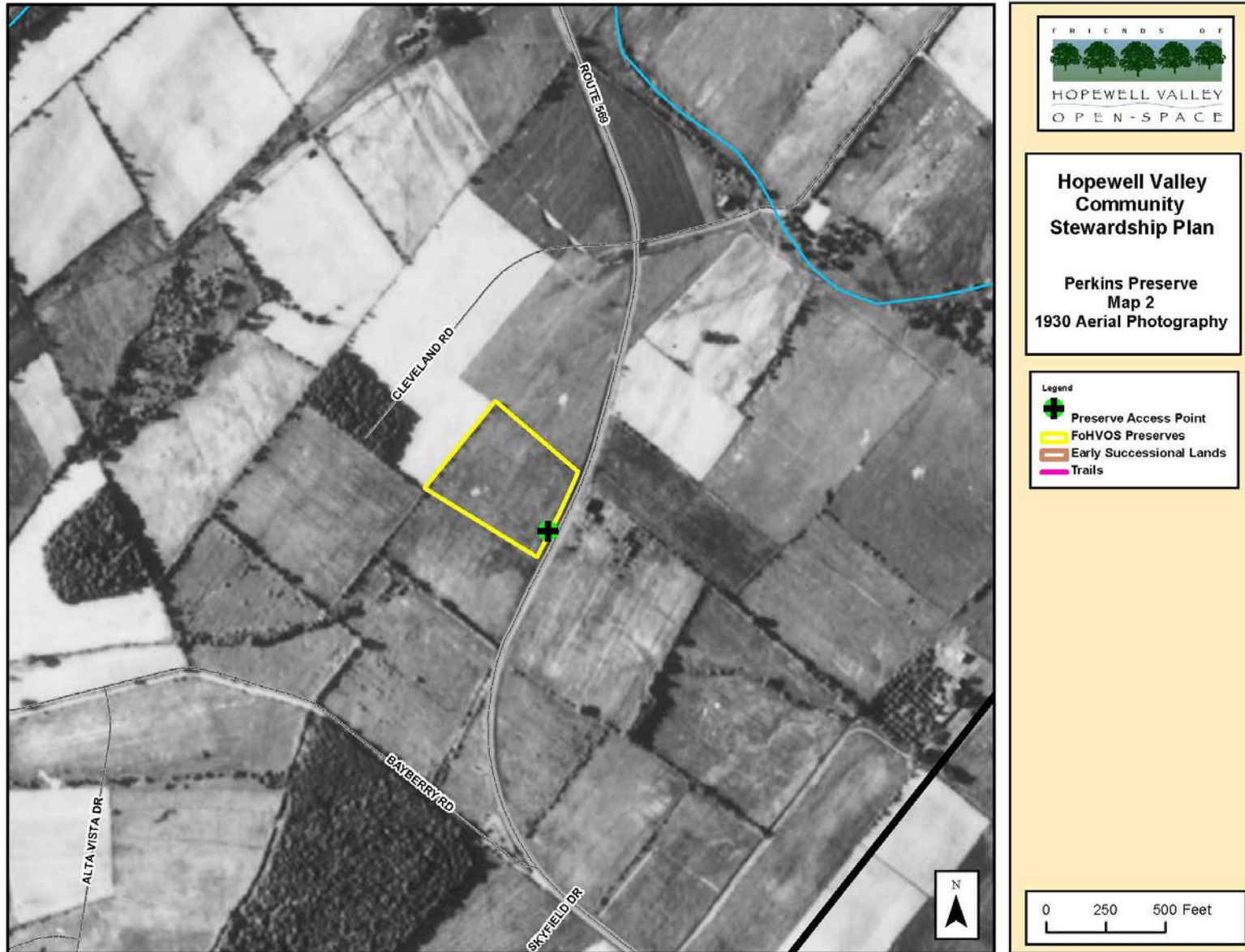
Perkins Preserve  
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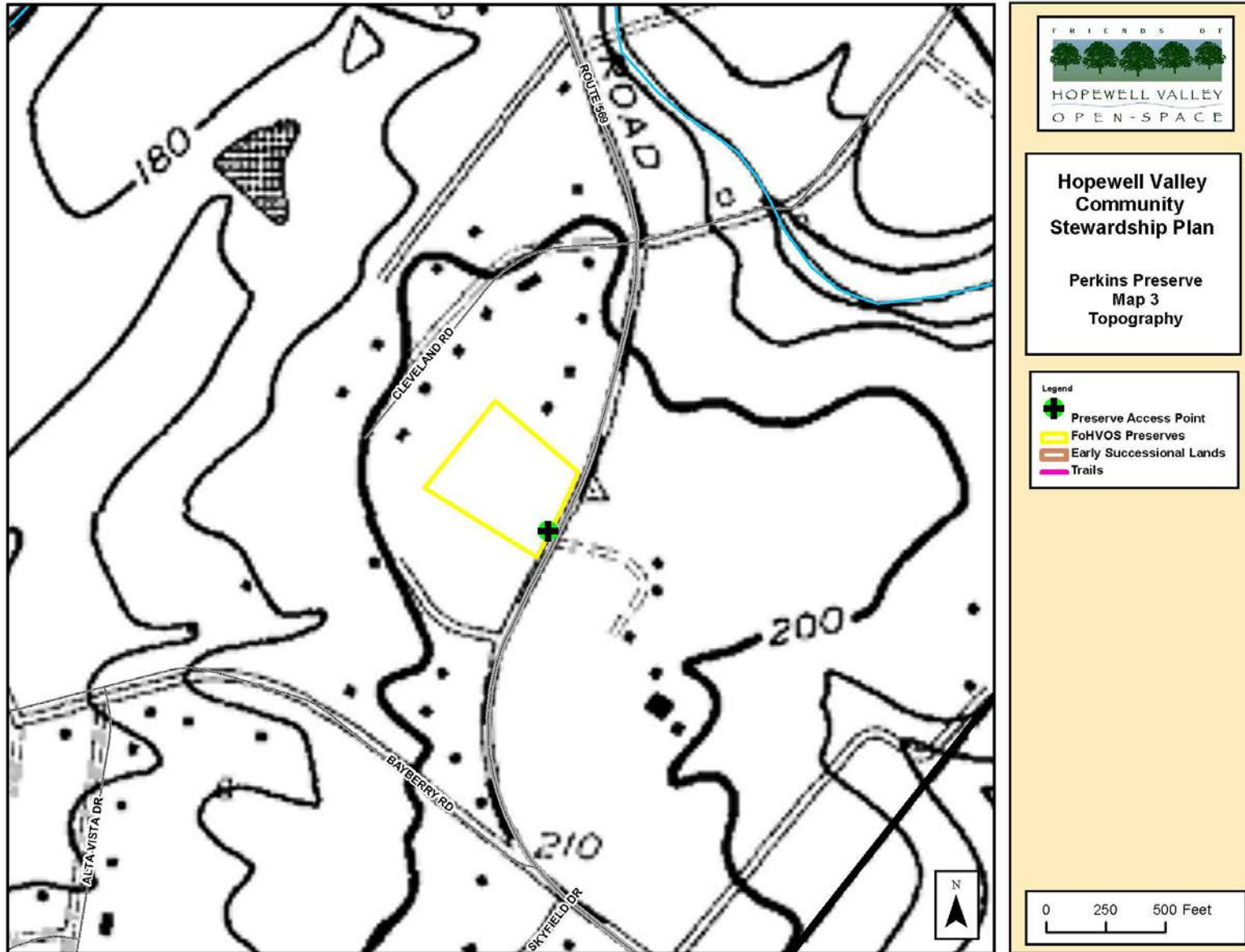




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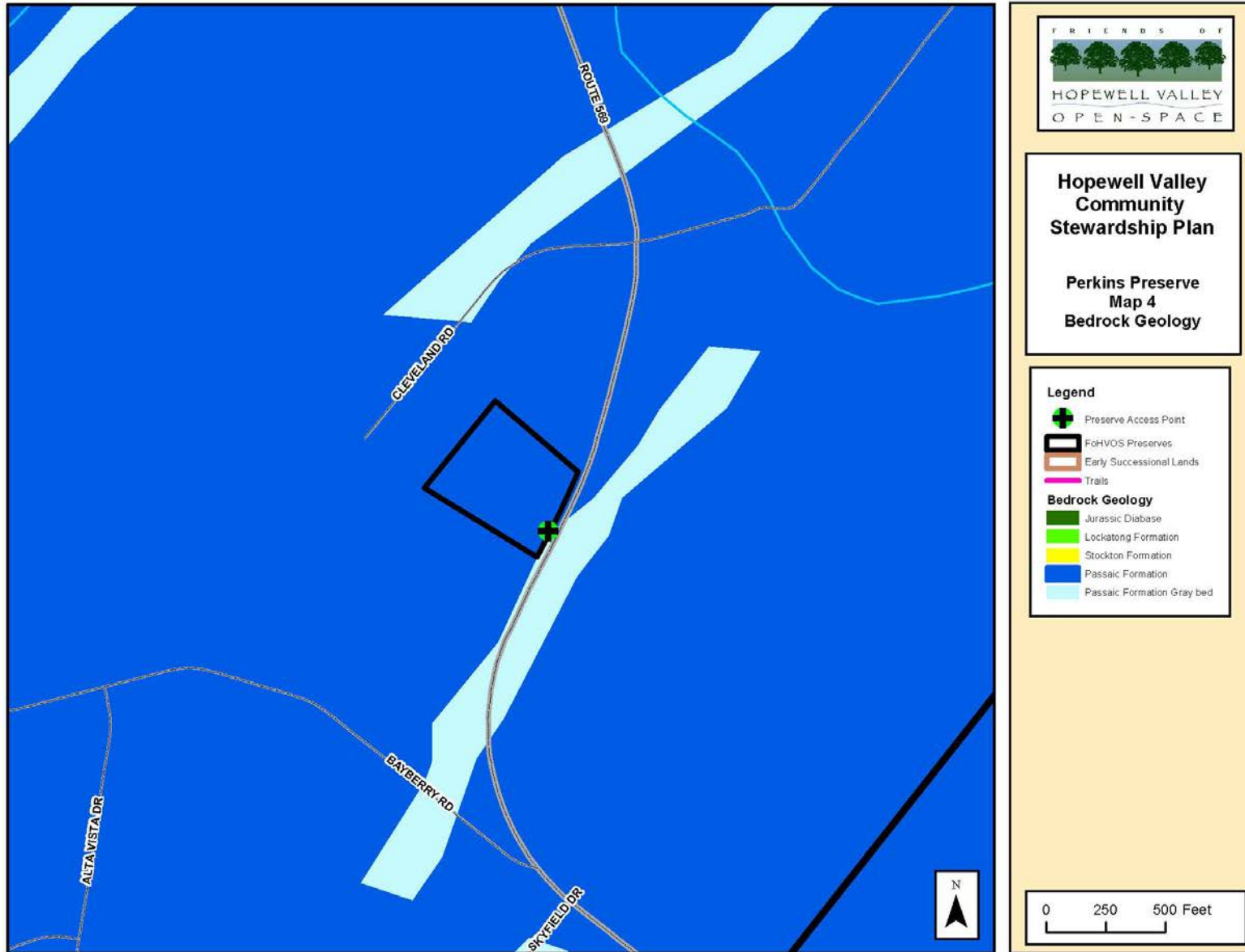


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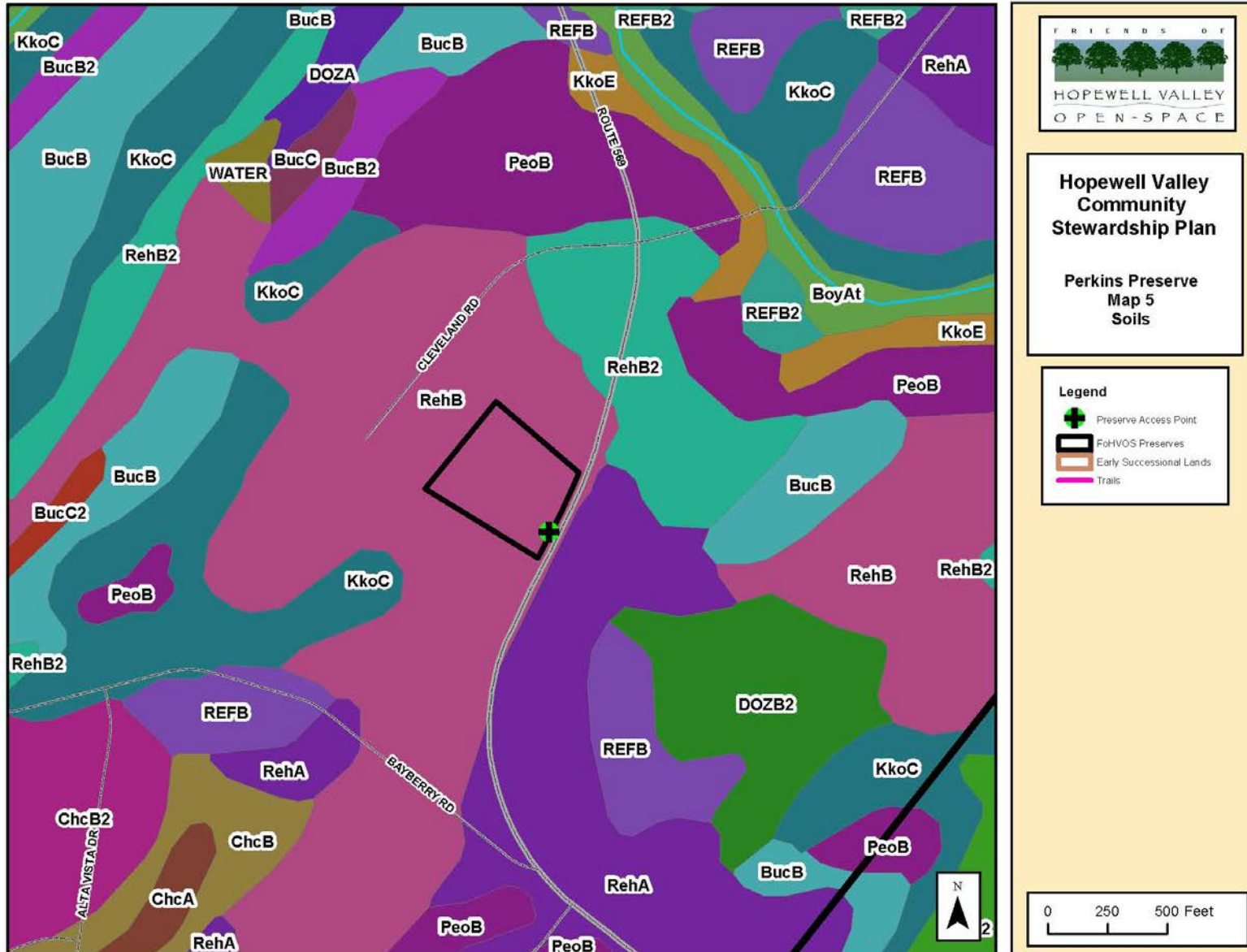




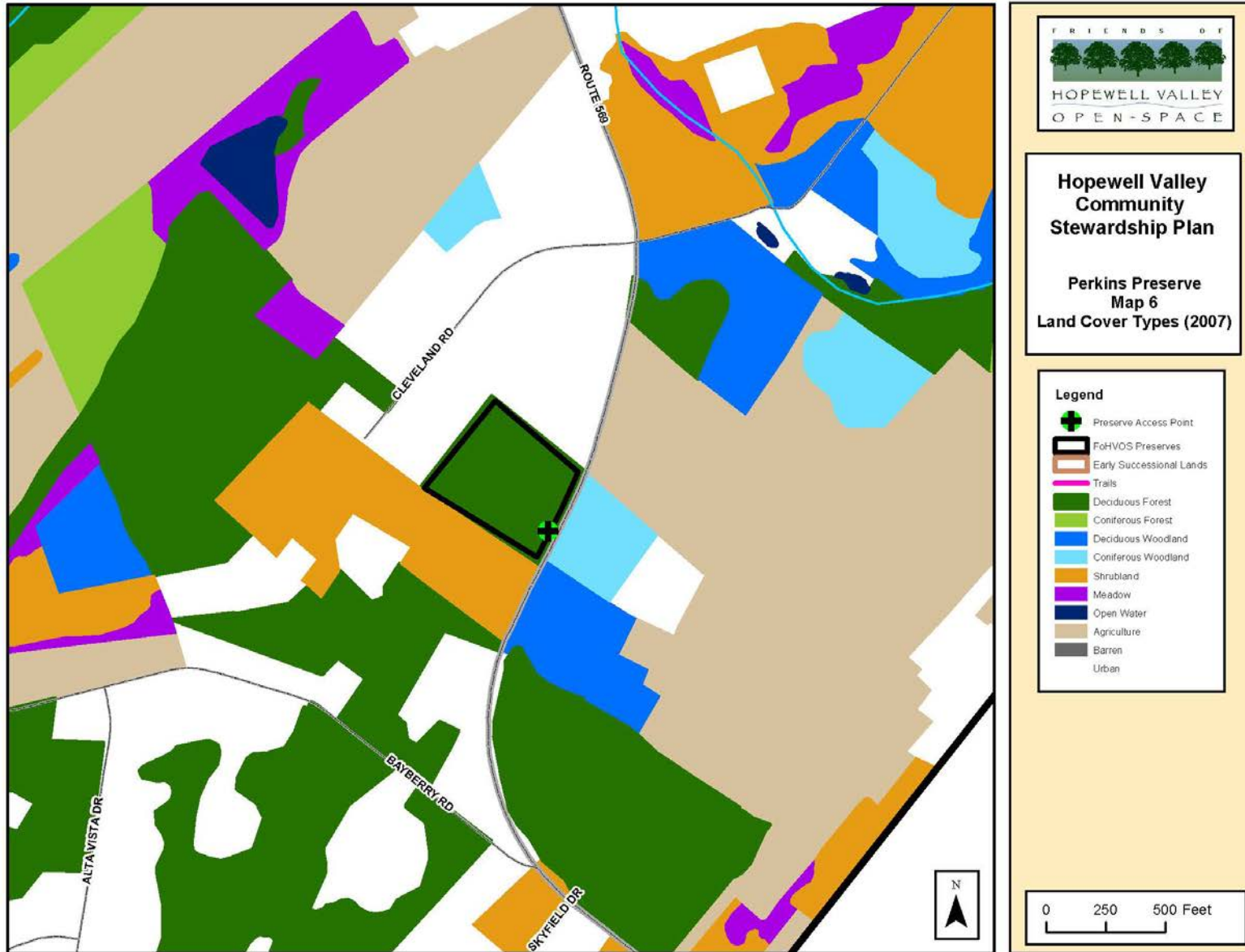
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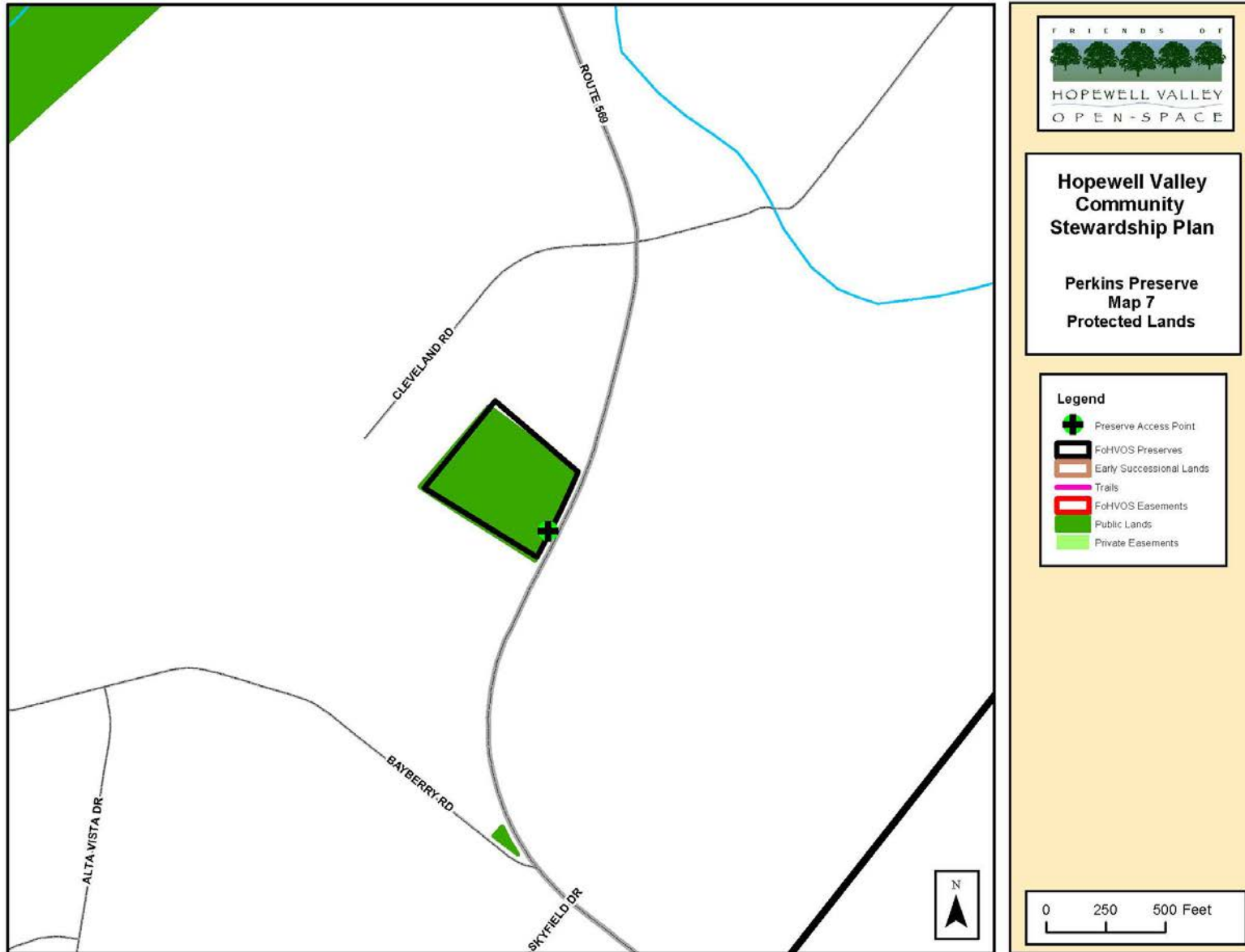
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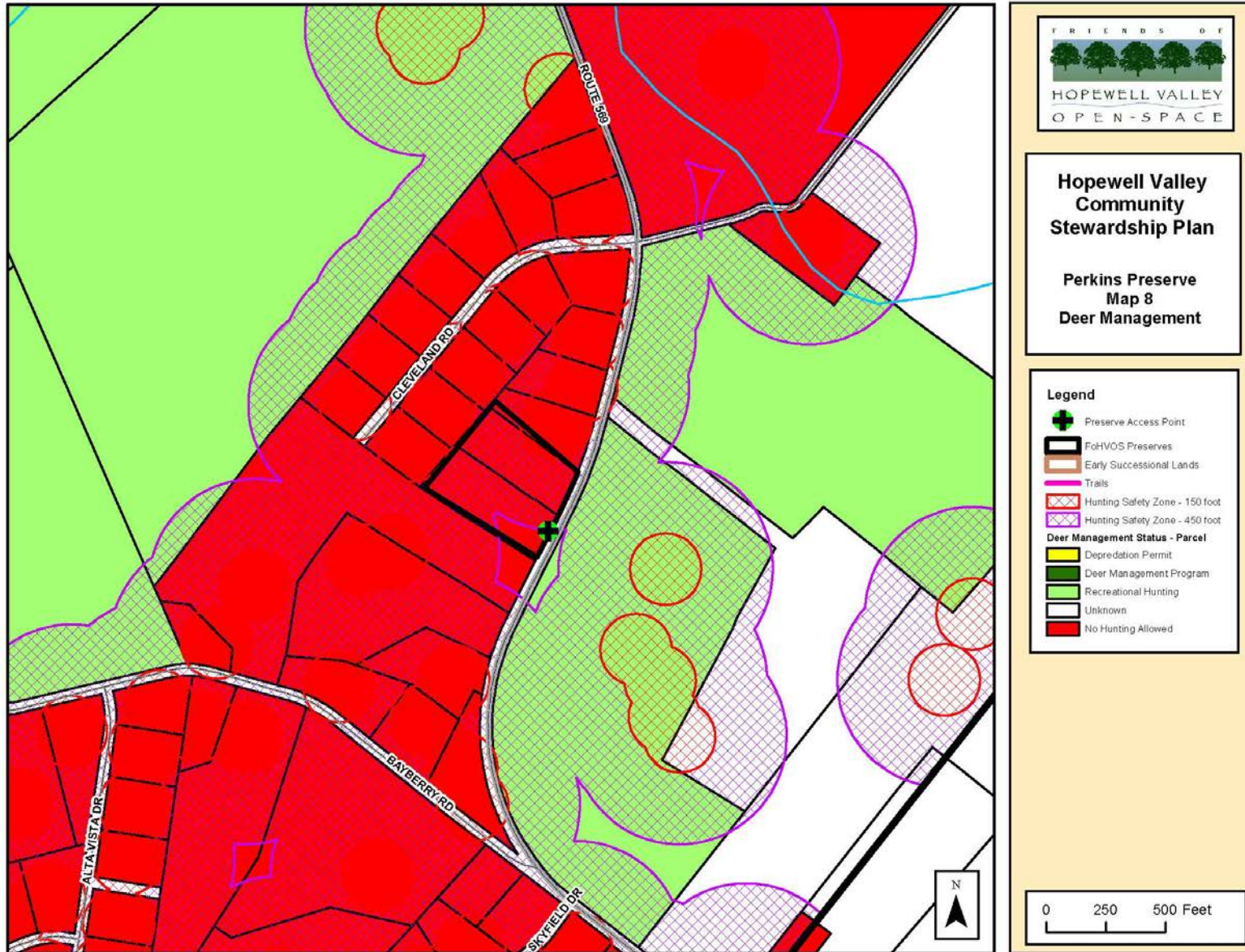


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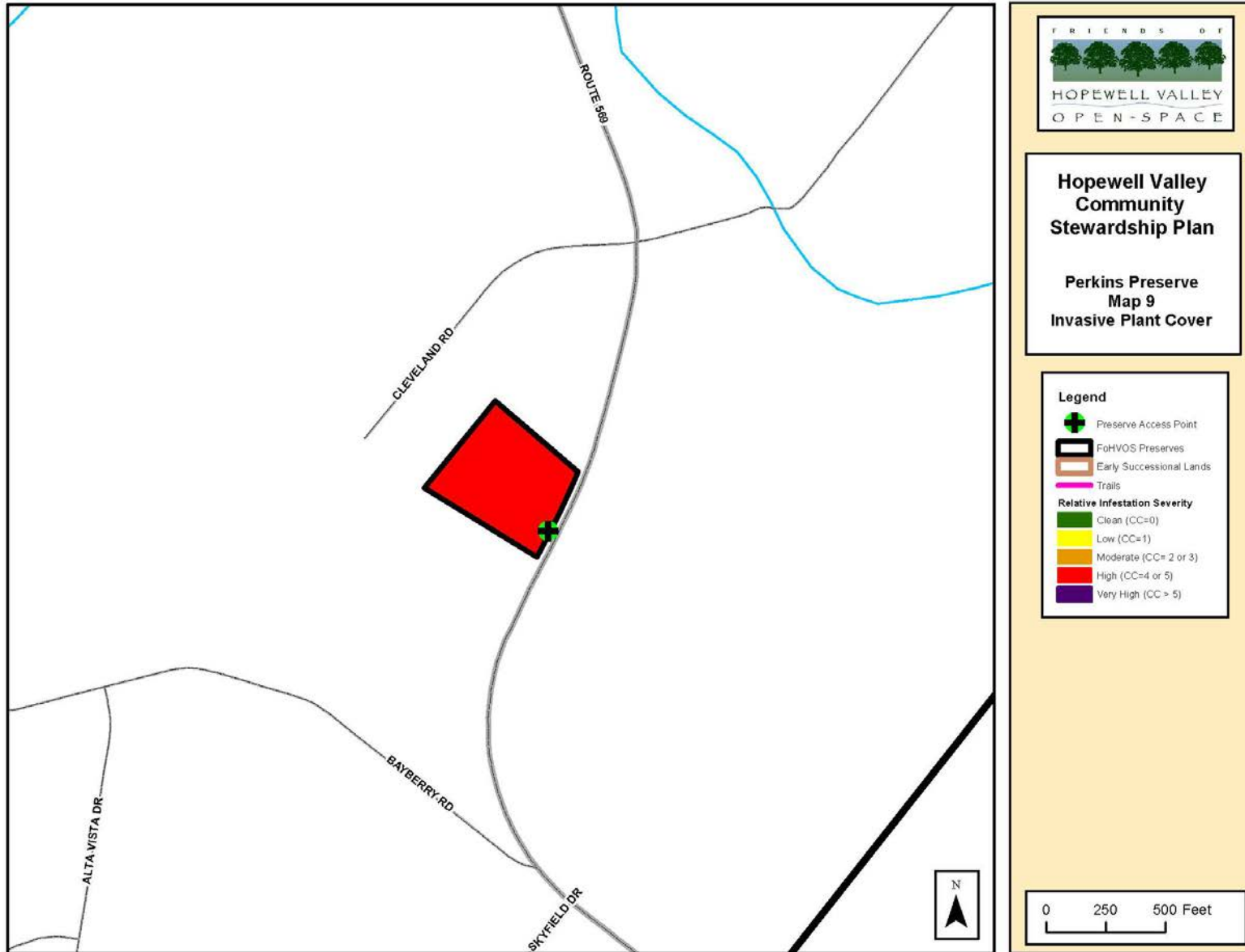




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**Appendix 20.  
Skyview and Garfi Preserves**

**Acreage:** 76.41 (Skyview 72.2 acres, Garfi 4.21 acres)

**Block and Lot:** Multiple. B23, L11 (Skyview); B23, L27 (Gomez)

**Ownership:** Skyview - FoHVOS (28%) and NJDEP (72%); Garfi - FoHVOS (100%)

**Year(s) Purchased:** Skyview - 2001; Garfi - 2008

**Location & Access:** Skyview Preserve has multiple access points. Trailhead parking is located at the southeast corner of Marshall's Corner-Woodsville Road and Skyview Drive. Additional parking is available along Skyview Drive (across from homes). **Nearest street address:** 2 Skyview Drive, Hopewell, NJ 08525. **Additional access points:** A) Along the southern side of Lambertville-Hopewell Road/Route 518. **Nearest street address:** 219 Lambertville-Hopewell Road/Route 518, Hopewell. B) Along Route 31, just south of Hopewell Valley Community Bank. **Nearest street address:** 4 Rte. 31, Hopewell. C) Garfi Preserve is located on the east side of Marshall's Corner-Woodsville Road. Parking access along road shoulder. **Nearest street address:** 85 Marshall's Corner-Woodsville Road, Hopewell.

**Structures:** None.

Additional property information is summarized in Appendix W. The following Preserve maps are provided at the end of this document:

- Map 1 2007 Aerial Photography
- Map 2 1930 Aerial Photography
- Map 3 Topography
- Map 4 Bedrock Geology
- Map 5 Soils
- Map 6 Land Cover Types (2007)
- Map 7 Protected Lands
- Map 8 Deer Management
- Map 9 Invasive Plant Cover (Relative Infestation Severity for all species)

**Website Description:**

**Skyview and Garfi Preserves** protect a series of meadows, woodlands, hedgerows, and a portion of Woodsville Brook near Route 31. A hiking trail meanders through these habitats. The Garfi Preserve is owned entirely by FoHVOS, while the Skyview Preserve is co-owned with the New Jersey Department of Environmental Protection.

**BROAD PROPERTY DESCRIPTION**

The Skyview and Garfi Preserves are (Map 1) located at the north-central section of the township. The topography (Map 3) is primarily flat at 90 to 70 feet above sea level.

Based upon analysis of NJDEP's 2007 Land Use/Land Cover dataset, the preserve contains seven broad plant communities: Coniferous Forest (> 50% canopy) - Upland, Deciduous Forest (> 50% canopy) - Upland, Coniferous Woodland (10-50% canopy) - Upland, Shrubland (< 10% canopy, > 25% shrub cover) - Upland, Deciduous Forest (> 50% canopy) - Wetland, Agricultural Lands and Urban Lands. Land Use/Land Cover is summarized in Appendix X and illustrated in Map 6.

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Agriculture was the predominant past land use and the nearest 1930s forest tract is 0.14 miles to the southwest.

The southernmost forested portions of the preserve contain primarily a mix of early and late successional tree species including red cedar, pin oak, and shagbark hickory. The understory layer is a mix of winged euonymus, multiflora rose, blackhaw, and autumn olive. Seedlings of Japanese maple and several thickets of jetbead have been found, and treatment initiated. A small patch of woodland wildflowers hints at a remnant patch of older forest; species include halberd-leaved violet (*Viola hastata*), bloodroot, and Pennsylvania sedge.

Between the southern and northern meadows, lies a fragment of red cedar with evidence of owls (significant accumulation of pellets under one tree). Soils saturated and standing water is frequent within the copse of cedars.

The remaining forest patches in the northern part of the preserve are highly disturbed by past land use and flooding of the Brook. Species there include red maple, Japanese stiltgrass, multiflora rose, and minimal skunk cabbage. Narrow leaved bittercress is frequent on the floodplain. A portion of Woodsville Brook (0.2 miles) runs through this forest.

The forest of the Garfi preserve is lowland, and severely invaded by multiflora rose. It is nearly impenetrable on foot.

Each meadows harbors different plant communities. The northern meadow along Route 518 is highly diverse with *Lobelia spicata*, rushes, sedges, New England aster, little white aster, *Sabatia sp.*, *Rubus sp.*, broomsedge, reed canary grass, and *Miscanthus*. Meadow edge species include gray dogwood, winterberry, and blackhaw. The meadow and edges contain woody invasives including crabapple sp., multiflora rose, and autumn olive. The soils become increasingly moist from east to west.

The northern meadow is comprised of sedges, grasses, golden ragwort, goldenrod sp., common milkweed, *Galium sp.*, and dogbane, as well as woody invasives. Hedgerows between the northern meadows harbor the most tree diversity with bitternut hickory, blackhaw, and tupelo.

All meadows contain woody invasives including crabapple sp., multiflora rose, and autumn olive. The southern meadow is the most highly invaded. Autumn olive and mugwort are especially prevalent. Several individuals of *Miscanthus* were found and treated.

The preserve has one type of bedrock geology--the Lockatong formation. See Map 4.

The preserve has eight soil types (see Map 5) with Quakertown silt loam, 2 to 6 percent slopes; Chalfont silt loam, 2 to 6 percent; and Penn channery silt loam, 2 to 6 percent slopes, being the three most common types. The preserve's soils are described in Appendix Y.

### **CONSERVATION VALUES**

Based on Natural Heritage data, ENSP data, Landscape Project, 1930s forest presence/absence et al. the Preserve has a weighted Ecological Value at 50-75%. See Appendix A for a description of ranking factors.

**Forest and Woodland Communities:** The forest patch found on the Preserve and surrounding area is an important stop-over habitat (spring and fall resting and feeding) for migratory species. The fragmented



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nature of the forest and the lack of a woodland shrub layer reduces the chance of nesting and successful breeding.

Owl pellets were observed in the red cedar stand.

**Old forest:** None. See Map 2.

**Early Successional Communities:**

**Shrublands:** The shrubland is composed of invasive species.

**Meadows/Grasslands:** Meadows vary in abundance and richness of native species. Fields 50 and 52 have high diversity of native herbaceous cover. Field 53 has low diversity and significant invasive and woody cover, but has ragged fringed orchid. Field 54 is mowed as lawn by a neighbor. Field 52 is lower in diversity and is also part of the RHWHP Stony Brook buffer.

**Waterbodies:** A portion of Woodsville Brook runs through the northwest part of the preserve. Portions of the preserve fall into the RHWHP Stony Brook buffer.

A possible vernal pool is the strip of forest along Route 518.

**Rare Species:**

**Rare Plants:** None documented on the Preserve. Natural Heritage shows no species.

**Rare Animals:** The Landscape Project lists habitat for State Special Concern species.

See Appendix L for a list of species.

**THREATS**

**Deer:** White-tailed deer have suppressed much of the native community. Regeneration of the understory is nearly non-existent. Forest health monitoring was performed in 2008/2009 (See main plan table 9).

**Invasive species:** In 2008 staff began walk-through surveys for emerging invasive species on all preserves. Mapping documented each species and its population size. Chinese silvergrass, Callery pear, jetbead, Japanese maple, Siebold's viburnum (eradicated), and Chinese wisteria (on private land adjacent to preserve) were detected. See [www.njisst.org](http://www.njisst.org) for the current status of emerging invasive species at the Preserve.

In 2011 staff completed surveys for invasive plant species on all preserves (see Map 9). Mapping documented each species found and its population size (See Table 1 below). The five species with the highest infestation scores include: Multiflora Rose, Autumn Olive, Non-native cool season grass, Japanese Honeysuckle, and Japanese Stiltgrass.

**Other:** N/A

**Hopewell Valley Community Stewardship Plan  
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**STRATEGIES and ACTIONS:**

**Forest and Woodland Habitat Stewardship:**

All ED/RR species will be treated. No action is recommended for widespread invasive species, except winged euonymus (See Table 1 below). The mature individuals of afore mentioned species should be treated with basal bark applications as detected. Reduced deer density will allow the native plant communities to recover and compete with the widespread invasive species.

**Early Successional Habitat Stewardship:** A biannual winter mowing or burning regime is recommended in all meadows except Field 52. This field has a high number of ash seedlings and is part of the Stony Brook buffer; it will be allowed to succeed to forest.

The variety native species in the northernmost meadow and its hedgerows is notable. *Sabatia sp.* may respond well to a burning regime; intensive restoration activities are not recommended for this meadow. Reed canary grass, mugwort, and Canada thistle should be spot treated with foliar spray (See Table 1 below). Woody invasive species will be removed through meadow maintenance.

For habitat goals and maintenance schedule see Appendix T & U.

**Deer Management:** The preserve is enrolled in the DMP with bow and gun hunting. See Map 8 for delineations of the 150' and 450' safety zones and hunting status.

**Rare Species Management:** All native plant communities should be maintained to provide habitat.

**Neighboring Lands:** See Map 7 for adjacent protected lands.

**Waterbodies Management:** The tributary of the Woodsville Brook is too short to merit restoration efforts.

**Undesirable Activities Management:** N/A

**Scientific Research Assessment:** The Preserve is available for scientific research.

**Recreational Opportunities Assessment:** This property currently has a 1.4 mile loop trail and parking. Currently, there are no opportunities to connect to a regional trail system—none yet exist

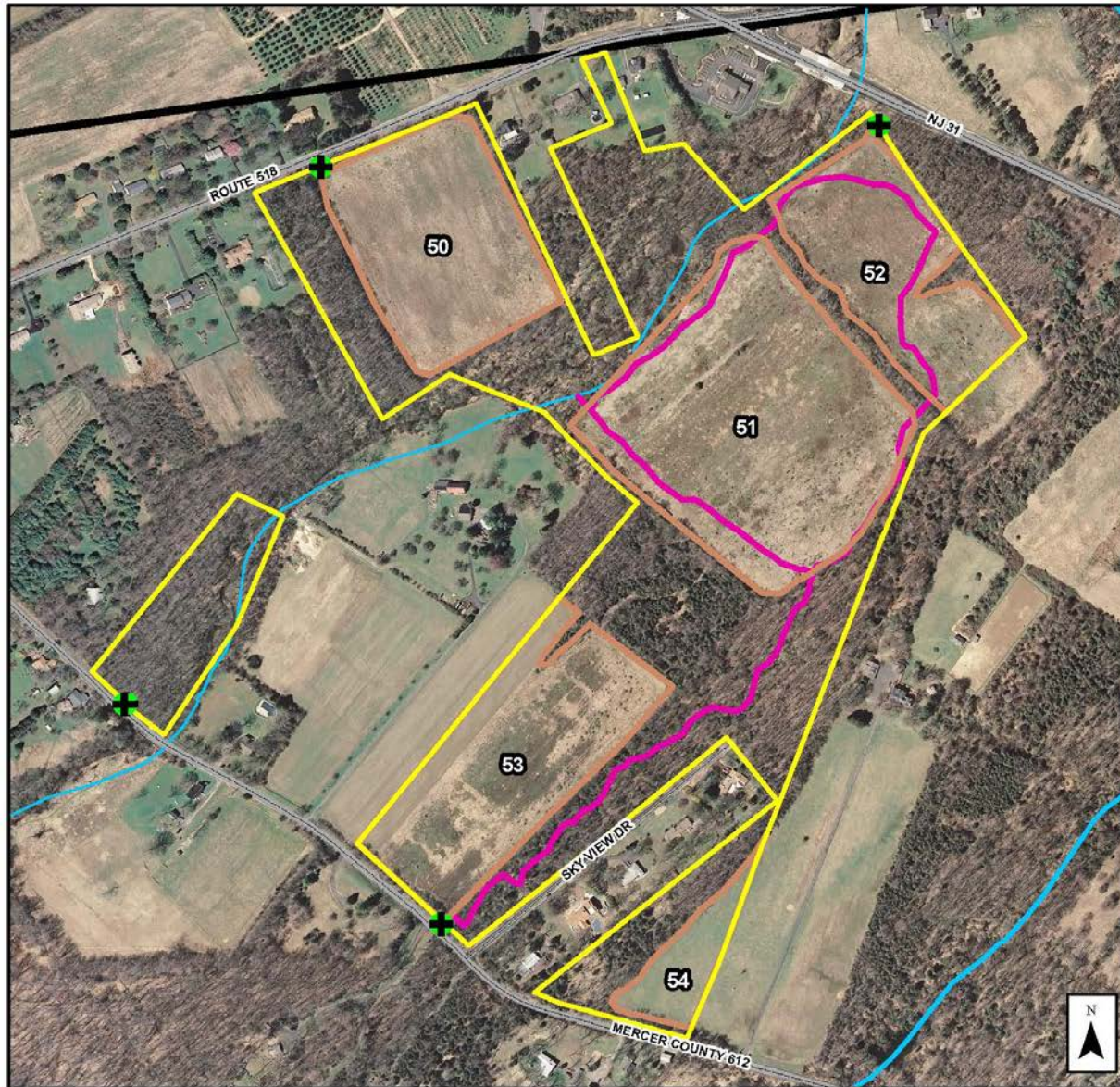
**Hopewell Valley Community Stewardship Plan  
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**Table 1. Invasive Plants – Species Abundance and Treatment Recommendations**

Scientific Name	Common Name	Infestation Index Score <sup>1</sup>	Total Acres Present	Percent of Preserve Area Present	Treatment Recommendation	LOE Estimate (Hours)	Acreage by Percent Ground Cover Categories						
							Category 0: 0%	Category: Trace	Category 1: 1-10%	Category 2: 10-25%	Category 3: 25-50%	Category 4: 50-75%	Category 5: 75-100%
<i>Acer palmatum</i>	Japanese Maple	0.0	1.2	1.6	Eradicate	Strategy 2A	75.22	1.2	0.0	0.0	0.0	0.0	0.0
<i>Acer platanoides</i>	Norway Maple	0.0	0.0	0.0	N/A		76.44	0.0	0.0	0.00	0.0	0.00	0.0
<i>Ailanthus altissima</i>	Tree-of-Heaven	0.0	0.0	0.0	N/A		76.44	0.0	0.0	0.0	0.0	0.0	0.0
<i>Alliaria petiolata</i>	Garlic Mustard	15.8	15.6	20.3	None		60.89	4.2	9.0	0.9	0.8	0.7	0.0
<i>Artemisia vulgaris</i>	Common Mugwort	39.3	21.2	27.8	Control - Field Maintenance	Strategy 3B	55.20	0.3	14.9	0.0	0.0	6.1	0.0
<i>Arthraxon hispidus</i>	Small Carpgrass	13.8	13.8	18.1	None		62.64	0.0	13.8	0.0	0.0	0.0	0.0
<i>Berberis thunbergii</i>	Japanese Barberry	0.0	1.5	2.0	None		74.90	1.5	0.0	0.0	0.0	0.0	0.0
<i>Cardamine impatiens</i>	Narrow-leaved Bittercress	14.4	13.5	17.7	None		62.94	4.6	3.5	5.4	0.0	0.0	0.0
<i>Catalpa bignonioides</i>	Northern Catalpa	0.0	0.0	0.0	N/A		76.44	0.0	0.0	0.0	0.0	0.0	0.0
<i>Celastrus orbiculatus</i>	Asiatic Bittersweet	0.0	0.0	0.0	N/A		76.44	0.0	0.0	0.0	0.00	0.0	0.0
<i>Centurea sp.</i>	Knapweed sp.	0.0	0.0	0.0	N/A		76.44	0.0	0.0	0.0	0.0	0.0	0.0
<i>Cirsium arvense</i>	Canada Thistle	13.3	19.4	25.3	Control - Field Maintenance	Strategy 3B	57.07	6.1	13.3	0.0	0.0	0.0	0.0
<i>Dipsacus sylvestris</i>	Teasel	0.0	0.0	0.0	N/A		76.44	0.0	0.00	0.0	0.0	0.0	0.0
<i>Eleaegnus umbellata</i>	Autumn Olive	151.0	65.5	85.7	Control - Field Maintenance	Strategy 3B	10.91	5.2	17.4	10.1	22.1	6.8	4.0
<i>Euonymus alata</i>	Winged Burning Bush	6.6	6.7	8.7	Control - Treat Fruiting Plants	20	69.78	1.7	3.5	1.5	0.0	0.0	0.00
<i>Iris pseudoacris</i>	Yellow Iris	0.0	0.0	0.0	N/A		76.44	0.0	0.0	0.0	0.0	0.0	0.0
<i>Lespedeza cuneata</i>	Chinese Bushclover	0.0	0.0	0.0	N/A		76.44	0.0	0.0	0.0	0.0	0.0	0.0
<i>Ligustrum obtusifolium</i>	Border Privet	2.5	2.5	3.3	None		73.92	0.0	2.52	0.0	0.0	0.0	0.0
<i>Lonicera japonica</i>	Japanese Honeysuckle	63.2	37.5	49.1	None		38.90	6.5	10.5	13.3	4.9	0.7	1.7
<i>Lonicera maackii</i>	Amur Honeysuckle	0.0	0.0	0.0	N/A		76.44	0.0	0.0	0.0	0.0	0.0	0.0
<i>Lonicera morrowii</i>	Morrow's Honeysuckle	13.4	19.6	25.6	None		56.86	7.0	11.8	0.8	0.00	0.0	0.0
<i>Lysimachia nummularia</i>	Moneywort	0.0	0.0	0.0	N/A		76.44	0.0	0.0	0.0	0.0	0.0	0.0
<i>Lythrum salicaria</i>	Purple Loosestrife	0.0	0.0	0.0	N/A		76.44	0.0	0.0	0.0	0.0	0.0	0.0
<i>Malus toringio</i>	Toringo Crabapple	0.0	0.0	0.0	N/A		76.44	0.0	0.0	0.0	0.0	0.0	0.0
<i>Microstegium vimineum</i>	Japanese Stiltgrass	60.9	26.6	34.9	None		49.80	1.4	6.5	9.2	5.4	0.8	3.3
N/A	Non-native, cool season grass	115.6	36.9	48.3	None		39.53	0.0	7.1	0.0	14.2	12.3	3.4
<i>Phalaris arundinacea</i>	Reed Canary Grass	23.4	14.2	18.6	Control - Field Maintenance	Strategy 3B	62.23	0.0	6.2	7.1	0.8	0.0	0.2
<i>Phragmites australis</i>	Common Reed	0.0	0.0	0.0	N/A		76.44	0.0	0.0	0.0	0.0	0.0	0.0
<i>Polygonum cuspidatum</i>	Japanese Knotweed	0.0	0.0	0.0	N/A		76.44	0.0	0.0	0.0	0.0	0.0	0.0
<i>Polygonum perfoliatum</i>	Mie-a-Minute	0.0	0.0	0.0	N/A		76.44	0.0	0.0	0.0	0.0	0.0	0.0
<i>Pyrus calleryana</i>	Callery Pear	0.0	0.0	0.0	N/A		76.44	0.0	0.0	0.0	0.0	0.0	0.0
<i>Ranunculus ficaria</i>	Lesser Celandine	0.0	0.0	0.0	N/A		76.44	0.0	0.0	0.0	0.0	0.0	0.0
<i>Robinia pseudoacacia</i>	Black Locust	0.6	0.3	0.4	Control - Field Maintenance	Strategy 3B	76.16	0.0	0.0	0.3	0.0	0.0	0.0
<i>Rosa multiflora</i>	Multiflora Rose	187.0	71.7	93.8	Control - Field Maintenance	Strategy 3B	4.73	0.8	9.5	40.3	2.2	4.4	14.6
<i>Rubus pheonculusiasus</i>	Wineberry	5.9	7.3	9.5	Control - Field Maintenance	Strategy 3B	69.18	2.1	4.4	0.8	0.0	0.0	0.0
<i>Securigera varia</i>	Crown vetch	0.0	0.0	0.0	N/A		76.44	0.0	0.0	0.0	0.0	0.0	0.0
<i>Viburnum dilatatum</i>	Linden Viburnum	0.0	0.0	0.0	N/A		76.44	0.0	0.0	0.0	0.0	0.0	0.0
<i>Viburnum sieboldii</i>	Siebold's Viburnum	0.0	0.0	0.0	N/A		76.44	0.0	0.0	0.0	0.0	0.0	0.0
<i>Wisteria floribunda</i>	Japanese Wisteria	0.0	0.0	0.0	N/A		76.44	0.0	0.0	0.0	0.0	0.0	0.0
<b>Total LOE</b>						<b>20</b>							

<sup>1</sup> The Infestation Index Score combines the extent of acreage infested and the intensity of the infestation. It was derived by multiplying the cover class number by the number of acres within each cover class.

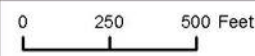
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Community  
Stewardship Plan

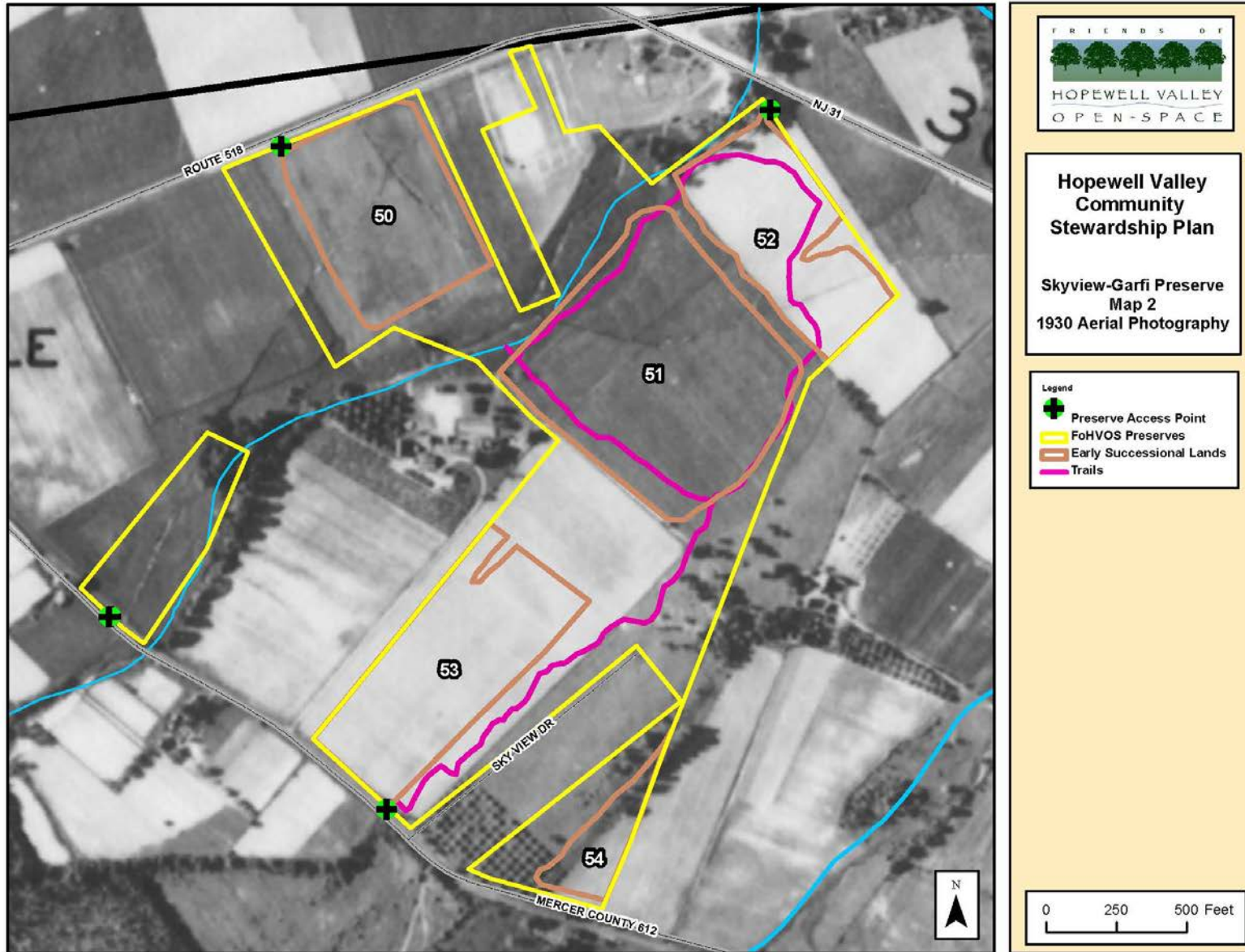
Skyview-Garfi Preserve  
Map 1  
2007 Aerial Photography

- Legend
- Preserve Access Point
  - FoHVOS Preserves
  - Early Successional Lands
  - Trails

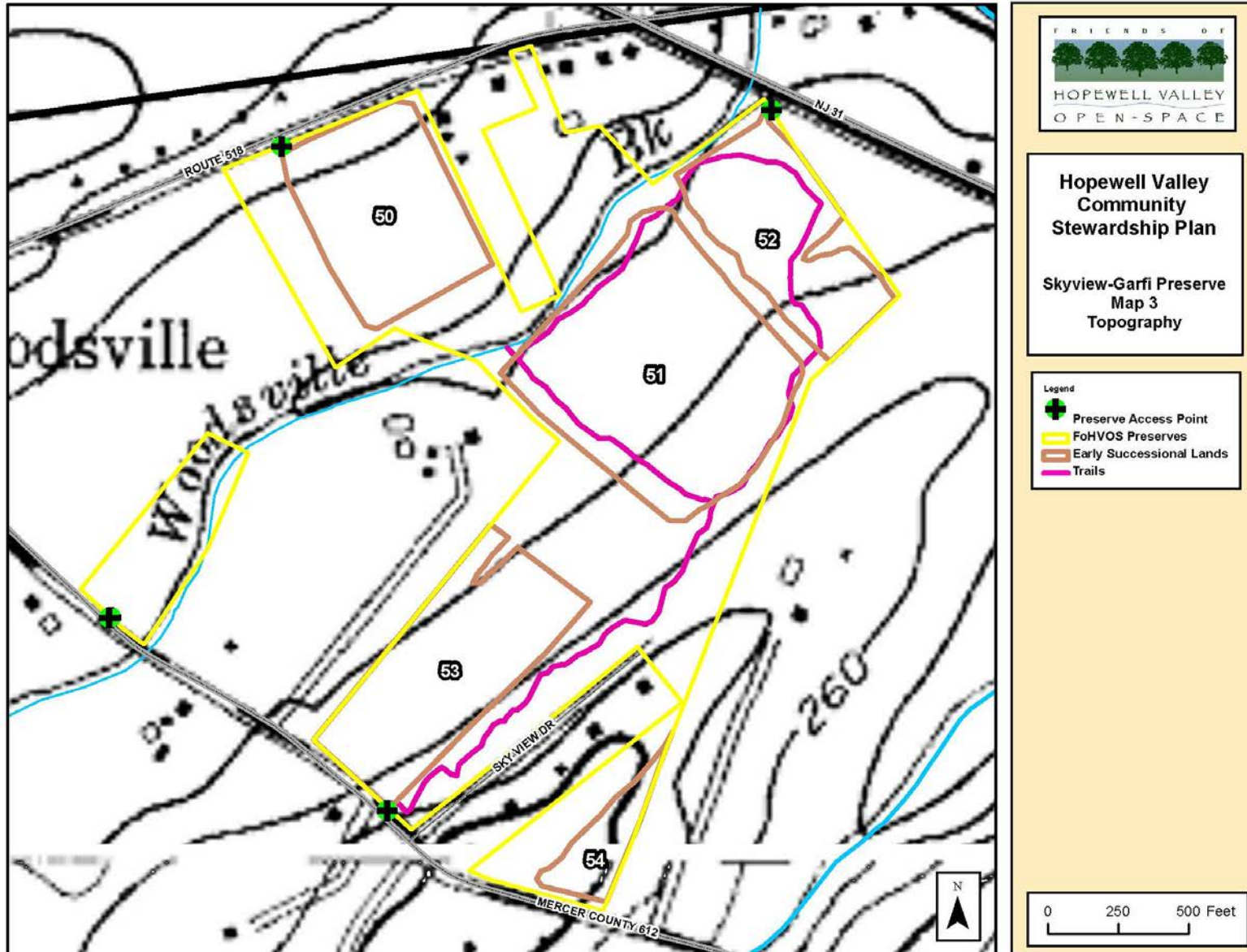




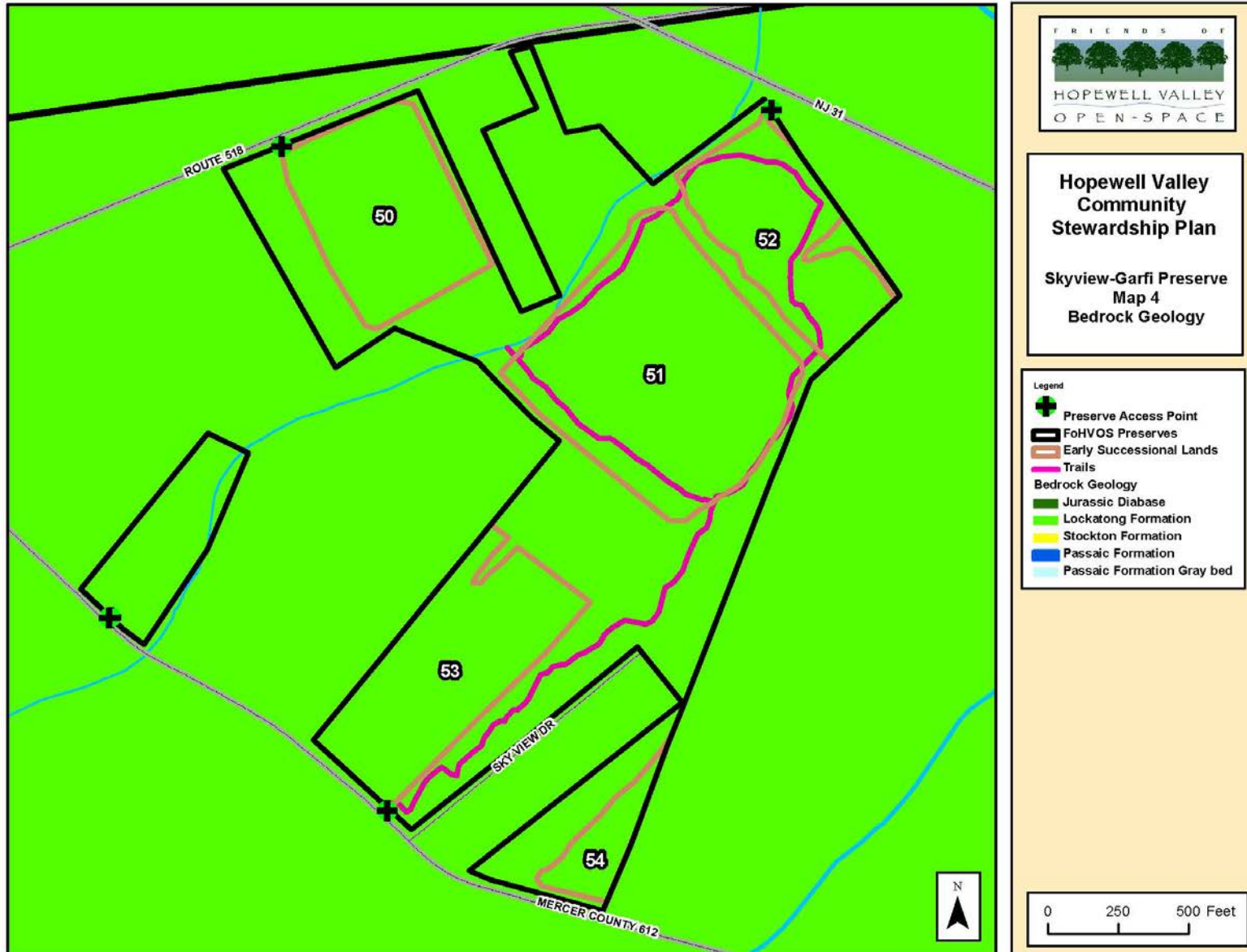
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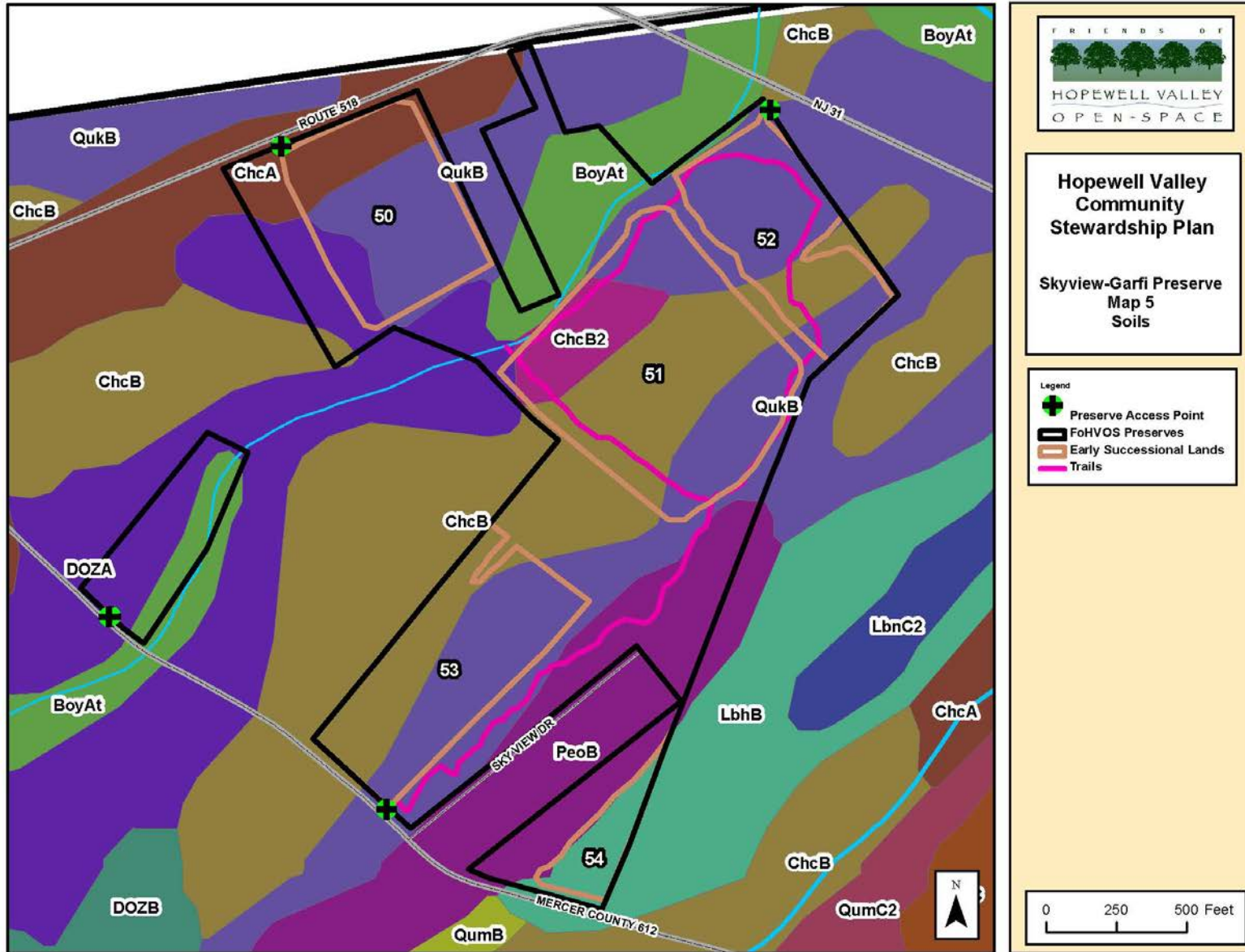


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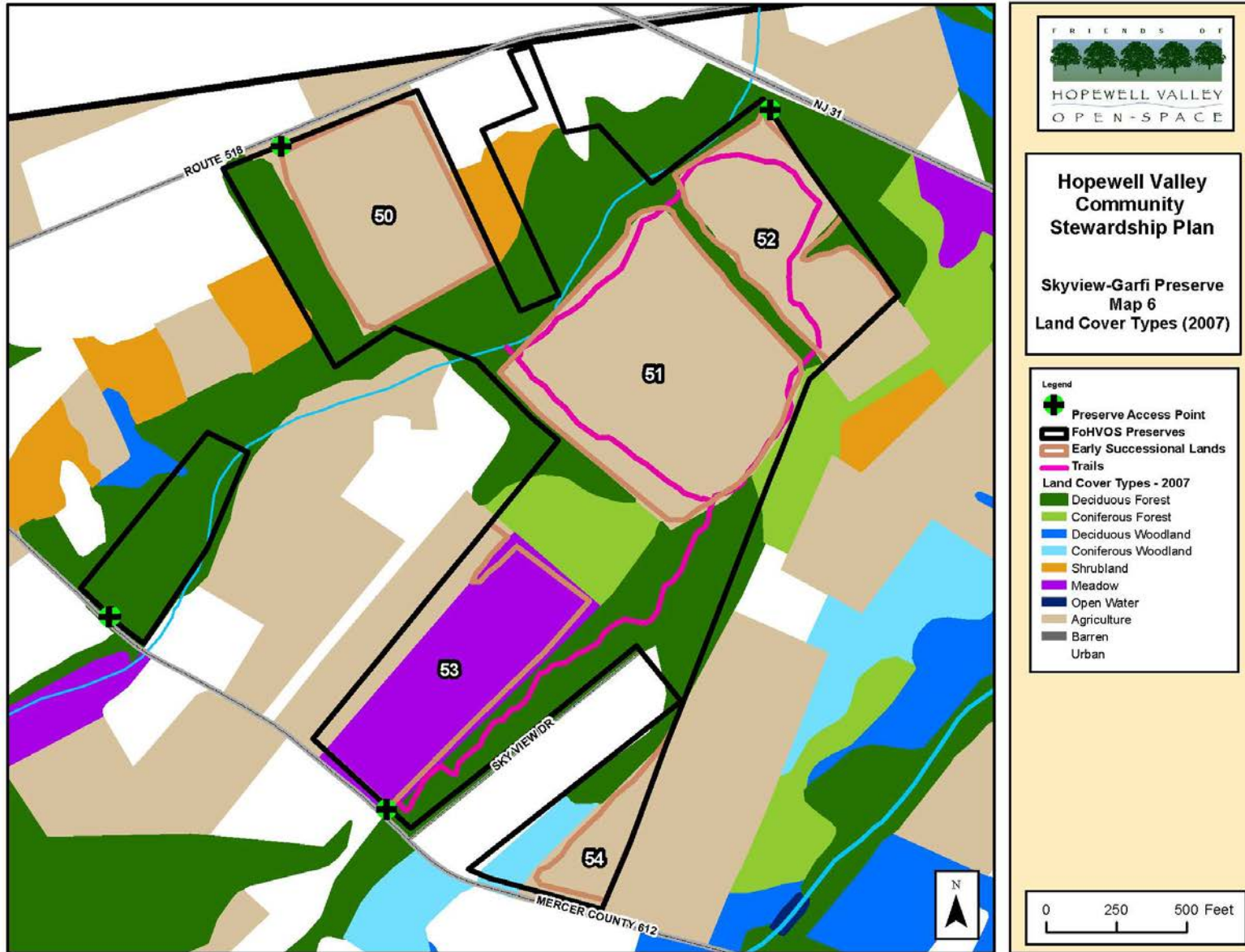


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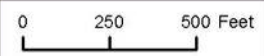
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**Hopewell Valley  
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**Skyview-Garfi Preserve  
 Map 8  
 Deer Management**

- Legend
- Preserve Access Point
  - FoHVOS Preserves
  - Early Successional Lands
  - Trails
  - Hunting Safety Zone - 150 foot
  - Hunting Safety Zone - 450 foot
  - Deer Management Status - Parcel
  - Depredation Permit
  - Deer Management Program
  - Recreational Hunting
  - Unknown
  - No Hunting Allowed



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**Appendix 21.  
Stephens Preserve**

**Acreage:** 5.07

**Block and Lot:** B2, L8.01

**Ownership:** FoHVOS (100%)

**Year(s) Purchased:** 2005

**Location & Access:** Preserve is located on the east side of Hopewell-Wertsville Road. Preserve is accessed by foot just south of the redeveloped parcel. Parking is available on Minnietown Road or at Hillbilly Hall (by permission). **Nearest street address:** 197 Hopewell-Wertsville Road, Hopewell, NJ 08525 (actual Preserve address).

**Structures:** None

Additional property information is summarized in Appendix W. The following Preserve maps are provided at the end of this document:

- Map 1 2007 Aerial Photography
- Map 2 1930 Aerial Photography
- Map 3 Topography
- Map 4 Bedrock Geology
- Map 5 Soils
- Map 6 Land Cover Types (2007)
- Map 7 Protected Lands
- Map 8 Deer Management
- Map 9 Invasive Plant Cover (Relative Infestation Severity for all species)

**Website Description:**

**Stephens Preserve**, a forested tract in the Sourland Mountain region of Hopewell, protects wood turtle habitat, and is adjacent to the Audubon Featherbed Lane Important Bird Area. Here, red maples dominate the canopy while highbush blueberry bushes make up the shrub layer.

**BROAD PROPERTY DESCRIPTION**

The Stephen Preserve (See Map 1) is located north of Hopewell Borough in the Sourland Mountain region. The topography (See Map 3) is flat at 130 feet above sea level.

Based upon analysis of NJDEP's 2007 Land Use/Land Cover dataset, the preserve contains one broad plant community: Deciduous Forest (> 50% canopy) - Upland. The preserve is surrounded by primarily forest and also residential and commercial development to the immediate north. Land Use/Land Cover is summarized in Appendix X and illustrated in Map 6.

The preserve's forest harbors a mesic to moist plant community: red maple, pin oak, ash, American beech, black cherry, and swamp white oak in the canopy; black huckleberry, highbush blueberry, deerberry, ironwood, spicebush, *Rubus* sp., Virginia creeper, and round leaved greenbriar in the subcanopy and shrub layer; jewelweed, wood reed grass, rice cut grass, sedges, partridgeberry, bugleweed, Canada mayflower, and jack-in-the-pulpit. Invasive plants are concentrated around the redeveloped parcel to the north.

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The preserve has one type of bedrock geology--the Lockatong formation. See Map 4.

The preserve has 1 soil type (see Map 5) -- Chalfont silt loam, 2 to 6 percent slopes. The preserve's soils are described in Appendix Y.

**CONSERVATION VALUES**

Based on an analysis involving the ranking of ecological values and threats (See Community Stewardship Plan text), the Preserve has a weighted Ecological Value of >75%. See Appendix A for a description of ranking factors.

**Forest and Woodland Communities:** The Preserve is a part of the core forest of the Sourland Mountain region and the RHWHP Sourlands Central Forest Focal Area. It serves to maintain the region as forest. While the diabase ridge to the north features plant communities that prefer richer soils, the preserve's forest contains plants that prefer acidic soils, typically found in this area of the Sourlands. This ever-shifting "tapestry" of soils, hydrology and geology supports exponentially diverse plant and wildlife communities.

**Old forest:** None. See Map 2.

**Early Successional Communities:**

**Shrublands:** N/A

**Meadows/Grasslands:** N/A

**Waterbodies:** N/A

**Rare Species:**

**Rare Plants:** None documented on the Preserve, but Natural Heritage data shows winged monkeyflower (*Mimulus alatus*), as present in the area.

**Rare Animals:** The Landscape Project has identified the Preserve as ranked for species of State Endangered, Threatened, and Special Concern Species. The Preserve has suitable wood turtle habitat.

See Appendix L for a list of species.

**THREATS**

**Deer:** The understory and herb layers are severely browsed. Regeneration of the shrub and canopy layer are currently non-existent. Most individual plants in the understory layer are <4'.

**Invasive species:** In 2008 staff began walk-through surveys for emerging invasive species on all preserves. Mapping documented each species and its population size. No emerging species have been detected at the Preserve. See [www.njisst.org](http://www.njisst.org) for the current status of emerging invasive species at the Preserve.

In 2011 staff completed surveys for invasive plant species on all preserves (see Map 9). Mapping documented each species found and its population size (See Table 1 below). The four species with the highest infestation scores include: Japanese Stiltgrass, Japanese Barberry, Multiflora Rose, and Japanese Honeysuckle.

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**Other:** Tree cutting has occurred on the northern edge of the preserve.

**STRATEGIES and ACTIONS**

**Forest and Woodland Habitat Stewardship:** Annual surveys for and eradication of emerging invasive species is a high priority at this Preserve. No action is recommended for widespread invasive species. Reduced deer density will allow the native plant communities to recover and compete with all other widespread invasive species on a long-term basis.

**Early Successional Habitat Stewardship:** N/A

**Deer Management:** The preserve has not been enrolled in the DMP. The 450' safety zone disallows hunting across the entire preserve. However, the 150' safety zone for bow hunting allows for hunting in the majority of the preserve and hunters will be sought for the 2012/2013 seasons. See Map 8 for delineations of the 150' and 450' safety zones and hunting status.

**Rare Species Management:** Survey for presence of rare species. Maintain forest habitat for rare species. Because winged monkeyflower typically occurs along quiet riparian corridors, the species is unlikely to be found at the preserve.

**Neighboring Lands:** See Map 7 for adjacent protected lands.

**Waterbodies Management:** N/A

**Undesirable Activities Management:** Contact neighbors about issues.

**Scientific Research Assessment:** The preserve is available for scientific research.

**Recreational Opportunities Assessment:** This property is not suitable for self-contained trail because it is too small. Parking area is limited as well. However, this trail has potential to act as part of a regional trail system (Trail extension through Ruggieri, Preston, etc.).

**Hopewell Valley Community Stewardship Plan  
Friends of Hopewell Valley Open Space**

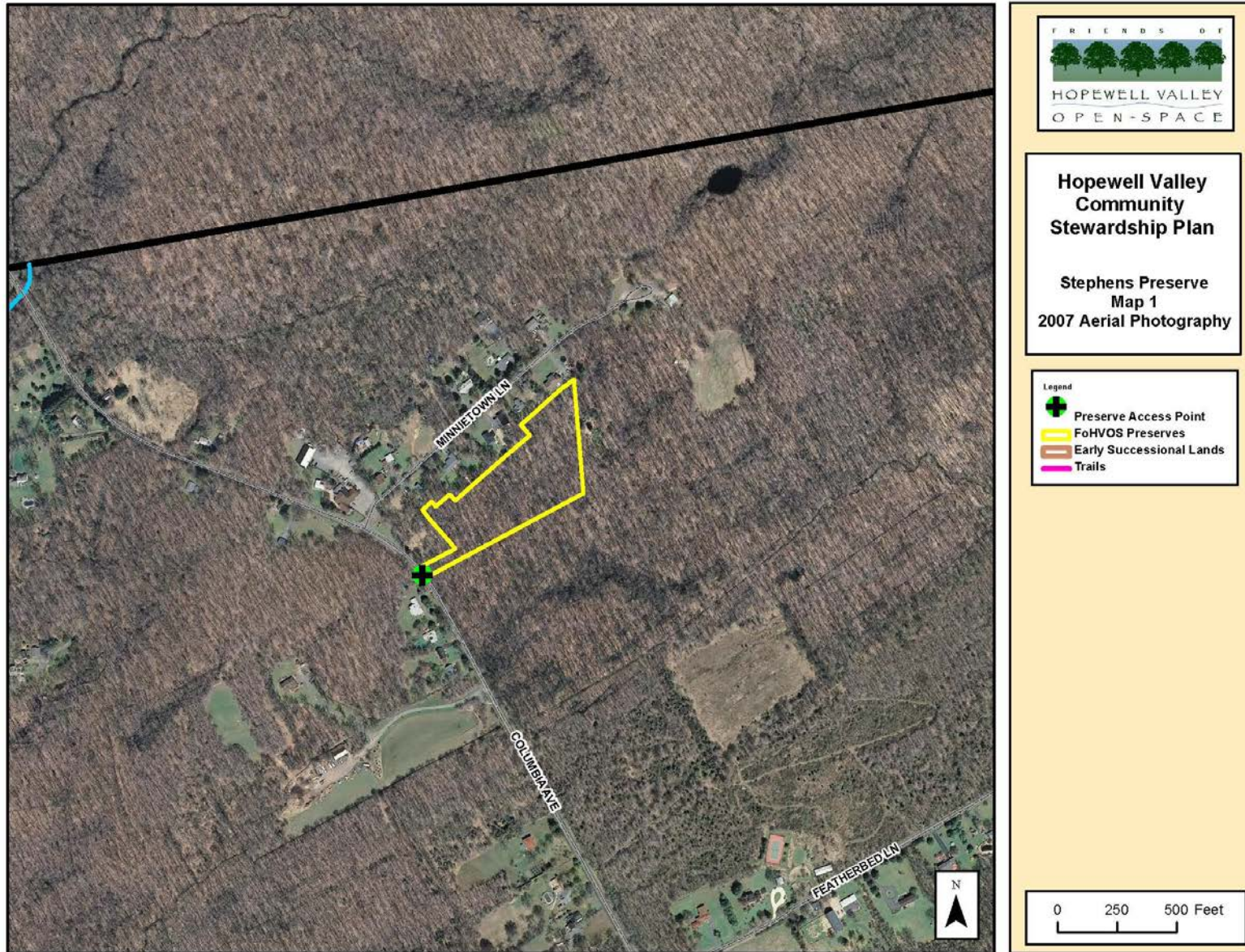
**Table 1. Invasive Plants – Species Abundance and Treatment Recommendations**

Scientific Name	Common Name	Infestation Index Score <sup>1</sup>	Total Acres Present	Percent of Preserve Area Present	Treatment Recommendation	LOE Estimate (Hours)	Acreage by Percent Ground Cover Categories						
							Category 0: 0%	Category: Trace	Category 1: 1-10%	Category 2: 10-25%	Category 3: 25-50%	Category 4: 50-75%	Category 5: 75-100%
<i>Acer palmatum</i>	Japanese Maple	0.0	0.0	0.0	N/A		5.07	0.0	0.0	0.0	0.0	0.0	0.0
<i>Acer platanoides</i>	Norway Maple	0.0	0.0	0.0	N/A		5.07	0.0	0.0	0.00	0.0	0.00	0.0
<i>Ailanthus altissima</i>	Tree-of-Heaven	0.0	0.0	0.0	N/A		5.07	0.0	0.0	0.0	0.0	0.0	0.0
<i>Alliaria petiolata</i>	Garlic Mustard	0.0	0.0	0.0	N/A		5.07	0.0	0.0	0.0	0.0	0.0	0.0
<i>Artemisia vulgaris</i>	Common Mugwort	0.0	0.0	0.0	N/A		5.07	0.0	0.0	0.0	0.0	0.0	0.0
<i>Arthraxon hispidus</i>	Small Carpgrass	0.0	0.0	0.0	N/A		5.07	0.0	0.0	0.0	0.0	0.0	0.0
<i>Berberis thunbergii</i>	Japanese Barberry	6.8	5.1	100.0	None		0.00	0.0	4.2	0.0	0.8	0.0	0.0
<i>Cardamine impatiens</i>	Narrow-leaved Bittercress	0.0	0.0	0.0	N/A		5.07	0.0	0.0	0.0	0.0	0.0	0.0
<i>Catalpa bignonioides</i>	Northern Catalpa	0.0	0.0	0.0	N/A		5.07	0.0	0.0	0.0	0.0	0.0	0.0
<i>Celastrus orbiculatus</i>	Asiatic Bittersweet	0.0	0.0	0.0	N/A		5.07	0.0	0.0	0.0	0.00	0.0	0.0
<i>Centurea sp.</i>	Knapsweed sp.	0.0	0.0	0.0	N/A		5.07	0.0	0.0	0.0	0.0	0.0	0.0
<i>Cirsium arvense</i>	Canada Thistle	0.0	0.0	0.0	N/A		5.07	0.0	0.0	0.0	0.0	0.0	0.0
<i>Dipsacus sylvestris</i>	Teasel	0.0	0.0	0.0	N/A		5.07	0.0	0.00	0.0	0.0	0.0	0.0
<i>Eleagnus umbellata</i>	Autumn Olive	0.0	0.0	0.0	N/A		5.07	0.0	0.0	0.0	0.0	0.0	0.0
<i>Euonymus alata</i>	Winged Burning Bush	0.0	0.0	0.0	N/A		5.07	0.0	0.0	0.0	0.0	0.0	0.00
<i>Iris pseudoacris</i>	Yellow Iris	0.0	0.0	0.0	N/A		5.07	0.0	0.0	0.0	0.0	0.0	0.0
<i>Lespedeza cuneata</i>	Chinese Bushclover	0.0	0.0	0.0	N/A		5.07	0.0	0.0	0.0	0.0	0.0	0.0
<i>Ligustrum obtusifolium</i>	Border Privet	0.0	0.0	0.0	N/A		5.07	0.0	0.00	0.0	0.0	0.0	0.0
<i>Lonicera japonica</i>	Japanese Honeysuckle	4.6	5.1	100.0	None		0.00	0.6	4.2	0.2	0.0	0.0	0.0
<i>Lonicera maackii</i>	Amur Honeysuckle	0.0	0.0	0.0	N/A		5.07	0.0	0.0	0.0	0.0	0.0	0.0
<i>Lonicera morrowii</i>	Morrow's Honeysuckle	0.0	0.0	0.0	N/A		5.07	0.0	0.0	0.0	0.00	0.0	0.0
<i>Lysimachia nummularia</i>	Moneywort	0.0	0.0	0.0	N/A		5.07	0.0	0.0	0.0	0.0	0.0	0.0
<i>Lythrum salicaria</i>	Purple Loosestrife	0.0	0.0	0.0	N/A		5.07	0.0	0.0	0.0	0.0	0.0	0.0
<i>Malus toringo</i>	Toringo Crabapple	0.0	0.0	0.0	N/A		5.07	0.0	0.0	0.0	0.0	0.0	0.0
<i>Microstegium vimineum</i>	Japanese Stiltgrass	25.4	5.1	100.0	None		0.00	0.0	0.0	0.0	0.0	0.0	5.1
N/A	Non-native, cool season grass	0.0	0.0	0.0	N/A		5.07	0.0	0.0	0.0	0.0	0.0	0.0
<i>Phalaris arundinacea</i>	Reed Canary Grass	0.0	0.0	0.0	N/A		5.07	0.0	0.0	0.0	0.0	0.0	0.0
<i>Phragmites australis</i>	Common Reed	0.0	0.0	0.0	N/A		5.07	0.0	0.0	0.0	0.0	0.0	0.0
<i>Polygonum cuspidatum</i>	Japanese Knotweed	0.0	0.0	0.0	N/A		5.07	0.0	0.0	0.0	0.0	0.0	0.0
<i>Polygonum perfoliatum</i>	Mile-a-Minute	0.0	0.0	0.0	N/A		5.07	0.0	0.0	0.0	0.0	0.0	0.0
<i>Pyrus calleryana</i>	Callery Pear	0.0	0.0	0.0	N/A		5.07	0.0	0.0	0.0	0.0	0.0	0.0
<i>Ranunculus ficaria</i>	Lesser Celandine	0.0	0.0	0.0	N/A		5.07	0.0	0.0	0.0	0.0	0.0	0.0
<i>Robinia pseudoacacia</i>	Black Locust	0.0	0.0	0.0	N/A		5.07	0.0	0.0	0.0	0.0	0.0	0.0
<i>Rosa multiflora</i>	Multiflora Rose	6.8	5.1	100.0	None		0.00	0.0	4.2	0.0	0.8	0.0	0.0
<i>Rubus phoenicolasius</i>	Wineberry	0.0	0.0	0.0	N/A		5.07	0.0	0.0	0.0	0.0	0.0	0.0
<i>Securigera varia</i>	Crown vetch	0.0	0.0	0.0	N/A		5.07	0.0	0.0	0.0	0.0	0.0	0.0
<i>Viburnum dilatatum</i>	Linden Viburnum	0.0	0.0	0.0	N/A		5.07	0.0	0.0	0.0	0.0	0.0	0.0
<i>Viburnum sieboldii</i>	Siebold's Viburnum	0.0	0.0	0.0	N/A		5.07	0.0	0.0	0.0	0.0	0.0	0.0
<i>Wisteria floribunda</i>	Japanese Wisteria	0.0	0.0	0.0	N/A		5.07	0.0	0.0	0.0	0.0	0.0	0.0
<b>Total LOE</b>						<b>0</b>							

<sup>1</sup> The Infestation Index Score combines the extent of acreage infested and the intensity of the infestation. It was derived by multiplying the cover class number by the number of acres within each cover class.

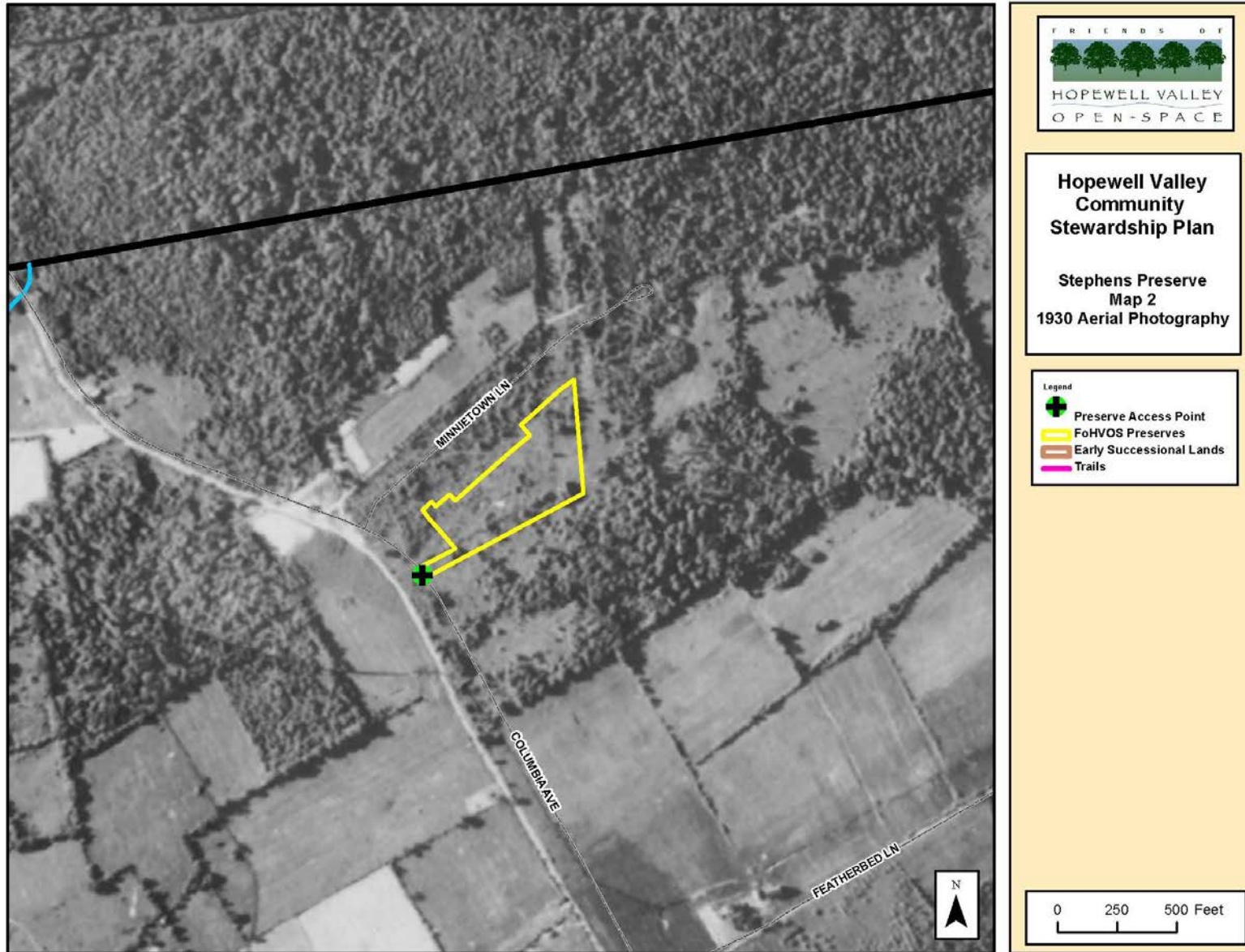


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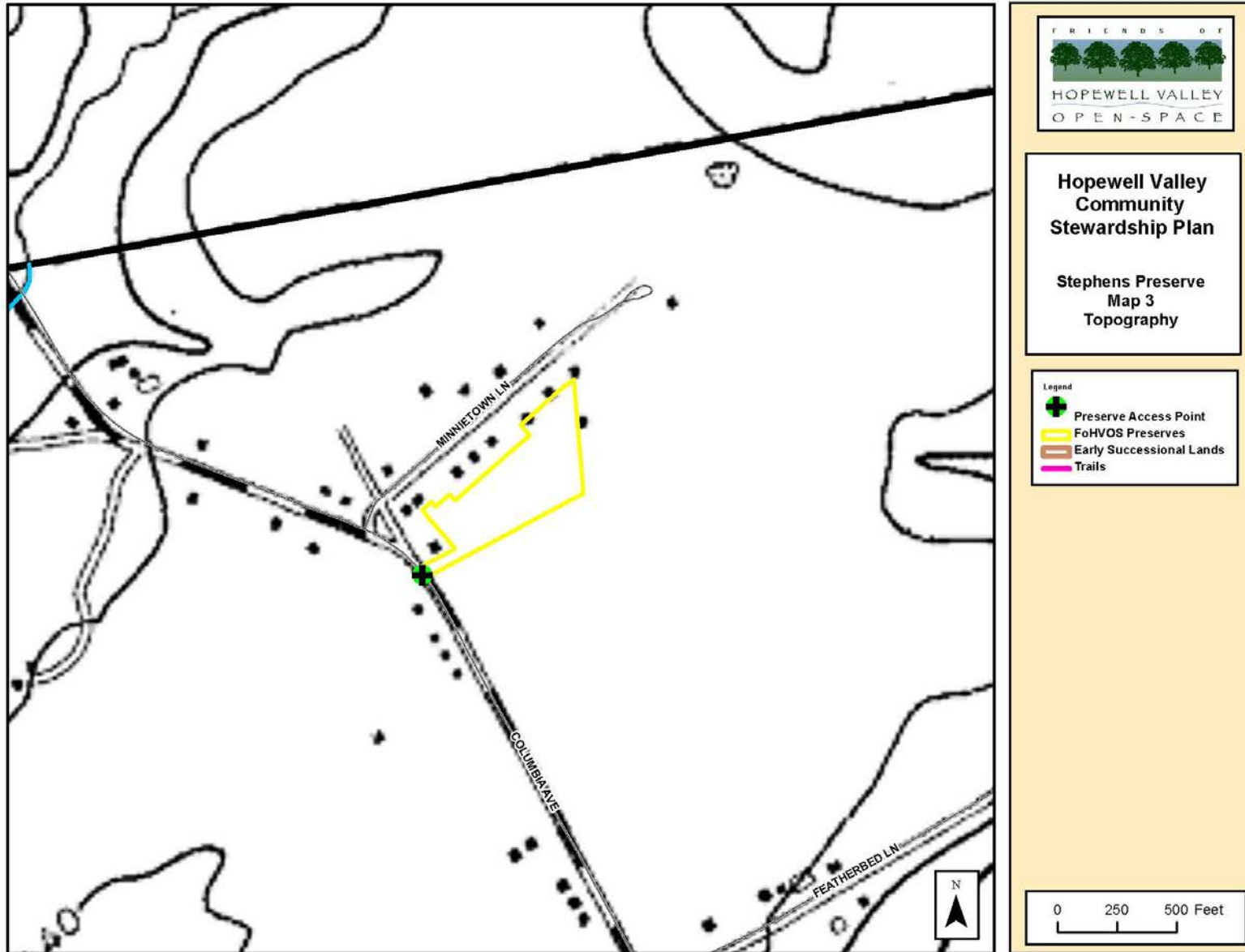




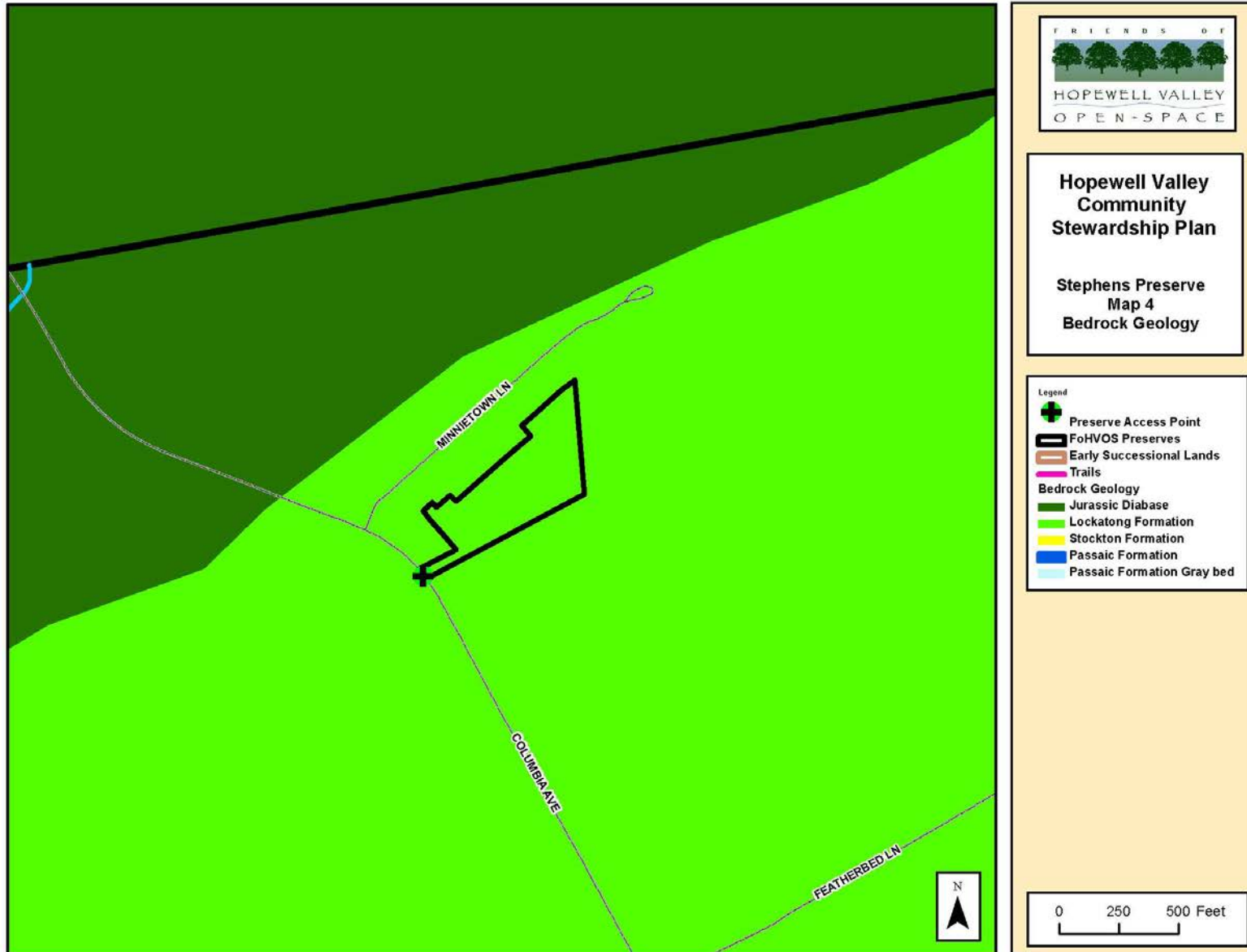
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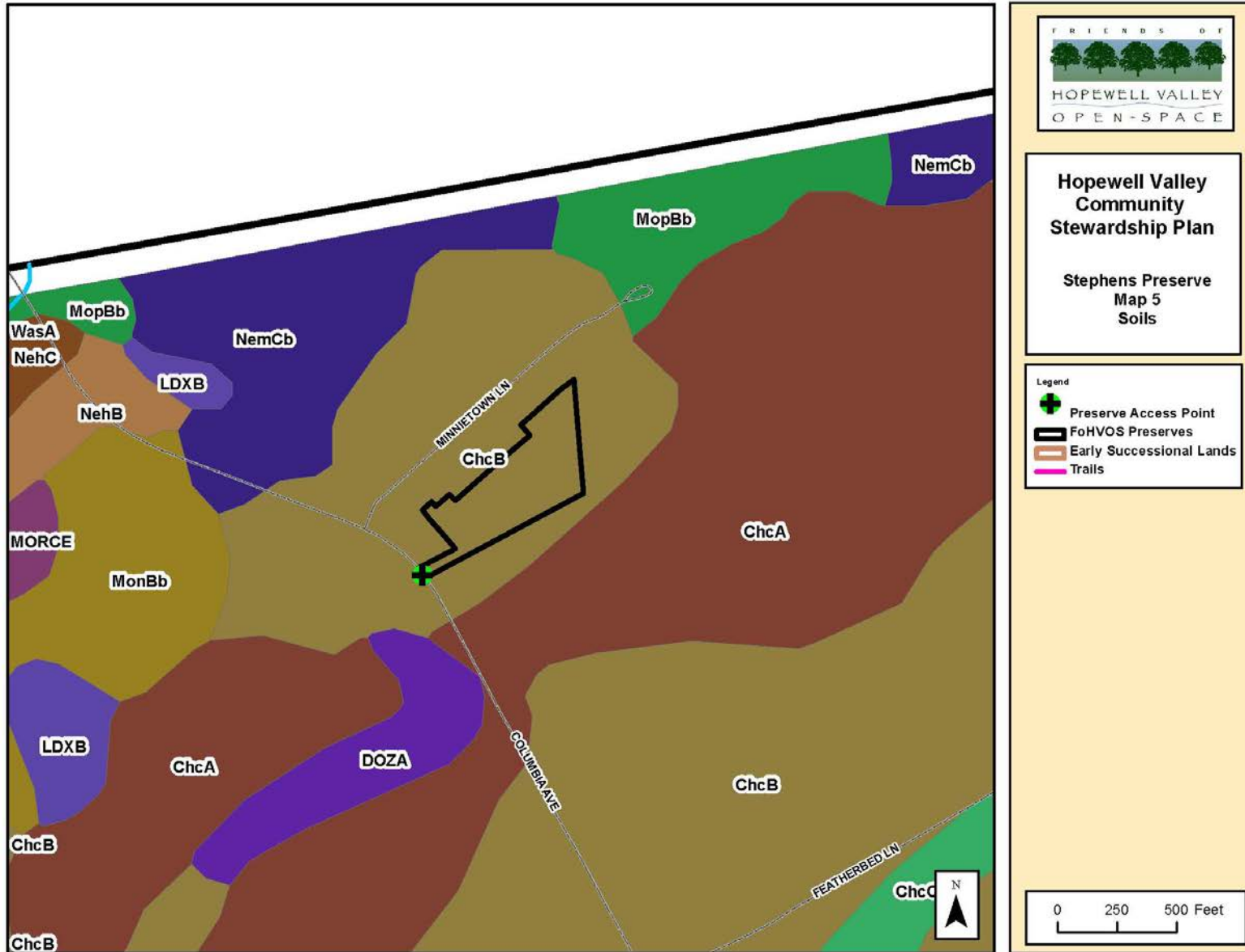


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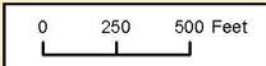
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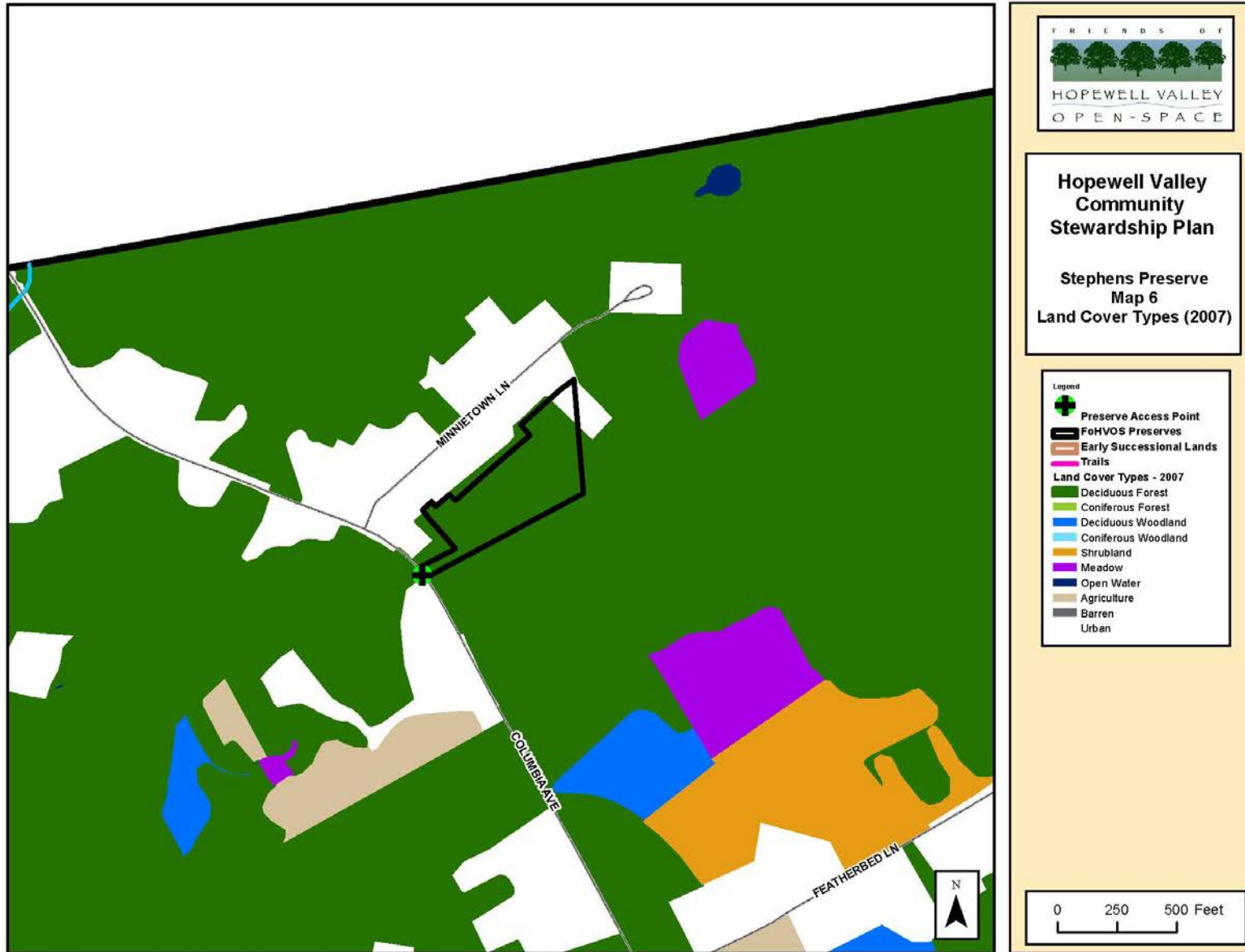
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**Stephens Preserve  
 Map 5  
 Soils**

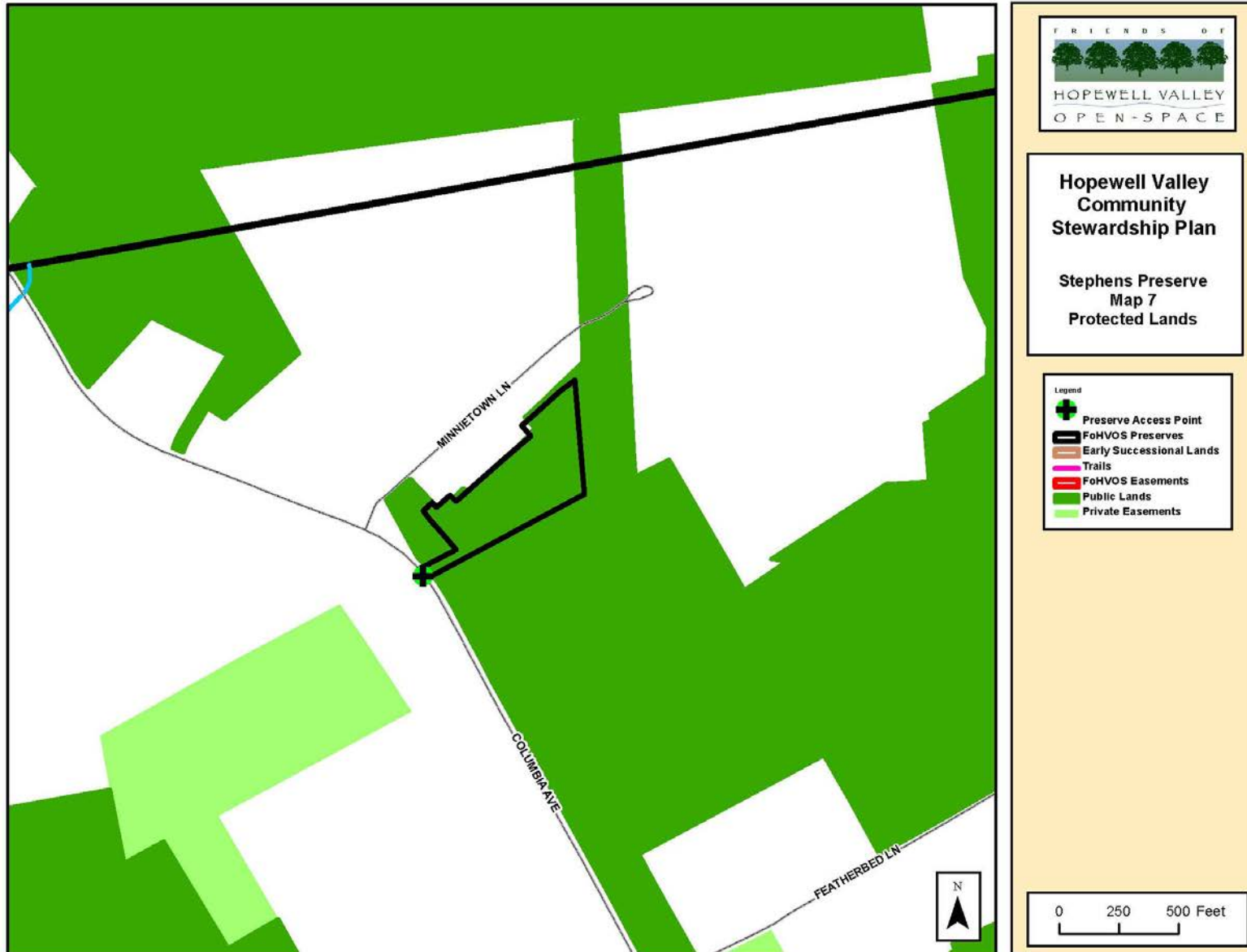
- Legend
- Preserve Access Point
  - FoHVOS Preserves
  - Early Successional Lands
  - Trails



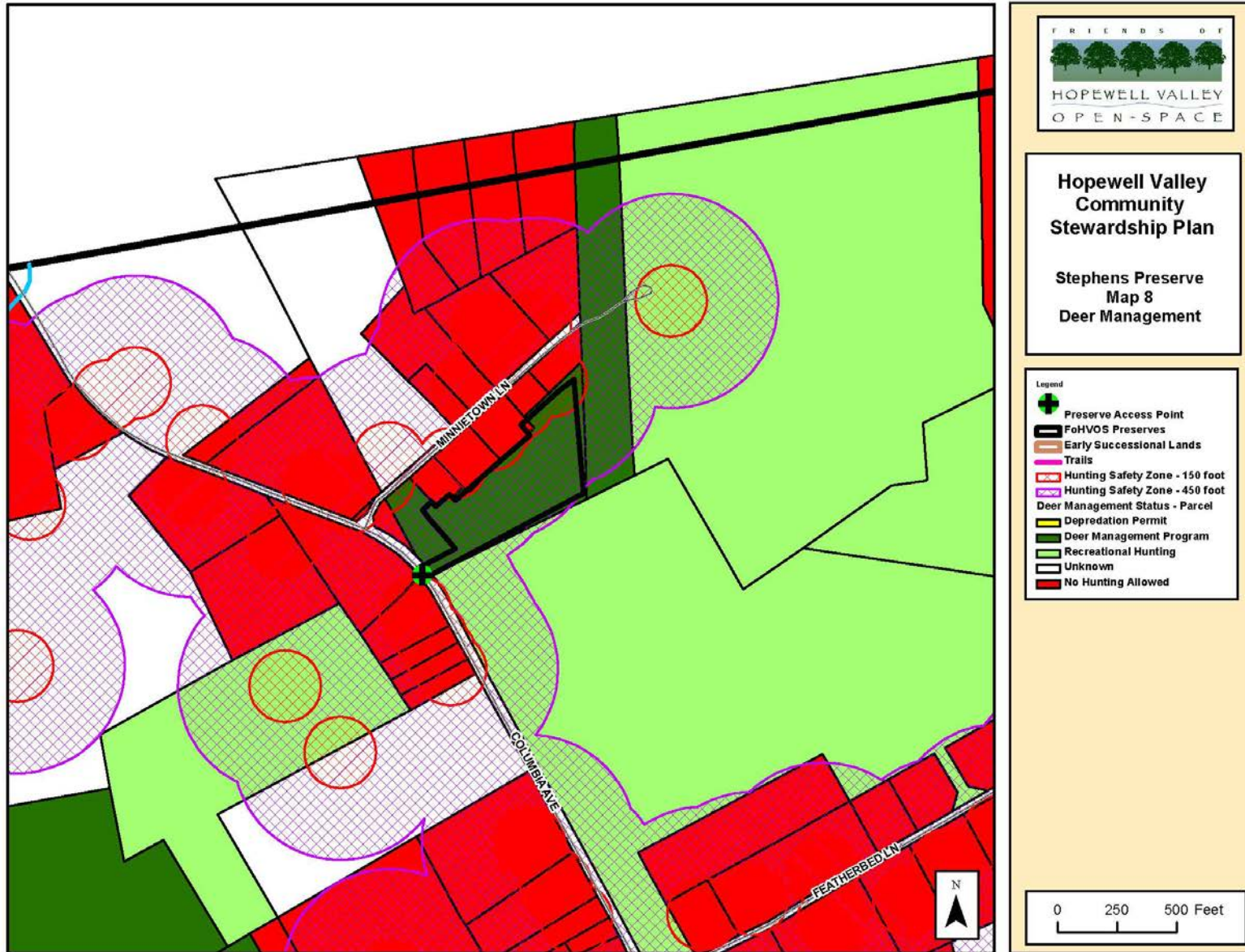
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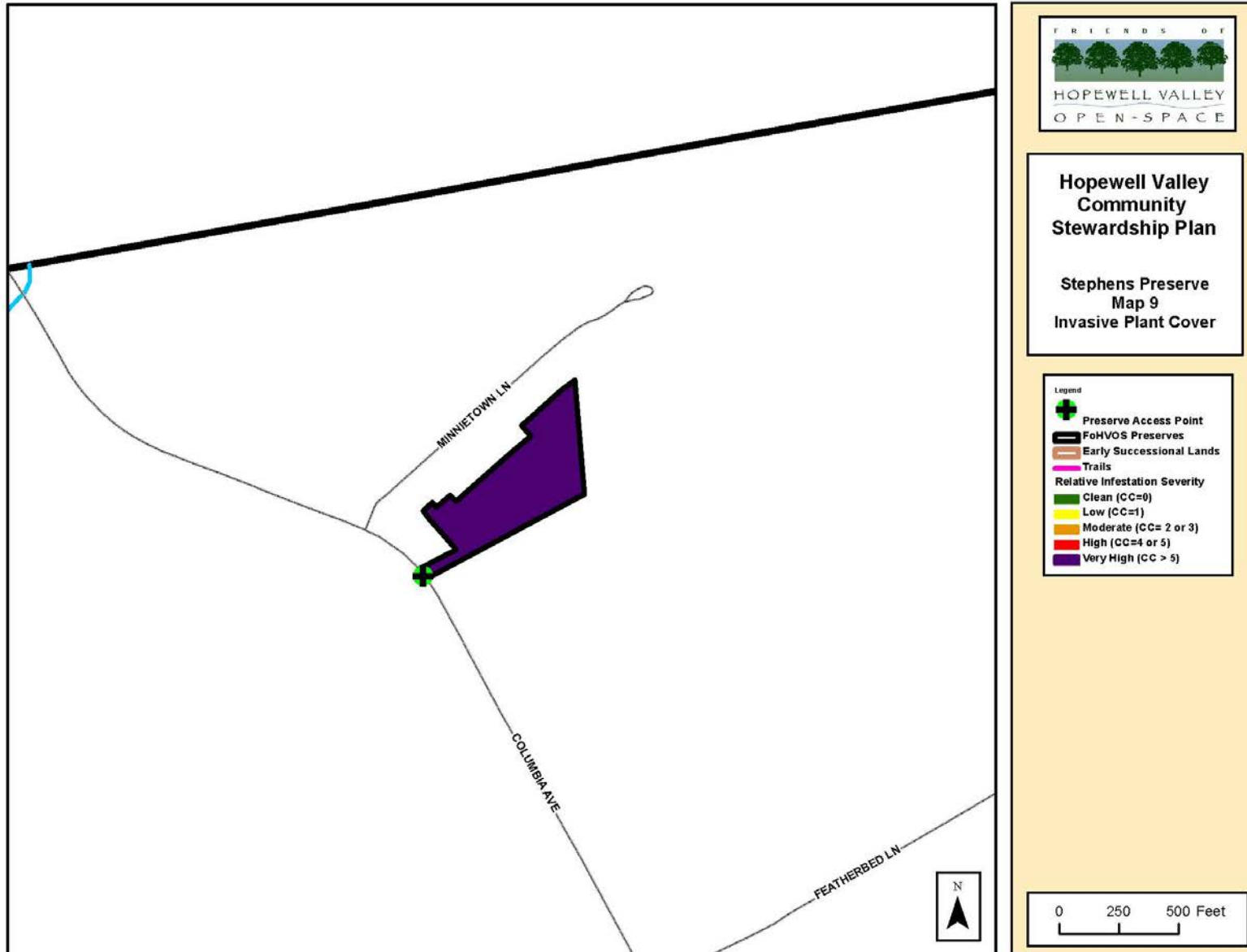


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**Appendix 22.  
Ted Stiles Preserve at Baldpate Mountain**

**Acreage:** 1,222

**Block and Lot:** Multiple. B59, L2; B60, L1, 5, 6, 7, 7.01, 17, 18, 21, 27, 31, 32, 37, 38, 43, 47, 50

**Ownership:** NJDEP, Mercer County, Hopewell Township, FoHVOS. Percentages TBD. **Note:** Mercer County maintains all infrastructure: driveways, parking lots, gates, buildings, and trails.

**Year(s) Purchased:** 1998

**Location & Access:** Ted Stiles Preserve at Baldpate Mountain is located between Route 29, Fiddler's Creek Road and Pleasant Valley Road. There are two major public access points with large parking areas:

- 1.) Primary Southern Entrance: Fiddler's Creek Road (0.1 mile east of Route 29) through access gates to Strawberry Hill and the modern facilities at the top of the preserve. Parking limited. Staff and handicapped visitors may park at modern facilities. Less than ¼ mile east of this entrance lays the entrance for a large parking area located at the base of the mountain. Nearest street address: 11 Fiddler's Creek Road, Titusville, NJ 08560
- 2.) Primary Northern Entrance: A large parking area, including space for horse trailers, occurs along Pleasant Valley Road (1.2 miles east of Route 29). Nearest street address: 84 Pleasant Valley Road, Titusville, NJ 08560

Additional access occurs at the following:

- 3.) Fiddler's Creek Road (1.1 miles east of Route 29 or 0.5 miles west of Church Road) to roadside parking at Creek Spur trail.
- 4.) Church Road (just east of intersection with Fiddler's Creek Road) at Kuser Easement/Honey Hollow Trail. Parking is on Brick Road (part of Washington Crossing State Park). Marked with a sign reading "Niederer's Pond."
- 5.) Pleasant Valley Road (1.3 miles east of Route 29 at Hunter Road. Hunter Road is closed to traffic. It is owned by Mercer County Park Commission/Howell Living History Farm.) to Pleasant Valley Trail. No parking is immediately available. Park at the Howell Living History Farm and walk down Hunter Road to Pleasant Valley Road. Gates to the Farm closed after hours.
- 6.) Route 29 (0.6 miles north of Fiddler's Creek Road) to Switchback Trail. Parking area is unmarked. Park in grass alongside old home.

**Structures:** Two modern facilities are located at the top of Strawberry Hill: a small "Lodge" and the former residence – Strawberry Hill Mansion. Both are closed except for scheduled events. Public restrooms at the Lodge are always open.

One former residence and barn are located at the Route 29 access point. In addition, multiple barns, outbuildings, and stone foundations are located throughout the preserve.

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Additional property information is summarized in Appendix W. The following Preserve maps are provided at the end of this document:

- Map 1 2007 Aerial Photography
- Map 2 1930 Aerial Photography
- Map 3 Topography
- Map 4 Bedrock Geology
- Map 5 Soils
- Map 6 Land Cover Types (2007)
- Map 7 Protected Lands
- Map 8 Deer Management
- Map 9 Invasive Plant Cover (Relative Infestation Severity for all species)

### **Website Description:**

**Ted Stiles Preserve at Baldpate Mountain** is Hopewell Township's largest contiguous forest. Because of this distinction, it is home to numerous unique and rare plant and animal species and is an Audubon Important Bird Area. A series of trails winds through the preserve. This preserve is co-owned with New Jersey Department of Environmental Protection, Mercer County Park Commission and Hopewell Township.

### **BROAD PROPERTY DESCRIPTION**

The preserve (See Map 1) is located in the southwestern region of Hopewell Township and is part of the Sourland Mountain region. The topography (See Map 3) is rolling to extremely steep and rocky flat at 50 to 470 feet above sea level.

Based upon analysis of NJDEP's 2007 Land Use/Land Cover dataset, the preserve contains 12 broad plant communities. The majority are upland: Coniferous Forest (> 50% canopy) - Upland; Deciduous Forest (> 50% canopy) - Upland; Coniferous Woodland (10-50% canopy) - Upland; Deciduous Woodland (10-50% canopy) - Upland; Shrubland (< 10% canopy, > 25% shrub cover) - Upland; Meadows (< 25% shrub cover) - Upland. Two are wetland: Deciduous Forest (> 50% canopy) - Wetland and Meadows (< 25% shrub cover) - Wetland. The remaining are Open Water, Urban Lands, and Agricultural Lands.

Upland and wetland forest types account for 928 acres of the preserve, while 126 acres are open habitats. Of that 126 acres, 8.3 were fenced and reforested in 2010.

Though designated as agricultural land, no fields are in active agriculture. Urban land refers to the ROW, parking lot and building complexes. Land Use/Land Cover is summarized in Appendix X and illustrated in Map 6.

The preserve is primarily forest and is Hopewell Township's largest, contiguous forest block. The summit and ridge areas are diabase, and in fact, the preserve is part of the Sourland Mountain ridge. Geology most likely accounts for the historical forest cover. The majority of the center portion of the preserve was forested as of the 1930s, except for areas around the mansion. Eastern portion of the preserve was utilized more heavily for agriculture. Forestry activities have occurred repeatedly over the years and the entire mountain was devoid of trees during the 1800's.

The past land use history of the preserve has greatly affected the plant composition. Multiflora rose accounts for a significant portion of the preserve's understory. Meanwhile, 34 acres contain maple leaf viburnum, and 270 acres contain spicebush. Bladdernut occurs along seeps on the eastern side of the preserve. Canopy trees include tulip tree, ash, red maple, American beech, and oaks. Woodland

## **Hopewell Valley Community Stewardship Plan Friends of Hopewell Valley Open Space**

wildflowers include: spring beauty, bluebells, bloodroot, Joe Pye weed, alumroot, skunk cabbage, toothwort, and others. The greatest diversity of species occurs in areas without an agricultural history across the forested diabase ridge.

The preserve has 3 types of bedrock geology--the Jurassic, Passaic, and Passaic Gray Bed (very minimal acreage) formations. See Map 4.

The preserve has 25 soil types (see Map 5) with Neshaminy silt loam, 6 to 12 percent slopes, very stony; Legore gravelly loam, 12 to 18 percent slopes; and Legore gravelly loam, 18 to 30 percent slopes being the three most common types. The preserve's soils are described in Appendix Y.

### **CONSERVATION VALUES**

Based on an analysis involving the ranking of ecological values and threats (See Community Stewardship Plan text), the Preserve has a weighted Ecological Value of >75%. See Appendix A for a description of ranking factors.

**Forest and Woodland Communities:** The Preserve is a part of the RHWHP Baldpate Forest Focal Area. As previously mentioned, the preserve is Hopewell Township's largest forest and contains a matrix of upland and mesic forest types. It serves as breeding habitat for numerous neotropical birds, as well as forest-dwelling herbs that prefer less disturbed sites.

**Old forest:** Based upon analysis of 1930 aerial photography, 591 acres of the preserve were forested. The largest blocks of old forest are concentrated around the Strawberry Hill area, north and south of the summit. See Map 2.

### **Early Successional Communities:**

**Shrublands:** Shrublands are scattered across the preserve. They include canopy gaps maintained by unknown users, powerline ROW, areas where forestry was conducted, and former agricultural areas. All are heavily infested by invasive species.

**Meadows/Grasslands:** Meadows on the preserve are primarily upland and lack species diversity.

**Waterbodies:** Portions of Fiddler's Creek (minimally), Moore Creek, and unnamed tributaries flow through the preserve.

### **Rare Species:**

**Rare Plants:** Natural Heritage and staff surveys have documented 10 rare plant species (globally ranked, State Endangered, State "threatened", and State "special concern"), including American ginseng, Aunt Lucy, green violet, Ohio spiderwort, redbud, slender toothwort, and small-fruit groovebur.

**Rare Animals:** The Landscape Project has identified the Preserve as ranked for habitat for wood turtle. The preserve is habitat for State Endangered, Threatened, and Special Concern Species.

See Appendix L for a list of species.

### **THREATS**

**Deer:** Mercer County Park Commission has been conducting a successful DMP on the Preserve for over 10 years. Portions of the preserve's native plant communities show significant recovery with spicebush beginning to shade out invasive species such as Japanese barberry and garlic mustard. However, adjacent



## **Hopewell Valley Community Stewardship Plan Friends of Hopewell Valley Open Space**

Washington Crossing State Park land is not hunted and large numbers of deer have been observed north of the Preserve during Valley-wide nighttime deer counts in 2010 and 2012.

Native woody plants and herbs are severely browsed. Areas with the steepest topography contain the pockets of robust vernal wildflowers. Immediately adjacent areas with steep topography, but not steep enough to exclude deer have fewer and less robust herbs.

Forest health monitoring was performed in 2007/2008 (See main plan, Table 9).

**Invasive species:** In 2008 staff began walk-through surveys for emerging invasive species on all preserves. Mapping documented each species and its population size. Fourteen species have been found: fiveleaf akebia, kousa dogwood, European spindle tree, English ivy, Chinese bushclover, Toringo crabapple, Oriental photinia, mile a minute, weeping cherry, Japanese snowball viburnum, Linden viburnum, Seibold's viburnum, and Japanese wisteria. See [www.njisst.org](http://www.njisst.org) for the current status of emerging invasive species at the Preserve.

In 2011 staff completed surveys for invasive plant species on all preserves (see Map 9). Mapping documented each species found and its population size (See Table 1 below). The five species with the highest infestation scores include: Multiflora rose, Japanese honeysuckle, autumn olive, Japanese stiltgrass, and Japanese barberry had the highest ranking Infestation Index Scores (See Table 1 below).

Shade tolerant invasive species with significant Infestation Index Scores include linden viburnum and winged euonymus.

**Other:** N/A

### **STRATEGIES and ACTIONS**

**Forest and Woodland Habitat Stewardship:** Annual surveys for and eradication of emerging invasive species is a high priority at this Preserve. No action is recommended for widespread invasive species except for those occurring in restoration areas and linden viburnum, winged euonymus, and Asiatic bittersweet (see Table 1 below).

Reduced deer density will allow the native plant communities to recover and compete with all other widespread invasive species on a long-term basis. Notably, the most severe invasive species are all shade-intolerant. With increased native woody cover, it is expected that these invasive species will be shaded out over time. This requires a significantly lower deer population and possibly additional factors (such as rose rosette disease) to allow native species recruitment.

**Early Successional Habitat Stewardship:** Overall, the goal for successional habitats on the preserve is reforestation to enhance the contiguous nature of the forest. Ultimately, however, these goals are affected by access and the need for other uses. Exceptions to the reforestation goals are: Fields 4 and 5 (powerline ROW must be maintained); Field 6 (viewshed); Field 10 (viewshed with possible shrubland restoration, sloping topography allows for shrubland and a clear view of Delaware River); Fields 11, 13, and 17 (maintain lawn/meadow for preservation of historic buildings); and Field 18 (remove invasive cover, maintain meadow to preserve homestead, accessible via old road).

For habitat goals and maintenance schedule see Appendix T & U.

**Deer Management:** The Preserve is enrolled in the Mercer County Park Commission DMP with bow and gun hunting. See Map 8 for delineations of the 150' and 450' safety zones and hunting status. The

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formation of a Quality Deer Management Cooperative with adjoining and nearby neighbors is being developed through the Hopewell Township Deer Management Advisory Committee (including a FoHVOS leadership role).

**Rare Species Management:** Create conservation plans and survey for presence of rare species with priority on twinleaf, ginseng, green violet, and redbud. Sharyn Magee conducts regular surveys for neotropical breeding birds. Her work is submitted to the e-Bird database.

**Neighboring Lands:** See Deer Management. See Map 7 for adjacent protected lands.

**Waterbodies Management:** No recommendations.

**Undesirable Activities Management:** N/A

**Scientific Research Assessment:** The preserve is available for scientific research.

**Recreational Opportunities Assessment:** The trail system is maintained by the Mercer County Park Commission and connects to Washington Crossing State Park trails and eventually to Hollystone Preserve (currently undeveloped).

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**Table 1. Invasive Plants – Species Abundance and Treatment Recommendations**

Scientific Name	Common Name	Infestation Index Score <sup>1</sup>	Total Acres Present	Percent of Preserve Area Present	Treatment Recommendation	LOE Estimate (Hours)	Acreage by Percent Ground Cover Categories						
							Category 0: 0%	Category: Trace	Category 1: 1-10%	Category 2: 10-25%	Category 3: 25-50%	Category 4: 50-75%	Category 5: 75-100%
<i>Acer palmatum</i>	Japanese Maple	0.0	0.0	0.0	N/A		1132.33	0.0	0.0	0.0	0.0	0.0	0.0
<i>Acer platanoides</i>	Norway Maple	0.0	0.0	0.0	N/A		1132.33	0.0	0.0	0.00	0.0	0.00	0.0
<i>Ailanthus altissima</i>	Tree-of-Heaven	7.7	12.5	1.1	Control - Restorations and Field Maintenance Only	Strategy 3A, 3B	1119.85	6.5	5.6	0.0	0.0	0.0	0.4
<i>Alliaria petiolata</i>	Garlic Mustard	303.2	209.9	18.5	None		922.39	35.3	92.6	47.1	23.7	11.4	0.0
<i>Artemisia vulgaris</i>	Common Mugwort	6.6	8.1	0.7	Control - Restorations and Field Maintenance Only	Strategy 3A, 3B	1124.21	5.3	0.0	1.8	1.0	0.0	0.0
<i>Arthraxon hispidus</i>	Small Carpgrass	10.3	13.6	1.2	None		1118.76	4.0	8.8	0.8	0.0	0.0	0.0
<i>Berberis thunbergii</i>	Japanese Barberry	841.6	768.6	67.9	None		363.71	147.1	464.4	109.0	33.5	14.7	0.0
<i>Cardamine impatiens</i>	Narrow-leaved Bittercress	7.7	11.1	1.0	None		1121.28	4.1	6.3	0.7	0.0	0.0	0.0
<i>Catalpa bignonioides</i>	Northern Catalpa	0.0	0.0	0.0	N/A		1132.33	0.0	0.0	0.0	0.0	0.0	0.0
<i>Celastrus orbiculatus</i>	Asiatic Bittersweet	4.9	88.6	7.8	Control - Treat Fruiting Plants	40	1043.76	83.6	4.9	0.0	0.00	0.0	0.0
<i>Centurea sp.</i>	Knapweed sp.	0.0	0.0	0.0	N/A		1132.33	0.0	0.0	0.0	0.0	0.0	0.0
<i>Cirsium arvense</i>	Canada Thistle	8.8	13.3	1.2	Control - Restorations and Field Maintenance Only	Strategy 3A, 3B	1119.01	4.5	8.8	0.0	0.0	0.0	0.0
<i>Dipsacus sylvestris</i>	Teasel	17.6	8.8	0.8	Control - Restorations and Field Maintenance Only	Strategy 3A, 3B	1123.54	0.0	0.00	8.8	0.0	0.0	0.0
<i>Eleaagnus umbellata</i>	Autumn Olive	1830.9	970.4	85.7	Control - Restorations and Field Maintenance Only	Strategy 3A, 3B	161.91	145.8	276.6	285.0	106.4	117.9	38.7
<i>Euonymus alata</i>	Winged Burning Bush	76.3	264.0	23.3	Control - Treat Fruiting Plants	Strategy 2B	868.35	203.9	50.4	7.5	0.0	0.0	2.17
<i>Iris pseudoacris</i>	Yellow Iris	0.0	0.0	0.0	N/A		1132.33	0.0	0.0	0.0	0.0	0.0	0.0
<i>Lespedeza cuneata</i>	Chinese Bushclover	18.5	19.9	1.8	Control - Restorations and Field Maintenance Only	Strategy 3A, 3B	1112.39	9.9	7.3	0.0	0.0	2.8	0.0
<i>Ligustrum obtusifolium</i>	Border Privet	43.8	153.0	13.5	None		979.30	114.6	32.98	5.4	0.0	0.0	0.0
<i>Lonicera japonica</i>	Japanese Honeysuckle	2229.3	1027.6	90.7	None		104.78	45.4	224.3	386.8	260.5	102.9	7.7

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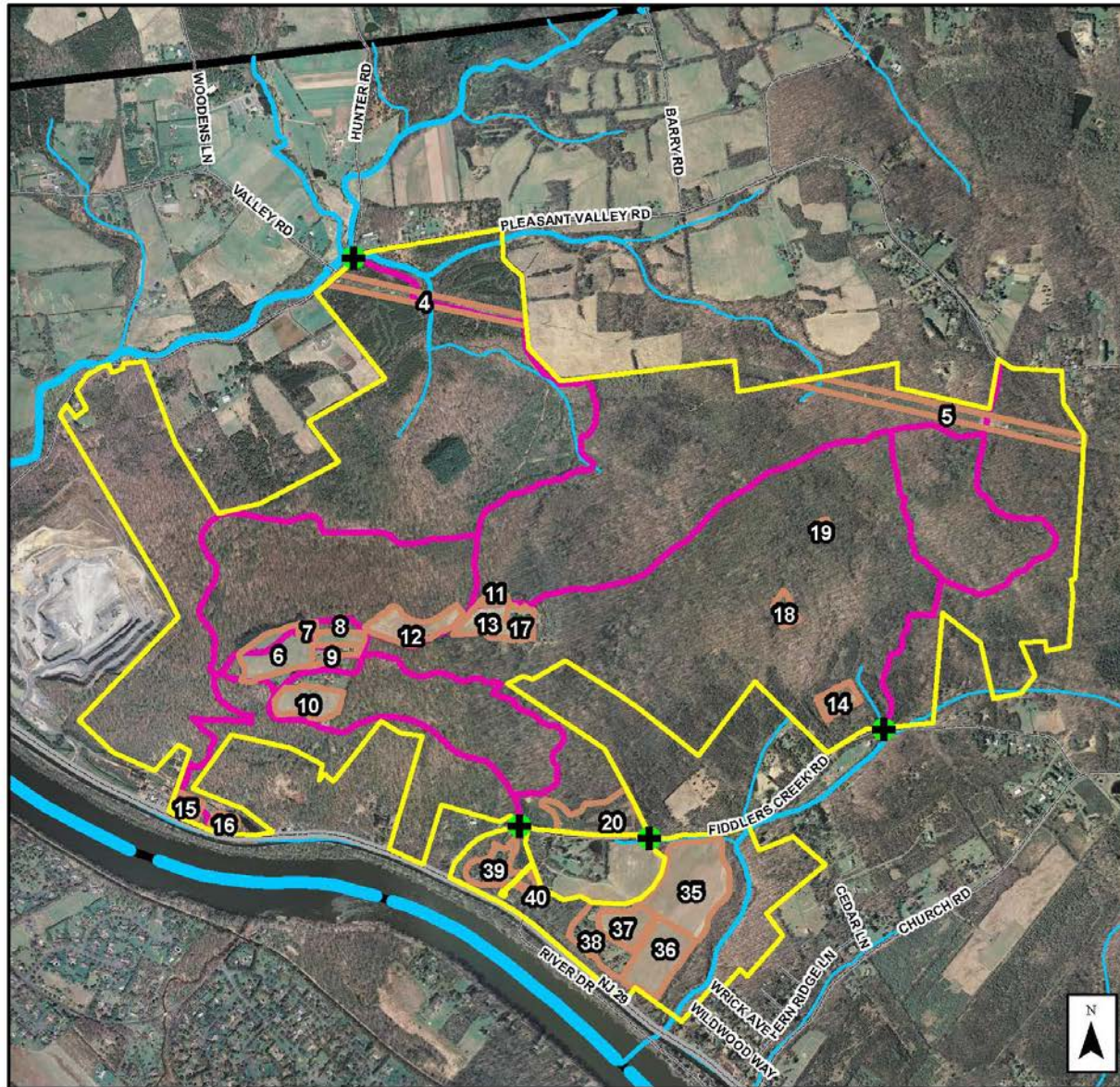
**Table 1. Invasive Plants – Species Abundance and Treatment Recommendations (continued)**

Scientific Name	Common Name	Infestation Index Score <sup>1</sup>	Total Acres Present	Percent of Preserve Area Present	Treatment Recommendation	LOE Estimate (Hours)	Acreage by Percent Ground Cover Categories						
							Category 0: 0%	Category: Trace	Category 1: 1-10%	Category 2: 10-25%	Category 3: 25-50%	Category 4: 50-75%	Category 5: 75-100%
<i>Lonicera maackii</i>	Amur Honeysuckle	2.6	17.9	1.6	None		1114.43	15.4	2.6	0.0	0.0	0.0	0.0
<i>Lonicera morrowii</i>	Morrow's Honeysuckle	12.9	11.6	1.0	None		1120.75	0.0	10.9	0.0	0.67	0.0	0.0
<i>Lysimachia nummularia</i>	Moneywort	0.0	0.0	0.0	N/A		1132.33	0.0	0.0	0.0	0.0	0.0	0.0
<i>Lythrum salicaria</i>	Purple Loosestrife	0.8	2.5	0.2	None - Check for biocontrol agent		1129.82	1.8	0.8	0.0	0.0	0.0	0.0
<i>Malus toringo</i>	Toringo Crabapple	28.1	136.7	12.1	Control - Restorations and Field Maintenance Only	Strategy 3A, 3B	995.59	114.1	17.2	5.4	0.0	0.0	0.0
<i>Microstegium vimineum</i>	Japanese Stiltgrass	949.1	623.3	55.1	None		508.99	103.1	288.2	118.7	60.8	21.7	30.9
N/A	Non-native, cool season grass	169.2	47.4	4.2	None		1084.95	0.0	13.7	2.8	0.0	4.5	26.4
<i>Phalaris arundinacea</i>	Reed Canary Grass	8.8	8.8	0.8	None		1123.54	0.0	8.8	0.0	0.0	0.0	0.0
<i>Phragmites australis</i>	Common Reed	9.3	13.4	1.2	None		1118.98	4.0	9.3	0.0	0.0	0.0	0.0
<i>Polygonum cuspidatum</i>	Japanese Knotweed	2.3	2.3	0.2	None		1130.06	0.0	2.3	0.0	0.0	0.0	0.0
<i>Polygonum perfoliatum</i>	Mile-a-Minute	78.0	60.1	5.3	None - Check for biocontrol agent		1072.19	0.0	46.8	8.7	4.6	0.0	0.0
<i>Pyrus calleryana</i>	Callery Pear	0.0	0.0	0.0	N/A		1132.33	0.0	0.0	0.0	0.0	0.0	0.0
<i>Ranunculus ficaria</i>	Lesser Celandine	0.0	0.0	0.0	N/A		1132.33	0.0	0.0	0.0	0.0	0.0	0.0
<i>Robinia pseudoacacia</i>	Black Locust	1.6	1.2	0.1	Control - Restorations and Field Maintenance Only	Strategy 3A, 3B	1131.12	0.0	1.0	0.0	0.2	0.0	0.0
<i>Rosa multiflora</i>	Multiflora Rose	2902.5	1073.3	94.8	None		59.00	79.8	197.7	283.7	154.5	114.3	243.3
<i>Rubus pheonculasius</i>	Wineberry	819.5	812.1	71.7	None		320.27	153.4	557.0	72.7	5.0	17.8	6.2
<i>Securigera varia</i>	Crown vetch	0.0	0.0	0.0	N/A		1132.33	0.0	0.0	0.0	0.0	0.0	0.0
<i>Viburnum dilatatum</i>	Linden Viburnum	179.9	343.3	30.3	Control - Treat Fruiting Plants	Strategy 2A	789.01	206.1	109.9	19.6	0.0	7.7	0.0
<i>Viburnum sieboldii</i>	Siebold's Viburnum	0.0	14.0	1.2	Eradicate	Strategy 2A	1118.35	14.0	0.0	0.0	0.0	0.0	0.0
<i>Wisteria floribunda</i>	Japanese Wisteria	9.1	12.2	1.1	Eradicate	Strategy 2A	1120.09	6.1	4.6	0.0	1.5	0.0	0.0
<b>Total LOE</b>						<b>40</b>							

<sup>1</sup>The Infestation Index Score combines the extent of acreage infested and the intensity of the infestation. It was derived by multiplying the cover class number by the number of acres within each cover class.



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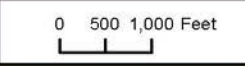


**Hopewell Valley  
 Community  
 Stewardship Plan**

**Ted Stiles Preserve  
 at Baldpate Mountain  
 Map 1  
 2007 Aerial Photography**

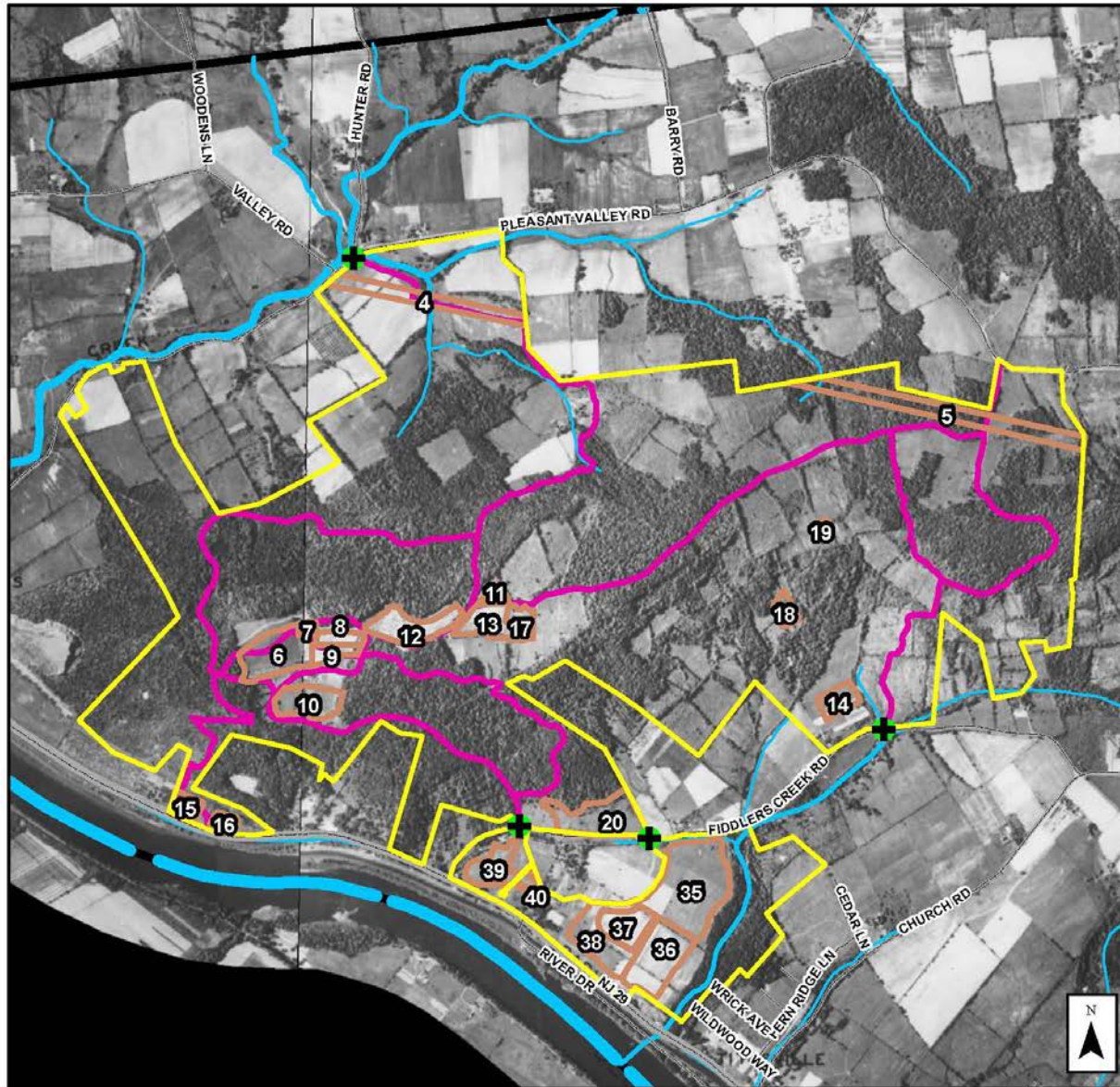
Legend

-  Preserve Access Point
-  FoHVOS Preserves
-  Early Successional Lands
-  Trails









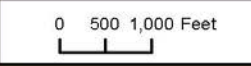
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**Hopewell Valley  
 Community  
 Stewardship Plan**

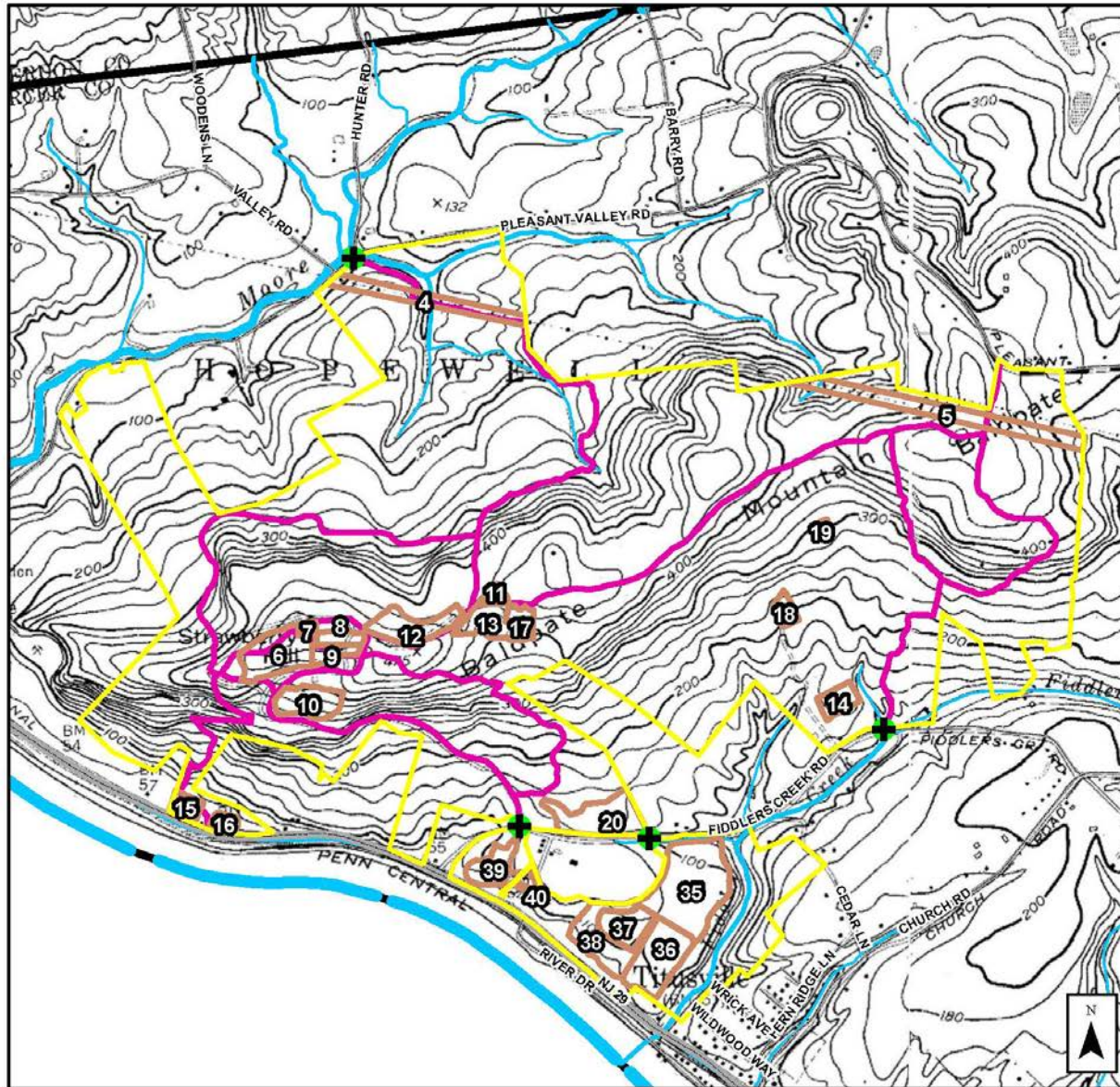
**Ted Stiles Preserve  
 at Baldpate Mountain  
 Map 2  
 1930 Aerial Photography**

- Legend
-  Preserve Access Point
  -  FoHVOS Preserves
  -  Early Successional Lands
  -  Trails





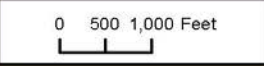
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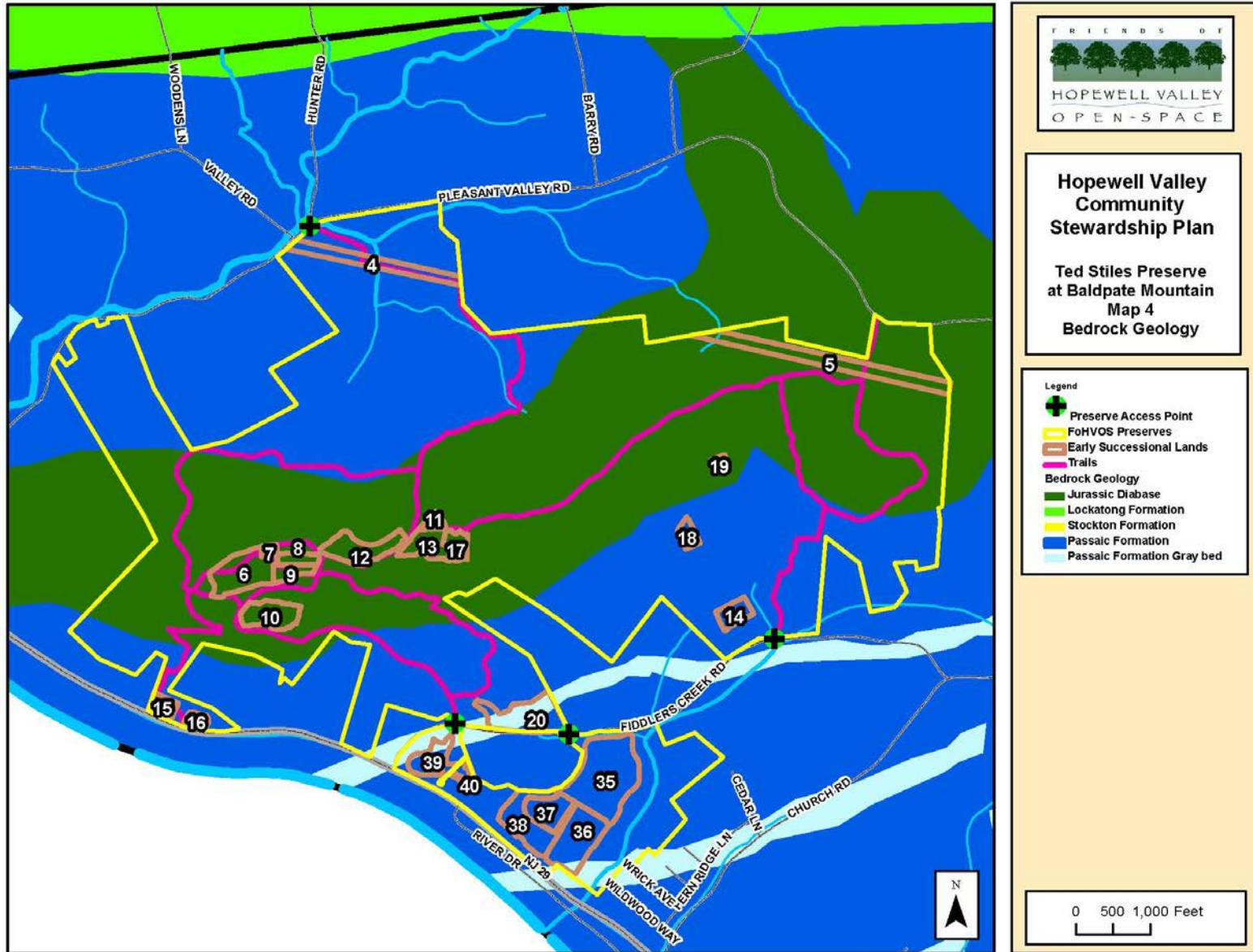
**Hopewell Valley  
 Community  
 Stewardship Plan**

Ted Stiles Preserve  
 at Baldpate Mountain  
 Map 3  
 Topography

- Legend
- Preserve Access Point
  - FoHVOS Preserves
  - Early Successional Lands
  - Trails



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 Friends of Hopewell Valley Open Space

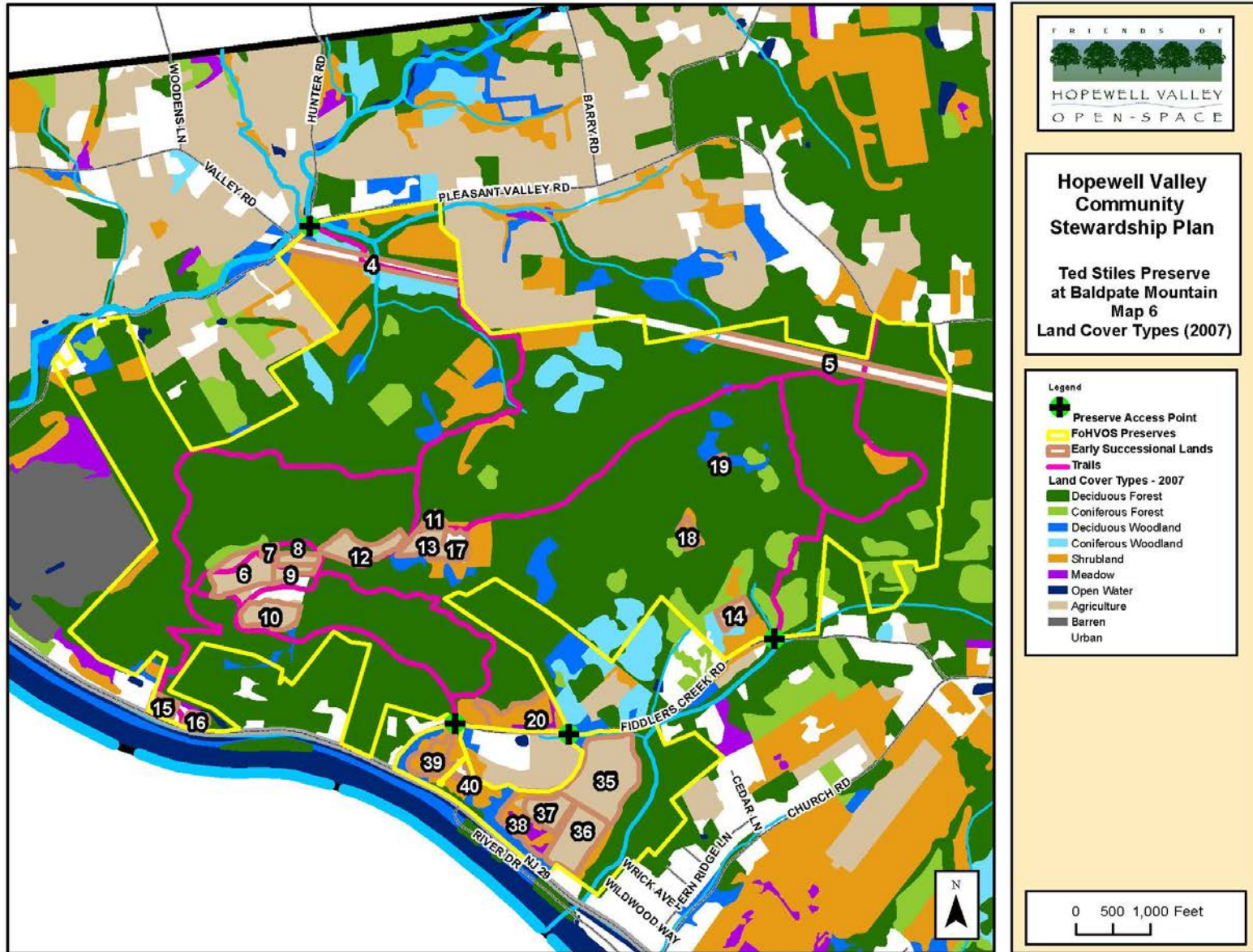




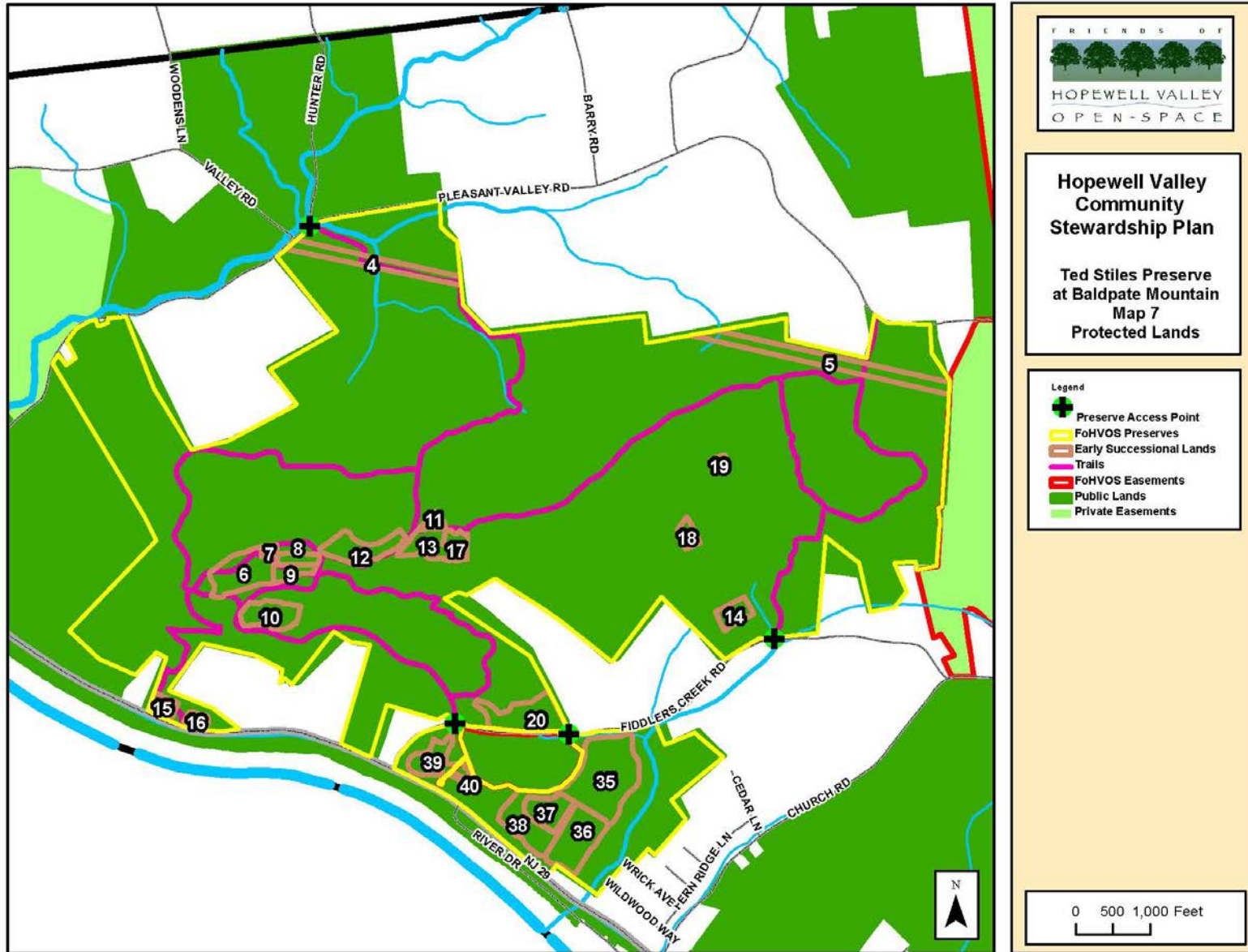




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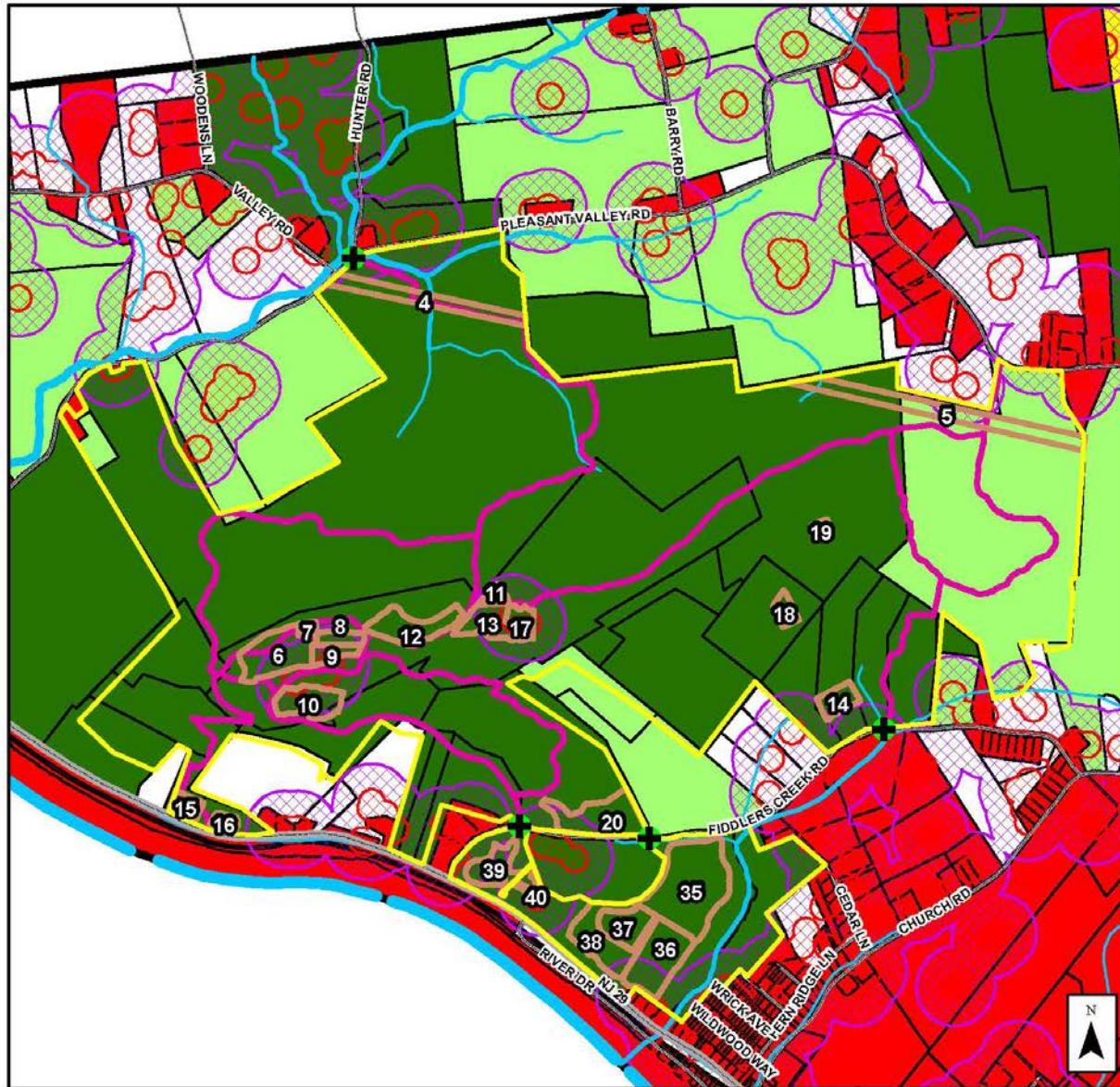


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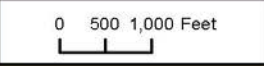
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**Hopewell Valley  
 Community  
 Stewardship Plan**

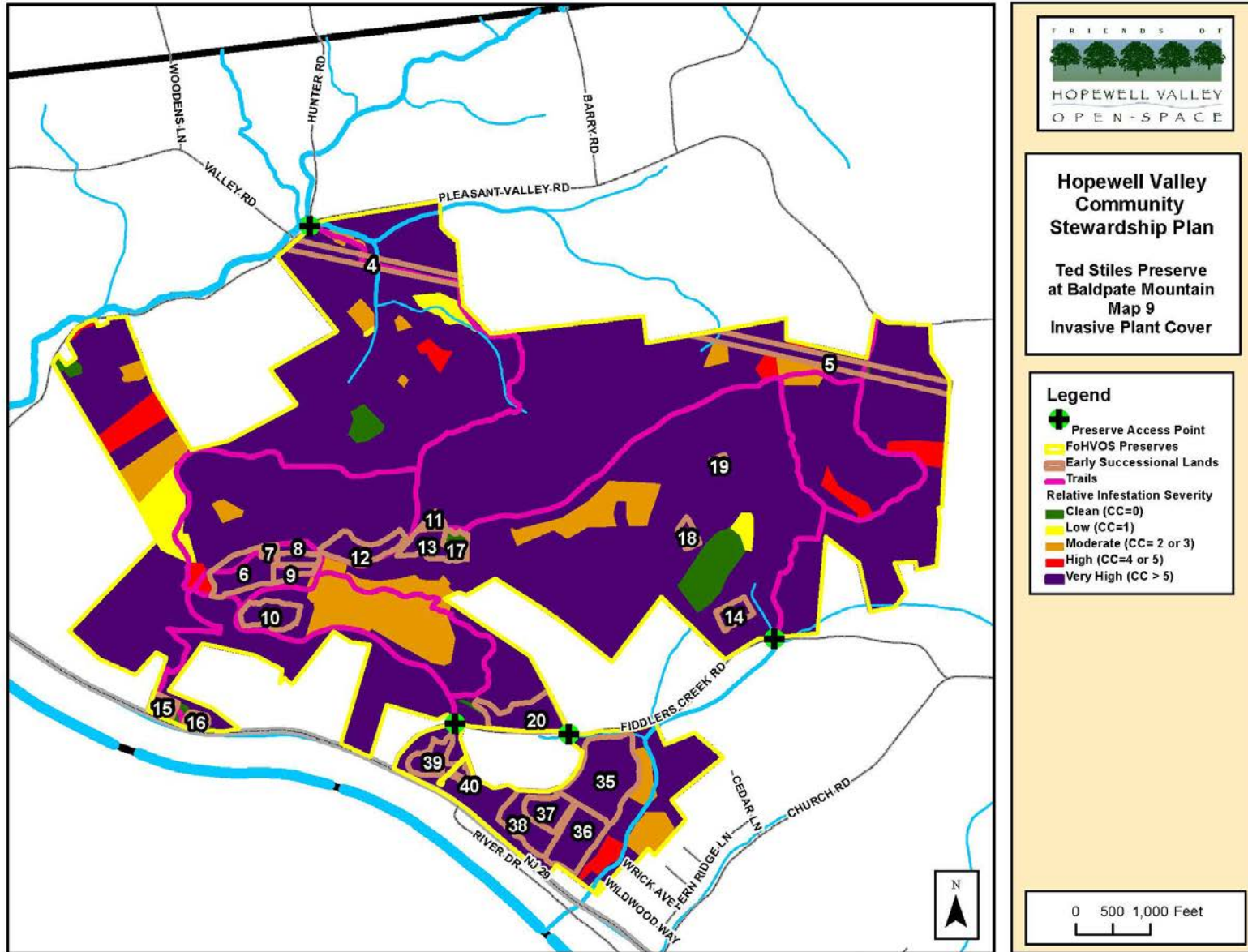
**Ted Stiles Preserve  
 at Baldpate Mountain  
 Map 8  
 Deer Management**

- Legend**
- Preserve Access Point
  - FoHVOS Preserves
  - Early Successional Lands
  - Trails
  - Hunting Safety Zone - 150 foot
  - Hunting Safety Zone - 450 foot
  - Deer Management Status - Parcel
  - Depredation Permit
  - Deer Management Program
  - Recreational Hunting
  - Unknown
  - No Hunting Allowed





Hopewell Valley Community Stewardship Plan  
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**Hopewell Valley Community Stewardship Plan  
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**Appendix 23.  
Thompson Preserve**

**Acreage:** 57.0

**Block and Lot:** B34, L5

**Ownership:** FoHVOS (100%)

**Year(s) Purchased:** 2002

**Location & Access:** Preserve is located on the north side of Route 654, 0.6 miles east of the intersection of Route 31. A formal gravel parking lot is installed at the preserve entrance. **Nearest street address:** 93 Pennington-Hopewell Road, Hopewell, NJ 08525.

**Structures:** None

Additional property information is summarized in Appendix W. The following Preserve maps are provided at the end of this document:

- Map 1 2007 Aerial Photography
- Map 2 1930 Aerial Photography
- Map 3 Topography
- Map 4 Bedrock Geology
- Map 5 Soils
- Map 6 Land Cover Types (2007)
- Map 7 Protected Lands
- Map 8 Deer Management
- Map 9 Invasive Plant Cover (Relative Infestation Severity for all species)

**Website Description:**

**Thompson Preserve** represents a blend of habitats and land use—forest, meadow, and farmland. In 2010 seven acres of abandoned farmland were converted to native forbs and grasses. The remaining field acreage is leased to a local organic farmer. Native pollinator strips were planted along the active farm fields to provide habitat for native bees & butterflies. A corridor of forest shelters the Stony Brook and a tributary. A loop trail leads the visitor through all habitats.

**BROAD PROPERTY DESCRIPTION**

The Thompson Preserve (see Map 1) is located in north central Hopewell Township. The preserve is bounded by residential development, forest, and farmland. The topography (see Map 3) primarily flat at 60 feet above sea level.

Based upon analysis of NJDEP's 2007 Land Use/Land Cover dataset, the preserve contains four broad plant communities: Deciduous Forest (> 50% canopy) - Upland, Deciduous Woodland (10-50% canopy) - Upland, Shrubland (< 10% canopy, > 25% shrub cover) - Upland, Deciduous Forest (> 50% canopy) - Wetland, Open Water, Agricultural Lands, and Urban Lands. Land Use/Land Cover is summarized in Appendix X.

The forest on the preserve is in various stages of regeneration. In the central portion of the preserve, as well as in the wetlands, invasive species are the majority of the understory. Multiflora rose and Japanese stiltgrass are prevalent. Native species were not recorded.

**Hopewell Valley Community Stewardship Plan**  
**Friends of Hopewell Valley Open Space**

Along the east side of Stony Brook, the forest is mature, but is disturbed by frequent flood events. The understory is largely comprised of multiflora rose and trace spicebush. Small populations of native herbaceous species - wild ginger, rue anemone, and Virginia waterleaf – were detected.

The preserve has two types of bedrock geology--the Passaic and Passaic Gray Bed formations. See Map 4.

The preserve has six soil types (see Map 5) with Bowmansville silt loam, 0 to 2 percent slopes, frequently flooded; Bucks silt loam, 0 to 2 percent slopes; and Bucks silt loam, 2 to 6 percent slopes, being the three most common types. The preserve's soils are described in Appendix Y.

**CONSERVATION VALUES**

Based on an analysis involving the ranking of ecological values and threats (See Community Stewardship Plan text), the Preserve has a weighted Ecological Value at 50-75%. See Appendix A for a description of ranking factors.

**Forest and Woodland Communities:** The forest patch found on the Preserve and surrounding area has been identified as wood turtle habitat and is an important stop-over habitat (spring and fall resting and feeding) for migratory species.

**Old forest:** None. See Map 2.

**Early Successional Communities:**

**Shrublands:** N/A

**Meadows/Grasslands:** Fields 58 & 59 were restored through clearing of dense multiflora rose and re-seeding with native grasses and wildflowers in 2010. Emphasis was placed on planting forbs with diverse phenology to benefit wildlife and create pollinator habitat.

Fields 55, 56 and 57 (17 acres) are leased to an organic farmer. The pollinator strips along the northern and western edges were planted in 2010. However, the previous farmer tilled and replanted >50% of the strips into cover crops without permission.

**Waterbodies:** The Stony Brook and one of its tributaries intersect on the preserve. A large portion of the Preserve falls within a RHWHP Priority Riparian Area (Stony Brook).

**Rare Species:**

**Rare Plants:** None documented on the Preserve. Natural Heritage report shows winged monkeyflower (*Mimulus alatus*) in the area.

**Rare Animals:** Forested areas of the Preserve are identified as habitat for State Endangered, Threatened, and Special Concern species, as well as wood turtle habitat. Wood thrush has been observed during nesting season.

See Appendix L for a list of species.

**THREATS**

**Deer:** The understory is severely browsed. Regeneration of the shrub and canopy layer are currently non-existent. Forest health monitoring was performed in 2006/2007 (See main plan, Table 9).

## **Hopewell Valley Community Stewardship Plan Friends of Hopewell Valley Open Space**

**Invasive species:** In 2008 staff began walk-through surveys for emerging invasive species on all preserves. Mapping documented each species and its population size. Oriental photinia was detected. See [www.njisst.org](http://www.njisst.org) for the current status of emerging invasive species at the Preserve.

In 2011 staff completed surveys for invasive plant species on all preserves (see Map 9). Mapping documented each species found and its population size (See Table 1 below). The four species with the highest infestation scores include: Multiflora Rose, Japanese Honeysuckle, Japanese Stiltgrass, Autumn Olive, and Toringo Crabapple.

**Other:** The preserve has a history of ATV usage. Neighbors were contacted about ATV use and issues have ceased.

Because of the truncation of the floodplain at the railroad line, severe flooding and back up of flood waters is exacerbated. Erosion along the banks of the Stony Brook is severe, reaching 12' high in places. Restoration activities would require very significant grant funding.

### **STRATEGIES and ACTIONS**

**Forest and Woodland Habitat Stewardship:** Annual surveys for and eradication of emerging invasive species are a high priority at this Preserve. Oriental photinia will be eradicated.

No action is recommended for widespread invasive species, except for winged burning bush and Asiatic bittersweet (see Table 1 below). Reduced deer density will allow the native plant communities to recover and compete with the widespread invasive species on a long-term basis.

**Early Successional Habitat Stewardship:** A biannual winter mowing or burning regime is recommended to maintain early successional habitat and remove invasive woody plants. The organic farmer is currently mowing the fields. Permission of neighbors is required to access Field 59.

Woody invasive species will be controlled through regular meadow maintenance. Knapweed and Canada thistle will be controlled by spot herbicide treatments (see Table 1 below). For habitat goals and maintenance schedule see Appendix T & U.

**Deer Management:** The preserve is enrolled in the DMP with bow and gun hunting. See Map 8 for delineations of the 150' and 450' safety zones and hunting status.

**Rare Species Management:** Survey Stony Brook and its tributary for winged monkeyflower. Maintain DMP goals to protect forest health and encourage recovery of herbaceous and shrub layers for improved nesting and foraging habitat.

**Neighboring Lands:** See Deer Management. See Map 7 for adjacent protected lands.

**Waterbodies Management:** Seek grant funding for stream bank restoration/stabilization project.

**Undesirable Activities Management:** Maintain presence on preserve through hiking, regular trail maintenance, and maintaining secure access points.

**Scientific Research Assessment:** The Preserve is available for scientific research.

**Recreational Opportunities Assessment:** This property currently has a 1.6 mile loop trail and parking. Currently, there are no opportunities to connect to a regional trail system—none yet exist.



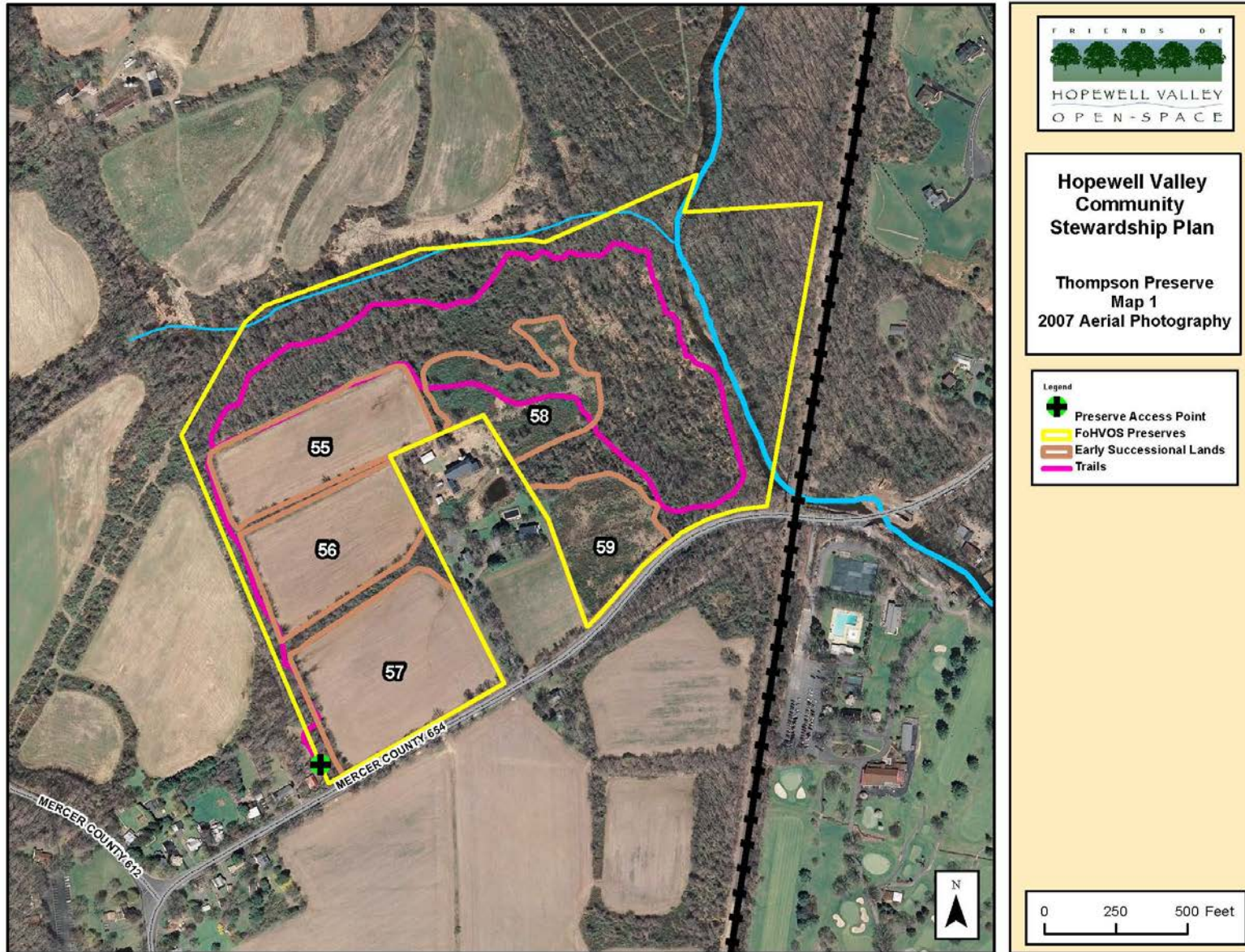
**Hopewell Valley Community Stewardship Plan  
Friends of Hopewell Valley Open Space**

**Table 1. Invasive Plants – Species Abundance and Treatment Recommendations**

Scientific Name	Common Name	Infestation Index Score <sup>1</sup>	Total Acres Present	Percent of Preserve Area Present	Treatment Recommendation	LOE Estimate (Hours)	Acreage by Percent Ground Cover Categories						
							Category 0: 0%	Category: Trace	Category 1: 1-10%	Category 2: 10-25%	Category 3: 25-50%	Category 4: 50-75%	Category 5: 75-100%
<i>Acer palmatum</i>	Japanese Maple	0.0	0.0	0.0	N/A		56.98	0.0	0.0	0.0	0.0	0.0	0.0
<i>Acer platanoides</i>	Norway Maple	0.2	0.2	0.3	None		56.79	0.0	0.2	0.00	0.0	0.00	0.0
<i>Ailanthus altissima</i>	Tree-of-Heaven	0.0	6.7	11.8	Control - Field Maintenance	Strategy 3B	50.24	6.7	0.0	0.0	0.0	0.0	0.0
<i>Alliaria petiolata</i>	Garlic Mustard	15.3	14.8	25.9	None		42.20	0.0	14.4	0.3	0.2	0.0	0.0
<i>Artemisia vulgaris</i>	Common Mugwort	3.3	3.0	5.2	Control - Field Maintenance	Strategy 3B	54.03	0.2	2.6	0.03	0.0	0.1	0.1
<i>Arthraxon hispidus</i>	Small Carpgrass	0.0	0.0	0.0	N/A		56.98	0.0	0.0	0.0	0.0	0.0	0.0
<i>Berberis thunbergii</i>	Japanese Barberry	0.0	0.6	1.0	None		56.43	0.6	0.0	0.0	0.0	0.0	0.0
<i>Cardamine impatiens</i>	Narrow-leaved Bittercress	11.1	5.6	9.7	None		51.43	0.0	0.0	5.6	0.0	0.0	0.0
<i>Catalpa bignonioides</i>	Northern Catalpa	0.0	0.0	0.0	N/A		56.98	0.0	0.0	0.0	0.0	0.0	0.0
<i>Celastrus orbiculatus</i>	Asiatic Bittersweet	2.6	2.6	4.6	Control - Treat Fruiting Plants	10	54.38	0.0	2.6	0.0	0.00	0.0	0.0
<i>Centurea sp.</i>	Knapweed sp.	3.6	2.7	4.7	Control - Field Maintenance	Strategy 3B	54.28	0.0	2.4	0.05	0.05	0.02	0.2
<i>Cirsium arvense</i>	Canada Thistle	8.9	9.5	16.7	Control - Field Maintenance	Strategy 3B	47.47	0.7	8.8	0.05	0.0	0.0	0.0
<i>Dipsacus sylvestris</i>	Teasel	0.0	3.7	6.5	Control - Field Maintenance	Strategy 3B	53.29	3.7	0.00	0.0	0.0	0.0	0.0
<i>Eleaegnus umbellata</i>	Autumn Olive	51.8	34.3	60.3	Control - Field Maintenance	Strategy 3B	22.64	9.3	14.5	3.6	0.2	4.4	2.4
<i>Euonymus alata</i>	Winged Burning Bush	0.0	0.6	1.0	Control - Treat Fruiting Plants	5	56.43	0.6	0.0	0.0	0.0	0.0	0.00
<i>Iris pseudoacris</i>	Yellow Iris	0.0	0.0	0.0	N/A		56.98	0.0	0.0	0.0	0.0	0.0	0.0
<i>Lespedeza cuneata</i>	Chinese Bushclover	0.0	0.0	0.0	N/A		56.98	0.0	0.0	0.0	0.0	0.0	0.0
<i>Ligustrum obtusifolium</i>	Border Privet	0.6	0.6	1.0	None		56.43	0.0	0.55	0.0	0.0	0.0	0.0
<i>Lonicera japonica</i>	Japanese Honeysuckle	107.9	38.2	67.1	None		18.74	0.0	8.1	3.4	14.7	11.5	0.6
<i>Lonicera maackii</i>	Amur Honeysuckle	0.0	0.0	0.0	N/A		56.98	0.0	0.0	0.0	0.0	0.0	0.0
<i>Lonicera morrowii</i>	Morrow's Honeysuckle	3.3	9.6	16.8	None		47.38	6.3	3.3	0.0	0.00	0.0	0.0
<i>Lysimachia nummularia</i>	Moneywort	0.0	0.0	0.0	N/A		56.98	0.0	0.0	0.0	0.0	0.0	0.0
<i>Lythrum salicaria</i>	Purple Loosestrife	0.0	0.0	0.0	N/A		56.98	0.0	0.0	0.0	0.0	0.0	0.0
<i>Malus torringo</i>	Toringo Crabapple	15.4	13.1	23.0	Control - Field Maintenance	Strategy 3B	43.90	3.9	4.2	4.3	0.4	0.4	0.0
<i>Microstegium vimineum</i>	Japanese Stiltgrass	89.9	28.0	49.2	None		28.94	0.0	0.6	9.8	7.5	3.6	6.6
N/A	Non-native, cool season grass	0.2	3.8	6.7	None		53.19	3.7	0.03	0.0	0.0	0.0	0.03
<i>Phalaris arundinacea</i>	Reed Canary Grass	0.0	0.0	0.0	N/A		56.98	0.0	0.0	0.0	0.0	0.0	0.0
<i>Phragmites australis</i>	Common Reed	0.0	0.0	0.0	N/A		56.98	0.0	0.0	0.0	0.0	0.0	0.0
<i>Polygonum cuspidatum</i>	Japanese Knotweed	0.0	0.0	0.0	N/A		56.98	0.0	0.0	0.0	0.0	0.0	0.0
<i>Polygonum perfoliatum</i>	Mile-a-Minute	0.0	0.0	0.0	N/A		56.98	0.0	0.0	0.0	0.0	0.0	0.0
<i>Pyrus calleryana</i>	Callery Pear	0.0	0.0	0.0	N/A		56.98	0.0	0.0	0.0	0.0	0.0	0.0
<i>Ranunculus ficaria</i>	Lesser Celandine	0.0	0.0	0.0	N/A		56.98	0.0	0.0	0.0	0.0	0.0	0.0
<i>Robinia pseudoacacia</i>	Black Locust	0.0	0.0	0.0	N/A		56.98	0.0	0.0	0.0	0.0	0.0	0.0
<i>Rosa multiflora</i>	Multiflora Rose	154.9	40.3	70.7	Control - Field Maintenance	Strategy 3B	16.70	3.7	2.9	1.5	1.2	9.8	21.3
<i>Rubus pheonculusius</i>	Wineberry	7.1	17.4	30.5	Control - Field Maintenance	Strategy 3B	39.61	10.3	7.1	0.0	0.0	0.0	0.0
<i>Securigera varia</i>	Crown vetch	0.0	0.0	0.0	N/A		56.98	0.0	0.0	0.0	0.0	0.0	0.0
<i>Viburnum dilatatum</i>	Linden Viburnum	0.0	0.0	0.0	N/A		56.98	0.0	0.0	0.0	0.0	0.0	0.0
<i>Viburnum sieboldii</i>	Siebold's Viburnum	0.0	0.0	0.0	N/A		56.98	0.0	0.0	0.0	0.0	0.0	0.0
<i>Wisteria floribunda</i>	Japanese Wisteria	0.0	0.0	0.0	N/A		56.98	0.0	0.0	0.0	0.0	0.0	0.0
<b>Total LOE</b>						<b>15</b>							

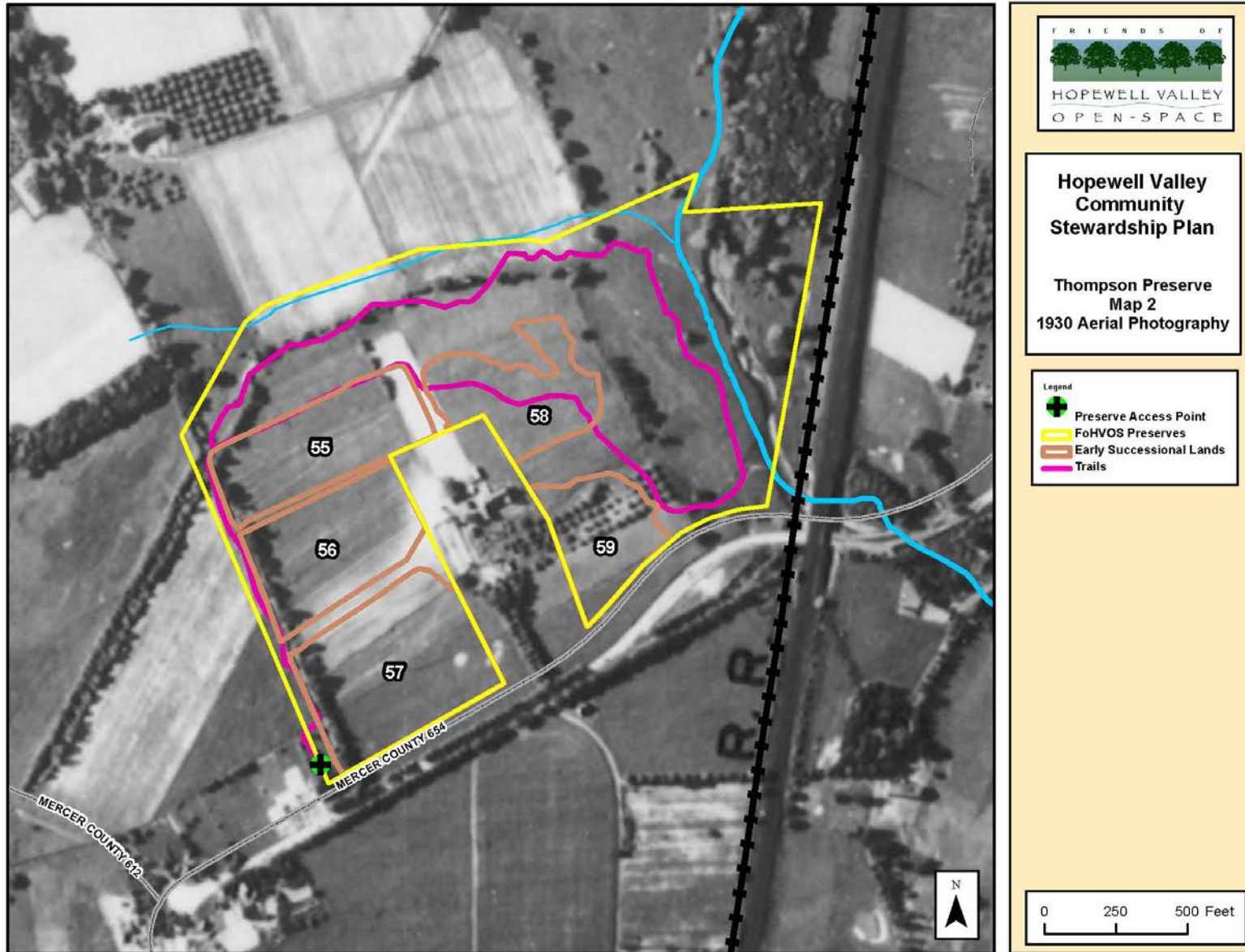
<sup>1</sup> The Infestation Index Score combines the extent of acreage infested and the intensity of the infestation. It was derived by multiplying the cover class number by the number of acres within each cover class.

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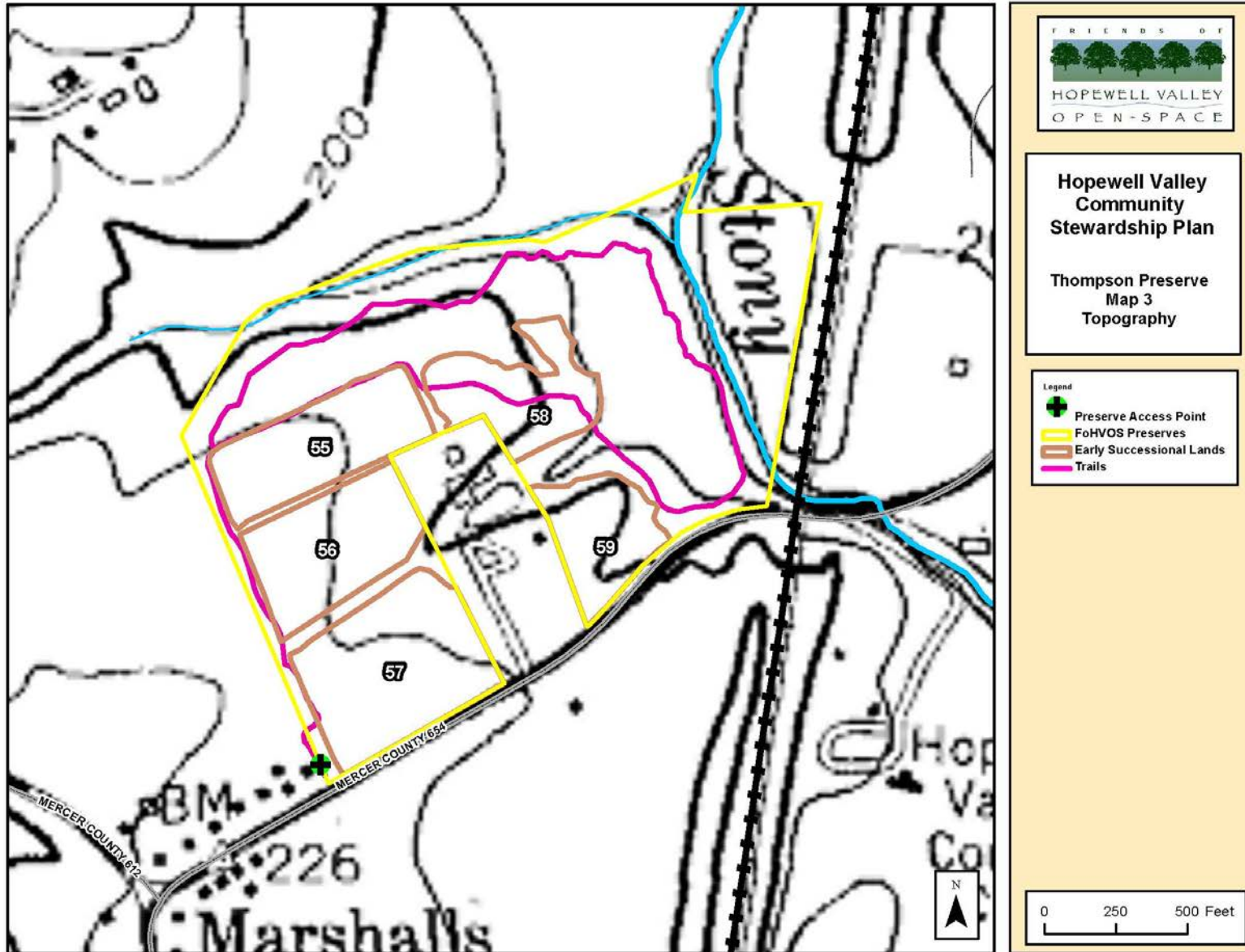




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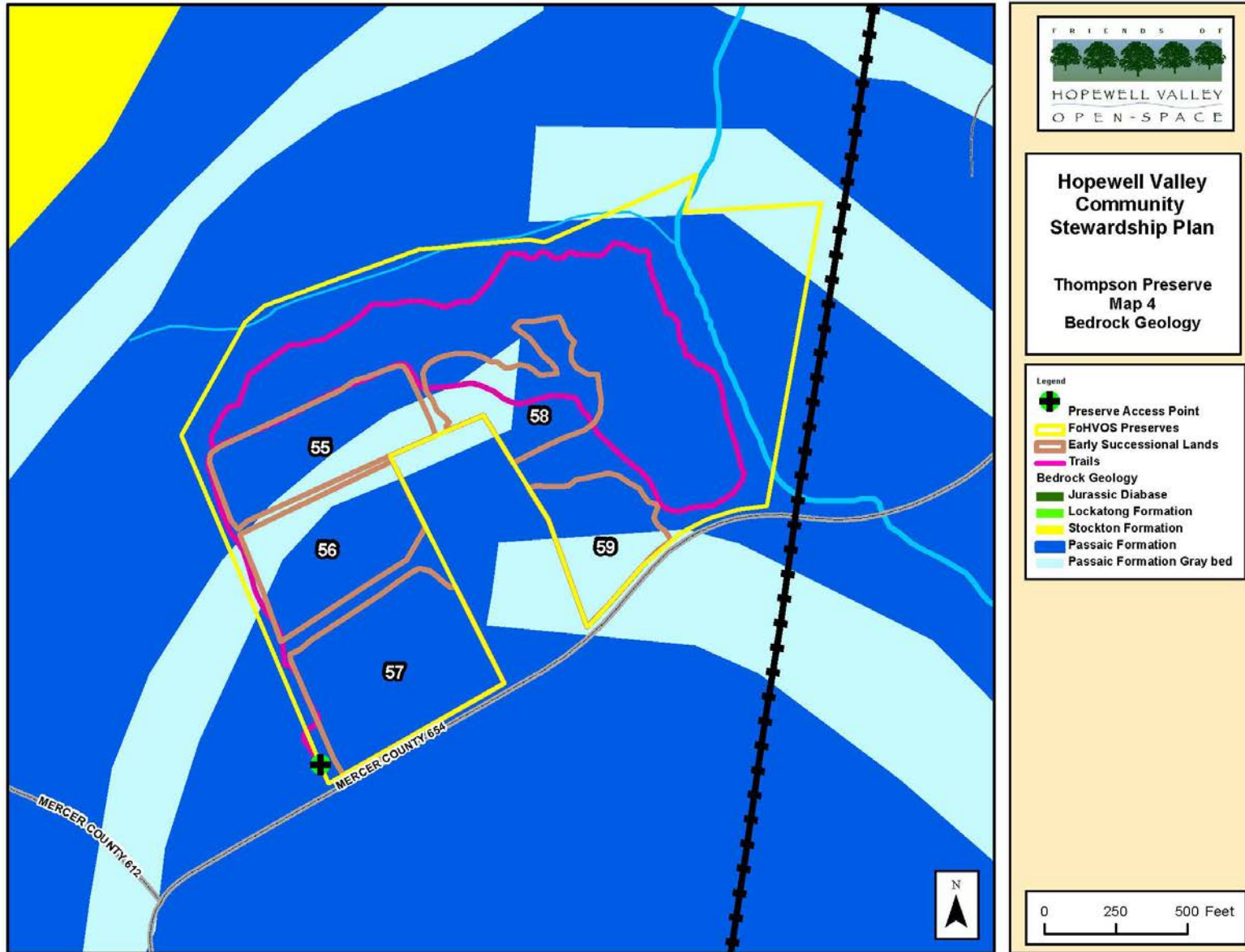


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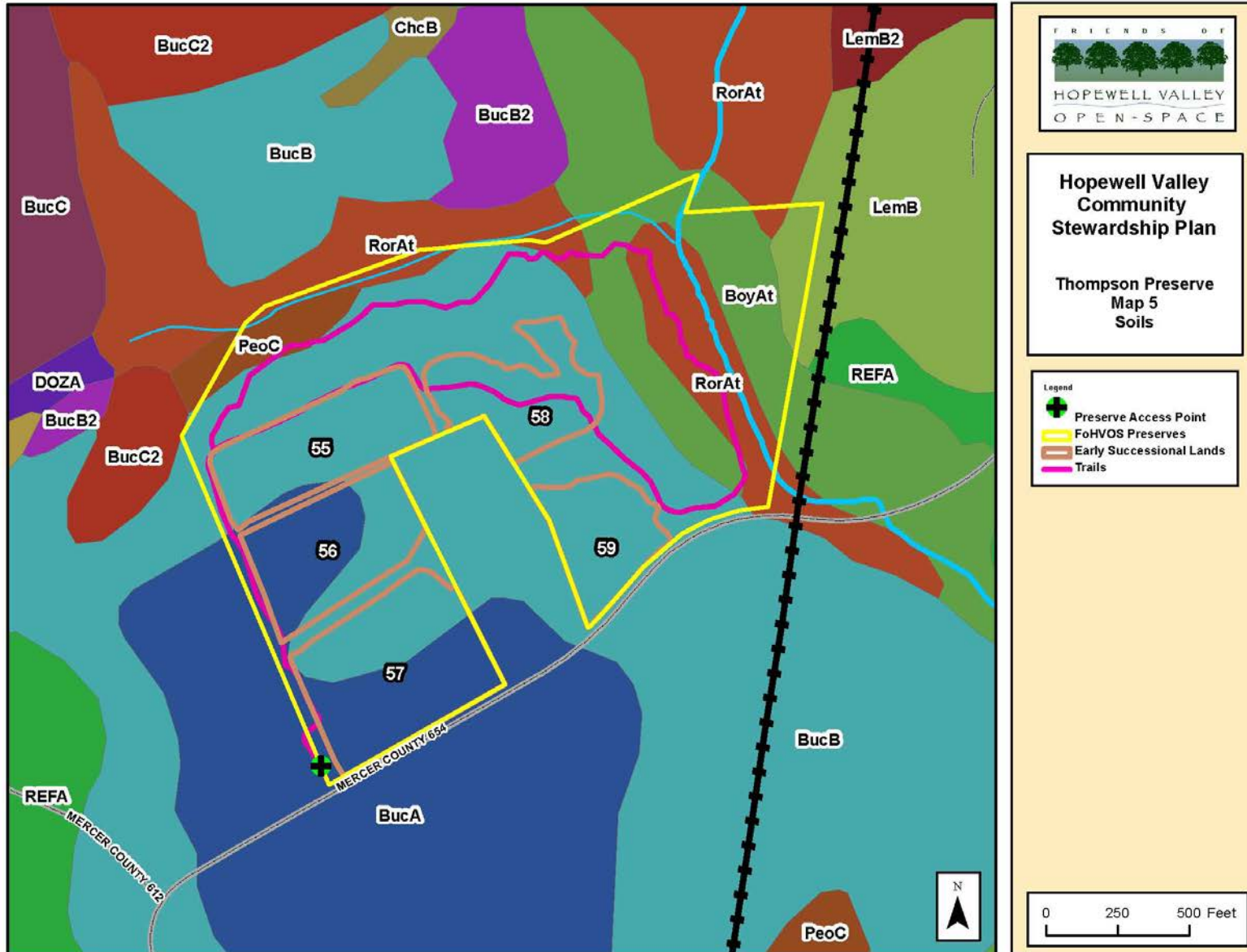




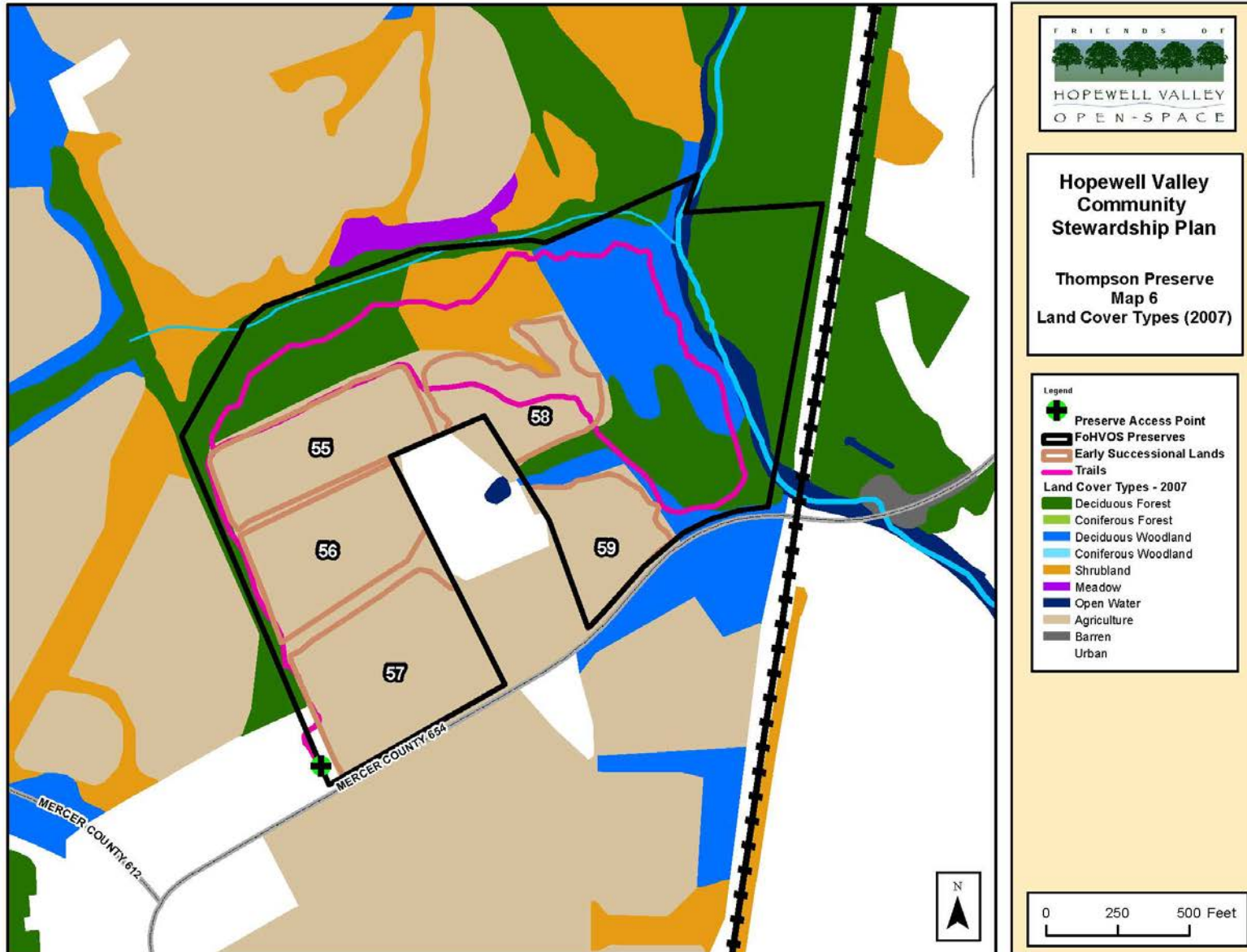
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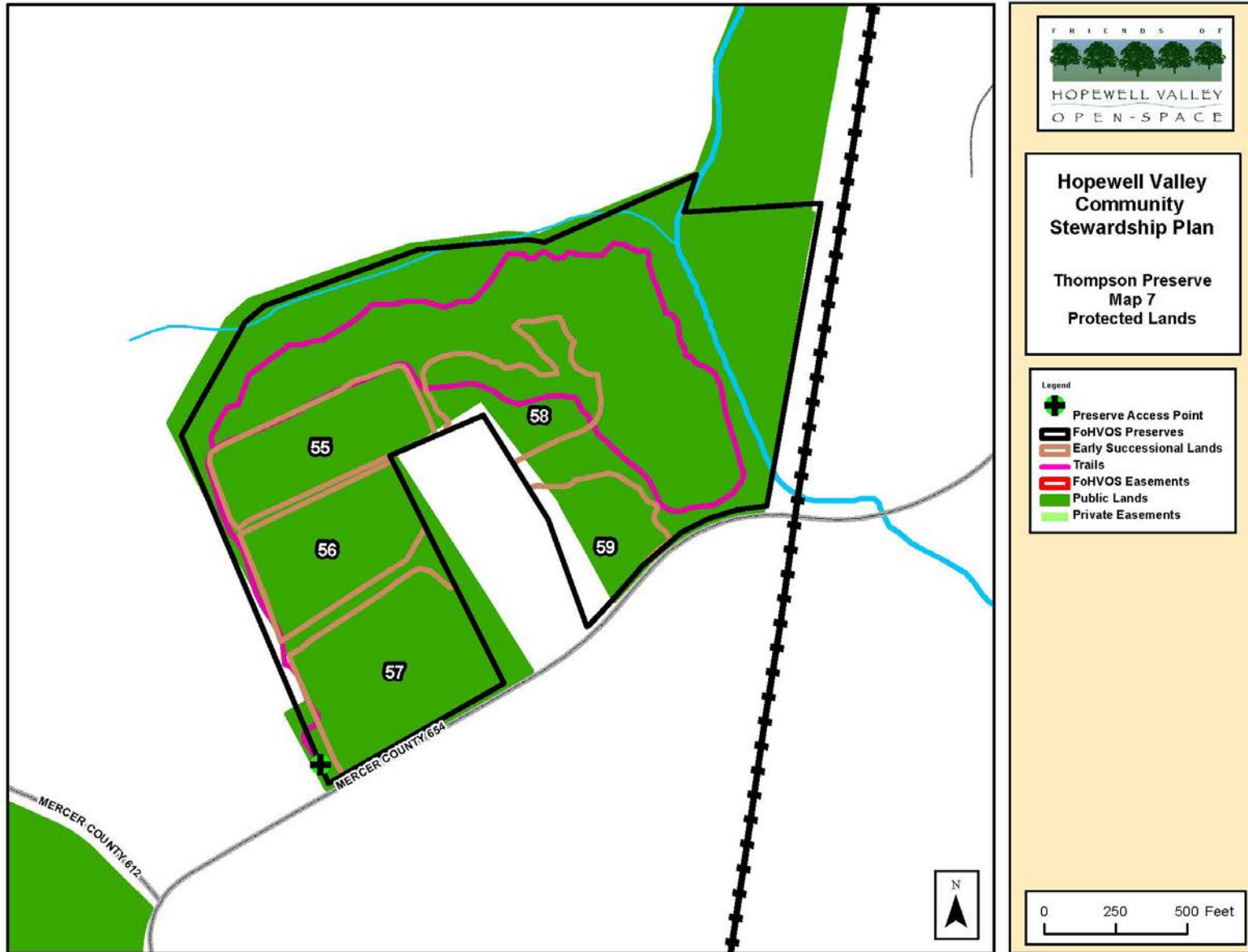


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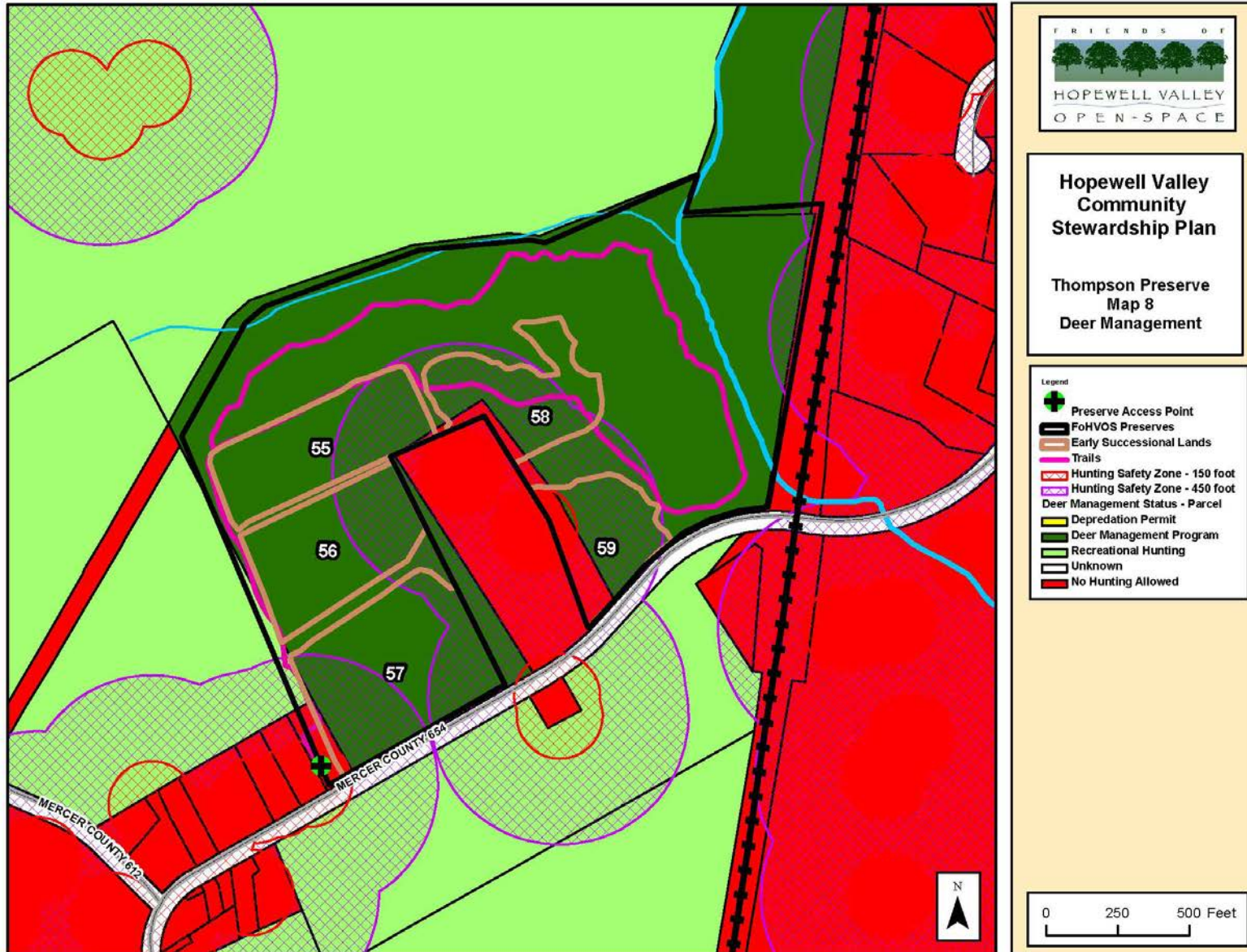


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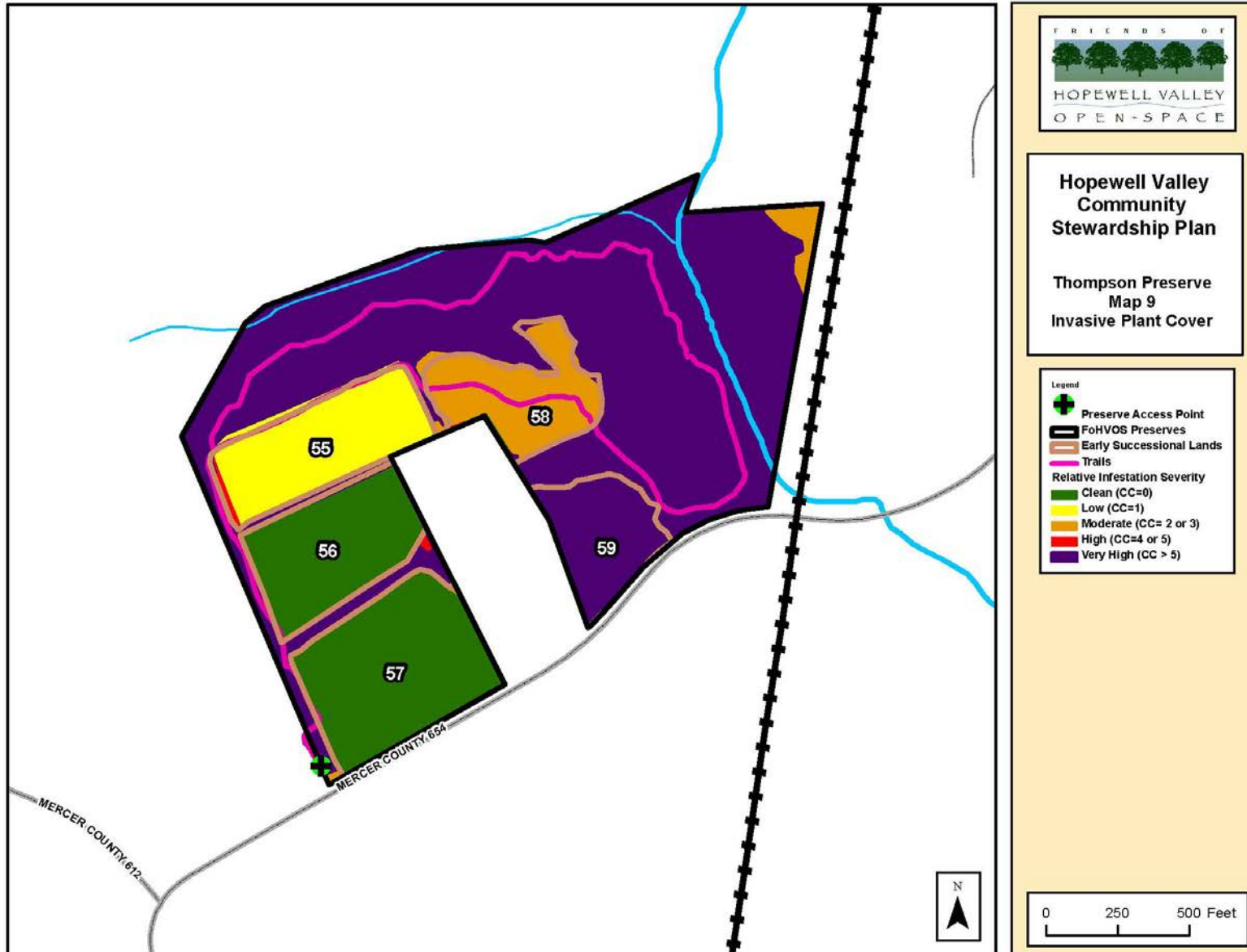




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**Appendix 24.  
Vales Preserve**

**Acreage:** 6.13

**Block and Lot:** B31, L3 & 64

**Ownership:** FoHVOS (80%), Hopewell Township (20%)

**Year(s) Purchased:** 2008

**Location & Access:** Preserve is located on the west side of Route 31. Parking access along road shoulder. CAUTION: Steady highway traffic makes access very difficult. Nearest street address: 145 Route 31 North, Pennington, NJ 08534.

**Structures:** None

Additional property information is summarized in Appendix W. The following Preserve maps are provided at the end of this document:

- Map 1 2007 Aerial Photography
- Map 2 1930 Aerial Photography
- Map 3 Topography
- Map 4 Bedrock Geology
- Map 5 Soils
- Map 6 Land Cover Types (2007)
- Map 7 Protected Lands
- Map 8 Deer Management
- Map 9 Invasive Plant Cover (Relative Infestation Severity for all species)

**Website Description:**

**Vales Preserve** protects two parcels along Route 31. The habitats are a mix of forest and shrubland reverting to forest. Hopewell Township is a co-owner of this preserve.

**BROAD PROPERTY DESCRIPTION**

The Vales Preserve (see Map 1) is located in south central Hopewell Township, just west of Pennington Borough. The preserve is bounded by residential and commercial development, forest, and a major traffic corridor (Route 31). The topography (see Map 3) is relatively flat, sloping down from west to east.

Based upon analysis of NJDEP's 2007 Land Use/Land Cover dataset, the preserve contains three broad plant communities: Shrubland (< 10% canopy, > 25% shrub cover) - Upland, Deciduous Forest (> 50% canopy) - Wetland, and Urban. Before preservation, this parcel was slated for development. Therefore, the "Urban" designation is more accurately called Meadows (< 25% shrub cover) - Upland. Land Use/Land Cover is summarized in Appendix X and illustrated in Map 6.

The section of the Stony Brook tributary that passes through the preserve reveals the area's past plant communities: elm, red maple, bladdernut, ironwood, blackhaw, winged monkeyflower, and skunk cabbage. Because of the preserve's fragmentation, proximity to Route 31, and past land use, the plant communities are heavily invaded by multiflora rose, Japanese honeysuckle, and other non-natives.

**Hopewell Valley Community Stewardship Plan**  
**Friends of Hopewell Valley Open Space**

The preserve has two types of bedrock geology--the Passaic and Passaic Gray Bed formations. See Map 4.

The preserve has three soil types (see Map 5) -- Bucks silt loam, 6 to 12 percent slopes, eroded; Doylestown and Reaville variant silt loams, 0 to 2 percent slopes; and Lawrenceville and Mount Lucas silt loams, 6 to 12 percent slopes, eroded. The preserve's soils are described in Appendix Y.

**CONSERVATION VALUES**

Based on an analysis involving the ranking of ecological values and threats (See Community Stewardship Plan text), the Preserve has a weighted Ecological Value at 25-50%. See Appendix A for a description of ranking factors.

**Forest and Woodland Communities:** The forest serves as a buffer to a tributary of the Stony Brook. The forest patch found on the Preserve and surrounding area is an important stop-over habitat (spring and fall resting and feeding) for migratory species.

**Old forest:** None. Immediately to the northeast is a 57 acre block of 1930s forest. See Map 2.

**Early Successional Communities:**

**Shrublands:** Shrubland on the preserve are disturbed canopy gaps dominated primarily by multiflora rose and secondarily by autumn olive. Red cedar and sycamore trees are colonizing the gap to a much lesser degree.

**Meadows/Grasslands:** The meadow is actually a former house pad site. It is predominantly hay grasses.

**Waterbodies:** 75' of a Stony Brook tributary passes through the preserve.

**Rare Species:**

**Rare Plants:** One population (approximately 2 flowering clumps) of winged monkeyflower (*Mimulus alatus*) has been documented on the Preserve. Natural Heritage grid data shows no species.

**Rare Animals:** Forested areas of the Preserve are identified as habitat for State Threatened and Special Concern species.

See Appendix L for a list of species.

**THREATS**

**Deer:** The understory is severely browsed. Regeneration of the shrub and canopy layer are nearly non-existent.

**Invasive species:** In 2008 staff began walk-through surveys for emerging invasive species on all preserves. Mapping documented each species and its population size. Chinese bushclover was detected. See [www.njisst.org](http://www.njisst.org) for the current status of emerging invasive species at the Preserve.

In 2011 staff completed surveys for invasive plant species on all preserves (see Map 9). Mapping documented each species found and its population size (See Table 1 below). The four species with the highest infestation scores include: Multiflora Rose, Japanese Honeysuckle Japanese Stiltgrass, Autumn Olive, and Reed Canary Grass.

**Other:** N/A



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**STRATEGIES and ACTIONS**

**Forest and Woodland Habitat Stewardship:** Annual surveys for and eradication of emerging invasive species is the highest priority at this Preserve. No action is recommended for widespread invasive species. Reduced deer density will allow the native plant communities to recover and compete with the widespread invasive species on a long-term basis.

**Early Successional Habitat Stewardship:** Because of the small field size, no action is recommended except for the eradication of Chinese bushclover.

**Deer Management:** The preserve will be managed under the Hopewell Township DMP (bow hunting only). The 450' safety zones prevent gun hunting. However, the 150' safety zone for bow hunting allows for hunting across much of the Preserve. See Map 8 for delineations of the 150' and 450' safety zones and neighboring parcel hunting status.

**Rare Species Management:** Maintain forested riparian areas to protect rare species.

**Neighboring Lands:** See Deer Management. See Map 7 for adjacent protected lands.

**Waterbodies Management:** Length of the Stony Brook tributary within the preserve is too short to merit restoration.

**Undesirable Activities Management:** N/A

**Scientific Research Assessment:** The Preserve is available for scientific research.

**Recreational Opportunities Assessment:** The preserve is too small to merit a trail. In addition, Access is limited—parking is dangerous along heavily traffic Route 31. Currently, there are no opportunities to connect to a regional trail system—none yet exist.

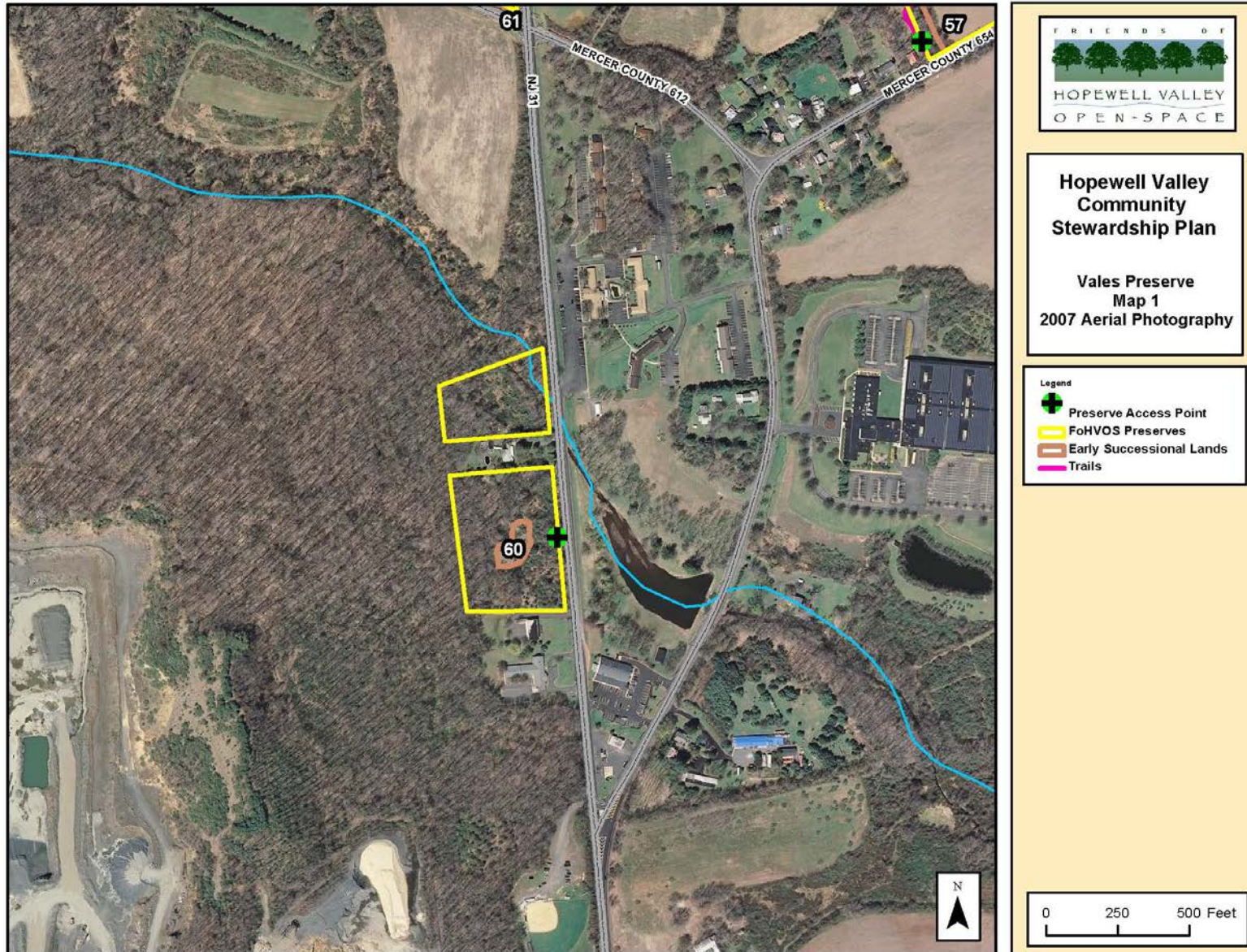
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**Table 1. Invasive Plants – Species Abundance and Treatment Recommendations**

Scientific Name	Common Name	Infestation Index Score <sup>1</sup>	Total Acres Present	Percent of Preserve Area Present	Treatment Recommendation	LOE Estimate (Hours)	Acreage by Percent Ground Cover Categories						
							Category 0: 0%	Category: Trace	Category 1: 1-10%	Category 2: 10-25%	Category 3: 25-50%	Category 4: 50-75%	Category 5: 75-100%
<i>Acer palmatum</i>	Japanese Maple	0.0	0.0	0.0	N/A		6.05	0.0	0.0	0.0	0.0	0.0	0.0
<i>Acer platanoides</i>	Norway Maple	0.0	0.0	0.0	N/A		6.05	0.0	0.0	0.00	0.0	0.00	0.0
<i>Ailanthus altissima</i>	Tree-of-Heaven	0.0	0.0	0.0	N/A		6.05	0.0	0.0	0.0	0.0	0.0	0.0
<i>Alliaria petiolata</i>	Garlic Mustard	0.0	0.0	0.0	N/A		6.05	0.0	0.0	0.0	0.0	0.0	0.0
<i>Artemisia vulgaris</i>	Common Mugwort	0.5	0.2	2.6	None		5.89	0.0	0.0	0.0	0.2	0.0	0.0
<i>Arthraxon hispidus</i>	Small Carpgrass	0.0	0.0	0.0	N/A		6.05	0.0	0.0	0.0	0.0	0.0	0.0
<i>Berberis thunbergii</i>	Japanese Barberry	0.0	0.0	0.0	N/A		6.05	0.0	0.0	0.0	0.0	0.0	0.0
<i>Cardamine impatiens</i>	Narrow-leaved Bittercress	0.0	0.0	0.0	N/A		6.05	0.0	0.0	0.0	0.0	0.0	0.0
<i>Catalpa bignonioides</i>	Northern Catalpa	0.0	0.0	0.0	N/A		6.05	0.0	0.0	0.0	0.0	0.0	0.0
<i>Celastrus orbiculatus</i>	Asiatic Bittersweet	0.0	0.0	0.0	N/A		6.05	0.0	0.0	0.0	0.00	0.0	0.0
<i>Centurea sp.</i>	Knapsweed sp.	0.0	0.0	0.0	N/A		6.05	0.0	0.0	0.0	0.0	0.0	0.0
<i>Cirsium arvense</i>	Canada Thistle	0.0	0.0	0.0	N/A		6.05	0.0	0.0	0.0	0.0	0.0	0.0
<i>Dipsacus sylvestris</i>	Teasel	0.0	0.0	0.0	N/A		6.05	0.0	0.00	0.0	0.0	0.0	0.0
<i>Eleaagnus umbellata</i>	Autumn Olive	7.5	5.3	87.6	None		0.75	0.0	4.1	0.9	0.0	0.0	0.3
<i>Euonymus alata</i>	Winged Burning Bush	0.0	0.0	0.0	N/A		6.05	0.0	0.0	0.0	0.0	0.0	0.00
<i>Iris pseudoacris</i>	Yellow Iris	0.0	0.0	0.0	N/A		6.05	0.0	0.0	0.0	0.0	0.0	0.0
<i>Lespedeza cuneata</i>	Chinese Bushclover	0.1	0.1	2.0	None		5.93	0.0	0.1	0.0	0.0	0.0	0.0
<i>Ligustrum obtusifolium</i>	Border Privet	0.0	0.0	0.0	N/A		6.05	0.0	0.00	0.0	0.0	0.0	0.0
<i>Lonicera japonica</i>	Japanese Honeysuckle	20.0	5.9	98.0	None		0.12	0.0	0.7	0.5	0.7	4.1	0.0
<i>Lonicera maackii</i>	Amur Honeysuckle	0.0	0.0	0.0	N/A		6.05	0.0	0.0	0.0	0.0	0.0	0.0
<i>Lonicera morrowii</i>	Morrow's Honeysuckle	1.3	1.3	22.1	None		4.71	0.0	1.3	0.0	0.00	0.0	0.0
<i>Lysimachia nummularia</i>	Moneywort	0.0	0.0	0.0	N/A		6.05	0.0	0.0	0.0	0.0	0.0	0.0
<i>Lythrum salicaria</i>	Purple Loosestrife	0.2	0.2	2.6	None - Check for biocontrol agent		5.89	0.0	0.2	0.0	0.0	0.0	0.0
<i>Malus toringo</i>	Toringo Crabapple	0.0	0.0	0.0	N/A		6.05	0.0	0.0	0.0	0.0	0.0	0.0
<i>Microstegium vimineum</i>	Japanese Stiltgrass	9.7	3.7	61.5	None		2.33	0.0	0.7	0.0	3.0	0.0	0.0
N/A	Non-native, cool season grass	0.5	0.1	2.0	None		5.93	0.0	0.0	0.0	0.0	0.1	0.0
<i>Phalaris arundinacea</i>	Reed Canary Grass	2.1	1.0	16.0	None		5.08	0.0	0.0	0.9	0.0	0.1	0.0
<i>Phragmites australis</i>	Common Reed	0.0	0.0	0.0	N/A		6.05	0.0	0.0	0.0	0.0	0.0	0.0
<i>Polygonum cuspidatum</i>	Japanese Knotweed	0.0	0.0	0.0	N/A		6.05	0.0	0.0	0.0	0.0	0.0	0.0
<i>Polygonum perfoliatum</i>	Mile-a-Minute	0.0	0.0	0.0	N/A		6.05	0.0	0.0	0.0	0.0	0.0	0.0
<i>Pyrus calleryana</i>	Callery Pear	0.0	0.0	0.0	N/A		6.05	0.0	0.0	0.0	0.0	0.0	0.0
<i>Ranunculus ficaria</i>	Lesser Celandine	0.0	0.0	0.0	N/A		6.05	0.0	0.0	0.0	0.0	0.0	0.0
<i>Robinia pseudoacacia</i>	Black Locust	0.0	0.0	0.0	N/A		6.05	0.0	0.0	0.0	0.0	0.0	0.0
<i>Rosa multiflora</i>	Multiflora Rose	23.7	6.0	98.8	None		0.07	0.0	0.5	0.0	0.0	4.4	1.1
<i>Rubus phoenicolasius</i>	Wineberry	1.3	1.3	21.5	None		4.75	0.0	1.3	0.0	0.0	0.0	0.0
<i>Securigera varia</i>	Crown vetch	0.0	0.0	0.0	N/A		6.05	0.0	0.0	0.0	0.0	0.0	0.0
<i>Viburnum dilatatum</i>	Linden Viburnum	0.0	0.0	0.0	N/A		6.05	0.0	0.0	0.0	0.0	0.0	0.0
<i>Viburnum sieboldii</i>	Siebold's Viburnum	0.0	0.0	0.0	N/A		6.05	0.0	0.0	0.0	0.0	0.0	0.0
<i>Wisteria floribunda</i>	Japanese Wisteria	0.0	0.0	0.0	N/A		6.05	0.0	0.0	0.0	0.0	0.0	0.0
<b>Total LOE</b>						<b>0</b>							

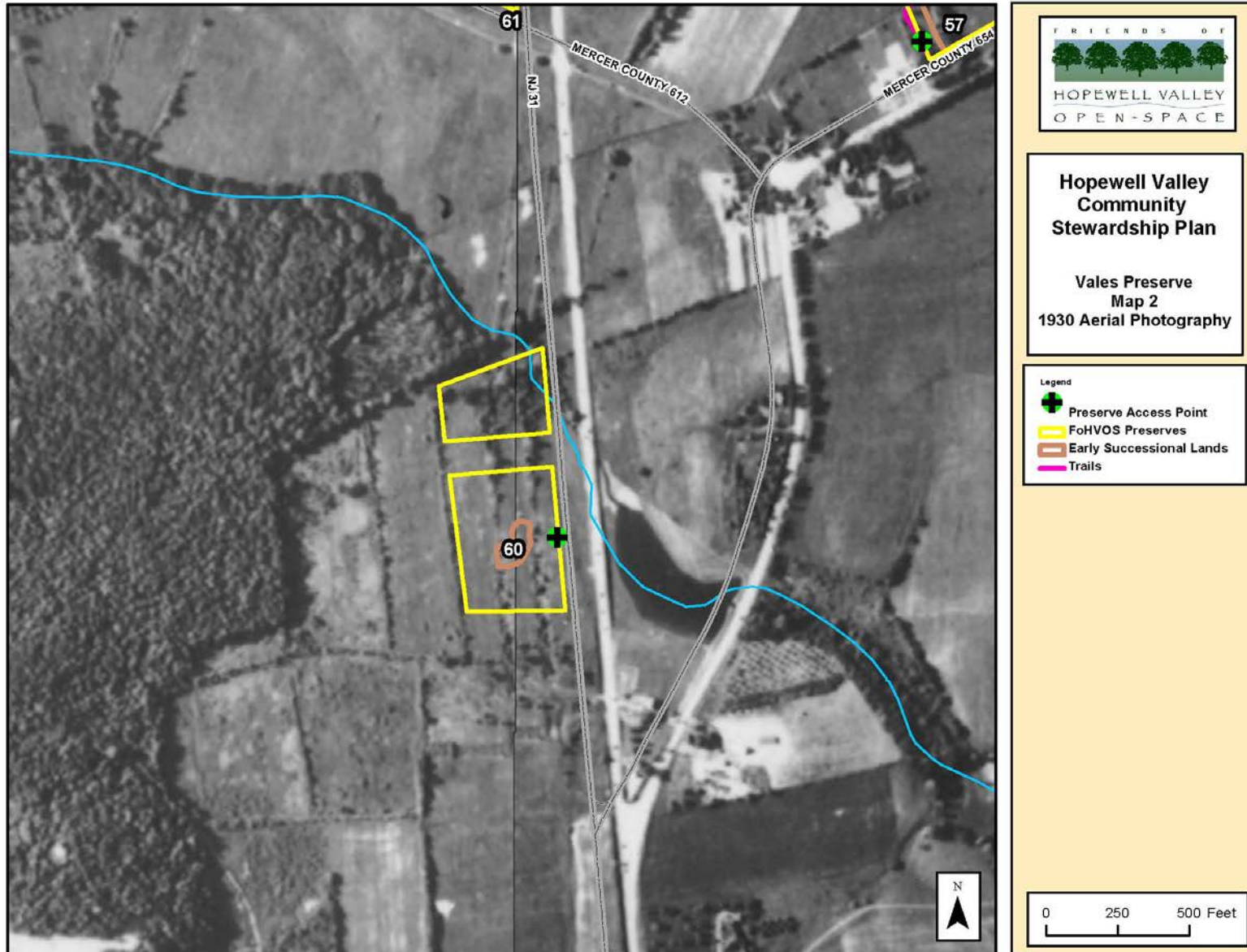
<sup>1</sup> The Infestation Index Score combines the extent of acreage infested and the intensity of the infestation. It was derived by multiplying the cover class number by the number of acres within each cover class.

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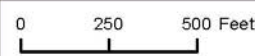
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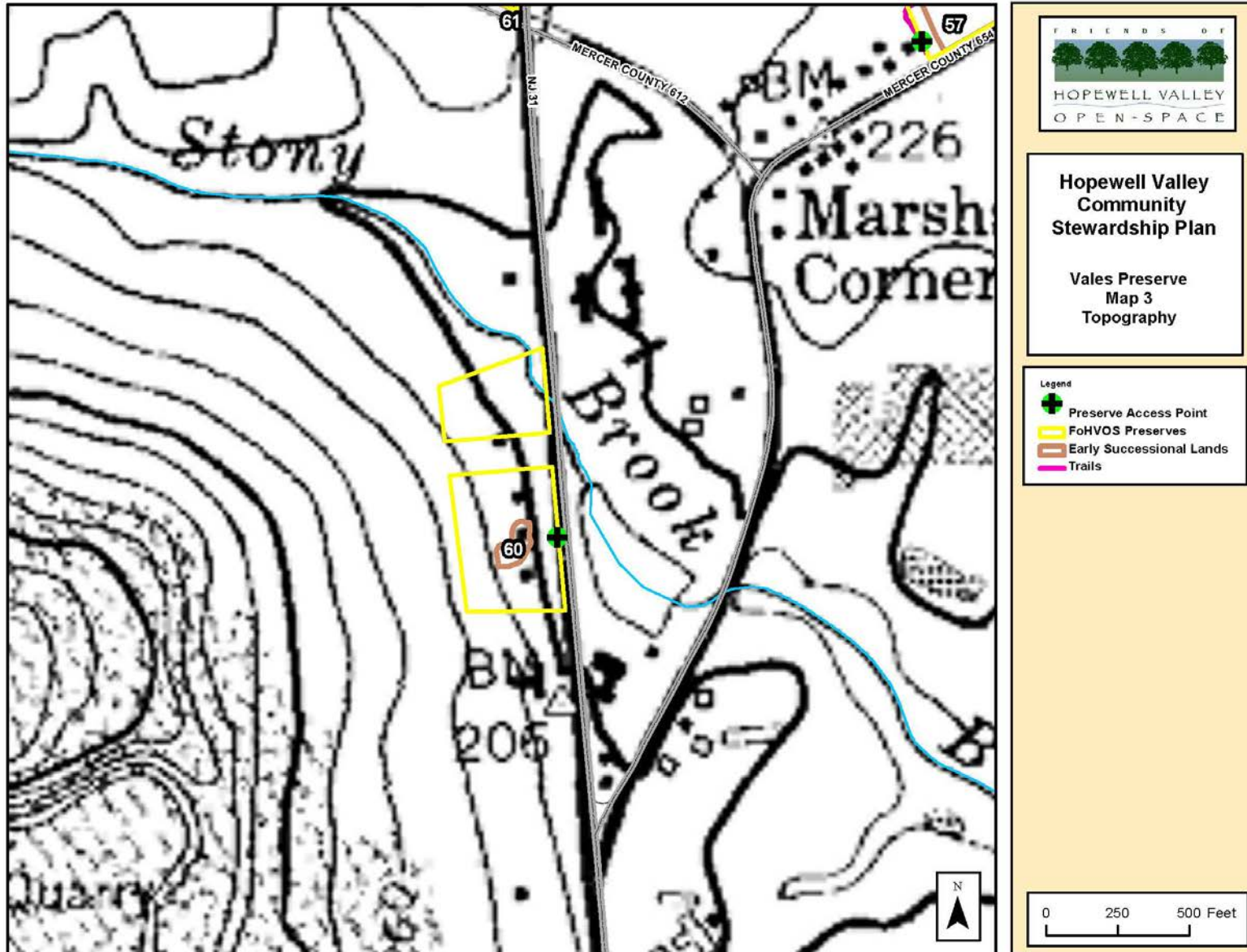
Vales Preserve  
Map 2  
1930 Aerial Photography

- Legend
- Preserve Access Point
  - FoHVOS Preserves
  - Early Successional Lands
  - Trails

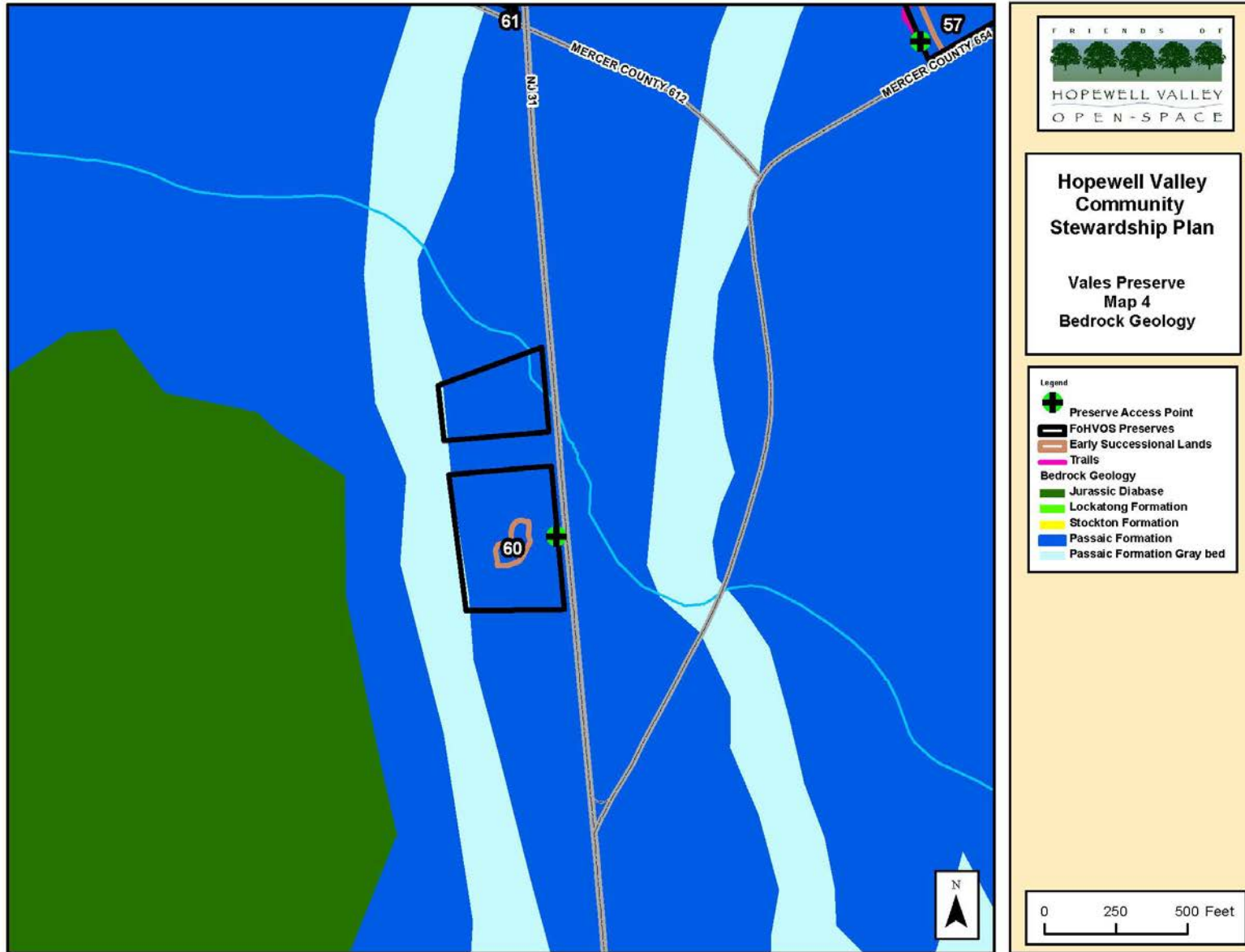




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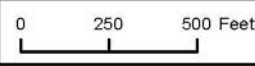
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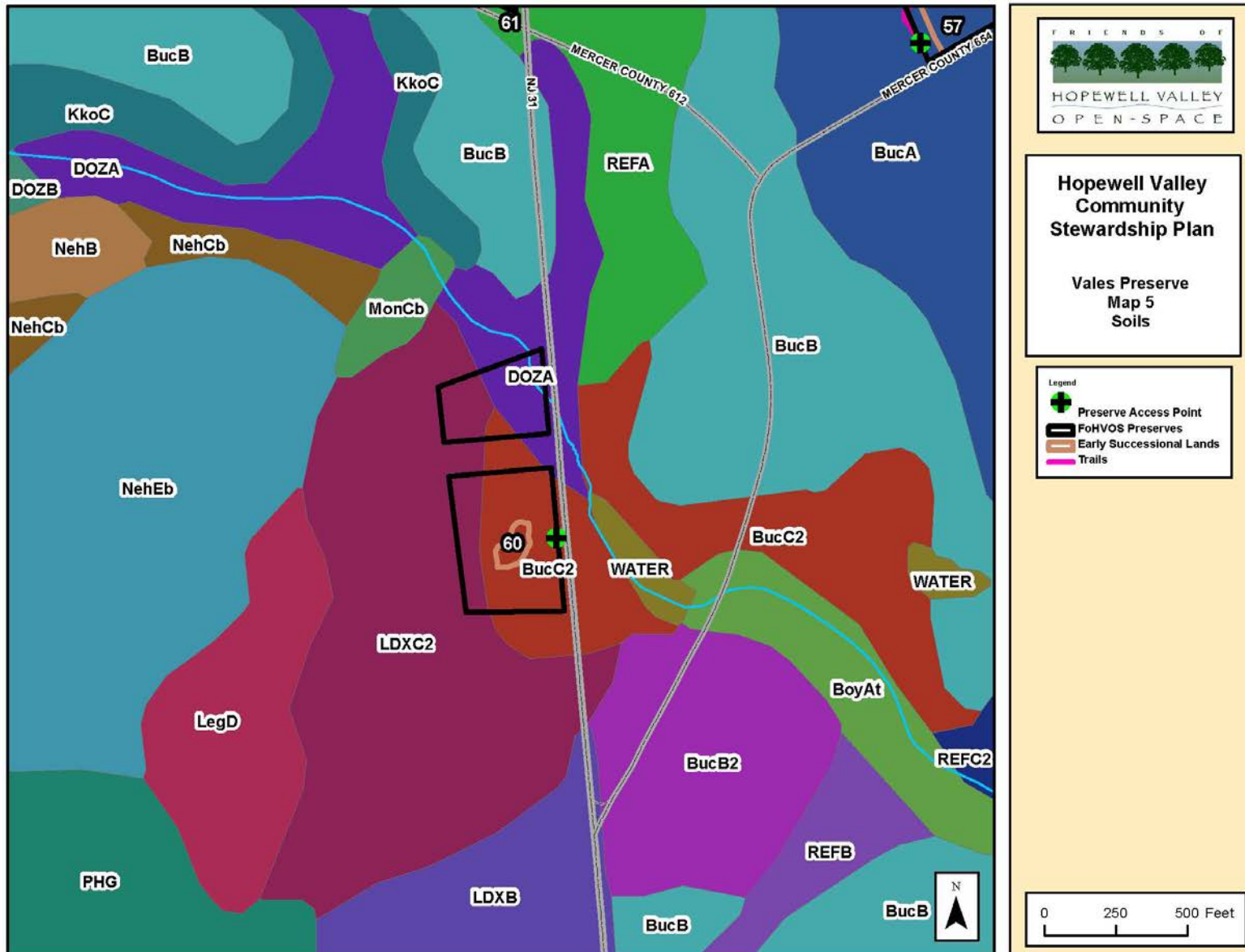
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Community  
Stewardship Plan**

**Vales Preserve  
Map 4  
Bedrock Geology**

- Legend
- Preserve Access Point
  - FoHVOS Preserves
  - Early Successional Lands
  - Trails
  - Bedrock Geology
    - Jurassic Diabase
    - Lockatong Formation
    - Stockton Formation
    - Passaic Formation
    - Passaic Formation Gray bed



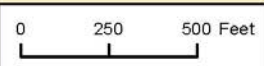
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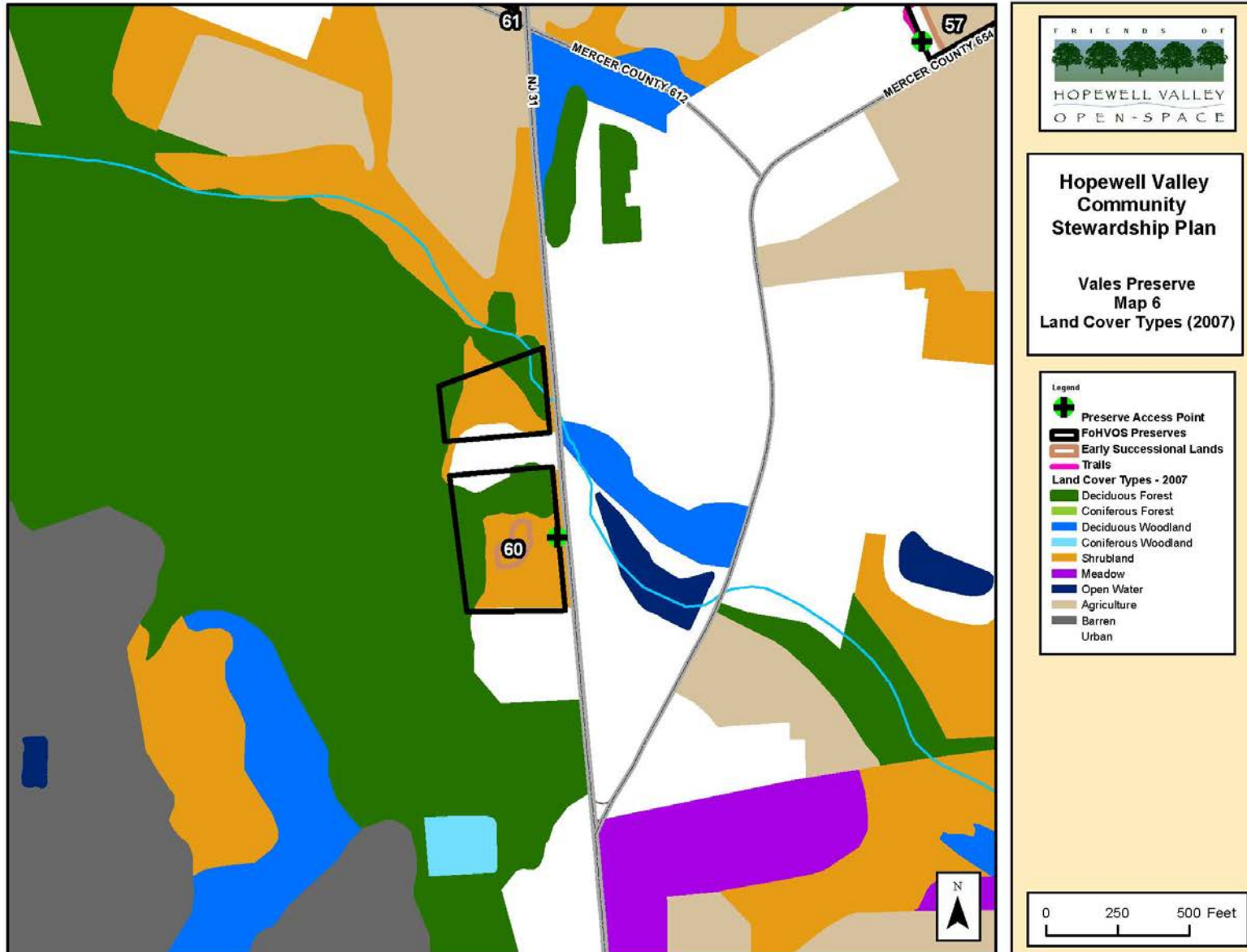
**Hopewell Valley  
 Community  
 Stewardship Plan**

Vales Preserve  
 Map 5  
 Soils

- Legend
- Preserve Access Point
  - FoHVOS Preserves
  - Early Successional Lands
  - Trails

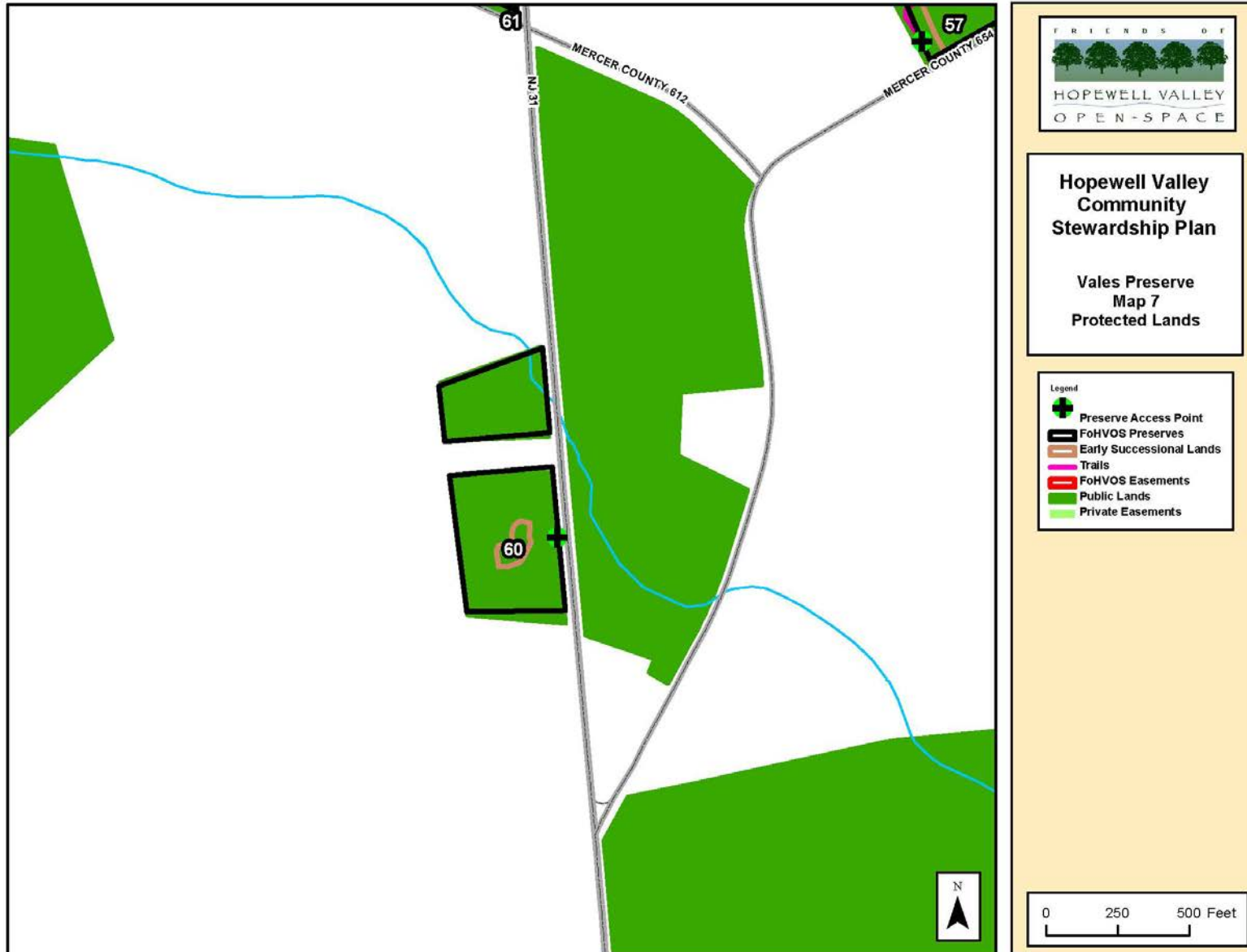


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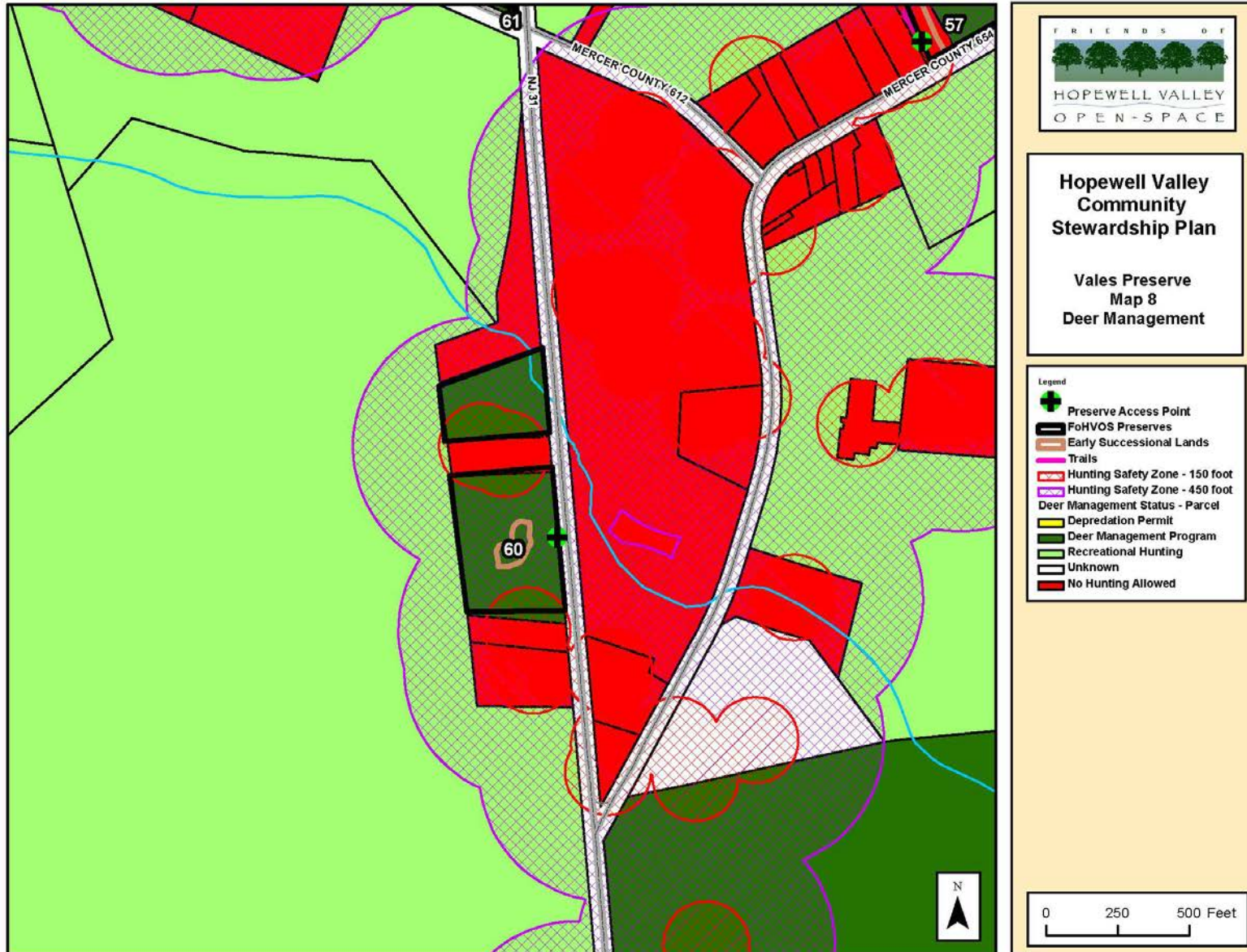




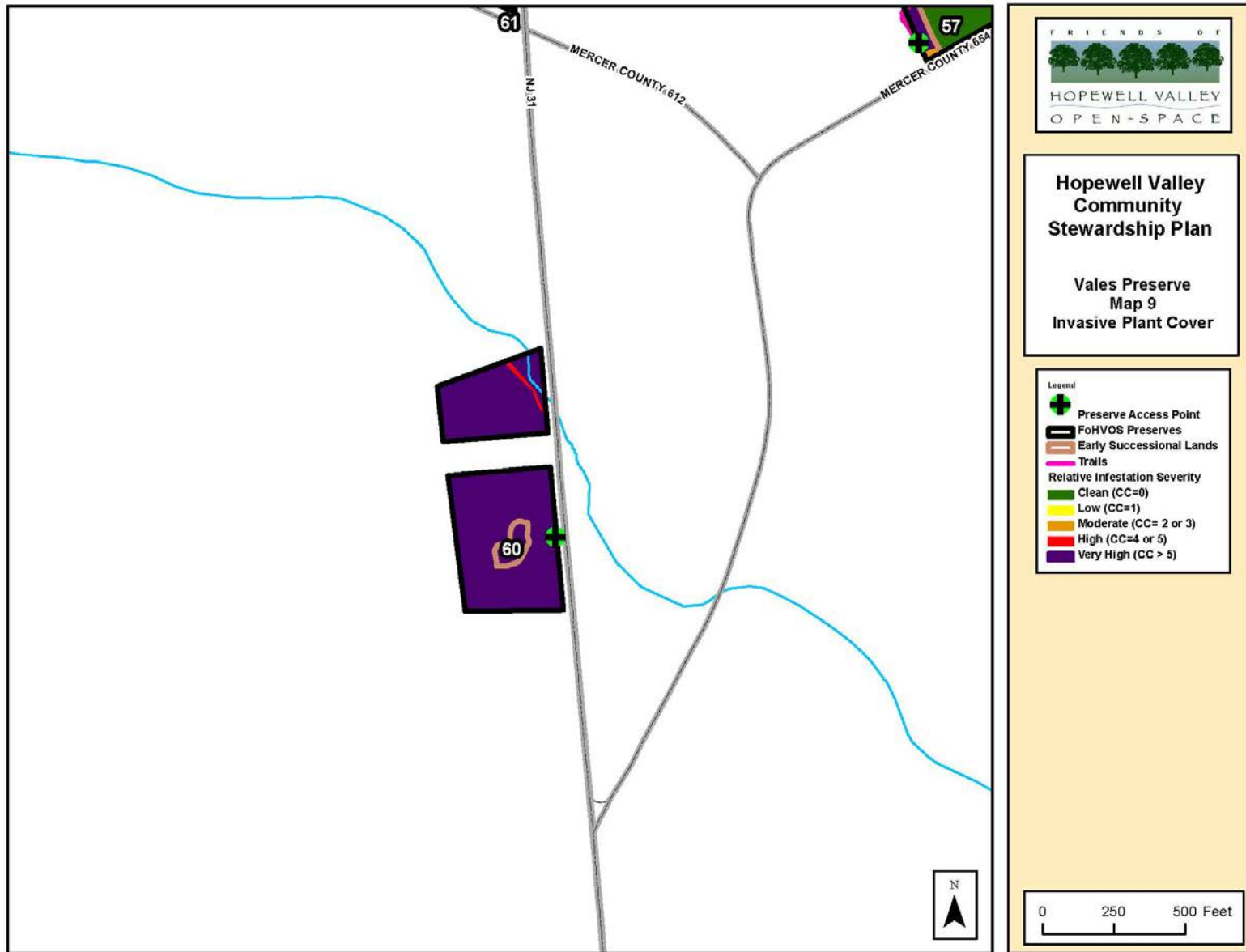
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**Appendix 25.  
Vogler Preserve**

**Acreage:** 11.3

**Block and Lot:** B32, L6.09

**Ownership:** FoHVOS (80%), Hopewell Township (20%)

**Year(s) Purchased:** 2008

**Location & Access:** Preserve is located on the northwestern corner of the intersection of Route 31 and Route 612/ Marshall's Corner-Woodsville Road. Parking access along grassy shoulder of Route 612/ Marshall's Corner-Woodsville Road. Nearest street address: 197 Marshall's Corner-Woodsville Road, Pennington, NJ 08534.

**Structures:** None

Additional property information is summarized in Appendix W. The following Preserve maps are provided at the end of this document:

- Map 1 2007 Aerial Photography
- Map 2 1930 Aerial Photography
- Map 3 Topography
- Map 4 Bedrock Geology
- Map 5 Soils
- Map 6 Land Cover Types (2007)
- Map 7 Protected Lands
- Map 8 Deer Management
- Map 9 Invasive Plant Cover (Relative Infestation Severity for all species)

**Website Description:**

Vogler Preserve, located near FoHVOS' Vales and Thompson Preserves, this land is co-owned with Hopewell Township. The preserve is nearly evenly split between forest and field and was zoned for Highway-Business Office prior to preservation.

**BROAD PROPERTY DESCRIPTION**

The preserve is located in north central Hopewell Township, southwest of Hopewell Borough. The preserve is bounded by residential development, forest, farmland, and a major traffic corridor (Route 31). The topography is primarily flat, sloping down towards the southeast.

Based upon analysis of NJDEP's 2007 Land Use/Land Cover dataset, the preserve contains five broad plant communities: Deciduous Forest (> 50% canopy) - Upland, Deciduous Woodland (10-50% canopy) - Upland, Deciduous Forest (> 50% canopy) - Wetland, Shrubland (< 10% canopy, > 25% shrub cover) - Upland, and Agricultural. Land Use/Land Cover is summarized in Appendix X.

The preserve's forest is young and is comprised of black walnut, ash, red maple, elm, spicebush, poison ivy, round leaved greenbriar, grape species, Virginia creeper, Virginia jumpseed, white snakeroot, clearweed, white geum, and jack-in-the-pulpit. Route 31 and adjacent residential development have rendered a highly fragmented and disturbed forest.



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The preserve's field is currently mowed annually during the growing season. The hedgerows include staghorn sumac, hackberry, blackcaps, ash (some die back). The shrubland is a section of the field that appears to have been abandoned in the past 10 to 20 years.

The preserve has three types of bedrock geology--the Lockatong, Passaic, Passaic Gray Bed formations. See Map 4.

The preserve has five soil types (see Map 5) with Readington and Abbottstown silt loams, 2 to 6 percent slopes; Bucks silt loam, 2 to 6 percent slopes; and Doylestown and Reaville variant silt loams, 0 to 2 percent slopes, being the three most common types. The preserve's soils are described in Appendix Y.

### **CONSERVATION VALUES**

Based on an analysis involving the ranking of ecological values and threats (See Community Stewardship Plan text), the Preserve has a weighted Ecological Value at 50-75%. See Appendix A for a description of ranking factors.

**Forest and Woodland Communities:** The forest serves as suitable habitat for wood turtle. The forest patch found on the Preserve and surrounding area is an important stop-over habitat (spring and fall resting and feeding) for migratory species.

**Old forest:** None. See Map 2.

### **Early Successional Communities:**

**Shrublands:** Shrubland habitat on the preserve is highly invaded. A yellow warbler, which breeds in wet thickets, shrubby areas, and fields was observed on the preserve in late June.

**Meadows/Grasslands:** The field is too small to provide significant habitat.

**Waterbodies:** An unnamed stream passes through the preserve.

### **Rare Species:**

**Rare Plants:** Natural Heritage grid data shows no species.

**Rare Animals:** Forested areas of the Preserve are identified as habitat for State Threatened and Special Concern species.

See Appendix L for a list of species.

### **THREATS**

**Deer:** The understory is severely browsed. Regeneration of the shrub and canopy layer are nearly non-existent.

**Invasive species:** In 2008 staff began walk-through surveys for emerging invasive species on all preserves. Mapping documented each species and its population size. No species were detected. See [www.njisst.org](http://www.njisst.org) for the current status of emerging invasive species at the Preserve.

In 2011 staff completed surveys for invasive plant species on all preserves (see Map 9). Mapping documented each species found and its population size (See Table 1 below). The five species with the highest infestation scores include: Multiflora Rose, Canada Thistle, Japanese Honeysuckle, Common Mugwort, and Garlic Mustard.

**Hopewell Valley Community Stewardship Plan**  
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**Other:** N/A

**STRATEGIES and ACTIONS**

**Forest and Woodland Habitat Stewardship:** Annual surveys for and eradication of emerging invasive species is the highest priority at this Preserve. No action is recommended for widespread invasive species. Reduced deer density will allow the native plant communities to recover and compete with the widespread invasive species on a long-term basis.

**Early Successional Habitat Stewardship:** A biannual winter mowing or burning regime is recommended to maintain early successional habitat and remove invasive woody plants. Spot treatment of Canada thistle and common mugwort via foliar spray is recommended (See Table 1 below). Woody invasive species will be controlled through meadow maintenance.

Burning and mowing may improve the species composition, but adjacent development and land use has degraded potential native seed sources. Restoration should be considered via grant funding.

For habitat goals and maintenance schedule see Appendix T & U.

**Deer Management:** The preserve will be enrolled in the Hopewell Township DMP. See Map 8 for delineations of the 150' and 450' safety zones and hunting status.

**Rare Species Management:** Maintain forested riparian areas to protect rare species.

**Neighboring Lands:** See Deer Management. See Map 7 for adjacent protected lands.

**Waterbodies Management:** Maintain forest around the unnamed stream corridor.

**Undesirable Activities Management:** N/A

**Scientific Research Assessment:** The Preserve is available for scientific research.

**Recreational Opportunities Assessment:** The preserve is too small to merit a trail. Currently, there are no opportunities to connect to a regional trail system—none yet exist.

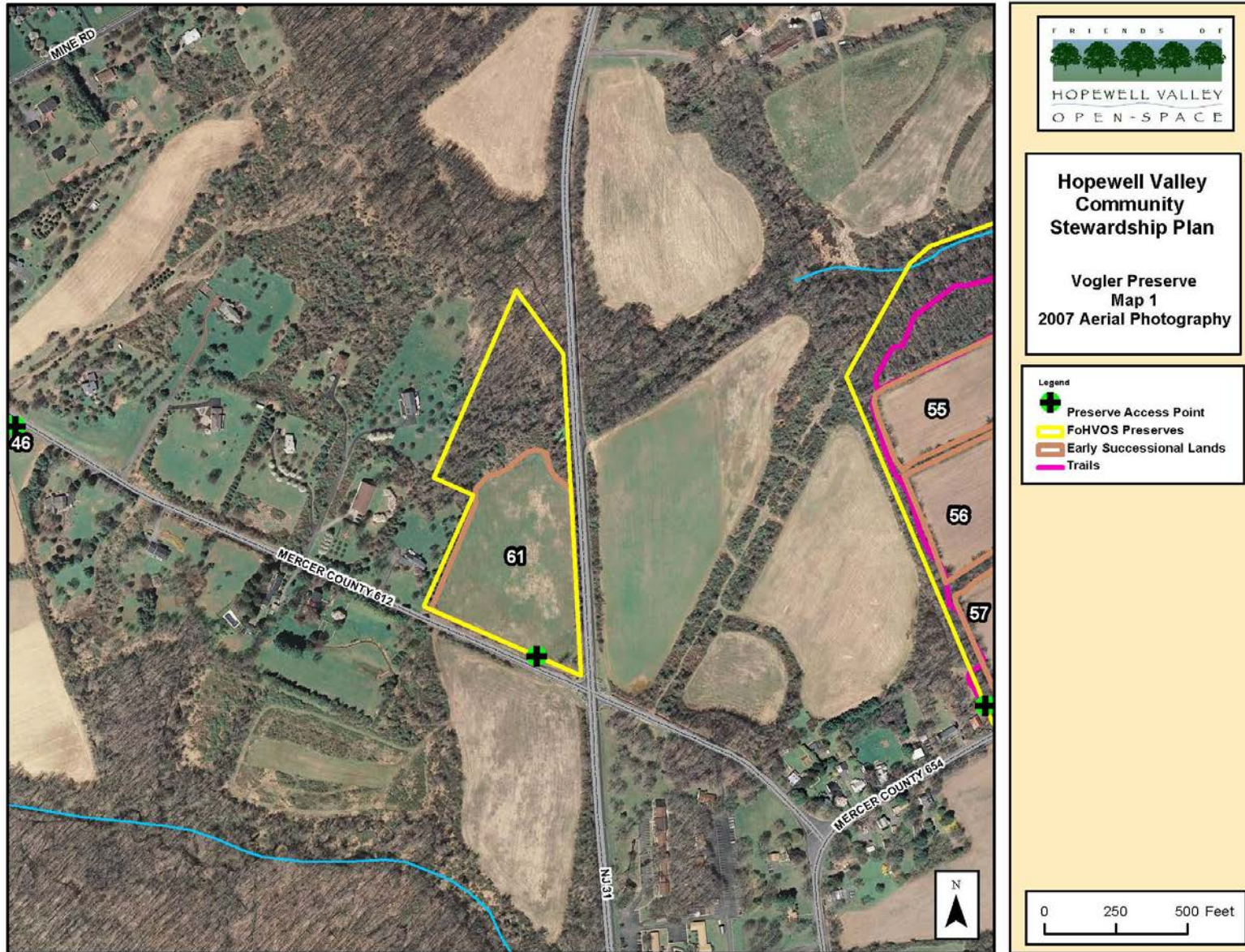
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Scientific Name	Common Name	Infestation Index Score <sup>1</sup>	Total Acres Present	Percent of Preserve Area Present	Treatment Recommendation	LOE Estimate (Hours)	Acreage by Percent Ground Cover Categories						
							Category 0: 0%	Category: Trace	Category 1: 1-10%	Category 2: 10-25%	Category 3: 25-50%	Category 4: 50-75%	Category 5: 75-100%
<i>Acer palmatum</i>	Japanese Maple	0.0	0.0	0.0	N/A		10.33	0.0	0.0	0.0	0.0	0.0	0.0
<i>Acer platanoides</i>	Norway Maple	0.0	0.0	0.0	N/A		10.33	0.0	0.0	0.00	0.0	0.00	0.0
<i>Ailanthus altissima</i>	Tree-of-Heaven	0.0	0.0	0.0	N/A		10.33	0.0	0.0	0.0	0.0	0.0	0.0
<i>Alliaria petiolata</i>	Garlic Mustard	4.9	4.0	38.9	None		6.31	0.0	3.6	0.0	0.5	0.0	0.0
<i>Artemisia vulgaris</i>	Common Mugwort	5.5	5.4	52.0	Control - Field Maintenance	Strategy 3B	4.96	0.0	5.3	0.1	0.0	0.0	0.0
<i>Arthraxon hispidus</i>	Small Carpgrass	0.0	0.0	0.0	N/A		10.33	0.0	0.0	0.0	0.0	0.0	0.0
<i>Berberis thunbergii</i>	Japanese Barberry	0.0	0.0	0.0	N/A		10.33	0.0	0.0	0.0	0.0	0.0	0.0
<i>Cardamine impatiens</i>	Narrow-leaved Bittercress	0.0	0.0	0.0	N/A		10.33	0.0	0.0	0.0	0.0	0.0	0.0
<i>Catalpa bignonioides</i>	Northern Catalpa	0.0	0.0	0.0	N/A		10.33	0.0	0.0	0.0	0.0	0.0	0.0
<i>Celastrus orbiculatus</i>	Asiatic Bittersweet	0.0	0.0	0.0	N/A		10.33	0.0	0.0	0.0	0.00	0.0	0.0
<i>Centurea sp.</i>	Knawweed sp.	0.0	0.0	0.0	N/A		10.33	0.0	0.0	0.0	0.0	0.0	0.0
<i>Cirsium arvense</i>	Canada Thistle	13.4	6.0	58.5	Control - Field Maintenance	Strategy 3B	4.29	0.0	0.1	5.4	0.1	0.0	0.5
<i>Dipsacus sylvestris</i>	Teasel	0.0	0.0	0.0	N/A		10.33	0.0	0.00	0.0	0.0	0.0	0.0
<i>Eleagnus umbellata</i>	Autumn Olive	0.2	0.2	2.0	Control - Field Maintenance	Strategy 3B	10.12	0.0	0.2	0.0	0.0	0.0	0.0
<i>Euonymus alata</i>	Winged Burning Bush	0.0	0.0	0.0	N/A		10.33	0.0	0.0	0.0	0.0	0.0	0.00
<i>Iris pseudoacris</i>	Yellow Iris	0.0	0.0	0.0	N/A		10.33	0.0	0.0	0.0	0.0	0.0	0.0
<i>Lespedeza cuneata</i>	Chinese Bushclover	0.0	0.0	0.0	N/A		10.33	0.0	0.0	0.0	0.0	0.0	0.0
<i>Ligustrum obtusifolium</i>	Border Privet	0.0	0.0	0.0	N/A		10.33	0.0	0.00	0.0	0.0	0.0	0.0
<i>Lonicera japonica</i>	Japanese Honeysuckle	6.5	4.9	47.1	None		5.46	0.0	3.9	0.4	0.5	0.1	0.0
<i>Lonicera maackii</i>	Amur Honeysuckle	0.0	0.0	0.0	N/A		10.33	0.0	0.0	0.0	0.0	0.0	0.0
<i>Lonicera morrowii</i>	Morrow's Honeysuckle	4.2	4.2	40.5	None		6.15	0.0	4.1	0.1	0.00	0.0	0.0
<i>Lysimachia nummularia</i>	Moneywort	0.0	0.0	0.0	N/A		10.33	0.0	0.0	0.0	0.0	0.0	0.0
<i>Lythrum salicaria</i>	Purple Loosestrife	0.0	0.0	0.0	N/A		10.33	0.0	0.0	0.0	0.0	0.0	0.0
<i>Malus toringo</i>	Toringo Crabapple	0.0	0.0	0.0	N/A		10.33	0.0	0.0	0.0	0.0	0.0	0.0
<i>Microstegium vimineum</i>	Japanese Stiltgrass	0.0	0.0	0.0	N/A		10.33	0.0	0.0	0.0	0.0	0.0	0.0
N/A	Non-native, cool season grass	0.3	0.1	0.5	None		10.28	0.0	0.0	0.0	0.0	0.0	0.1
<i>Phalaris arundinacea</i>	Reed Canary Grass	0.0	0.0	0.0	N/A		10.33	0.0	0.0	0.0	0.0	0.0	0.0
<i>Phragmites australis</i>	Common Reed	0.0	0.0	0.0	N/A		10.33	0.0	0.0	0.0	0.0	0.0	0.0
<i>Polygonum cuspidatum</i>	Japanese Knotweed	0.0	0.0	0.0	N/A		10.33	0.0	0.0	0.0	0.0	0.0	0.0
<i>Polygonum perfoliatum</i>	Mile-a-Minute	0.0	0.0	0.0	N/A		10.33	0.0	0.0	0.0	0.0	0.0	0.0
<i>Pyrus calleryana</i>	Callery Pear	0.0	0.0	0.0	N/A		10.33	0.0	0.0	0.0	0.0	0.0	0.0
<i>Ranunculus ficaria</i>	Lesser Celandine	0.0	0.0	0.0	N/A		10.33	0.0	0.0	0.0	0.0	0.0	0.0
<i>Robinia pseudoacacia</i>	Black Locust	0.0	0.0	0.0	N/A		10.33	0.0	0.0	0.0	0.0	0.0	0.0
<i>Rosa multiflora</i>	Multiflora Rose	26.1	10.2	99.1	Control - Field Maintenance	Strategy 3B	0.09	0.0	0.1	5.5	3.8	0.8	0.1
<i>Rubus pheonculusius</i>	Wineberry	3.6	3.6	34.6	Control - Field Maintenance	Strategy 3B	6.76	0.0	3.6	0.0	0.0	0.0	0.0
<i>Securigera varia</i>	Crown vetch	0.0	0.0	0.0	N/A		10.33	0.0	0.0	0.0	0.0	0.0	0.0
<i>Viburnum dilatatum</i>	Linden Viburnum	0.0	0.0	0.0	N/A		10.33	0.0	0.0	0.0	0.0	0.0	0.0
<i>Viburnum sieboldii</i>	Siebold's Viburnum	0.0	0.0	0.0	N/A		10.33	0.0	0.0	0.0	0.0	0.0	0.0
<i>Wisteria floribunda</i>	Japanese Wisteria	0.0	0.0	0.0	N/A		10.33	0.0	0.0	0.0	0.0	0.0	0.0
<b>Total LOE</b>						<b>0</b>							

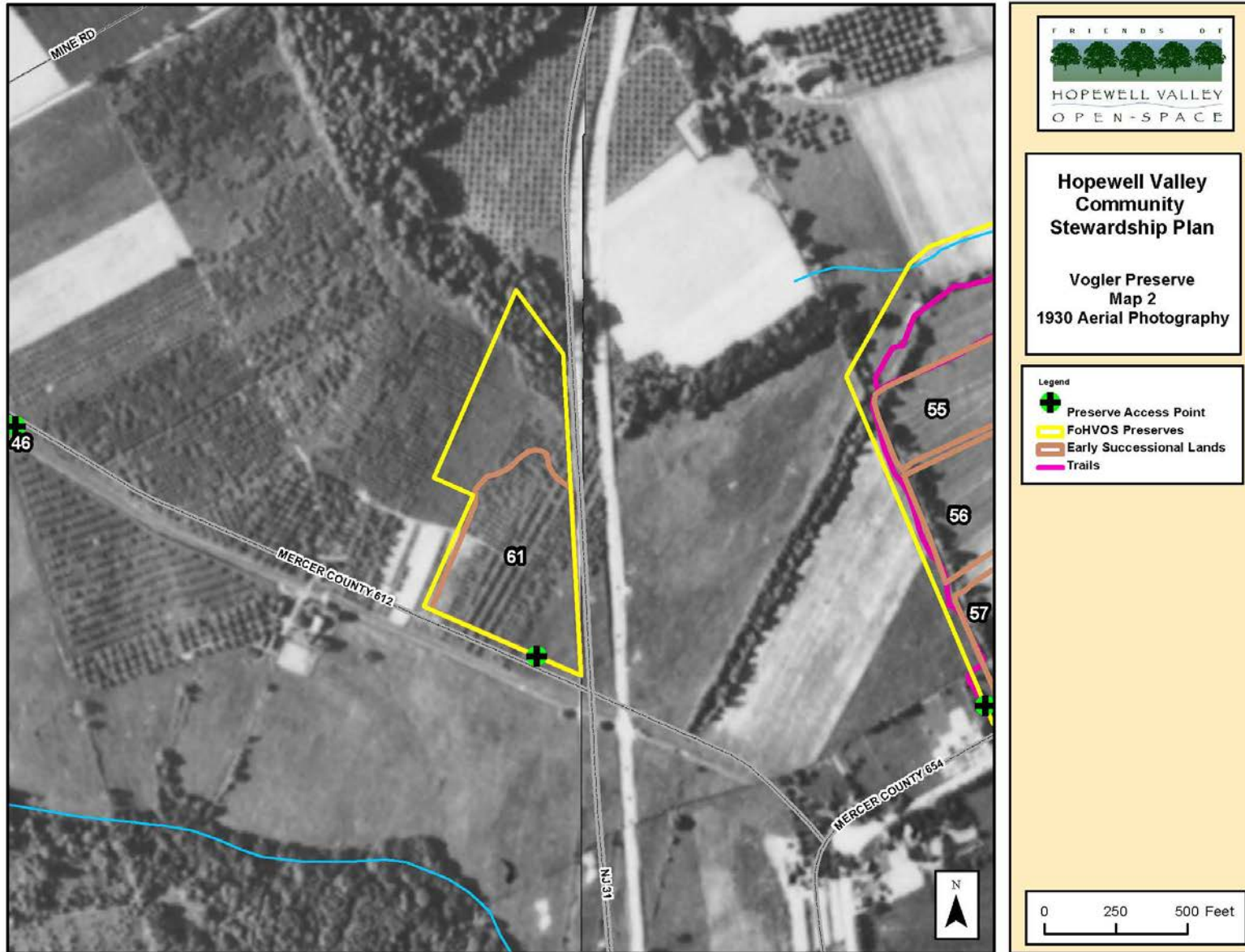
<sup>1</sup> The Infestation Index Score combines the extent of acreage infested and the intensity of the infestation. It was derived by multiplying the cover class number by the number of acres within each cover class.

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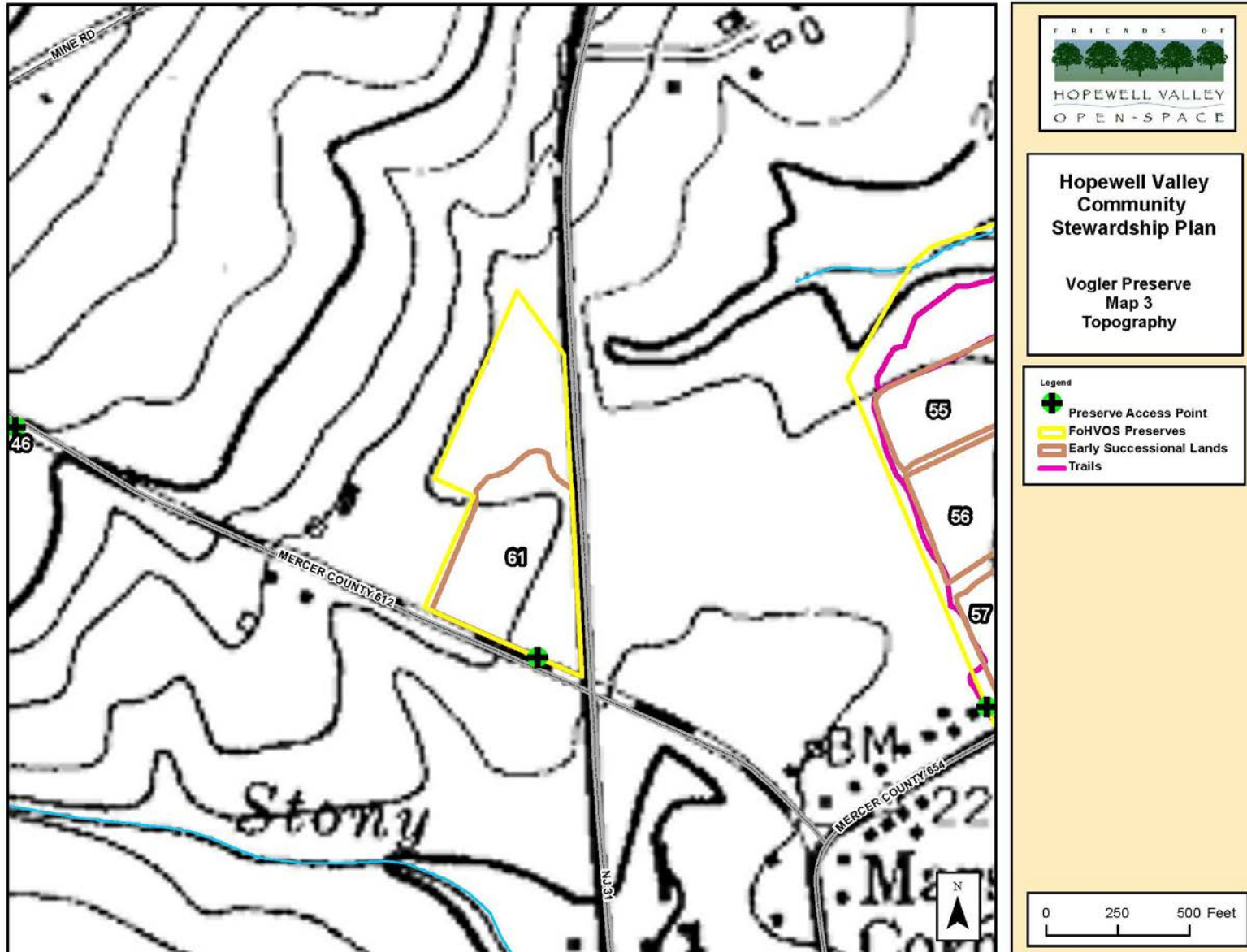




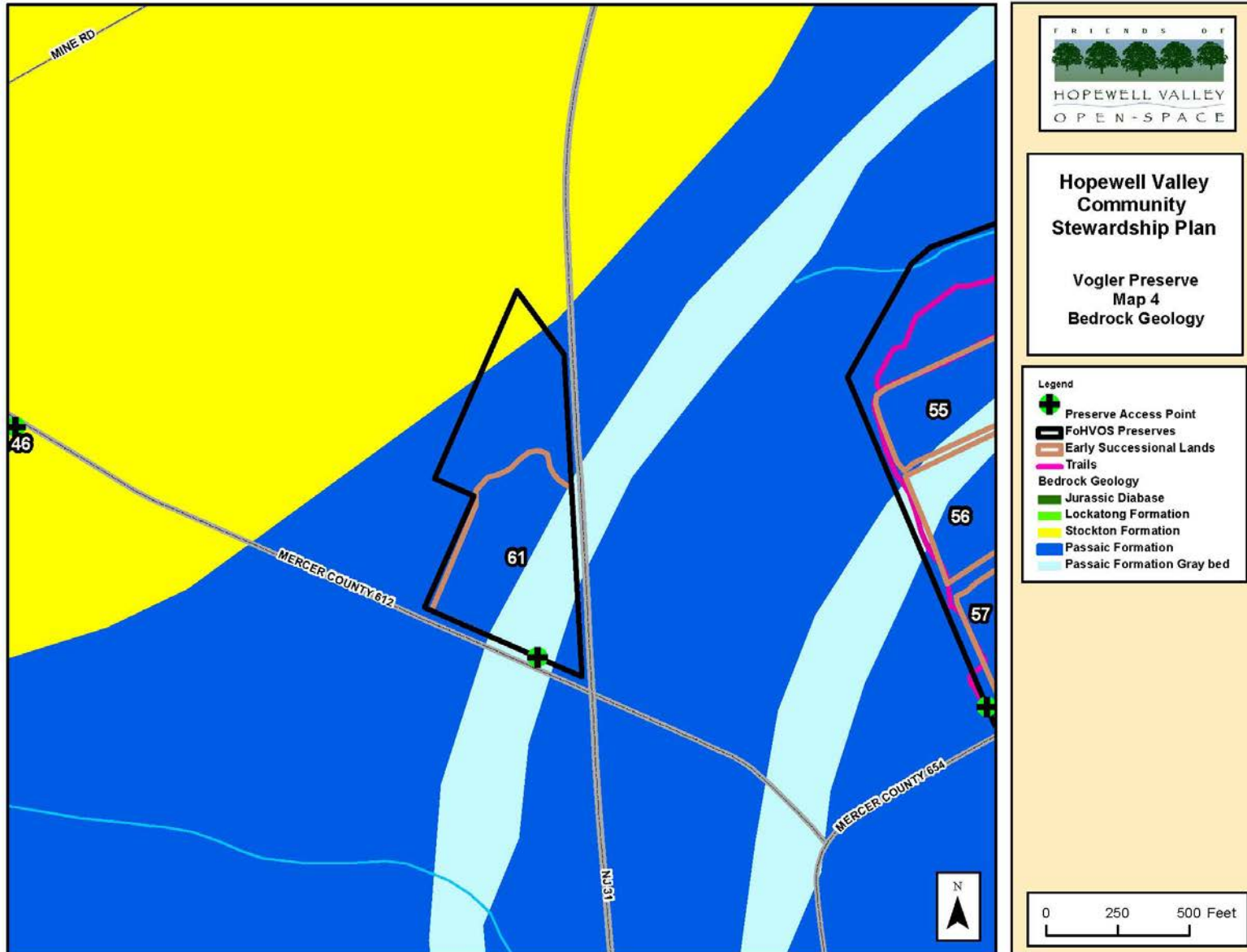
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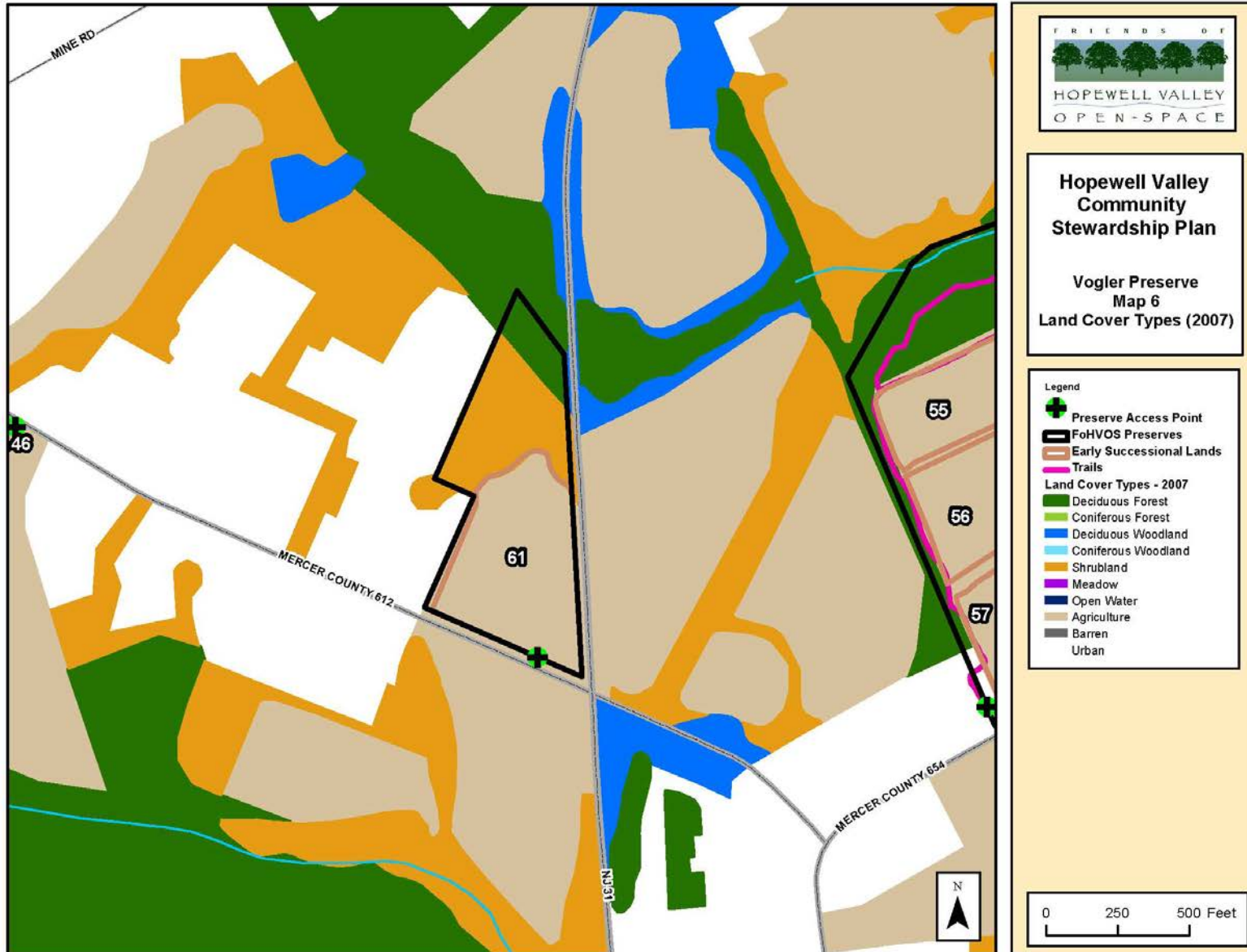




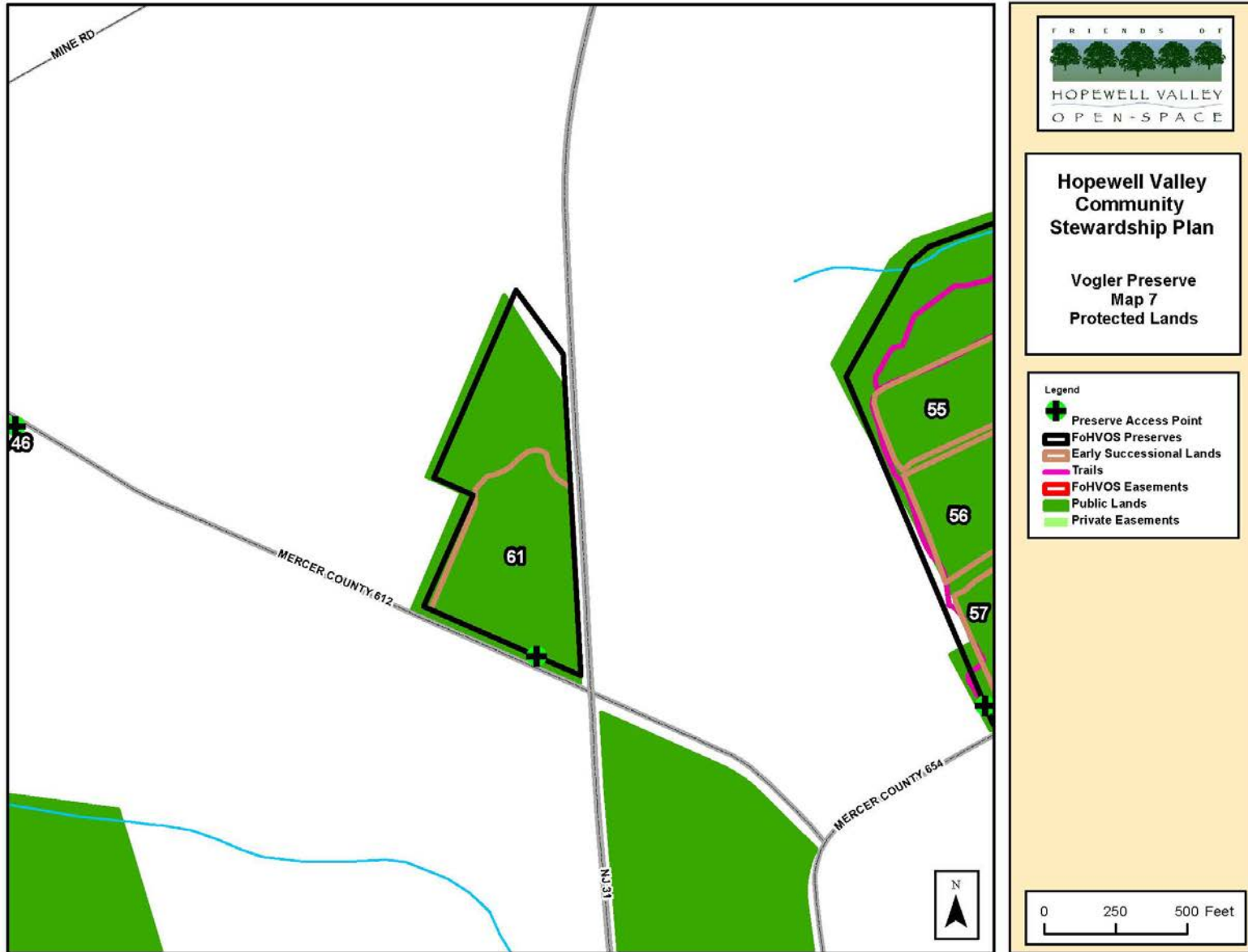




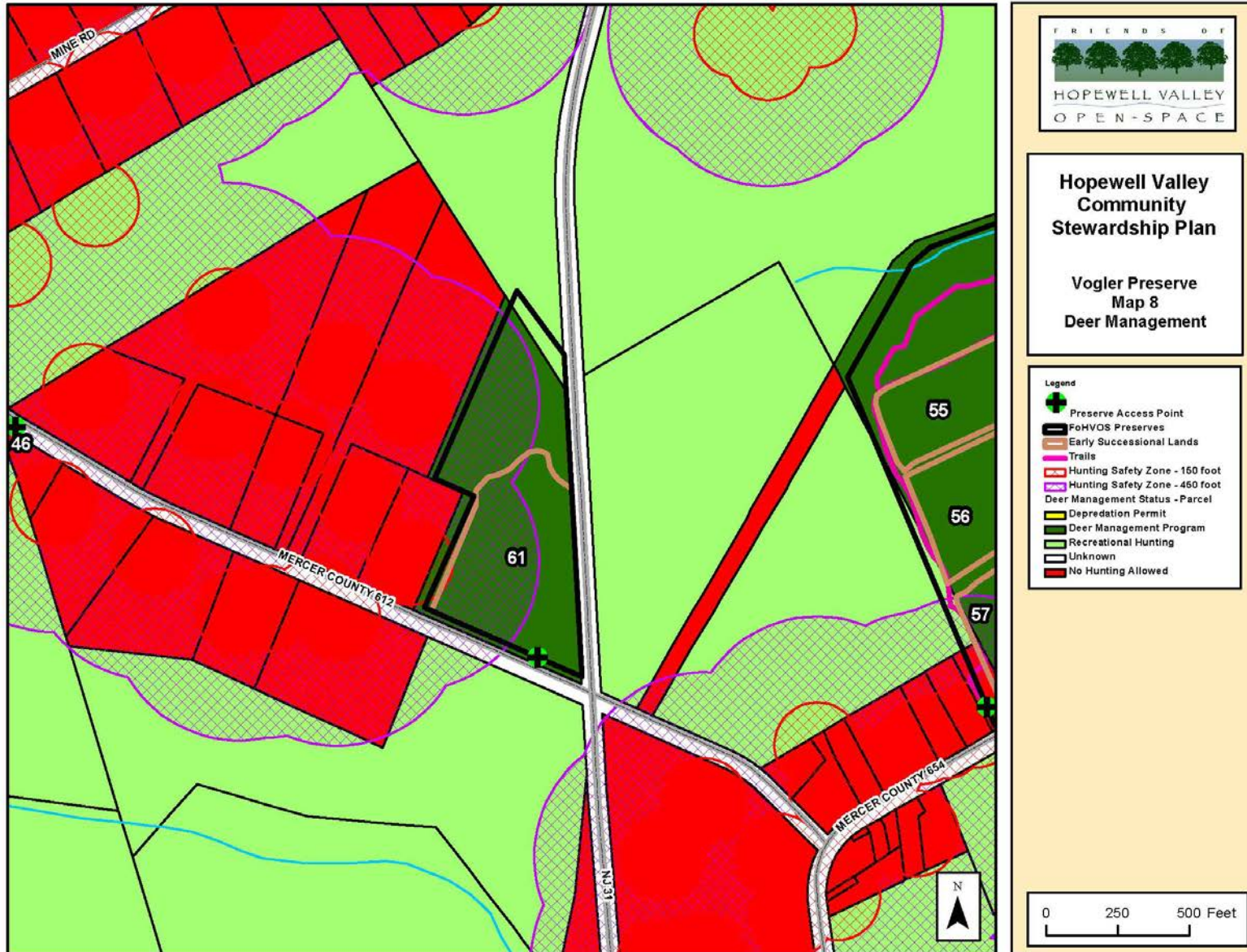
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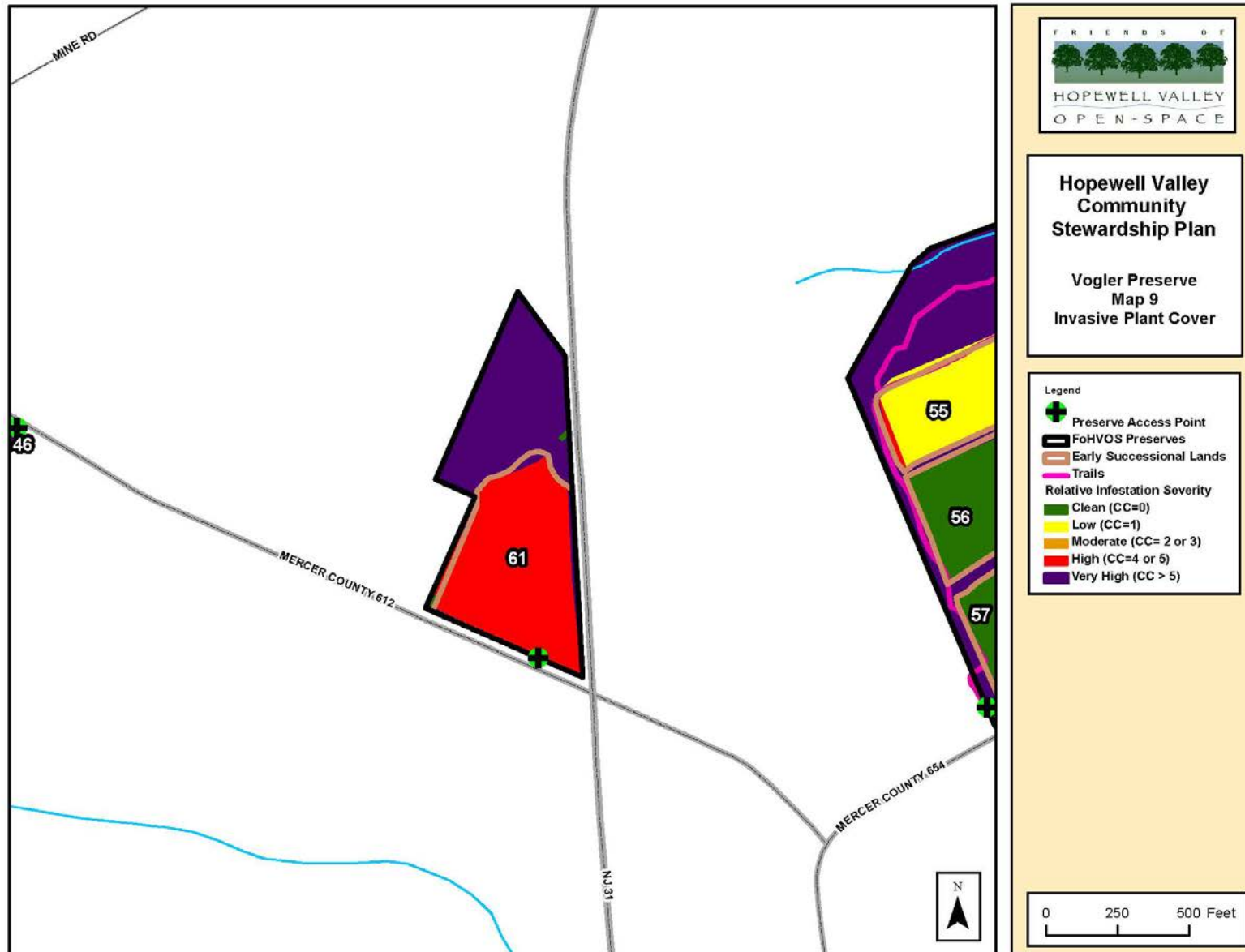


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**Appendix 26.  
Weidel Preserve**

**Acreage:** 1.6

**Block and Lot:** B65, L87, 96, & 97

**Ownership:** FoHVOS (100%)

**Year(s) Purchased:** 2001

**Location & Access:** Preserve is located on the west side of Route 31. Parking access along road shoulder. CAUTION: Steady highway traffic makes access very difficult. Nearest street address: 20 Route 31 North, Pennington, NJ 08534.

**Structures:** None

Additional property information is summarized in Appendix W. The following Preserve maps are provided at the end of this document:

- Map 1 2007 Aerial Photography
- Map 2 1930 Aerial Photography
- Map 3 Topography
- Map 4 Bedrock Geology
- Map 5 Soils
- Map 6 Land Cover Types (2007)
- Map 7 Protected Lands
- Map 8 Deer Management
- Map 9 Invasive Plant Cover (Relative Infestation Severity for all species)

**Website Description:**

**Weidel Preserve** protects a tract of forest and forested wetlands along a densely developed section of Route 31.

**BROAD PROPERTY DESCRIPTION**

The Weidel Preserve (see Map 1) is located in south central Hopewell Township, just west of Pennington Borough. The preserve is bounded by residential and commercial development, forest, and a major traffic corridor: Route 31. The topography (see Map 3) is relatively flat, at about 200 feet above sea level.

Based upon analysis of NJDEP's 2007 Land Use/Land Cover dataset, the preserve contains three broad plant communities: Deciduous Forest (> 50% canopy) – Upland, Deciduous Woodland (10-50% canopy) – Upland, and Deciduous Forest (> 50% canopy) - Wetland. Land Use/Land Cover is summarized in Appendix X and illustrated in Map 6.

The Preserve contains young forests comprised of species such as ash, red maple, elm. A small emergent wetland occurs in the center of the Preserve. Roadside edges are heavily degraded by invasive species.

The preserve has one type of bedrock geology--the Passaic formation. See Map 4.

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The preserve has three soil types (see Map 5) with Penn channery silt loam, 6 to 12 percent slopes and Bucks silt loam, 2 to 6 percent slopes, eroded being the two most common types. The preserve's soils are described in Appendix Y.

**CONSERVATION VALUES**

Based on an analysis involving the ranking of ecological values and threats (See Community Stewardship Plan text), the Preserve has a weighted Ecological Value at 25%. See Appendix A for a description of ranking factors.

**Forest and Woodland Communities:** The forest serves to protect a portion of the wetlands that feed into Woolsey Brook. The forest patch found on the Preserve is too small to provide significant habitat.

**Old forest:** None. See Map 2.

**Early Successional Communities:**

**Shrublands:** N/A

**Meadows/Grasslands:** N/A

**Waterbodies:** N/A

**Rare Species:**

**Rare Plants:** None documented on the Preserve. Natural Heritage grid data shows no species.

**Rare Animals:** None.

**THREATS**

**Deer:** The preserve serves as habitat for 'pocket deer'.

**Invasive species:** In 2008 staff began walk-through surveys for emerging invasive species on all preserves. Mapping documented each species and its population size. Chinese bushclover was detected along the roadside. See [www.njisst.org](http://www.njisst.org) for the current status of emerging invasive species at the Preserve.

In 2011 staff completed surveys for invasive plant species on all preserves (see Map 9). Mapping documented each species found and its population size (See Table 1 below). The five species with the highest infestation scores include: Autumn Olive, Japanese Honeysuckle, Amur Honeysuckle, Multifloral Rose, and Morrow's Honeysuckle.

**Other:** N/A

**STRATEGIES and ACTIONS**

**Forest and Woodland Habitat Stewardship:** Annual surveys for and eradication of emerging invasive species is the highest priority at this Preserve. No action is recommended for widespread invasive species. Reduced deer density will allow the native plant communities to recover and compete with the widespread invasive species on a long-term basis.

**Early Successional Habitat Stewardship:** N/A

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**Deer Management:** The preserve is not enrolled in the DMP due to proximity of human development. See Map 8 for delineations of the 150' and 450' safety zones and hunting status.

**Rare Species Management:** N/A

**Neighboring Lands:** See Map 7 for adjacent protected lands.

**Waterbodies Management:** N/A

**Undesirable Activities Management:** N/A

**Scientific Research Assessment:** The Preserve is available for scientific research.

**Recreational Opportunities Assessment:** The preserve is too small to merit a trail. In addition, Access is limited—parking is dangerous along heavily traffic Route 31. Currently, there are no opportunities to connect to a regional trail system—none yet exist.

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**Table 1. Invasive Plants – Species Abundance and Treatment Recommendations**

Scientific Name	Common Name	Infestation Index Score <sup>1</sup>	Total Acres Present	Percent of Preserve Area Present	Treatment Recommendation	LOE Estimate (Hours)	Acreage by Percent Ground Cover Categories						
							Category 0: 0%	Category: Trace	Category 1: 1-10%	Category 2: 10-25%	Category 3: 25-50%	Category 4: 50-75%	Category 5: 75-100%
<i>Acer palmatum</i>	Japanese Maple	0.0	0.0	0.0	N/A		1.64	0.0	0.0	0.0	0.0	0.0	0.0
<i>Acer platanoides</i>	Norway Maple	0.0	0.0	0.0	N/A		1.64	0.0	0.0	0.00	0.0	0.00	0.0
<i>Ailanthus altissima</i>	Tree-of-Heaven	0.0	0.1	3.7	None		1.58	0.1	0.0	0.0	0.0	0.0	0.0
<i>Alliaria petiolata</i>	Garlic Mustard	0.0	1.5	91.5	None		0.14	1.5	0.0	0.0	0.0	0.0	0.0
<i>Artemisia vulgaris</i>	Common Mugwort	0.0	0.0	0.0	N/A		1.64	0.0	0.0	0.0	0.0	0.0	0.0
<i>Arthraxon hispidus</i>	Small Carpgrass	0.0	0.0	0.0	N/A		1.64	0.0	0.0	0.0	0.0	0.0	0.0
<i>Berberis thunbergii</i>	Japanese Barberry	0.0	1.5	91.5	None		0.14	1.5	0.0	0.0	0.0	0.0	0.0
<i>Cardamine impatiens</i>	Narrow-leaved Bittercress	0.0	0.0	0.0	N/A		1.64	0.0	0.0	0.0	0.0	0.0	0.0
<i>Catalpa bignonioides</i>	Northern Catalpa	0.0	0.0	0.0	N/A		1.64	0.0	0.0	0.0	0.0	0.0	0.0
<i>Celastrus orbiculatus</i>	Asiatic Bittersweet	0.0	0.0	0.0	N/A		1.64	0.0	0.0	0.0	0.00	0.0	0.0
<i>Centurea sp.</i>	Knapsweed sp.	0.0	0.0	0.0	N/A		1.64	0.0	0.0	0.0	0.0	0.0	0.0
<i>Cirsium arvense</i>	Canada Thistle	0.0	0.0	0.0	N/A		1.64	0.0	0.0	0.0	0.0	0.0	0.0
<i>Dipsacus sylvestris</i>	Teasel	0.0	0.0	0.0	N/A		1.64	0.0	0.00	0.0	0.0	0.0	0.0
<i>Eleagnus umbellata</i>	Autumn Olive	3.0	1.5	91.5	None		0.14	0.0	0.0	1.5	0.0	0.0	0.0
<i>Euonymus alata</i>	Winged Burning Bush	0.0	0.0	0.0	N/A		1.64	0.0	0.0	0.0	0.0	0.0	0.00
<i>Iris pseudoacris</i>	Yellow Iris	0.0	0.0	0.0	N/A		1.64	0.0	0.0	0.0	0.0	0.0	0.0
<i>Lespedeza cuneata</i>	Chinese Bushclover	0.0	0.0	0.0	N/A		1.64	0.0	0.0	0.0	0.0	0.0	0.0
<i>Ligustrum obtusifolium</i>	Border Privet	0.0	0.0	0.0	N/A		1.64	0.0	0.00	0.0	0.0	0.0	0.0
<i>Lonicera japonica</i>	Japanese Honeysuckle	3.0	1.5	91.5	None		0.14	0.0	0.0	1.5	0.0	0.0	0.0
<i>Lonicera maackii</i>	Amur Honeysuckle	3.0	1.5	91.5	None		0.14	0.0	0.0	1.5	0.0	0.0	0.0
<i>Lonicera morrowii</i>	Morrow's Honeysuckle	1.5	1.5	91.5	None		0.14	0.0	1.5	0.0	0.00	0.0	0.0
<i>Lysimachia nummularia</i>	Moneywort	0.0	0.0	0.0	N/A		1.64	0.0	0.0	0.0	0.0	0.0	0.0
<i>Lythrum salicaria</i>	Purple Loosestrife	0.0	0.0	0.0	N/A		1.64	0.0	0.0	0.0	0.0	0.0	0.0
<i>Malus toringo</i>	Toringo Crabapple	0.0	0.0	0.0	N/A		1.64	0.0	0.0	0.0	0.0	0.0	0.0
<i>Microstegium vimineum</i>	Japanese Stiltgrass	0.0	0.0	0.0	N/A		1.64	0.0	0.0	0.0	0.0	0.0	0.0
N/A	Non-native, cool season grass	0.0	0.0	0.0	N/A		1.64	0.0	0.0	0.0	0.0	0.0	0.0
<i>Phalaris arundinacea</i>	Reed Canary Grass	0.1	0.1	7.9	None		1.51	0.0	0.1	0.0	0.0	0.0	0.0
<i>Phragmites australis</i>	Common Reed	0.0	0.0	0.0	N/A		1.64	0.0	0.0	0.0	0.0	0.0	0.0
<i>Polygonum cuspidatum</i>	Japanese Knotweed	1.5	1.5	91.5	None		0.14	0.0	1.5	0.0	0.0	0.0	0.0
<i>Polygonum perforatum</i>	Mile-a-Minute	0.0	0.0	0.0	N/A		1.64	0.0	0.0	0.0	0.0	0.0	0.0
<i>Pyrus calleryana</i>	Callery Pear	0.0	0.0	0.0	N/A		1.64	0.0	0.0	0.0	0.0	0.0	0.0
<i>Ranunculus ficaria</i>	Lesser Celandine	0.0	0.0	0.0	N/A		1.64	0.0	0.0	0.0	0.0	0.0	0.0
<i>Robinia pseudoacacia</i>	Black Locust	0.0	0.0	0.0	N/A		1.64	0.0	0.0	0.0	0.0	0.0	0.0
<i>Rosa multiflora</i>	Multiflora Rose	3.0	1.5	91.5	None		0.14	0.0	0.0	1.5	0.0	0.0	0.0
<i>Rubus phoenicolasius</i>	Wineberry	0.0	1.5	91.5	None		0.14	1.5	0.0	0.0	0.0	0.0	0.0
<i>Securigera varia</i>	Crown vetch	0.0	0.0	0.0	N/A		1.64	0.0	0.0	0.0	0.0	0.0	0.0
<i>Viburnum dilatatum</i>	Linden Viburnum	0.0	0.0	0.0	N/A		1.64	0.0	0.0	0.0	0.0	0.0	0.0
<i>Viburnum sieboldii</i>	Siebold's Viburnum	0.0	0.0	0.0	N/A		1.64	0.0	0.0	0.0	0.0	0.0	0.0
<i>Wisteria floribunda</i>	Japanese Wisteria	0.0	0.0	0.0	N/A		1.64	0.0	0.0	0.0	0.0	0.0	0.0
<b>Total LOE</b>						<b>0</b>							

<sup>1</sup> The Infestation Index Score combines the extent of acreage infested and the intensity of the infestation. It was derived by multiplying the cover class number by the number of acres within each cover class.



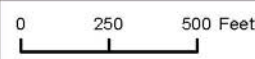
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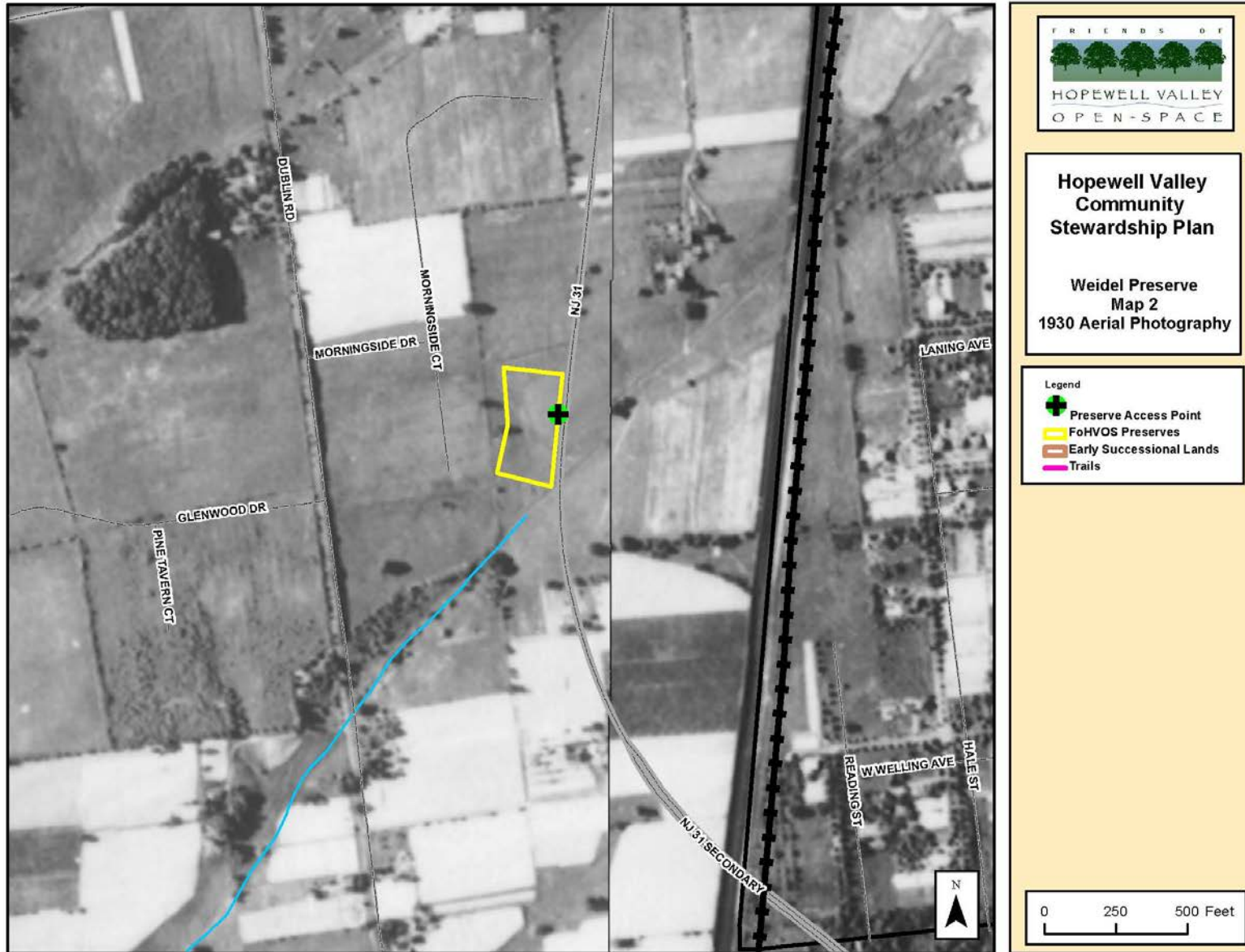
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**Weidel Preserve  
Map 1  
2007 Aerial Photography**

- Legend
- Preserve Access Point
  - FoHVOS Preserves
  - Early Successional Lands
  - Trails

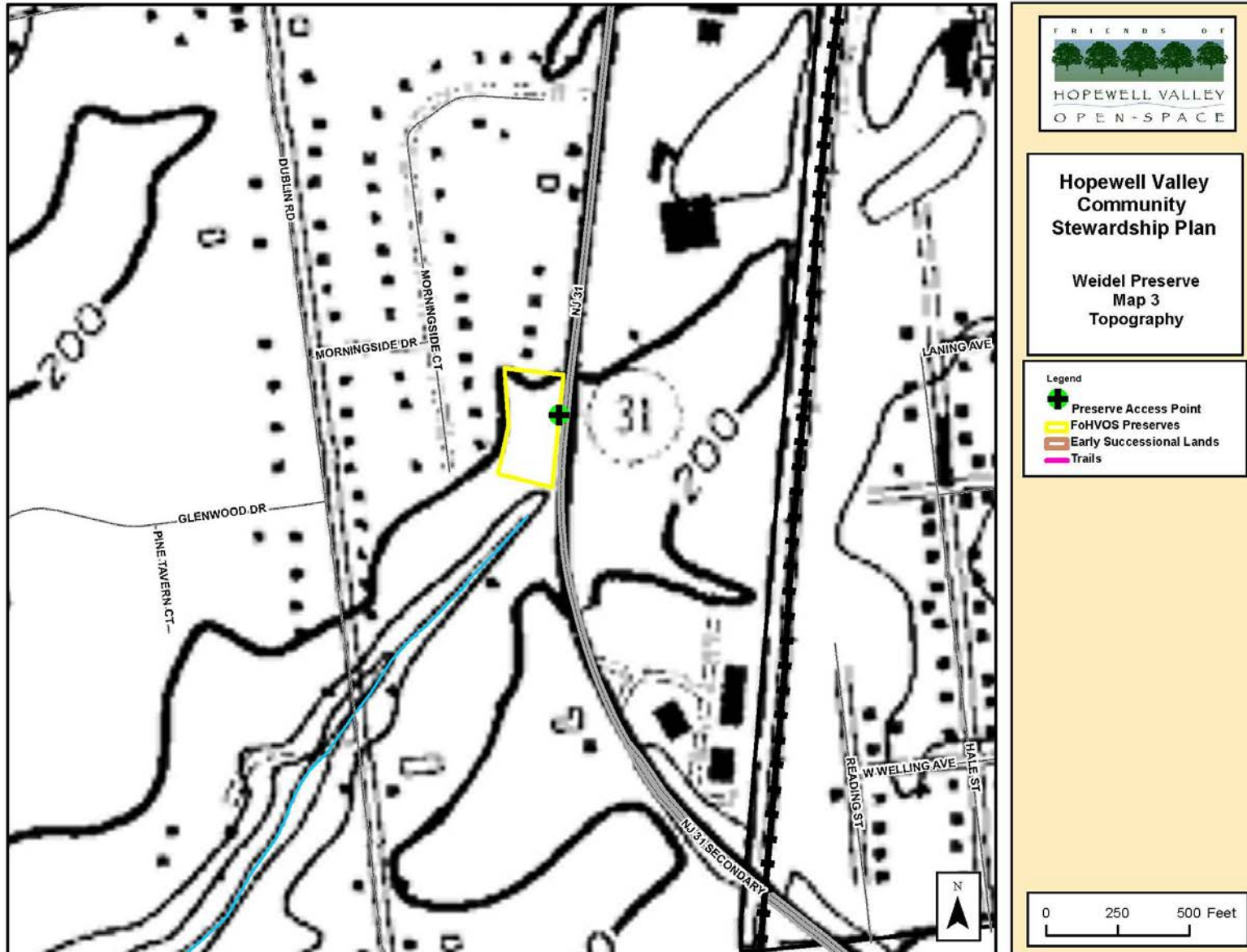


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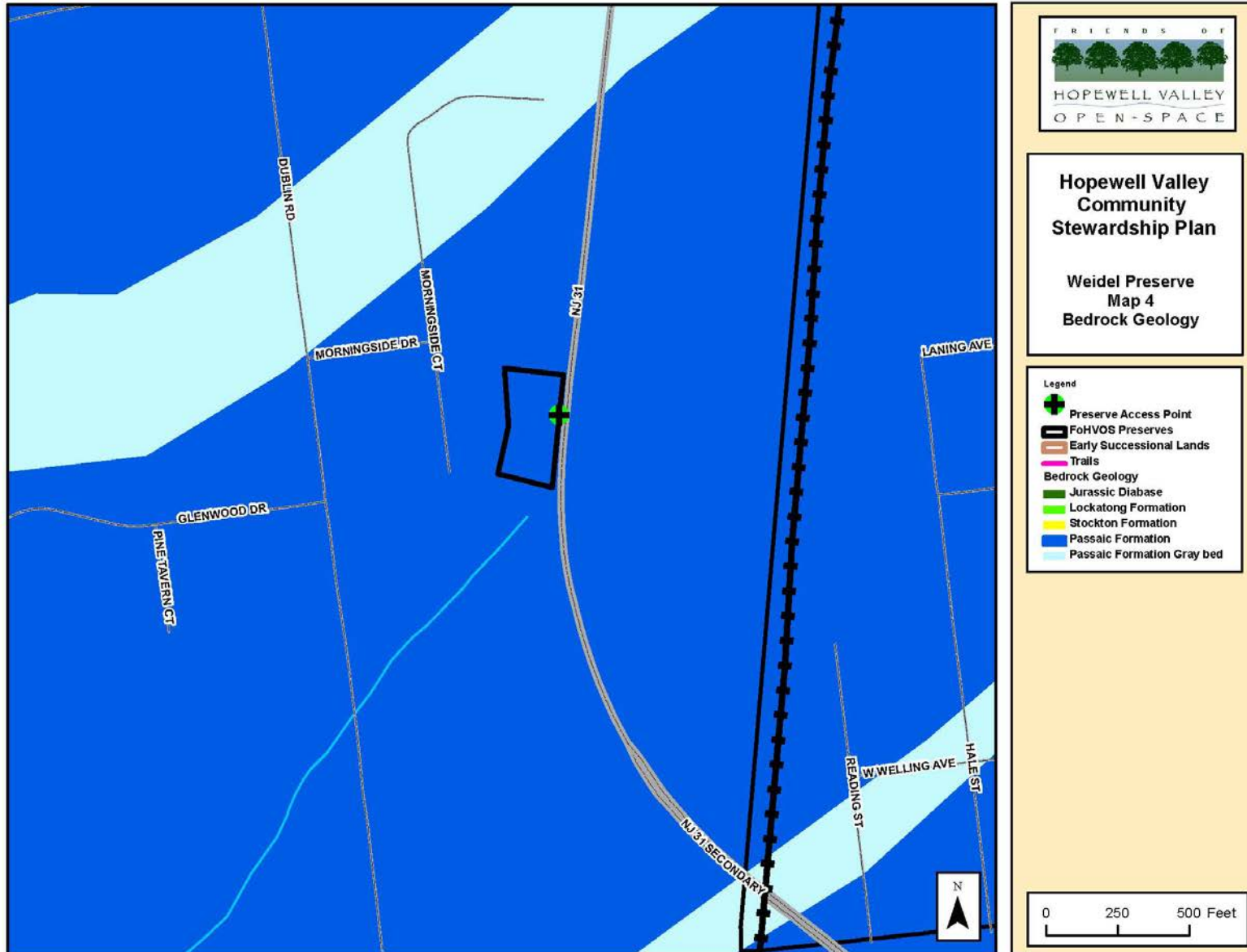




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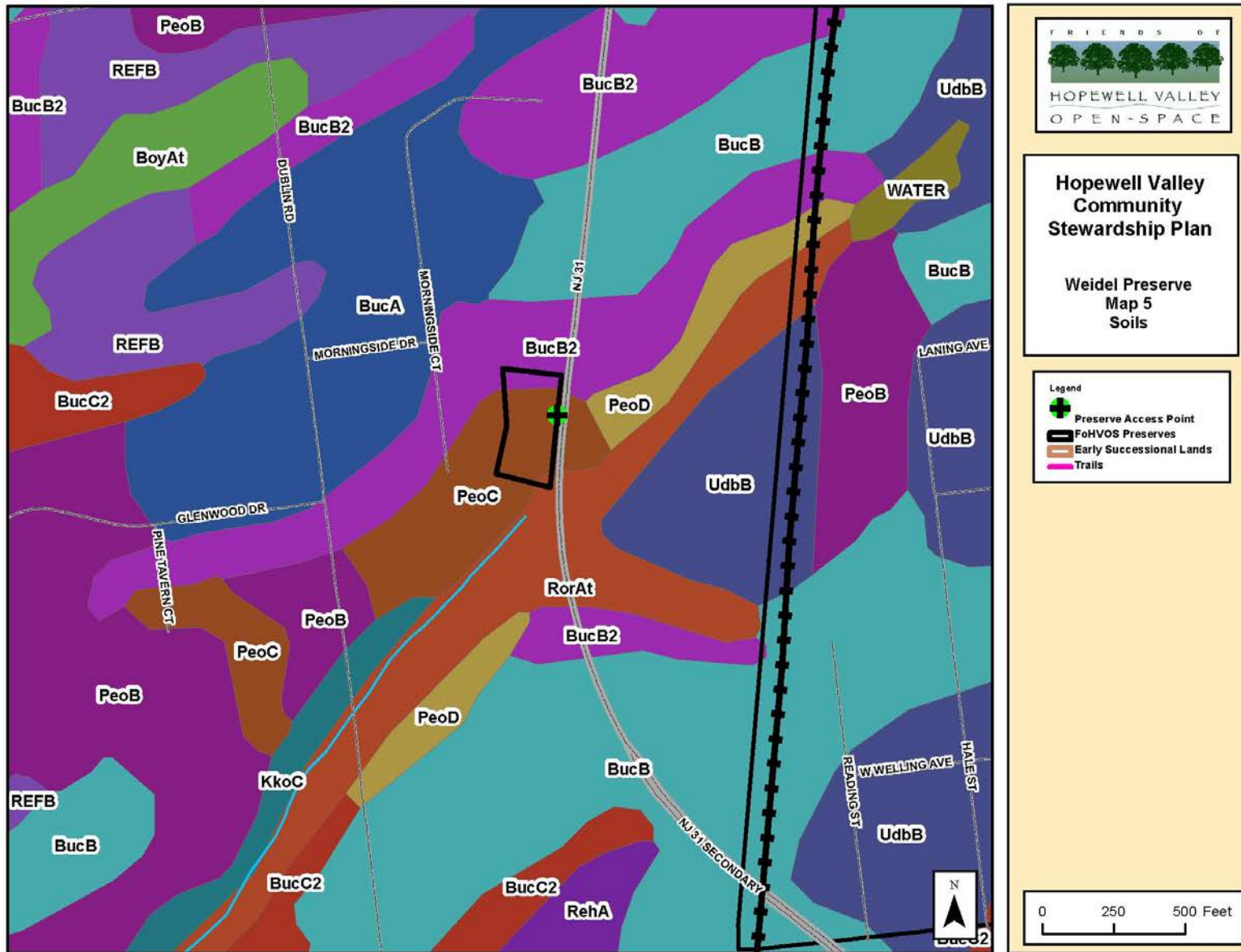


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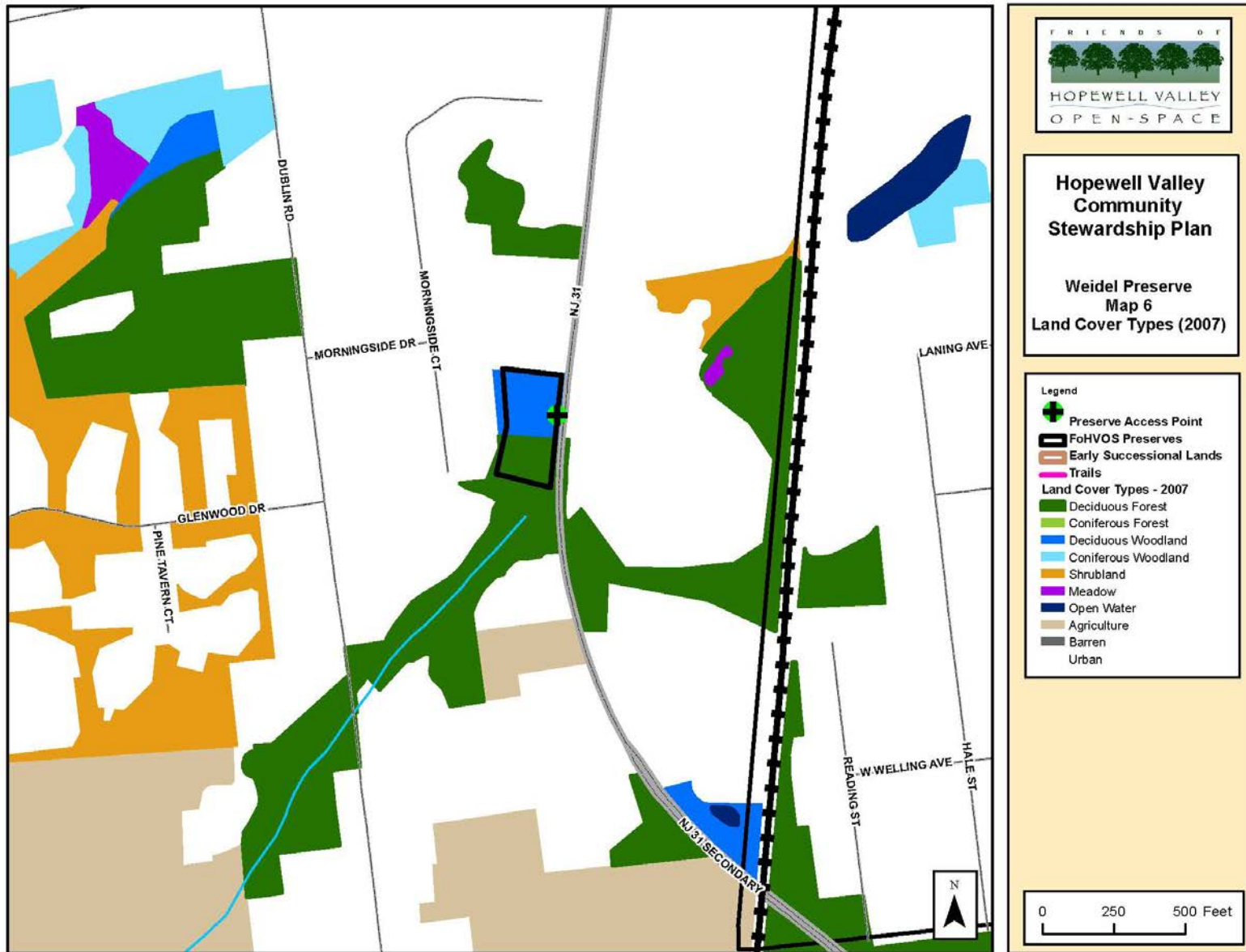




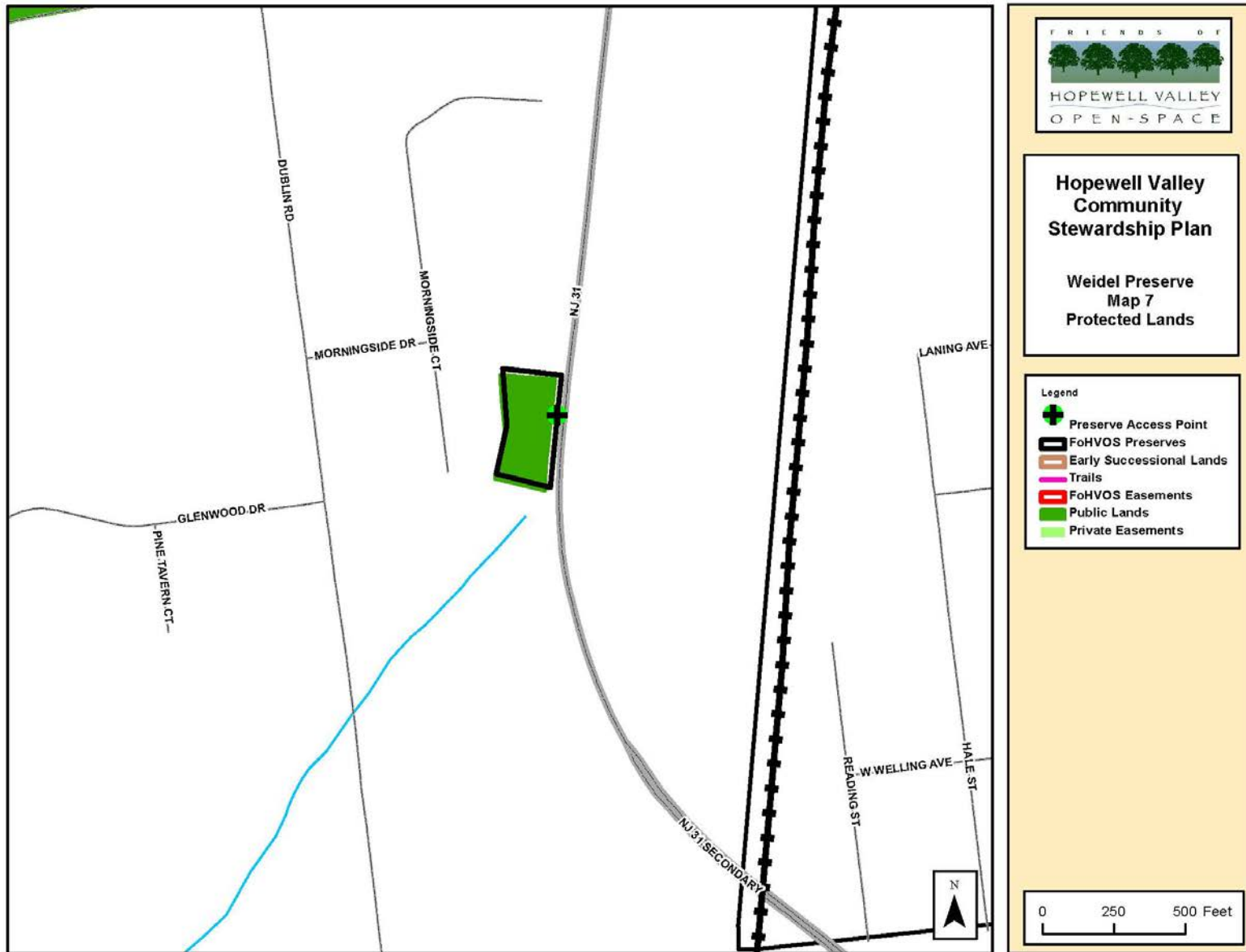
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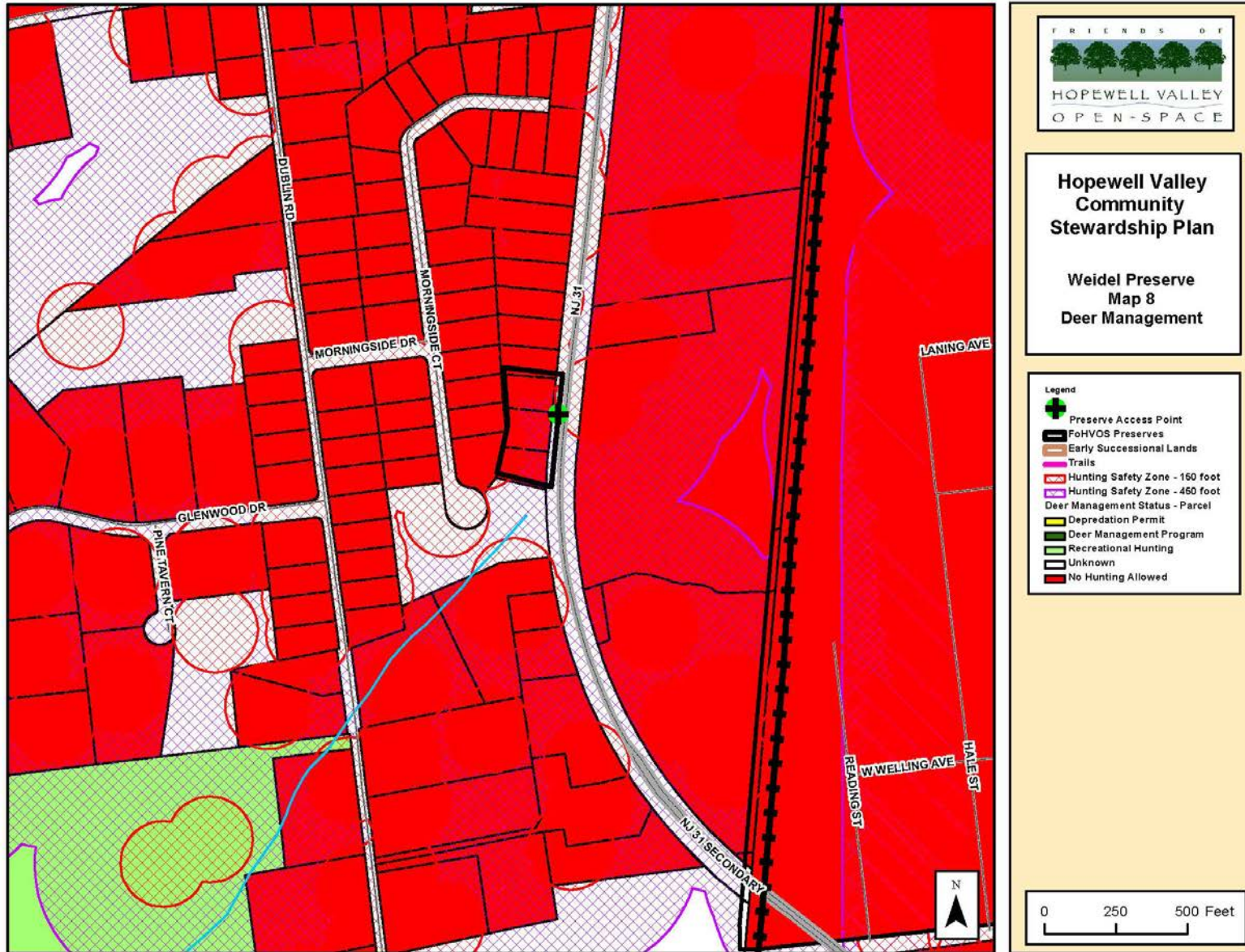


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