

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

**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.

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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 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

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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.

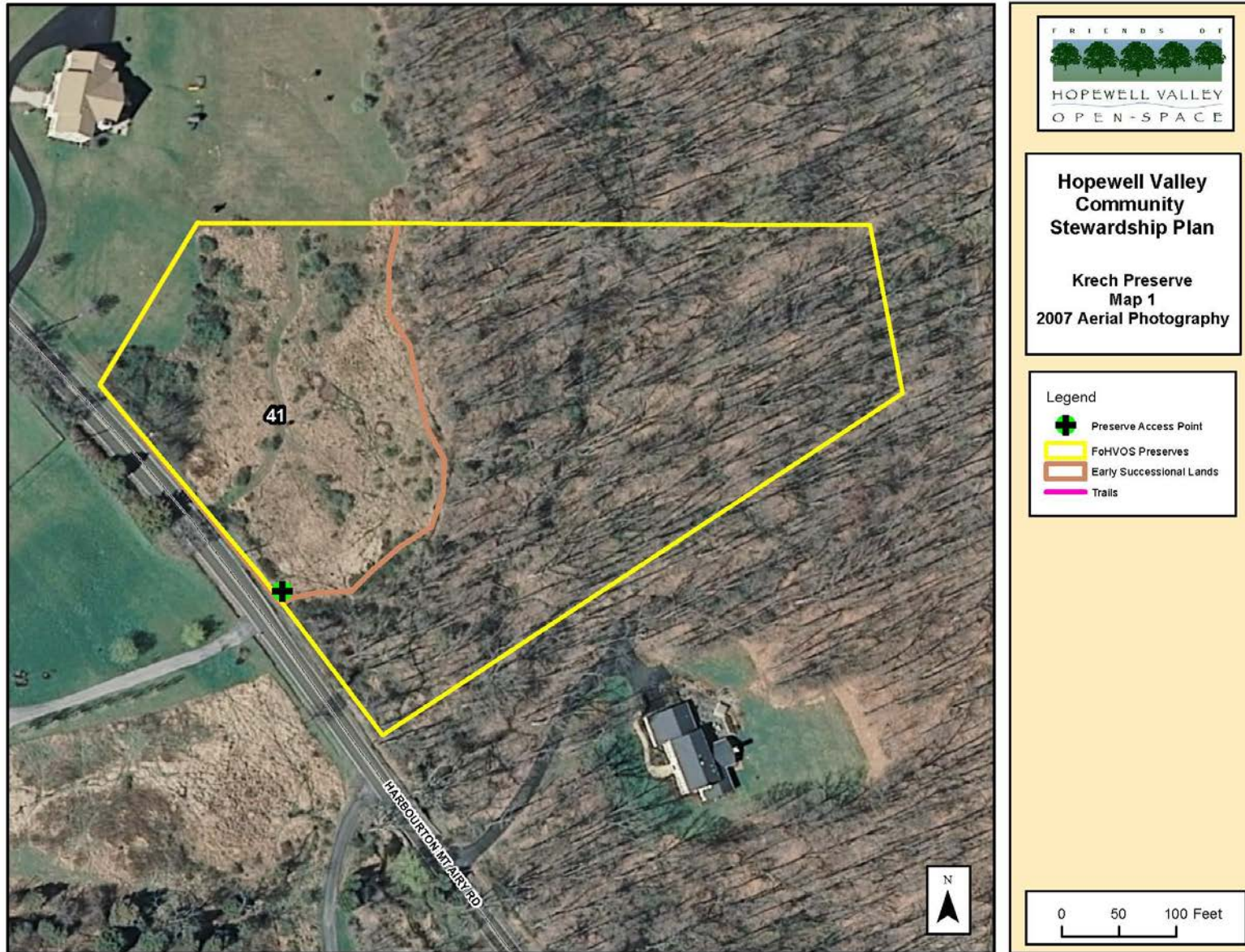
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Table 1. Invasive Plants – Species Abundance and Treatment Recommendations

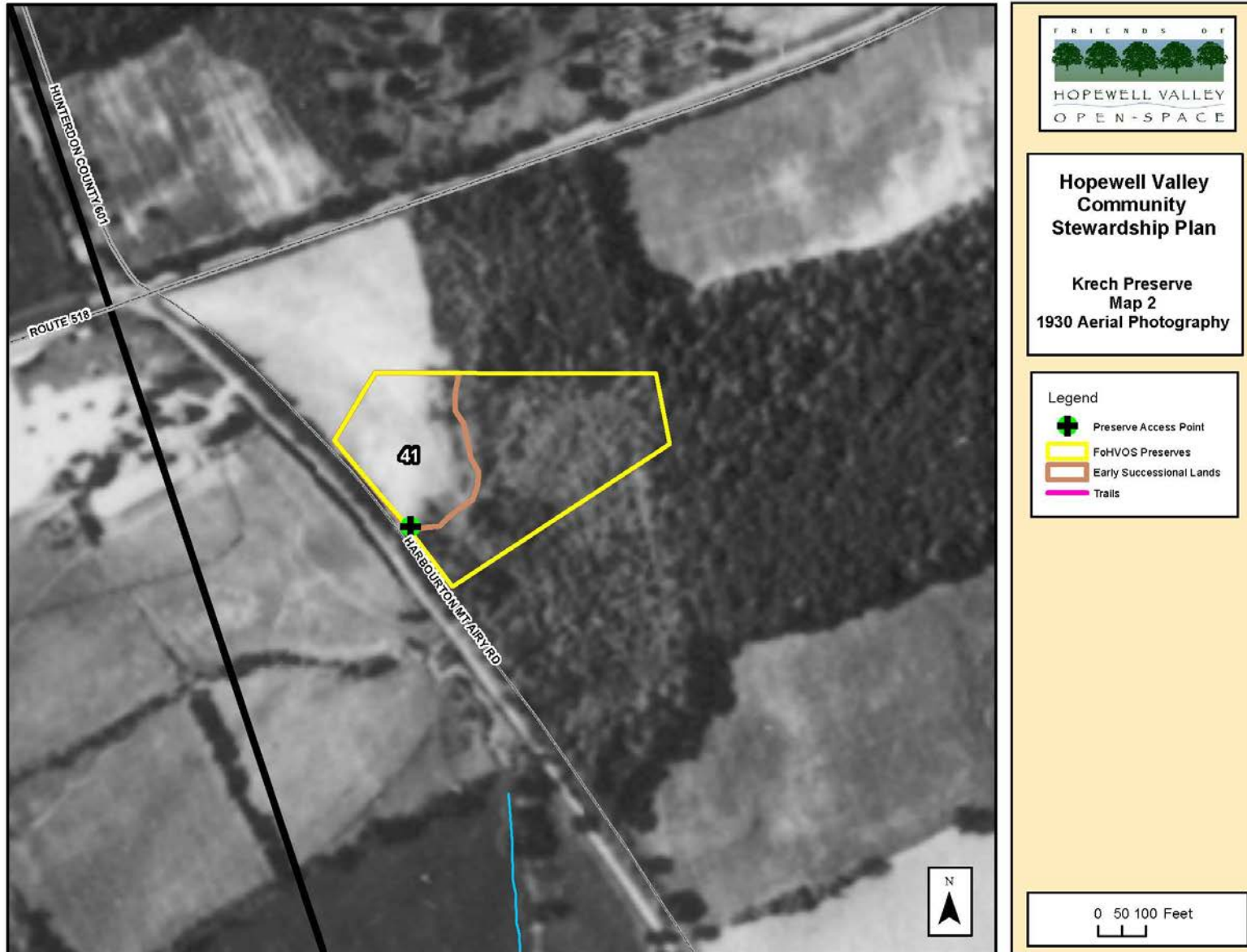
Scientific Name	Common Name	Infestation Index Score ¹	Total Acres Present	Percent of Preserve Area Present	Treatment Recommendation	LOE Estimate (Hours)	Acreage by Percent Ground Cover Categories						
							Category 0: 0%	Category: Trace	Category 1: 1-10%	Category 2: 10-25%	Category 3: 25-50%	Category 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
Total LOE						0							

¹ 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.

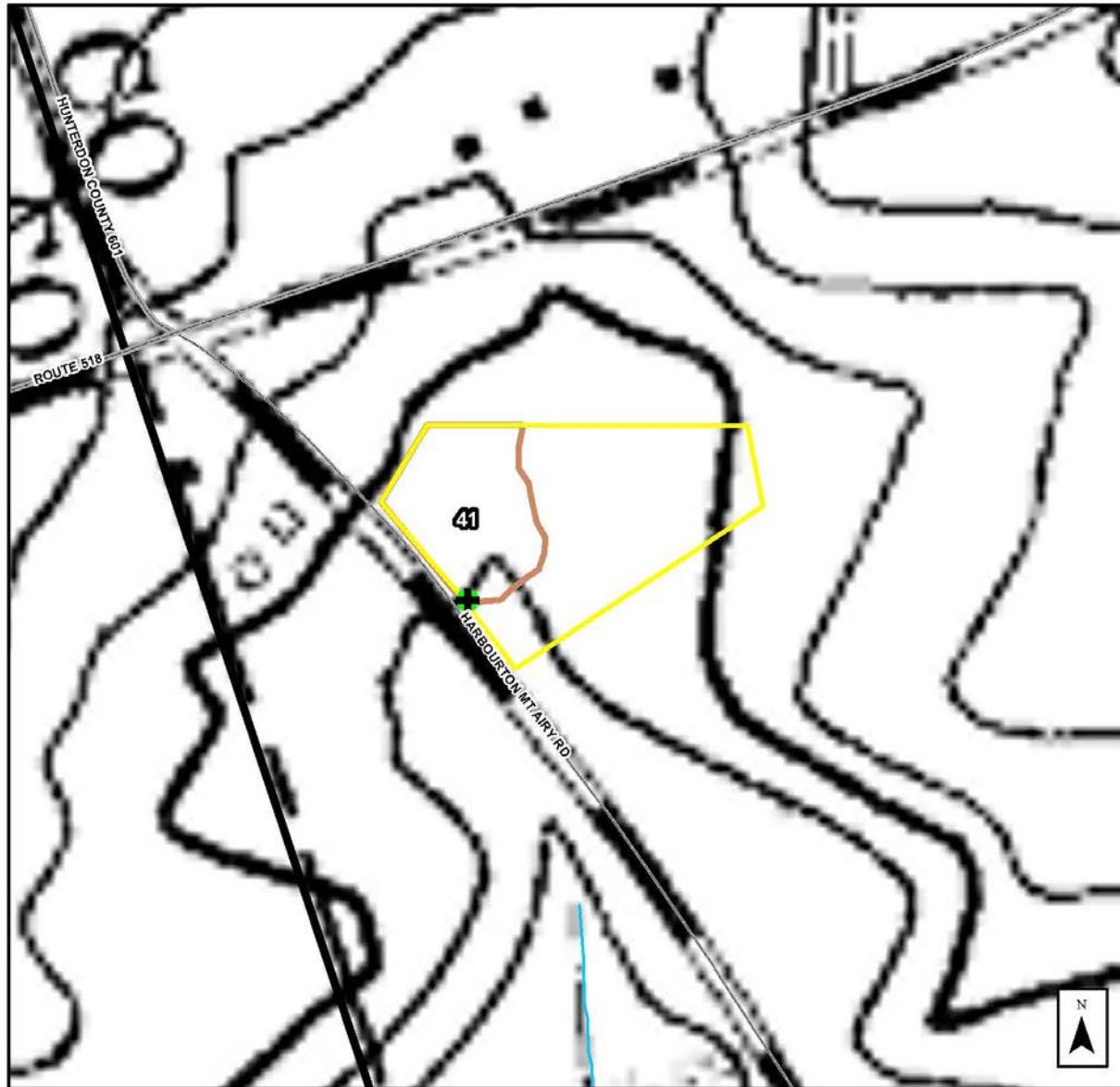
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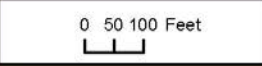
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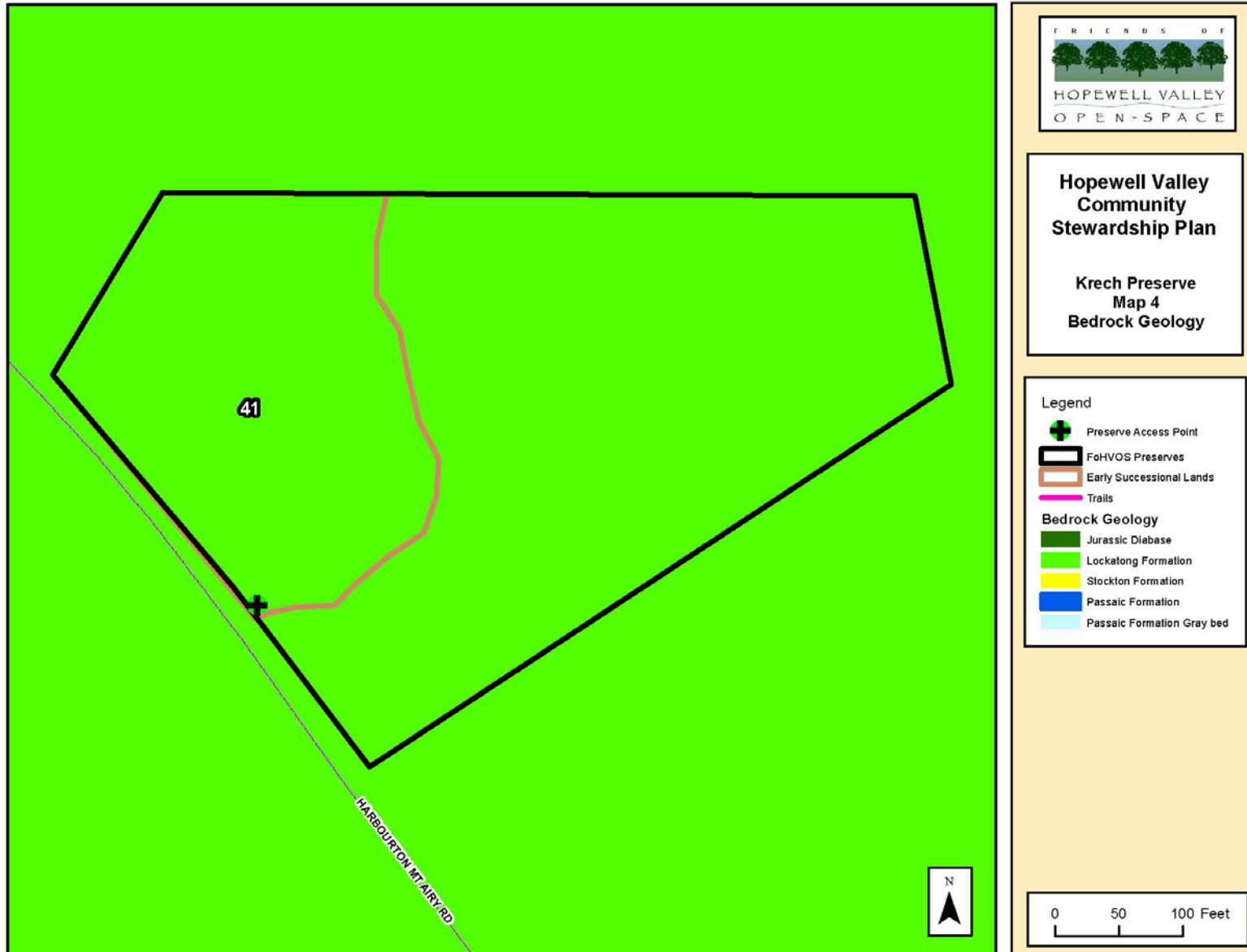
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**Krech Preserve
Map 3
Topography**

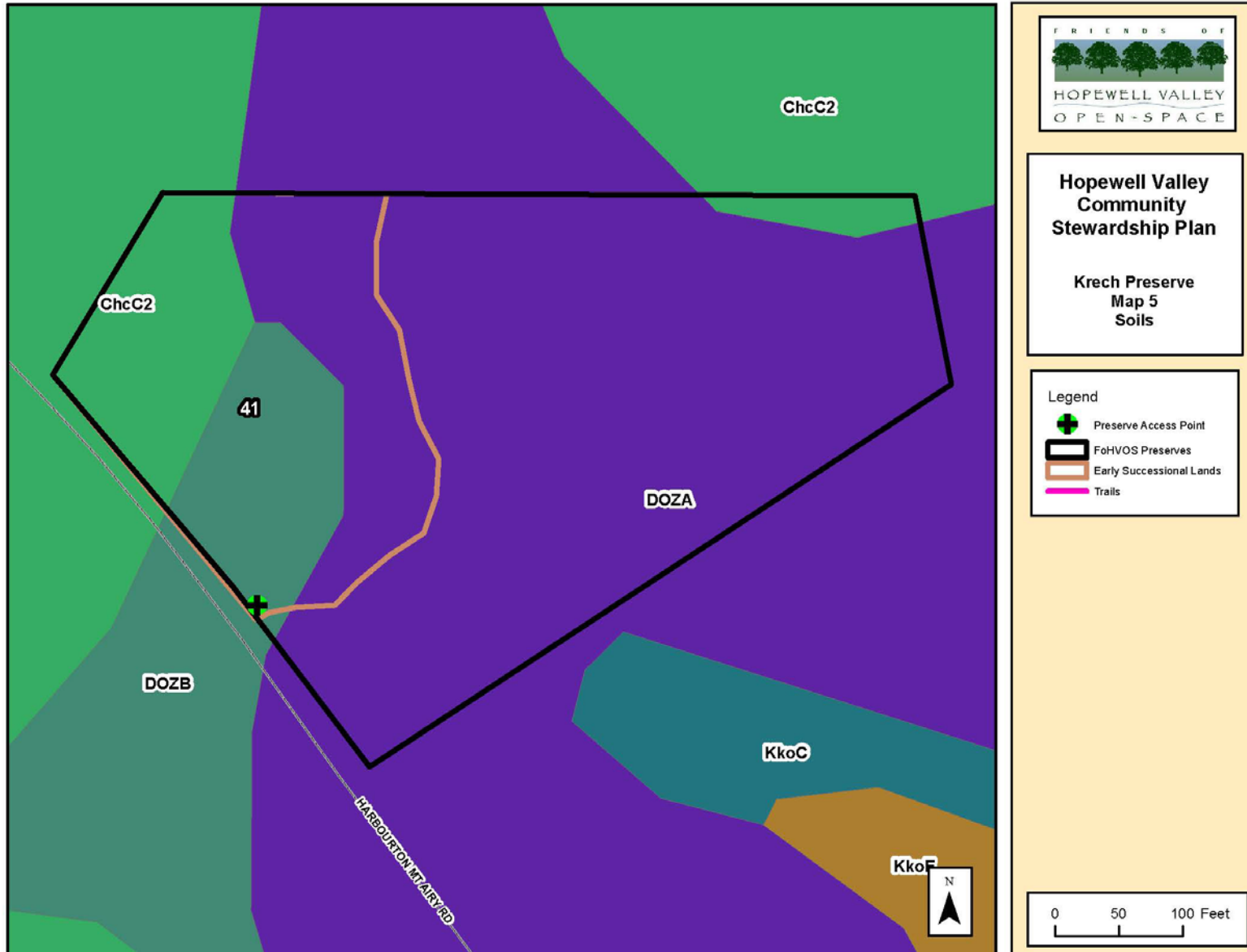
- Legend
-  Preserve Access Point
 -  FoHVOS Preserves
 -  Early Successional Lands
 -  Trails



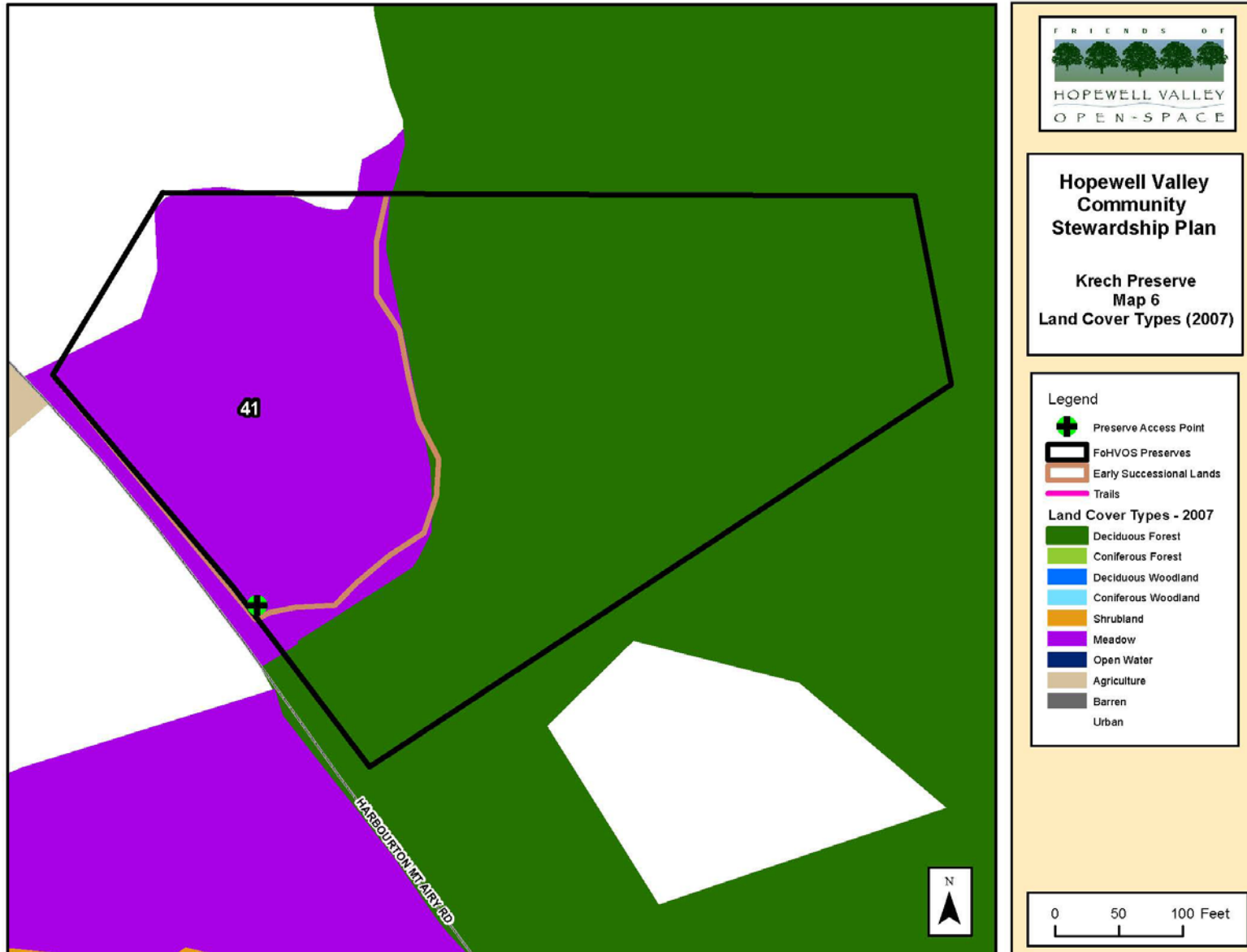
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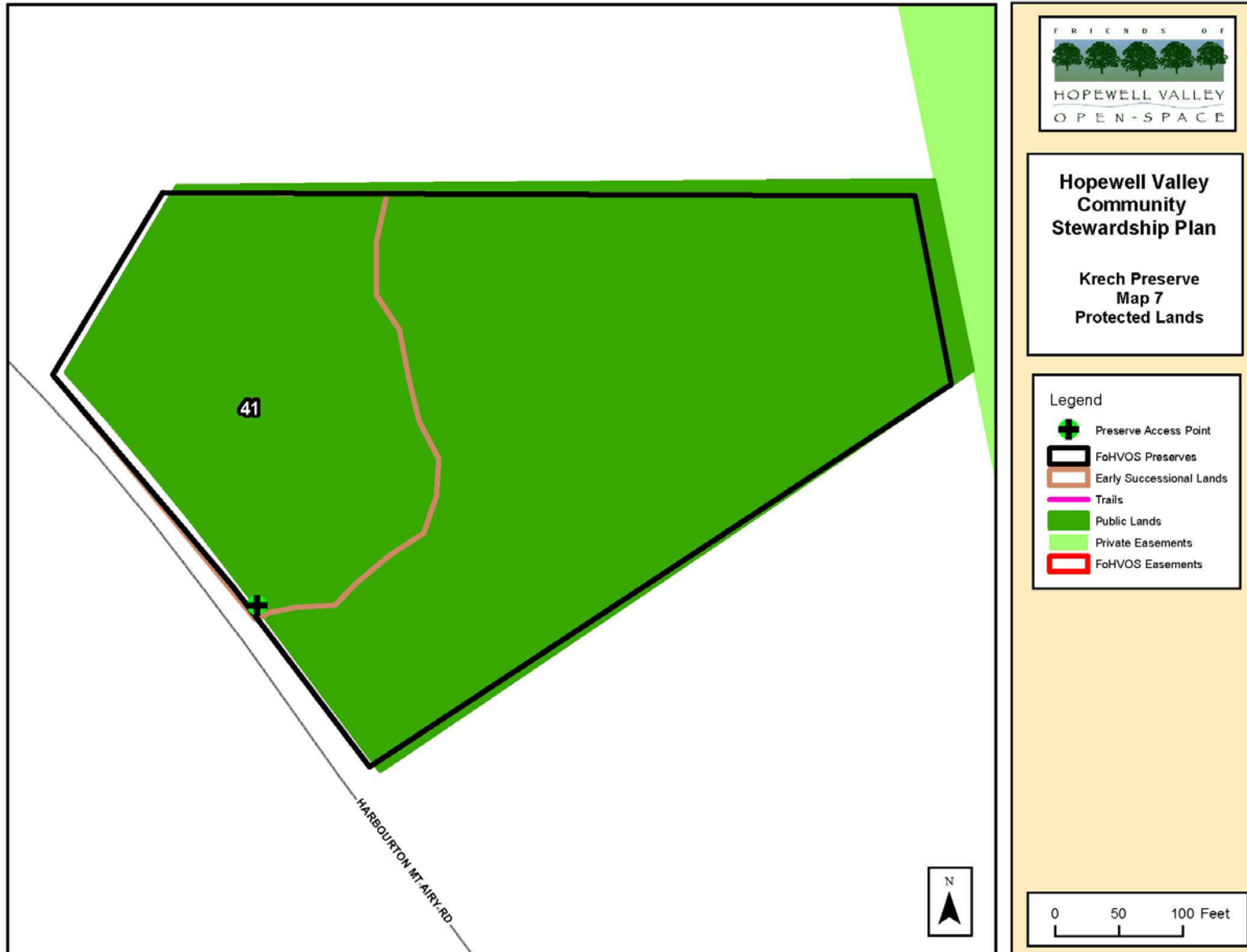
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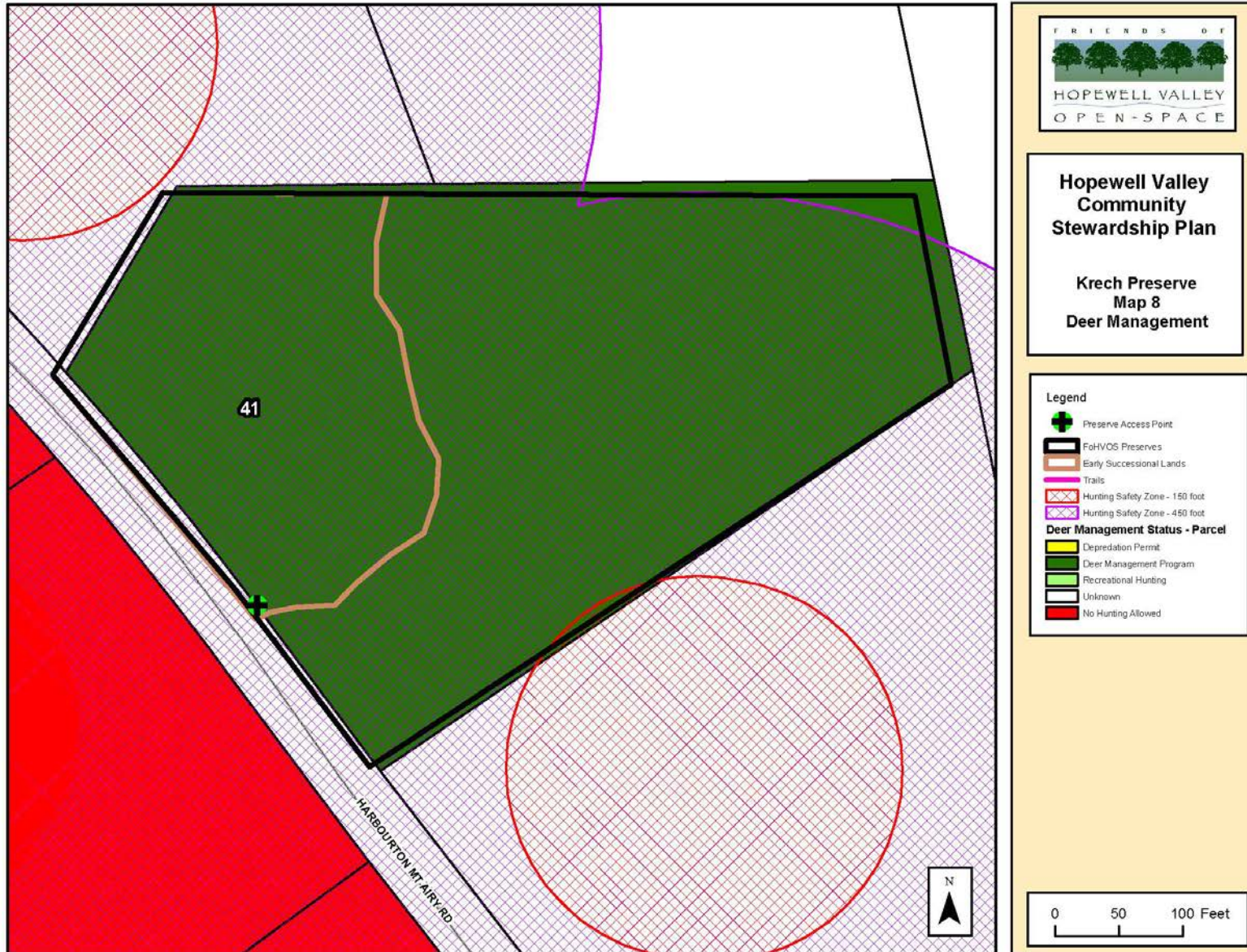
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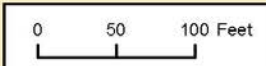
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**Krech Preserve
Map 8
Deer Management**

- 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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