

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

**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.

Hopewell Valley Community Stewardship Plan Friends of Hopewell Valley Open Space

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.

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

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 through 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 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.

Hopewell Valley Community Stewardship Plan
Friends of Hopewell Valley Open Space

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

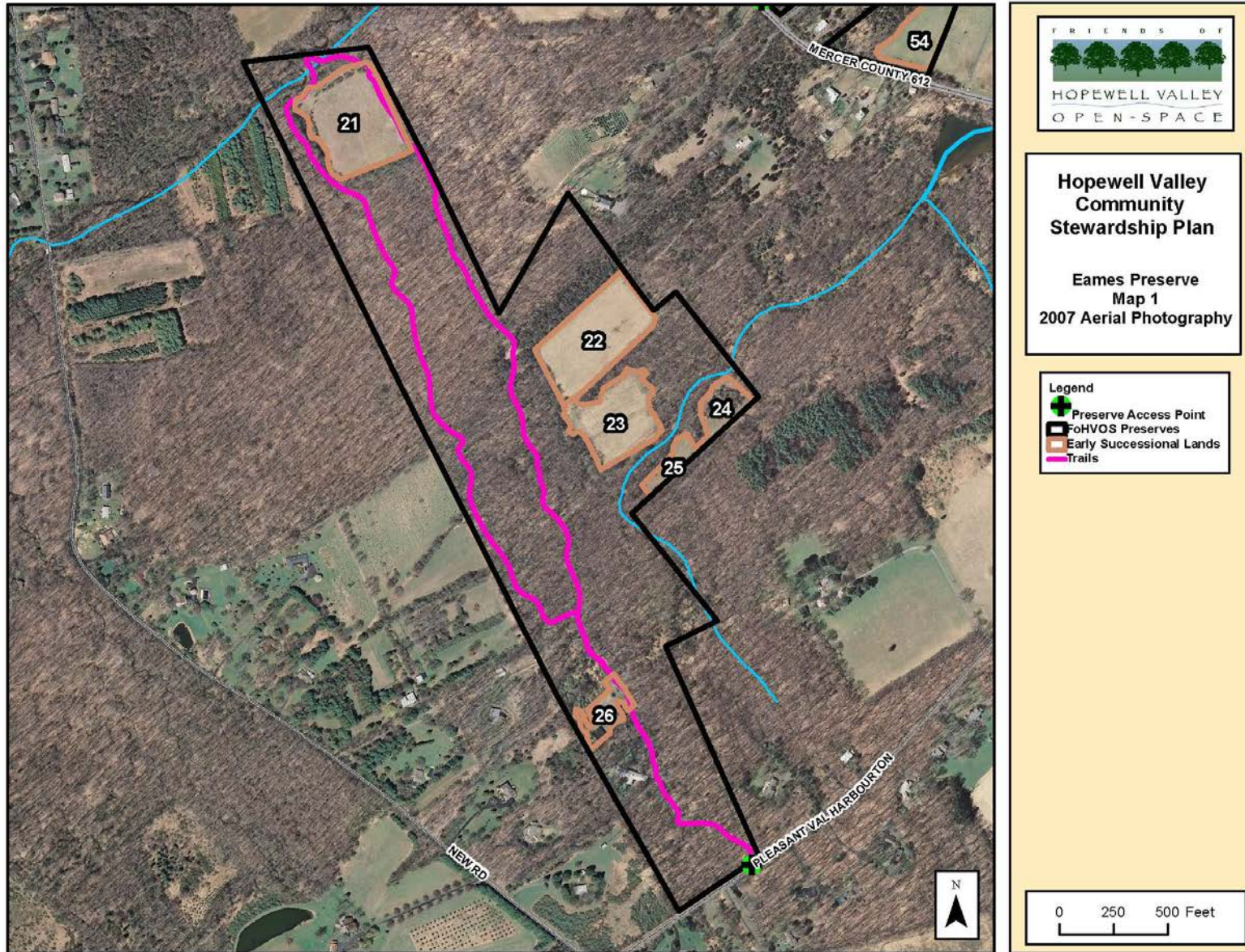
**Hopewell Valley Community Stewardship Plan
Friends of Hopewell Valley Open Space**

Table 1. Invasive Plants – Species Abundance and Treatment Recommendations

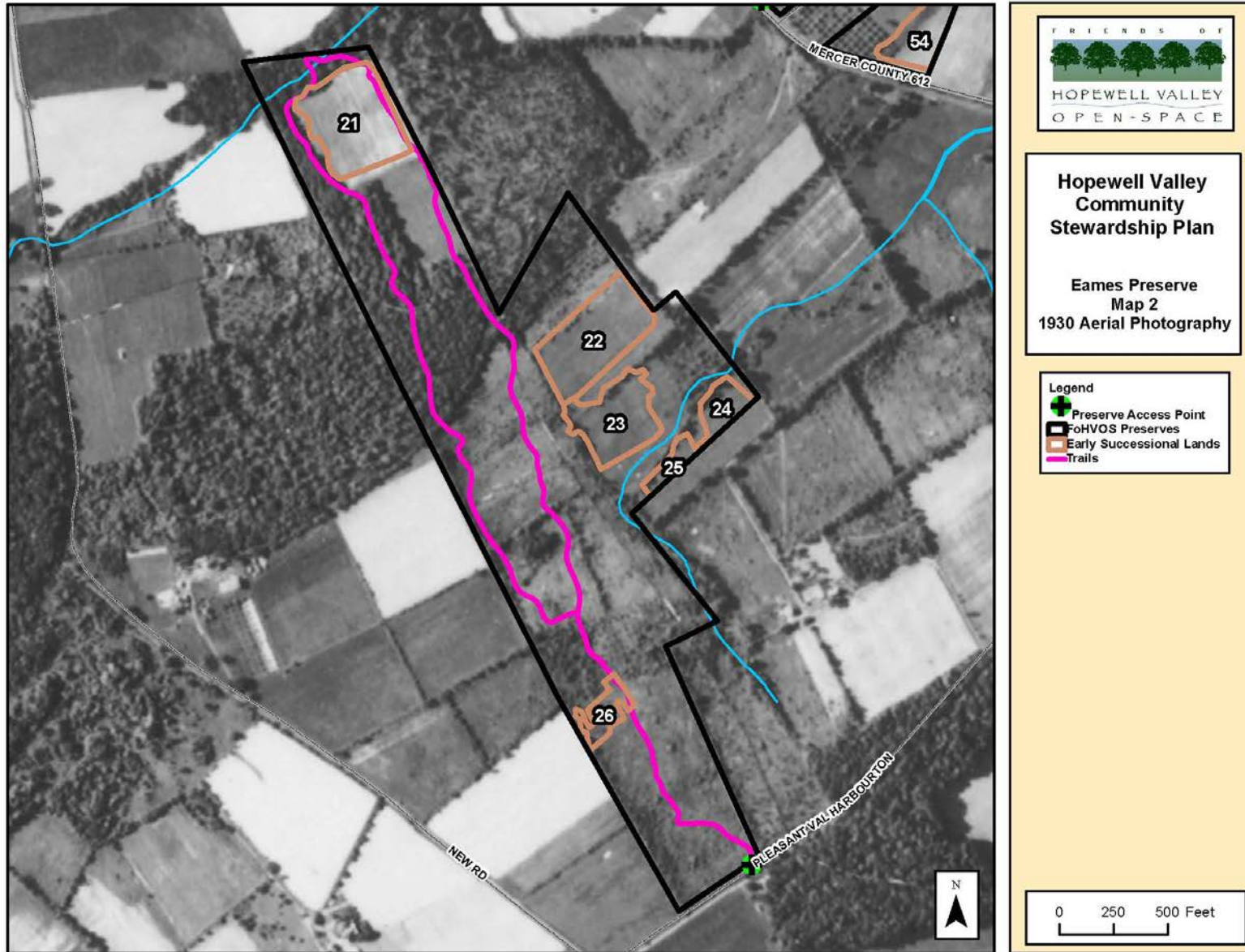
Scientific Name	Common Name	Infestation Index Score ¹	Total Acres Present	Percent of Preserve Area Present	Treatment Recommendation	LOE Estimate (Hours)	Acreage by Percent Ground Cover Categories						
							Category 0: 0%	Category: Trace	Category 1: 1-10%	Category 2: 10-25%	Category 3: 25-50%	Category 4: 50-75%	Category 5: 75-100%
<i>Acer palmatum</i>	Japanese Maple	0.0	0.0	0.0	N/A		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
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.

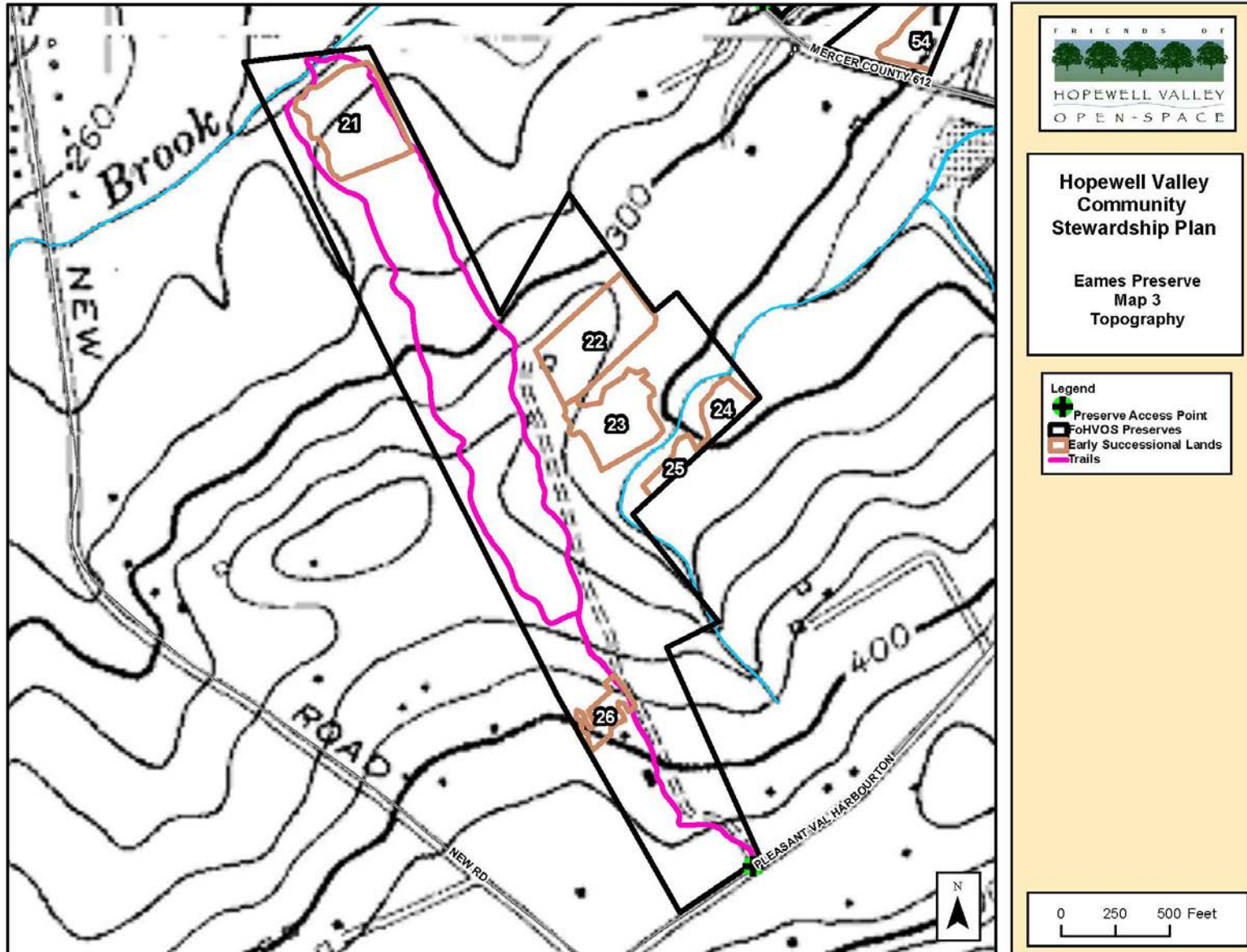
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Friends of Hopewell Valley Open Space



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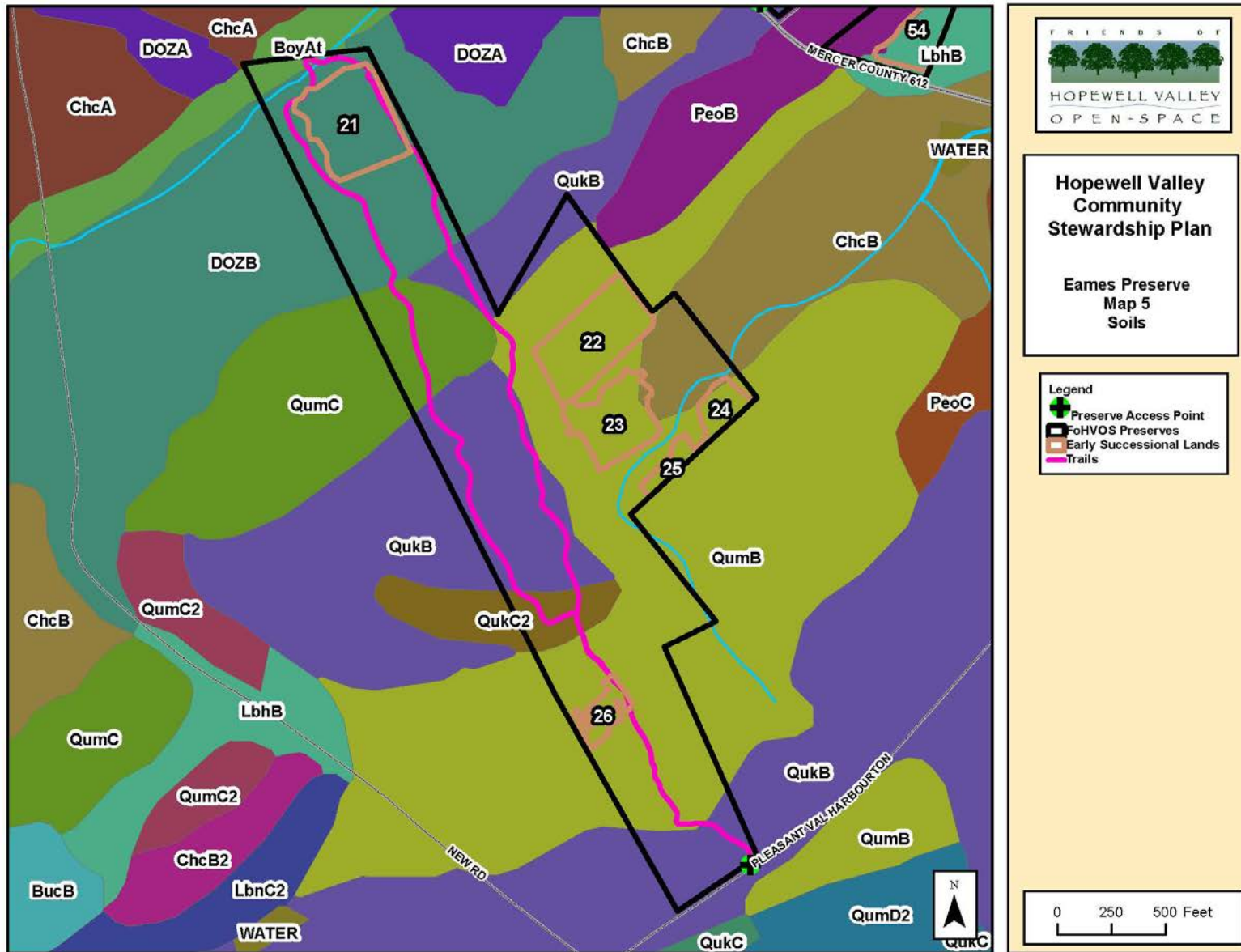
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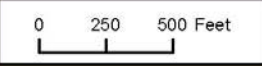
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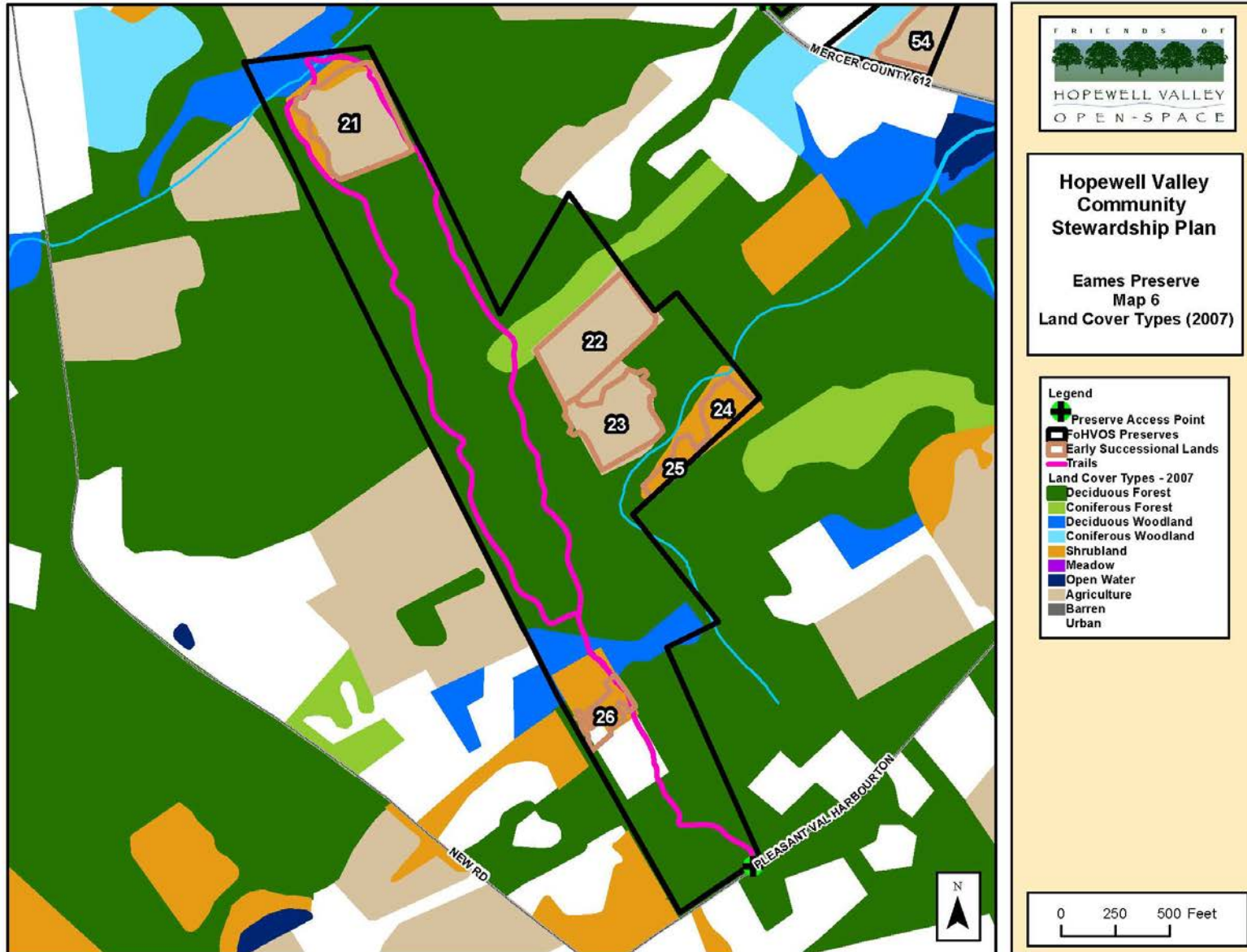
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**Eames Preserve
 Map 5
 Soils**

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



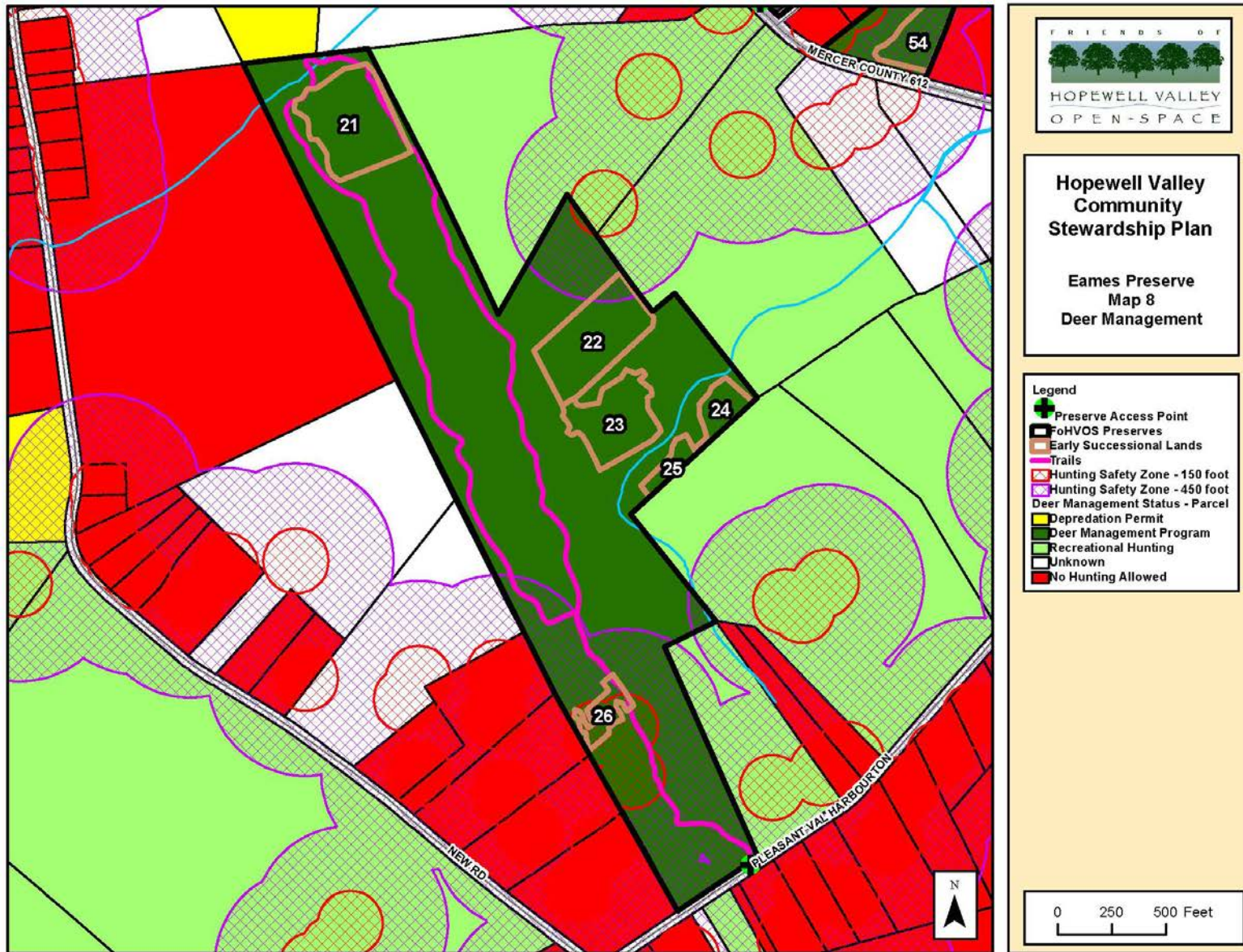
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