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 multifloral rose, Japanese honeysuckle, and other non-natives.

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 multifloral 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 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: Multifloral Rose, Japanese Honeysuckle Japanese Stiltgrass, Autumn Olive, and Reed Canary Grass.

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: 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.

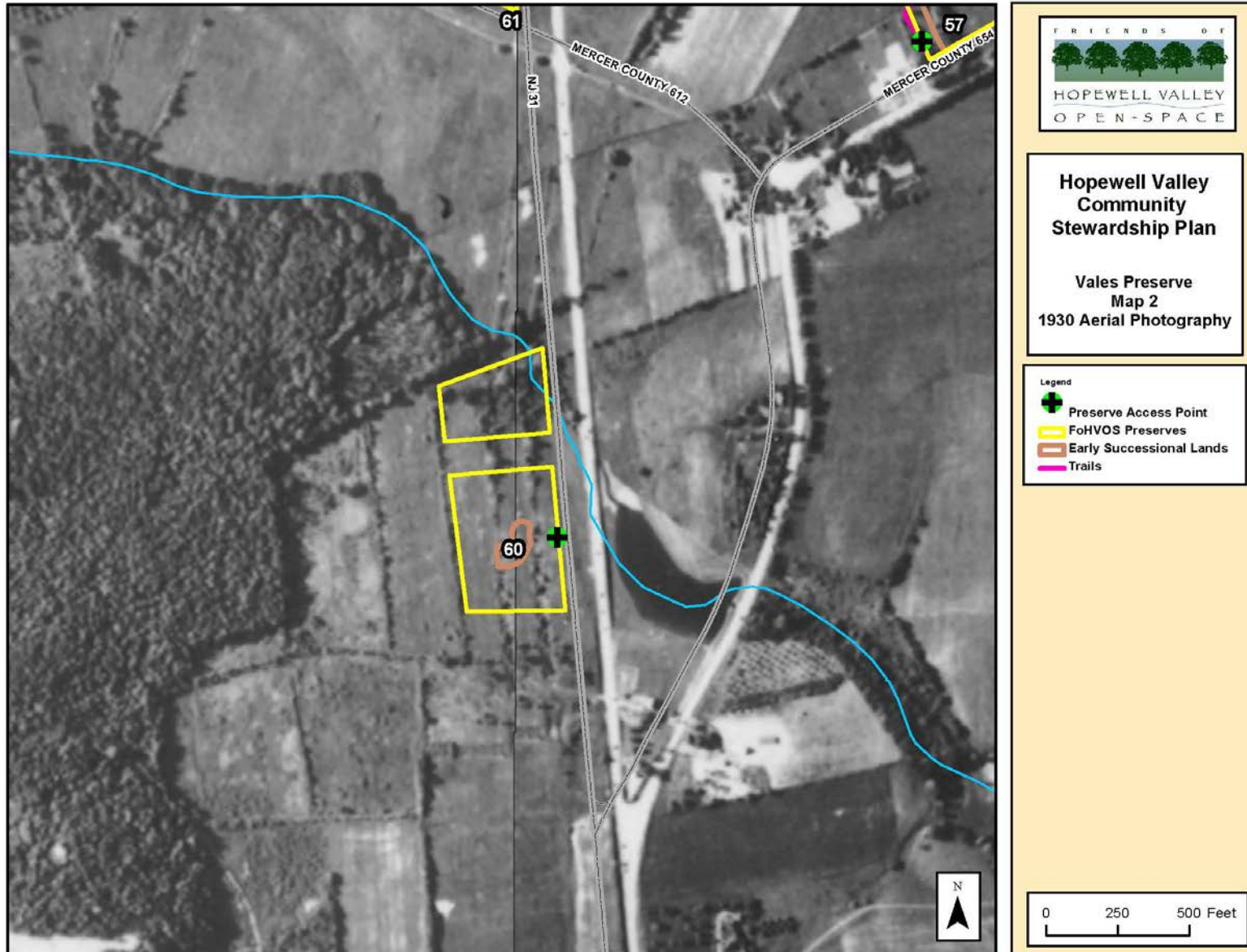## Table 1. Invasive Plants – Species Abundance and Treatment Recommendations

Scientific Name	Common Name	Infestation Index Score[1]	Total Acres Present	Percent of Preserve Area Present	Treatment Recommendation	LOE Estimate (Hours)	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%
Acer palmatum	Japanese Maple	0.0	0.0	0.0	N/A		6.05	0.0	0.0	0.0	0.0	0.0	0.0
Acer platanoides	Norway Maple	0.0	0.0	0.0	N/A		6.05	0.0	0.0	0.00	0.0	0.00	0.0
Ailanthus altissima	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
Alliaria petiolata	Garlic Mustard	0.0	0.0	0.0	N/A		6.05	0.0	0.0	0.0	0.0	0.0	0.0
Artemisia vulgaris	Common Mugwort	0.5	0.2	2.6	None		5.89	0.0	0.0	0.0	0.2	0.0	0.0
Arthraxon hispidus	Small Carpgrass	0.0	0.0	0.0	N/A		6.05	0.0	0.0	0.0	0.0	0.0	0.0
Berberis thunbergii	Japanese Barberry	0.0	0.0	0.0	N/A		6.05	0.0	0.0	0.0	0.0	0.0	0.0
Cardamine impatiens	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
Catalpa bignonioides	Northern Catalpa	0.0	0.0	0.0	N/A		6.05	0.0	0.0	0.0	0.0	0.0	0.0
Celastrus orbiculatus	Asiatic Bittersweet	0.0	0.0	0.0	N/A		6.05	0.0	0.0	0.0	0.00	0.0	0.0
Centurea sp.	Knapweed sp.	0.0	0.0	0.0	N/A		6.05	0.0	0.0	0.0	0.0	0.0	0.0
Cirsium arvense	Canada Thistle	0.0	0.0	0.0	N/A		6.05	0.0	0.0	0.0	0.0	0.0	0.0
Dipsacus sylvestris	Teasel	0.0	0.0	0.0	N/A		6.05	0.0	0.00	0.0	0.0	0.0	0.0
Eleaegnus umbellata	Autumn Olive	7.5	5.3	87.6	None		0.75	0.0	4.1	0.9	0.0	0.0	0.3
Euonymus alata	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
Iris pseudoacris	Yellow Iris	0.0	0.0	0.0	N/A		6.05	0.0	0.0	0.0	0.0	0.0	0.0
Lespedeza cuneata	Chinese Bushclover	0.1	0.1	2.0	None		5.93	0.0	0.1	0.0	0.0	0.0	0.0
Ligustrum obtusifolium	Border Privet	0.0	0.0	0.0	N/A		6.05	0.0	0.00	0.0	0.0	0.0	0.0
Lonicera japonica	Japanese Honeysuckle	20.0	5.9	98.0	None		0.12	0.0	0.7	0.5	0.7	4.1	0.0
Lonicera maackii	Amur Honeysuckle	0.0	0.0	0.0	N/A		6.05	0.0	0.0	0.0	0.0	0.0	0.0
Lonicera morrowii	Morrow's Honeysuckle	1.3	1.3	22.1	None		4.71	0.0	1.3	0.0	0.00	0.0	0.0
Lysimachia nummularia	Moneywort	0.0	0.0	0.0	N/A		6.05	0.0	0.0	0.0	0.0	0.0	0.0
Lythrum salicaria	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
Malus toringo	Toringo Crabapple	0.0	0.0	0.0	N/A		6.05	0.0	0.0	0.0	0.0	0.0	0.0
Microstegium vimineum	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
Phalaris arundinacea	Reed Canary Grass	2.1	1.0	16.0	None		5.08	0.0	0.0	0.9	0.0	0.1	0.0
Phragmites australis	Common Reed	0.0	0.0	0.0	N/A		6.05	0.0	0.0	0.0	0.0	0.0	0.0
Polygonum cuspidatum	Japanese Knotweed	0.0	0.0	0.0	N/A		6.05	0.0	0.0	0.0	0.0	0.0	0.0
Polygonum perfoliatum	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
Pyrus calleryana	Callery Pear	0.0	0.0	0.0	N/A		6.05	0.0	0.0	0.0	0.0	0.0	0.0
Ranunculus ficaria	Lesser Celandine	0.0	0.0	0.0	N/A		6.05	0.0	0.0	0.0	0.0	0.0	0.0
Robinia pseudoacacia	Black Locust	0.0	0.0	0.0	N/A		6.05	0.0	0.0	0.0	0.0	0.0	0.0
Rosa multiflora	Multifloral Rose	23.7	6.0	98.8	None		0.07	0.0	0.5	0.0	0.0	4.4	1.1
Rubus pheoniculasius	Wineberry	1.3	1.3	21.5	None		4.75	0.0	1.3	0.0	0.0	0.0	0.0
Securigera varia	Crown vetch	0.0	0.0	0.0	N/A		6.05	0.0	0.0	0.0	0.0	0.0	0.0
Viburnum dilatatum	Linden Viburnum	0.0	0.0	0.0	N/A		6.05	0.0	0.0	0.0	0.0	0.0	0.0
Viburnum sieboldii	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
Wisteria floribunda	Japanese Wisteria	0.0	0.0	0.0	N/A		6.05	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.
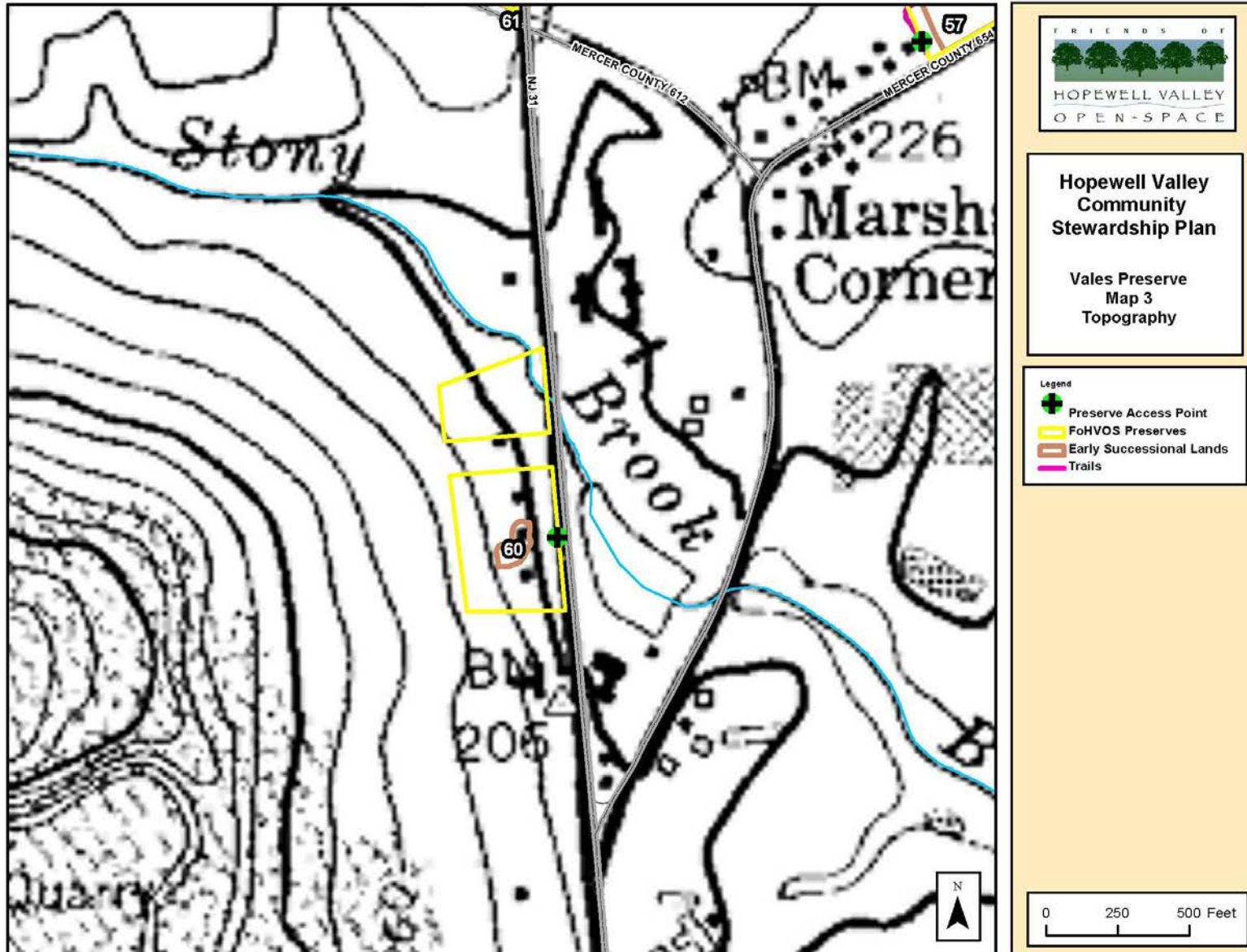
Hopewell Valley
Community
Stewardship Plan
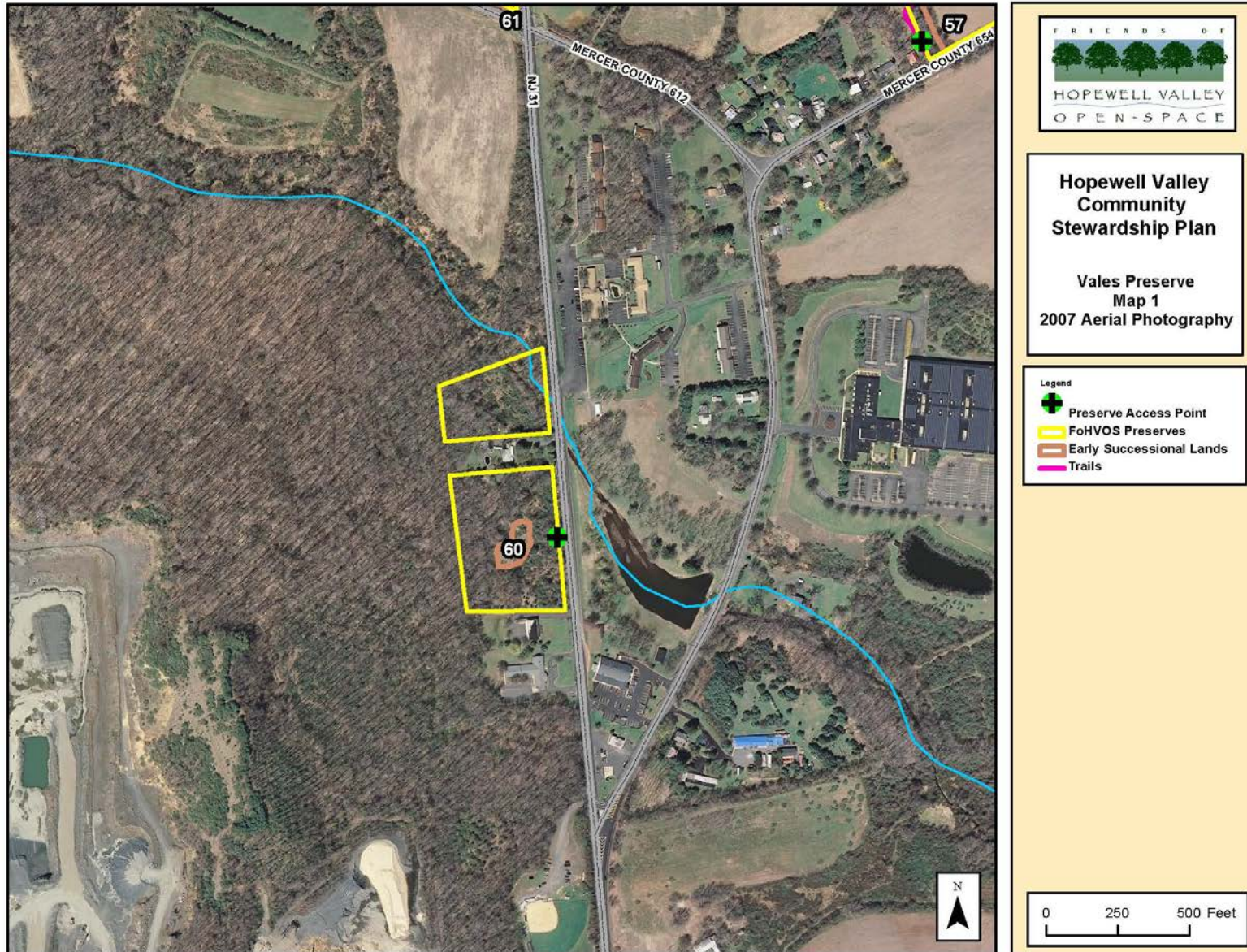
Vales Preserve
Map 1
2007 Aerial Photography
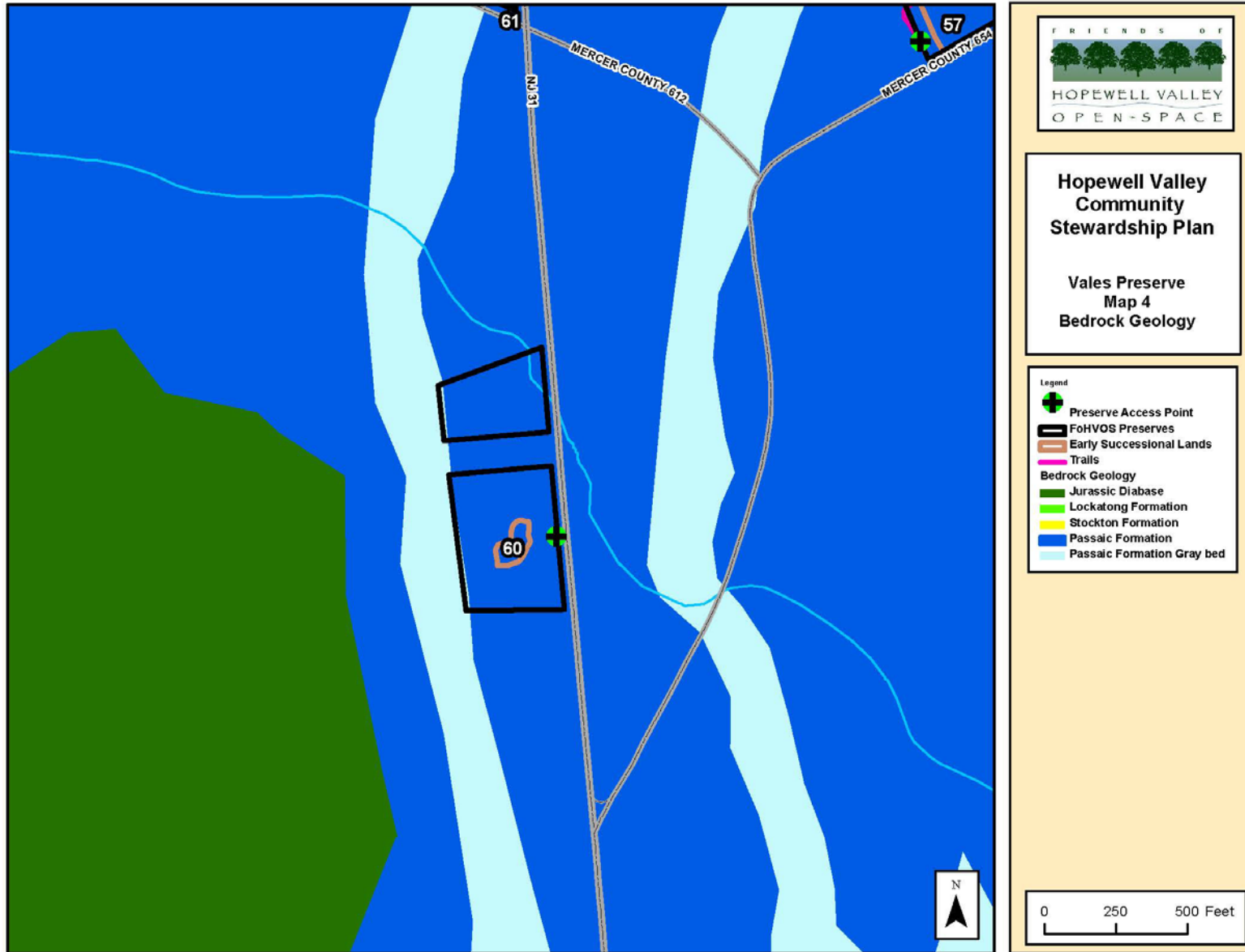
Legend
✚ Preserve Access Point
▭ FoHVOS Preserves
▭ Early Successional Lands
▬ Trails

0   250   500 Feet

FRIENDS OF
HOPEWELL VALLEY
OPEN-SPACE

Hopewell Valley Community Stewardship Plan

Vales Preserve
Map 2
1930 Aerial Photography

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

FRIENDS OF

HOPEWELL VALLEY

OPEN-SPACE

Hopewell Valley 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

0   250   500 Feet
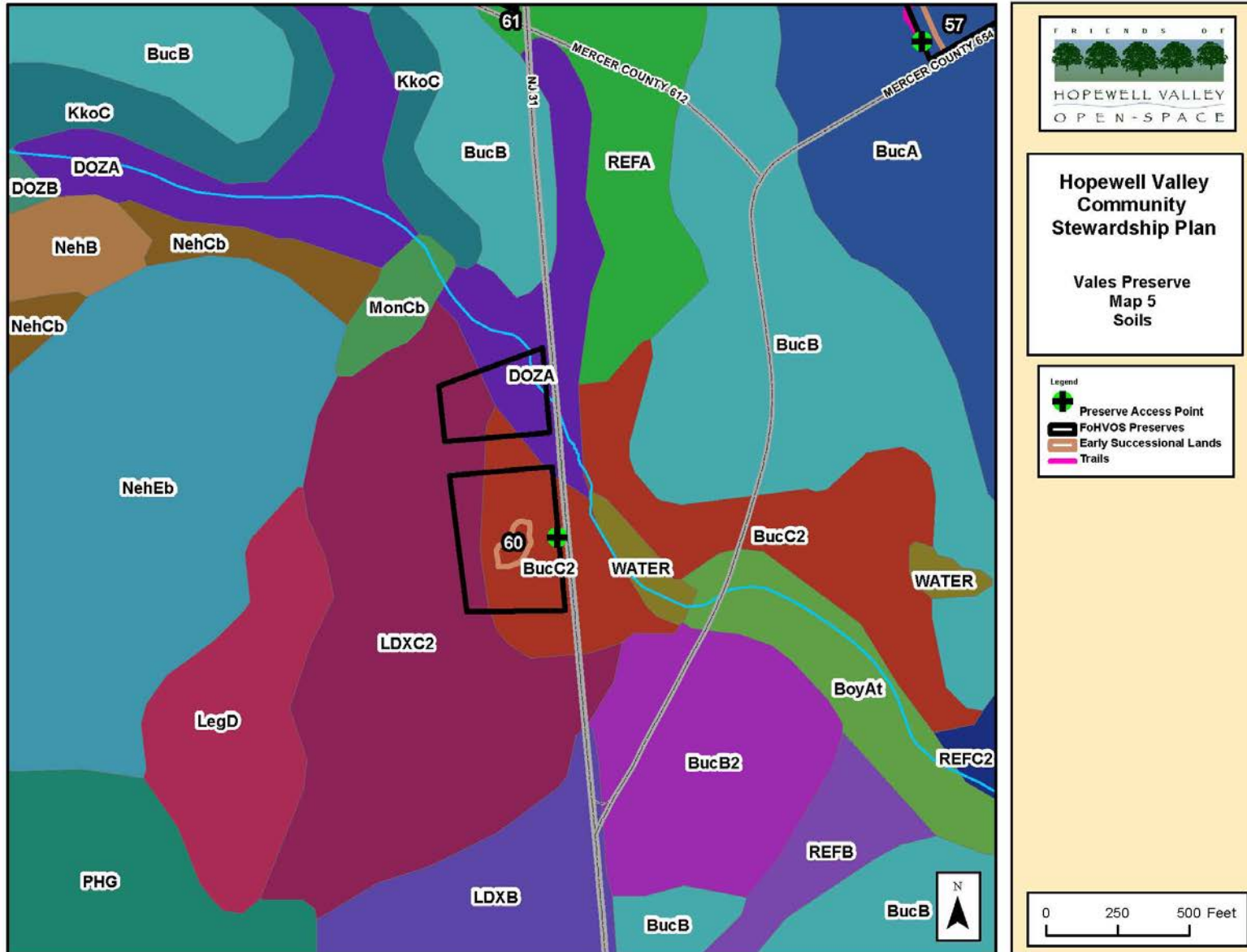
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Vales Preserve
Map 5
Soils

Legend
Preserve Access Point
FoHVOS Preserves
Early Successional Lands
Trails

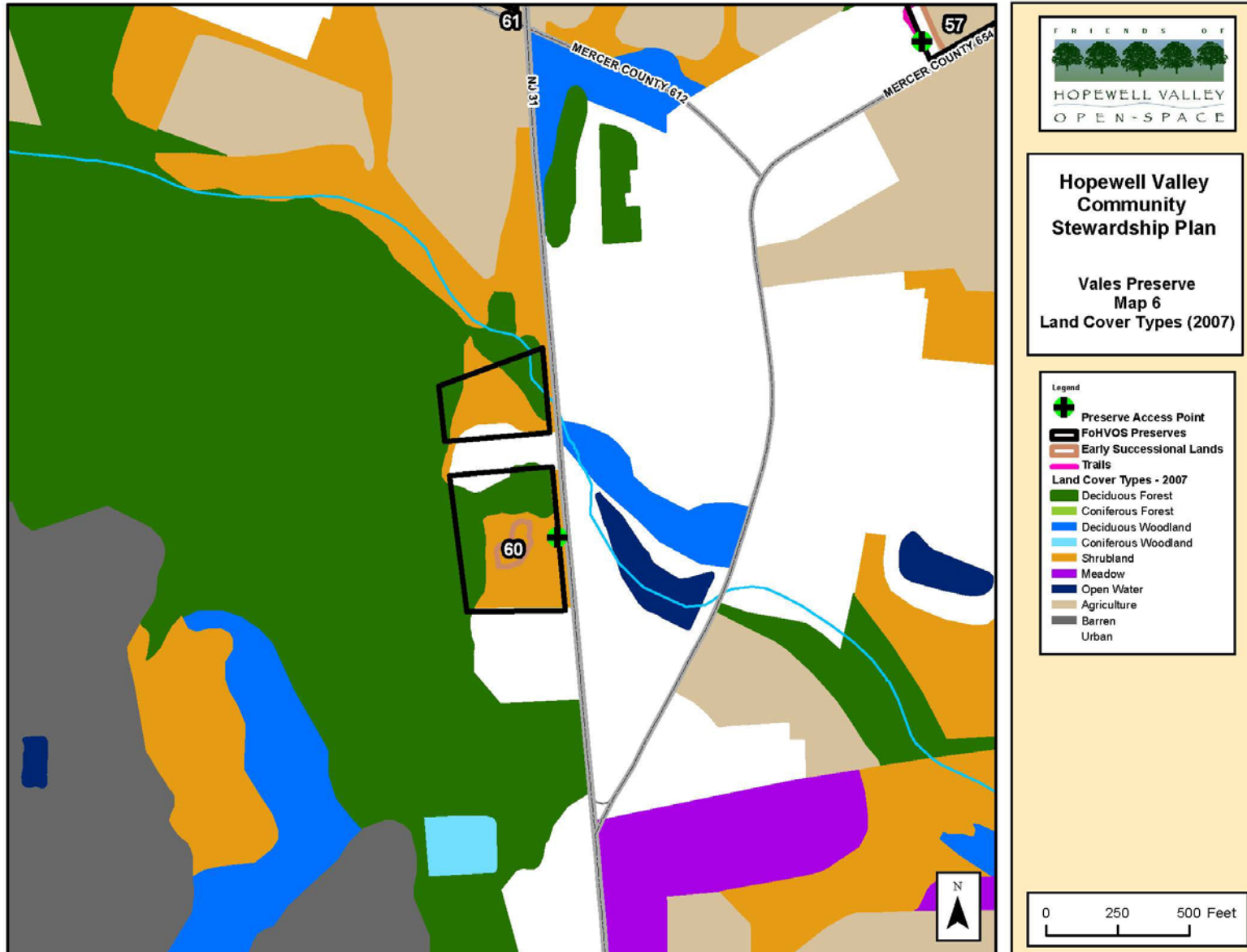**Hopewell Valley Community Stewardship Plan**

**Vales 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

0   250   500 Feet

Hopewell Valley Community Stewardship Plan

**Vales Preserve
Map 7
Protected Lands**

Legend
+ Preserve Access Point
▬ FoHVOS Preserves
▭ Early Successional Lands
▬ Trails
▬ FoHVOS Easements
▬ Public Lands
▬ Private Easements

0   250   500 Feet

Hopewell Valley Community Stewardship Plan

Vales 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

0   250   500 Feet

Hopewell Valley Community Stewardship Plan

**Vales Preserve
Map 9
Invasive Plant Cover**

Legend

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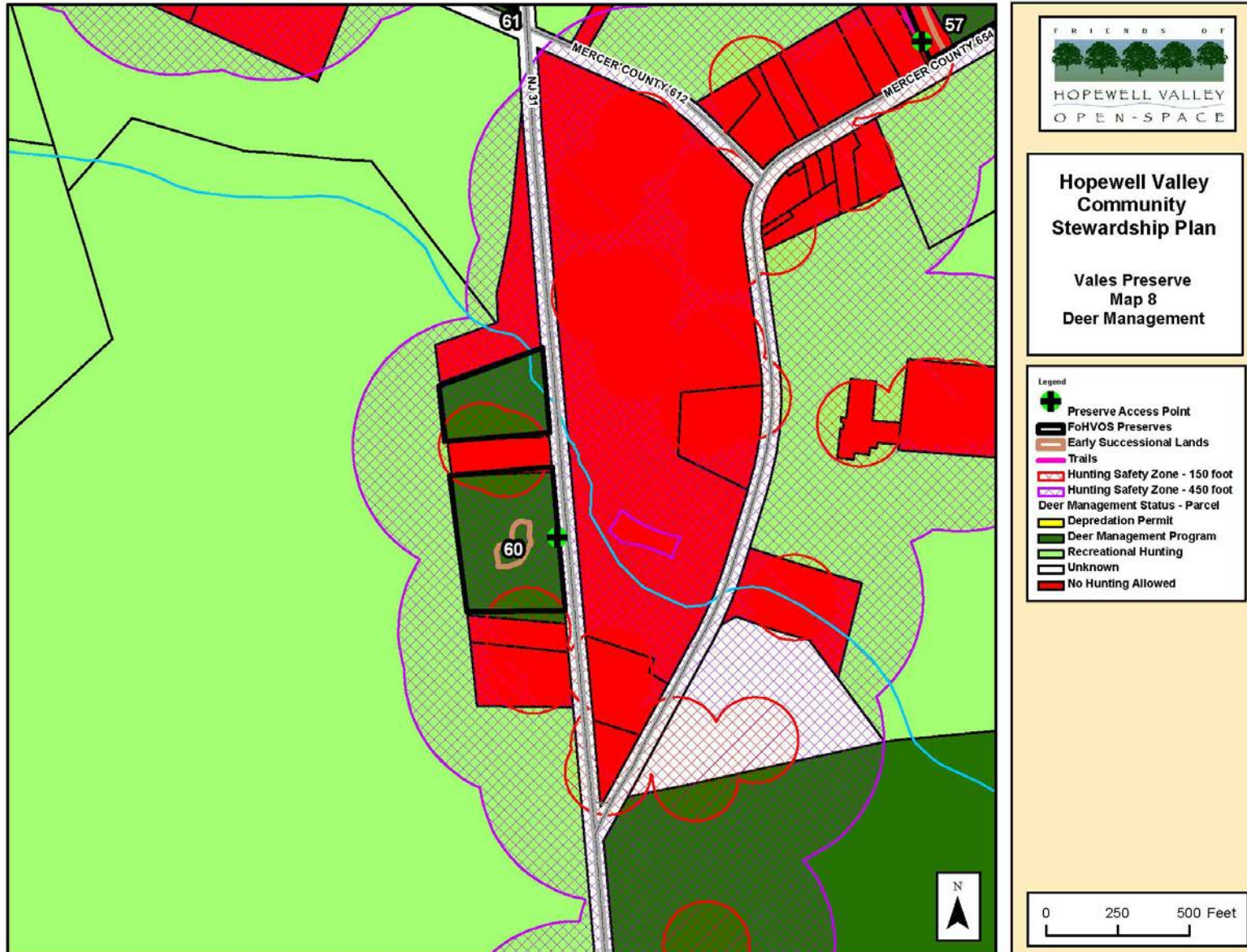- FoHVOS Preserves
- Early Successional Lands
- Trails

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

0   250   500 Feet