

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

**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.

Hopewell Valley Community Stewardship Plan Friends of Hopewell Valley Open Space

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.

Hopewell Valley Community Stewardship Plan
Friends of Hopewell Valley Open Space

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 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/foliar spray, beefsteakplant by hand pulling (foliar spray before seed set if population is larger than initially detected), and English ivy by foliar 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

Hopewell Valley Community Stewardship Plan
Friends of Hopewell Valley Open Space

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.

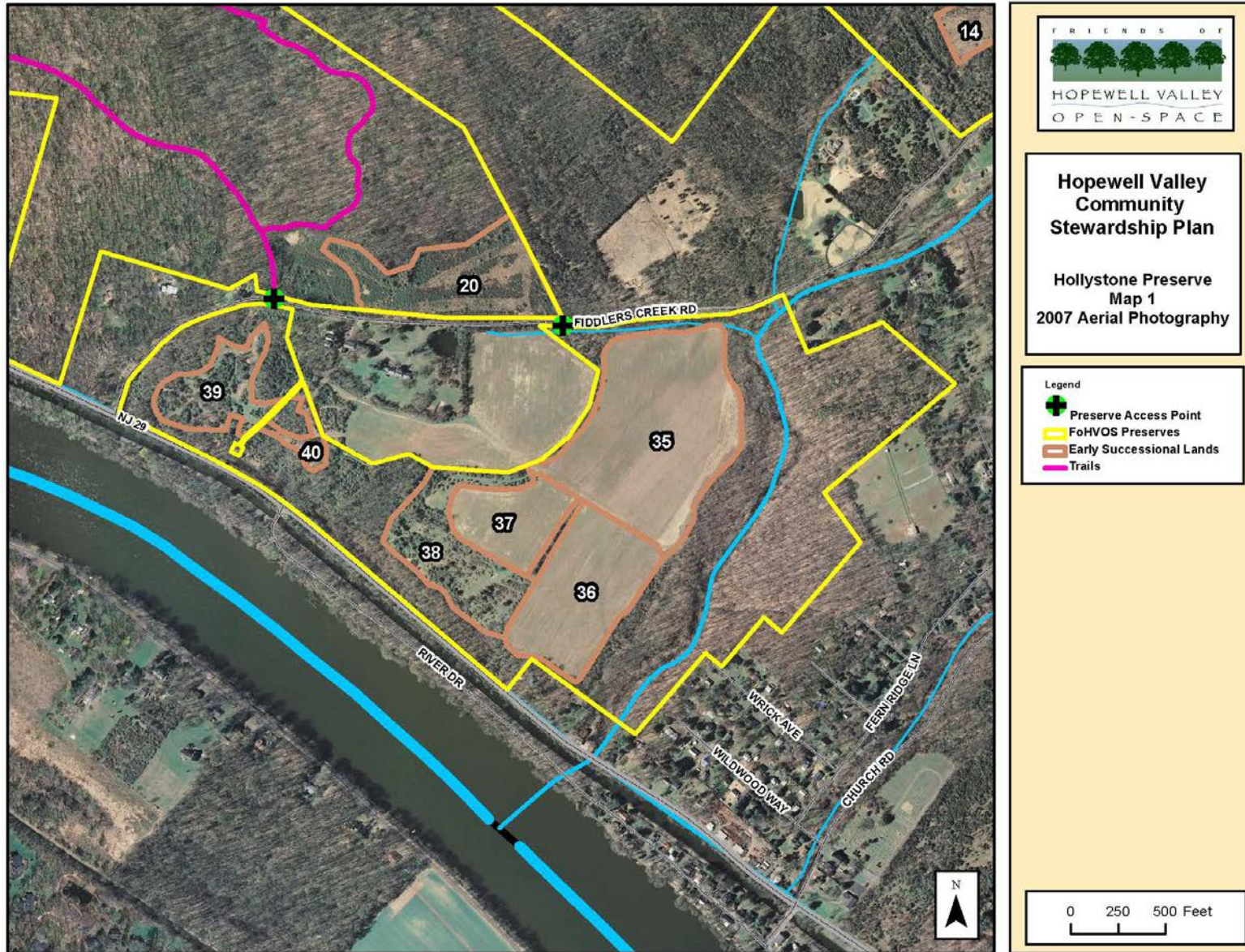
**Hopewell Valley Community Stewardship Plan
Friends of Hopewell Valley Open Space**

Table 1. Invasive Plants – Species Abundance and Treatment Recommendations

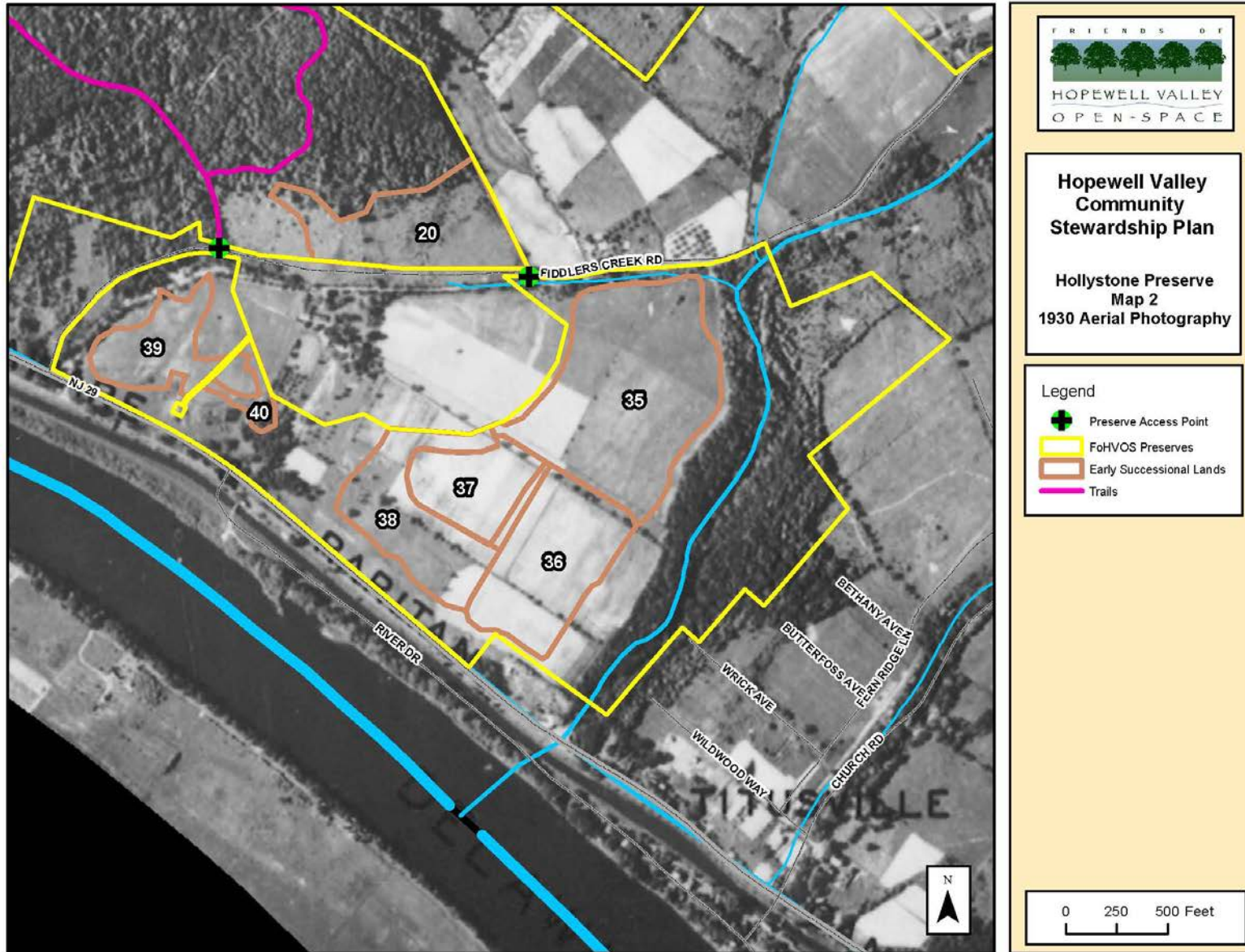
Scientific Name	Common Name	Infestation Index Score ¹	Total Acres Present	Percent of Preserve Area Present	Treatment Recommendation	LOE Estimate (Hours)	Acreage by Percent Ground Cover Categories						
							Category 0: 0%	Category: Trace	Category 1: 1-10%	Category 2: 10-25%	Category 3: 25-50%	Category 4: 50-75%	Category 5: 75-100%
<i>Acer palmatum</i>	Japanese Maple	0.0	0.0	0.0	N/A		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 Stiltgrass	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 perforiatum</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
Total LOE						20							

¹The 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.

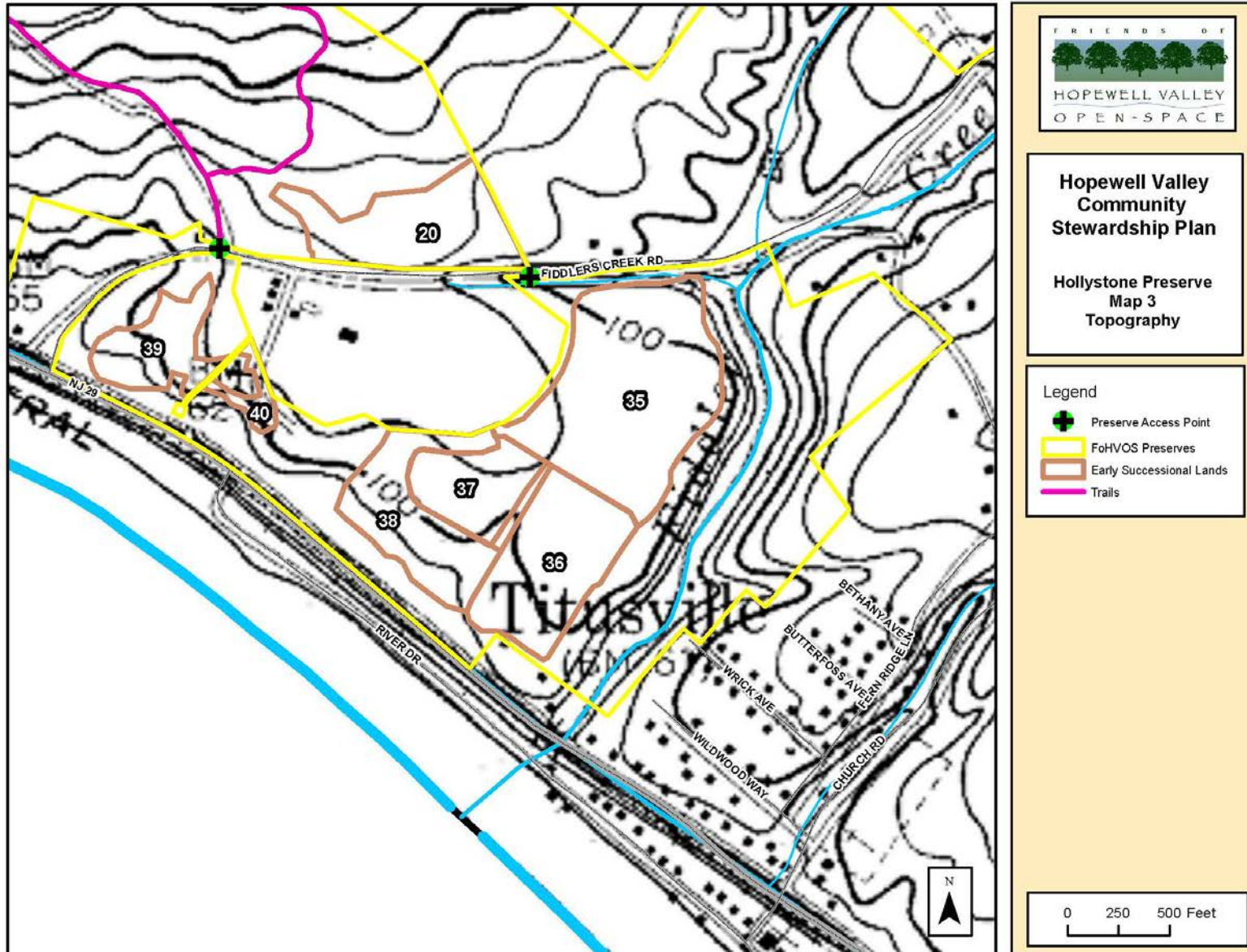
Hopewell Valley Community Stewardship Plan
Friends of Hopewell Valley Open Space



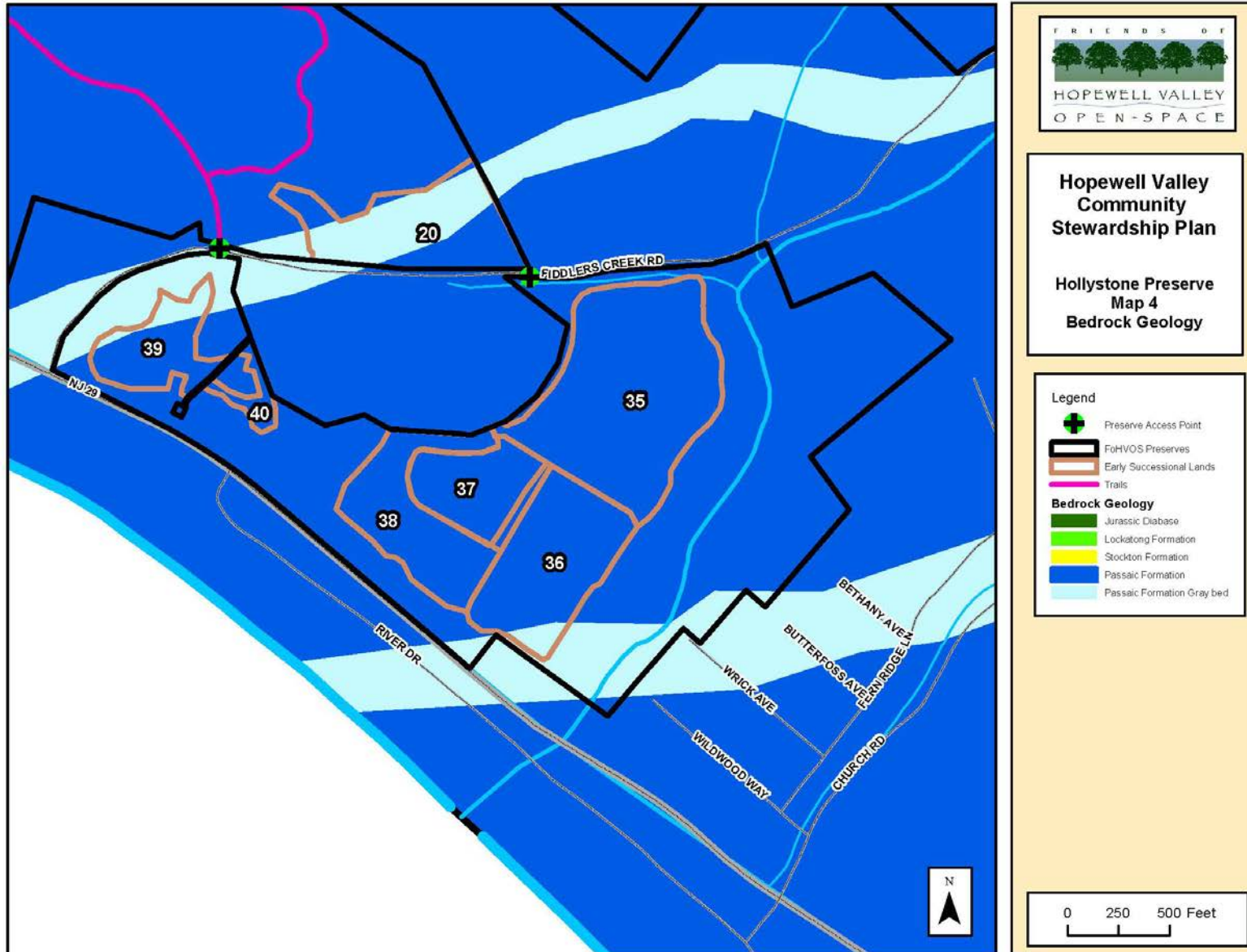
Hopewell Valley Community Stewardship Plan
Friends of Hopewell Valley Open Space



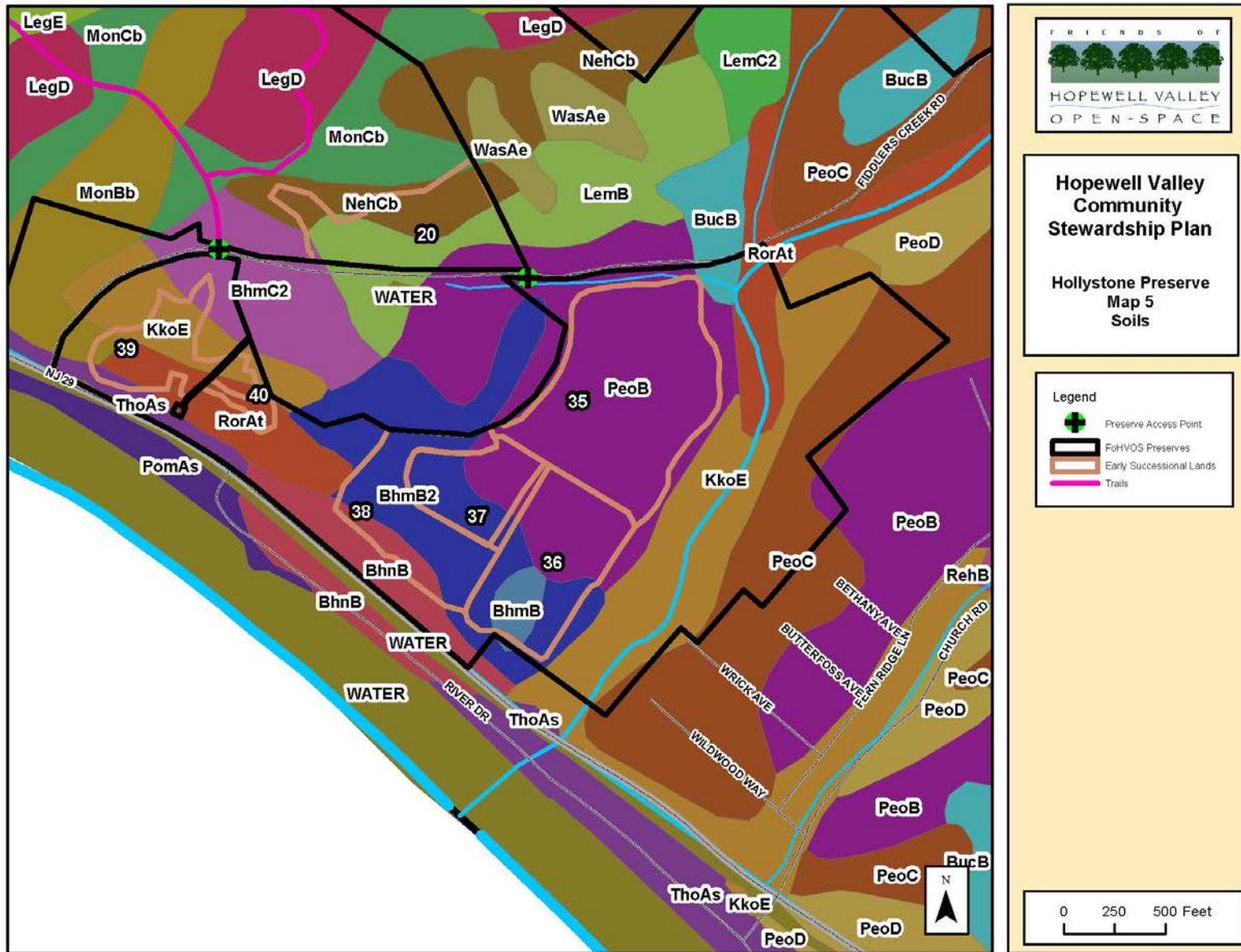
Hopewell Valley Community Stewardship Plan
Friends of Hopewell Valley Open Space



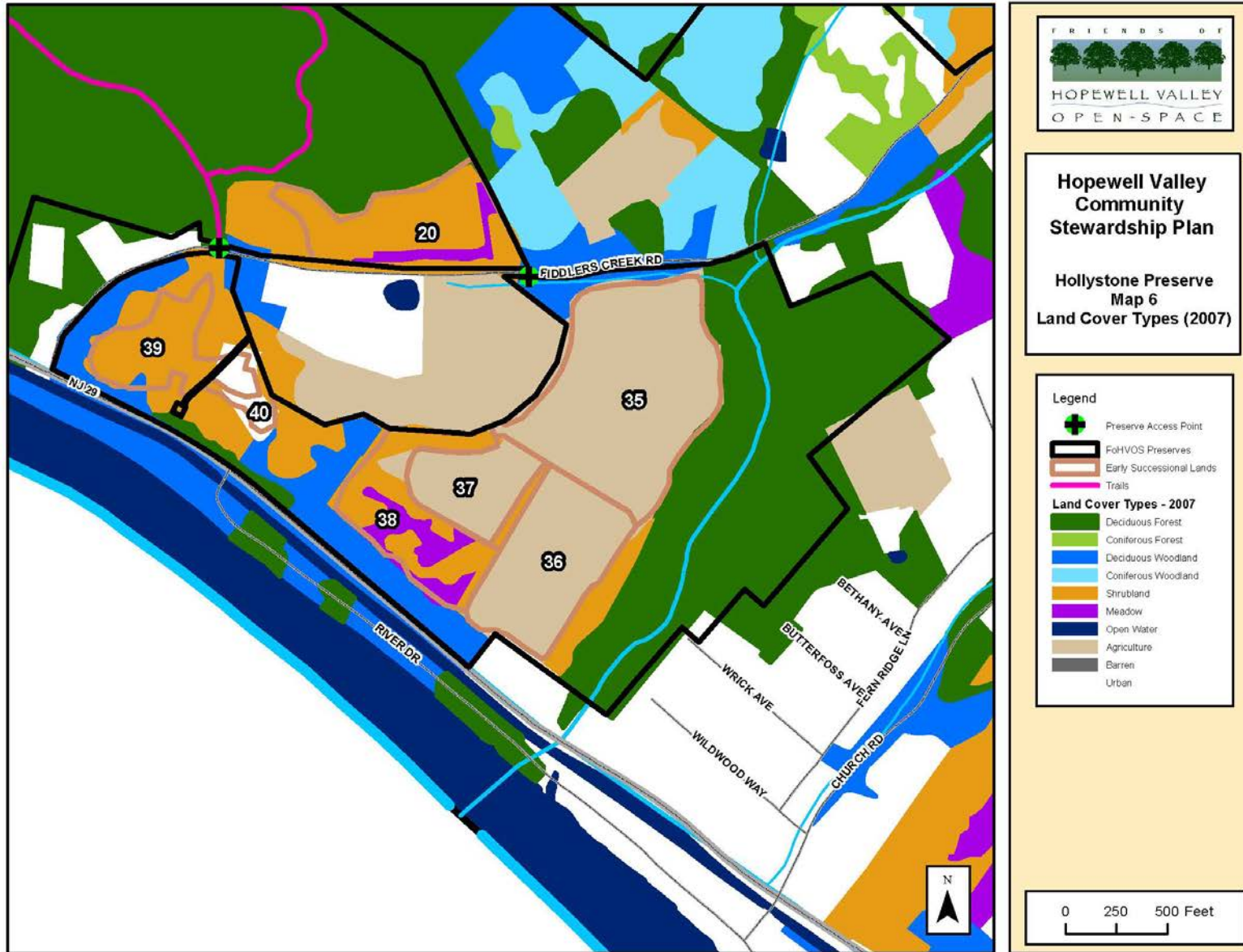
Hopewell Valley Community Stewardship Plan
 Friends of Hopewell Valley Open Space



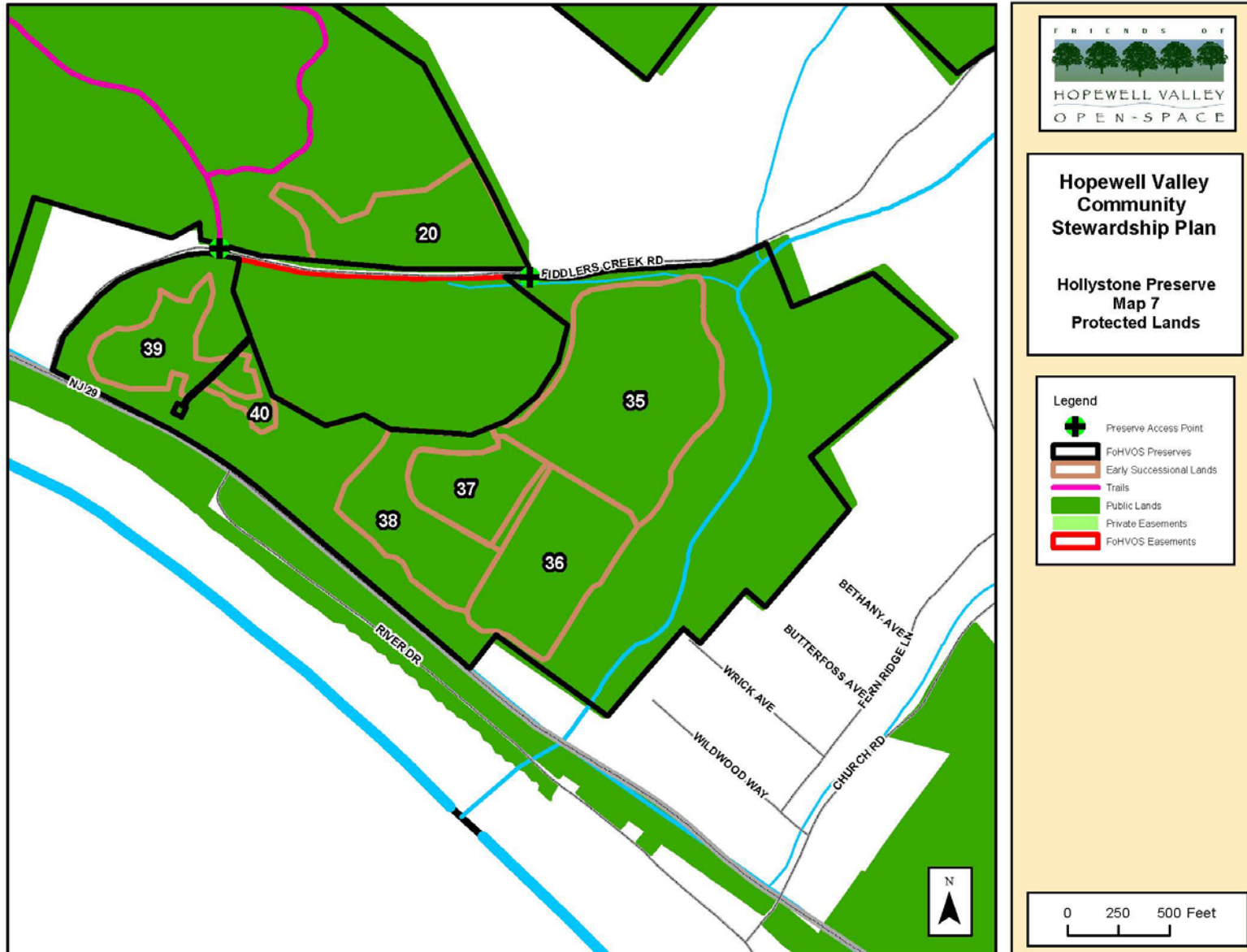
Hopewell Valley Community Stewardship Plan
 Friends of Hopewell Valley Open Space



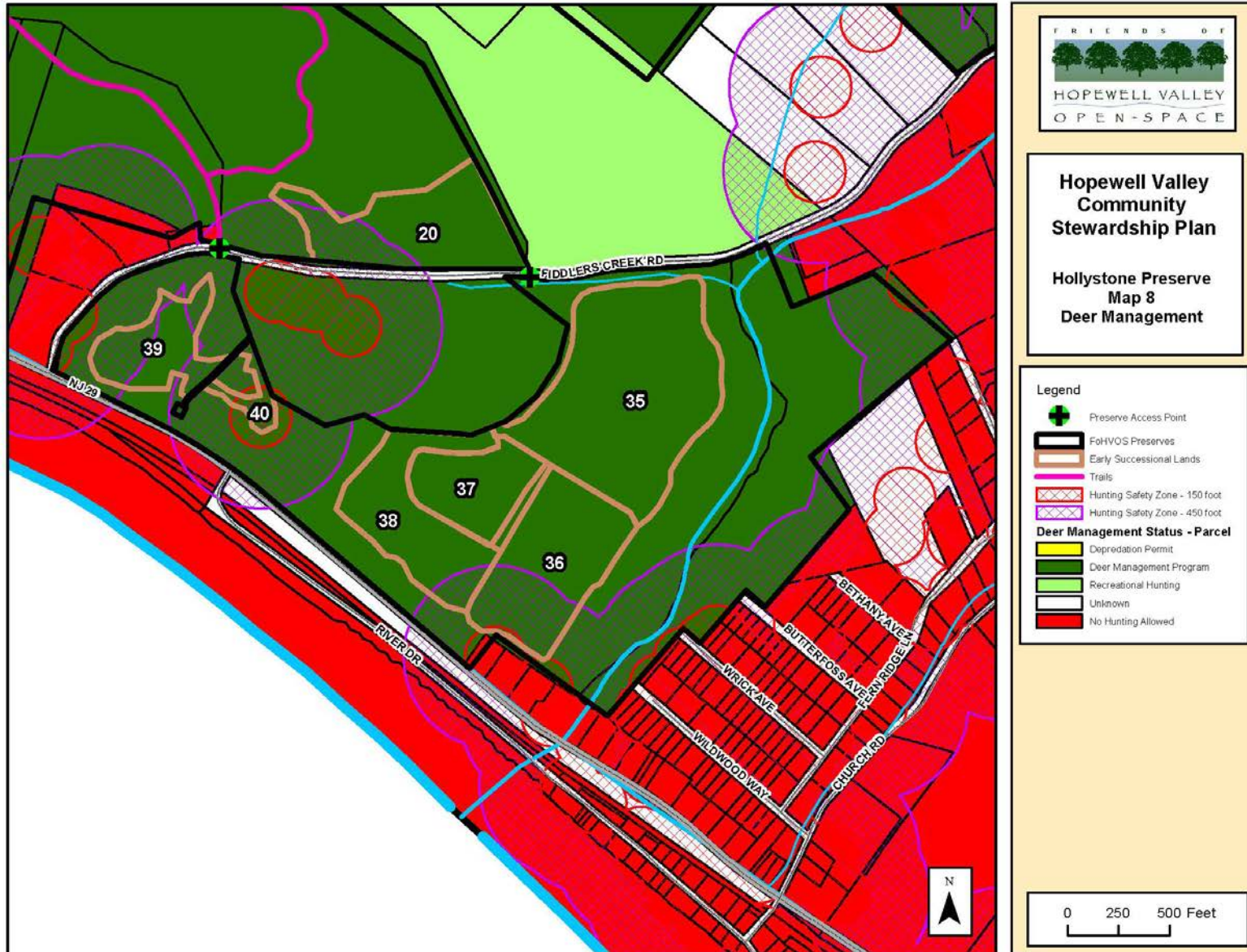
Hopewell Valley Community Stewardship Plan
 Friends of Hopewell Valley Open Space



Hopewell Valley Community Stewardship Plan
 Friends of Hopewell Valley Open Space



Hopewell Valley Community Stewardship Plan
 Friends of Hopewell Valley Open Space



Hopewell Valley Community Stewardship Plan
 Friends of Hopewell Valley Open Space

