Hopewell Valley Community Stewardship Plan
Friends of Hopewell Valley Open Space

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

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 exclosure 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.

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 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

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.

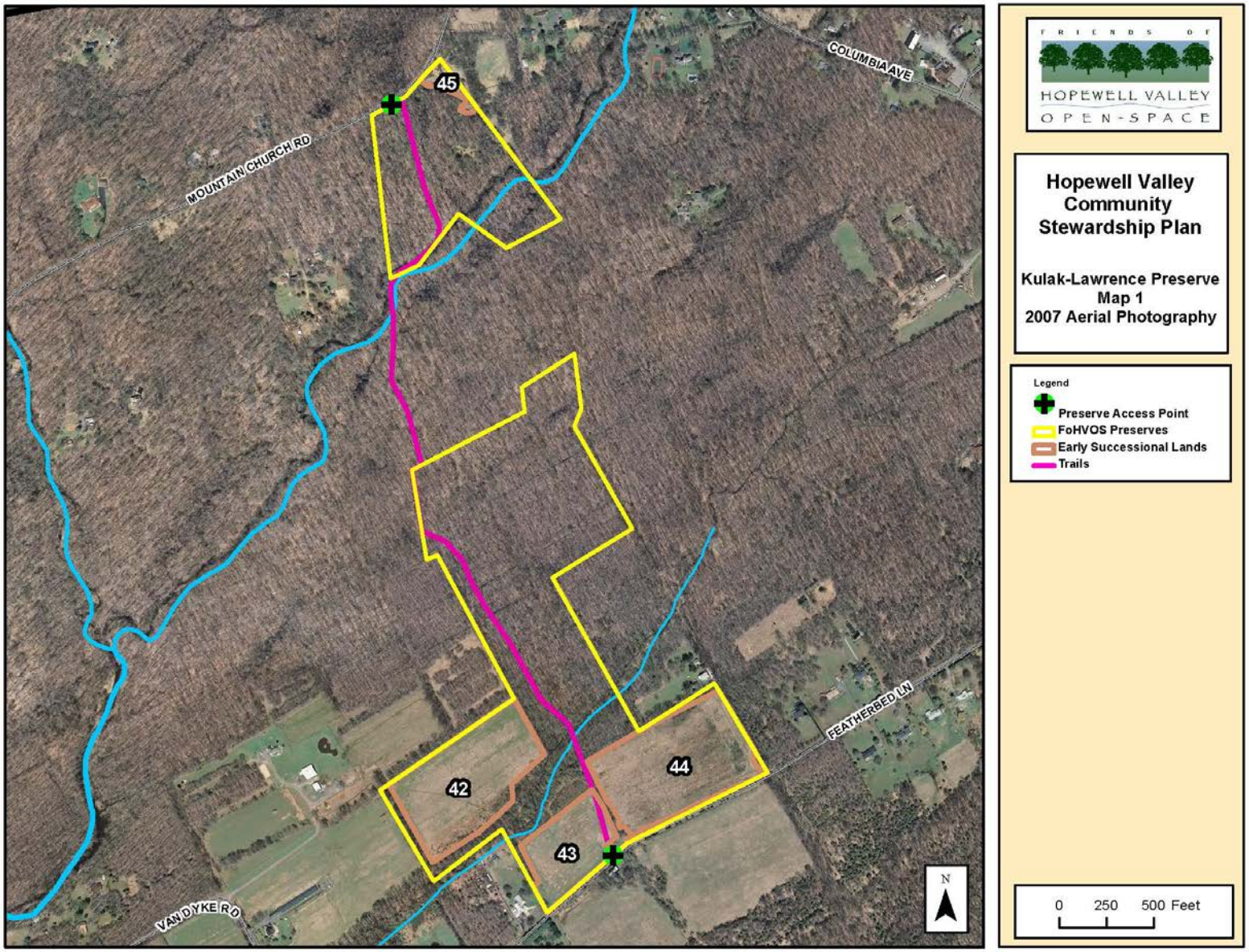
Recreational Opportunities Assessment: Kulak - Lawrence Preserve contains a one-way trail that connects between Featherbed Lane and Mountain Church Road. This trail is maintained by the D&R Greenway Land Trust as a part of their Sourlands Ecosystem Preserve regional trail network.

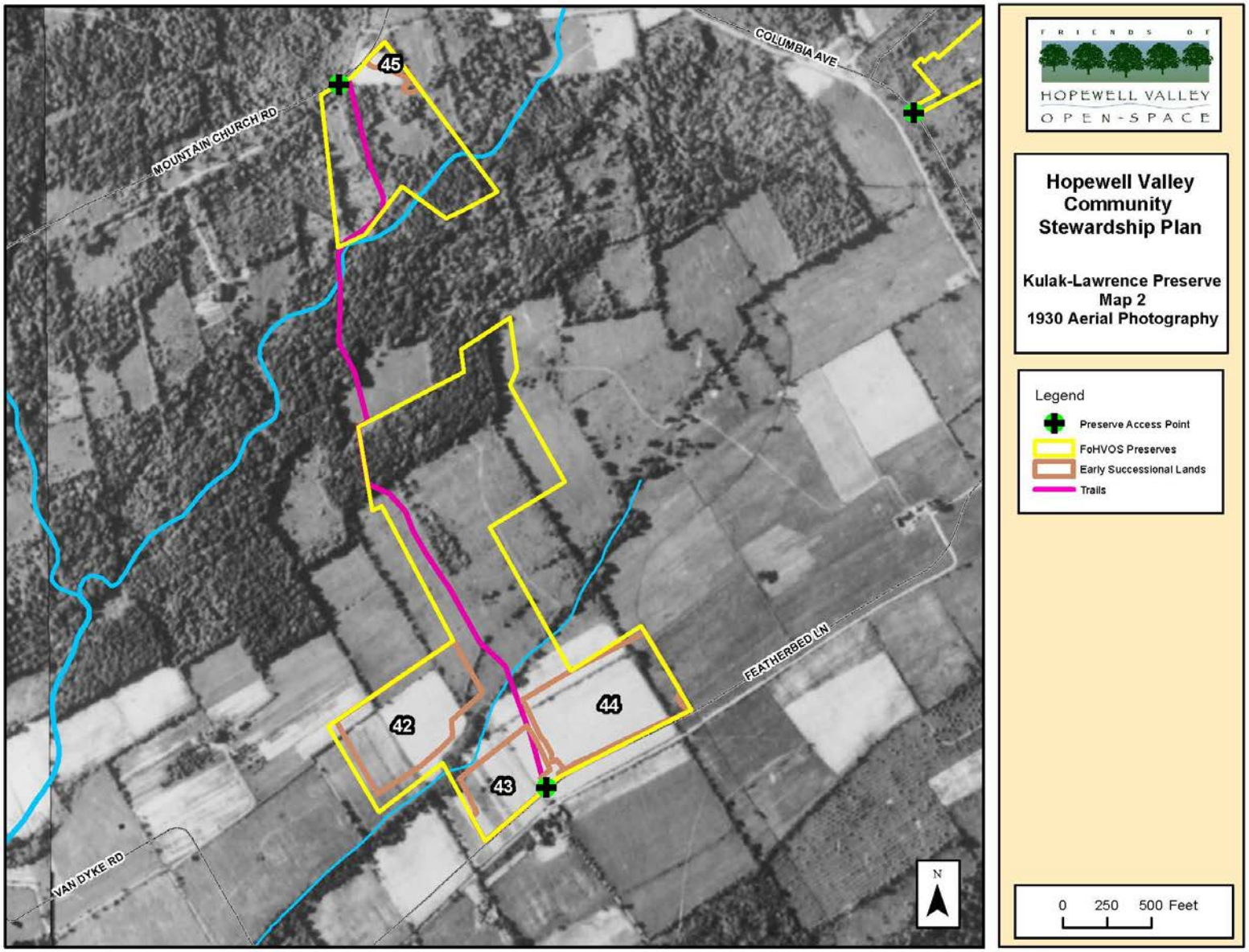
Hopewell Valley Community Stewardship Plan
Friends of Hopewell Valley Open Space

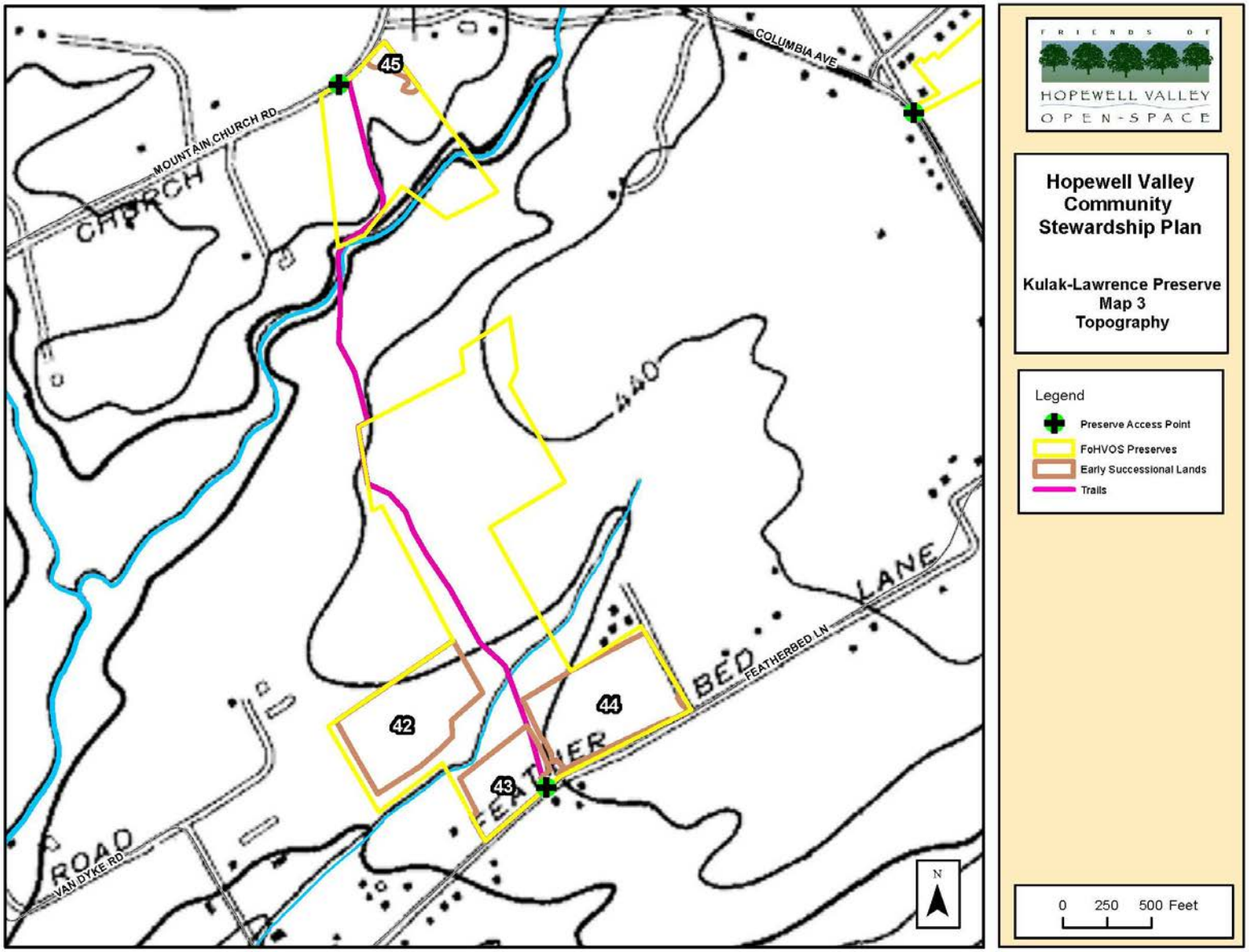
Table 1. Invasive Plants – Species Abundance and Treatment Recommendations

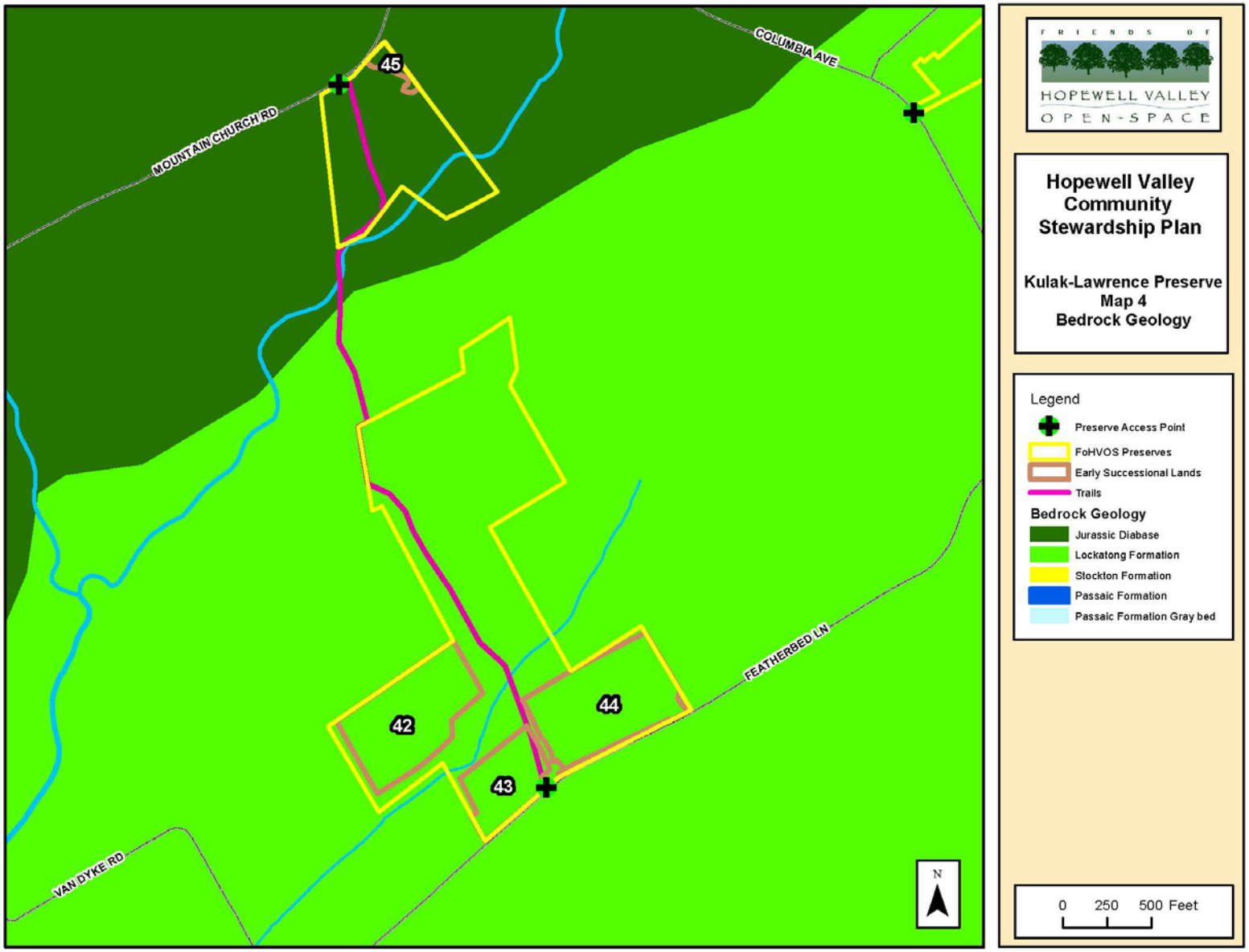
							Acreage by Percent Ground Cover Categories						
Scientific Name	**Common Name**	**Infestation Index Score[1]**	**Total Acres Present**	**Percent of Preserve Area Present**	**Treatment Recommendation**	**LOE Estimate (Hours)**	**Category 0: 0%**	**Category: Trace**	**Category 1: 1-10%**	**Category 2: 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		70.44	0.0	0.0	0.0	0.0	0.0	0.0
Acer platanoides	Norway Maple	0.0	0.0	0.0	N/A		70.44	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		70.44	0.0	0.0	0.0	0.0	0.0	0.0
Alliaria petiolata	Garlic Mustard	0.0	0.0	0.0	N/A		70.44	0.0	0.0	0.0	0.0	0.0	0.0
Artemisia vulgaris	Common Mugwort	0.0	0.0	0.0	N/A		70.44	0.0	0.0	0.0	0.0	0.0	0.0
Arthraxon hispidus	Small Carpgrass	38.2	18.9	26.8	None		51.55	0.2	0.2	18.0	0.0	0.5	0.0
Berberis thunbergii	Japanese Barberry	34.3	23.5	33.4	None		46.93	8.1	2.8	7.4	4.8	0.3	0.3
Cardamine impatiens	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
Catalpa bignonioides	Northern Catalpa	0.0	0.0	0.0	N/A		70.44	0.0	0.0	0.0	0.0	0.0	0.0
Celastrus orbiculatus	Asiatic Bittersweet	0.0	0.0	0.0	N/A		70.44	0.0	0.0	0.0	0.00	0.0	0.0
Centurea sp.	Knapweed sp.	0.0	0.0	0.0	N/A		70.44	0.0	0.0	0.0	0.0	0.0	0.0
Cirsium arvense	Canada Thistle	0.0	3.4	4.9	None		67.00	3.4	0.0	0.0	0.0	0.0	0.0
Dipsacus sylvestris	Teasel	0.0	0.0	0.0	N/A		70.44	0.0	0.00	0.0	0.0	0.0	0.0
Eleaegnus umbellata	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
Euonymus alata	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
Iris pseudoacris	Yellow Iris	0.0	0.0	0.0	N/A		70.44	0.0	0.0	0.0	0.0	0.0	0.0
Lespedeza cuneata	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
Ligustrum obtusifolium	Border Privet	0.0	0.4	0.6	None		70.02	0.4	0.00	0.0	0.0	0.0	0.0
Lonicera japonica	Japanese Honeysuckle	36.4	34.1	48.4	None		36.35	7.6	16.9	9.4	0.3	0.0	0.0
Lonicera maackii	Amur Honeysuckle	0.0	0.0	0.0	N/A		70.44	0.0	0.0	0.0	0.0	0.0	0.0
Lonicera morrowii	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
Lysimachia nummularia	Moneywort	0.0	0.0	0.0	N/A		70.44	0.0	0.0	0.0	0.0	0.0	0.0
Lythrum salicaria	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
Malus toringo	Toringo Crabapple	0.0	0.0	0.0	N/A		70.44	0.0	0.0	0.0	0.0	0.0	0.0
Microstegium vimineum	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
Phalaris arundinacea	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
Phragmites australis	Common Reed	0.0	0.0	0.0	N/A		70.44	0.0	0.0	0.0	0.0	0.0	0.0
Polygonum cuspidatum	Japanese Knotweed	0.0	0.0	0.0	N/A		70.44	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		70.44	0.0	0.0	0.0	0.0	0.0	0.0
Pyrus calleryana	Callery Pear	0.0	0.0	0.0	N/A		70.44	0.0	0.0	0.0	0.0	0.0	0.0
Ranunculus ficaria	Lesser Celandine	0.0	0.0	0.0	N/A		70.44	0.0	0.0	0.0	0.0	0.0	0.0
Robinia pseudoacacia	Black Locust	0.0	0.0	0.0	N/A		70.44	0.0	0.0	0.0	0.0	0.0	0.0
Rosa multiflora	Multifloral 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
Rubus pheoniculasius	Wineberry	5.8	6.8	9.6	None		63.67	1.0	5.8	0.0	0.0	0.0	0.0
Securigera varia	Crown vetch	0.0	0.0	0.0	N/A		70.44	0.0	0.0	0.0	0.0	0.0	0.0
Viburnum dilatatum	Linden Viburnum	0.0	0.0	0.0	N/A		70.44	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		70.44	0.0	0.0	0.0	0.0	0.0	0.0
Wisteria floribunda	Japanese Wisteria	0.0	0.0	0.0	N/A		70.44	0.0	0.0	0.0	0.0	0.0	0.0
					Total LOE	**5**							

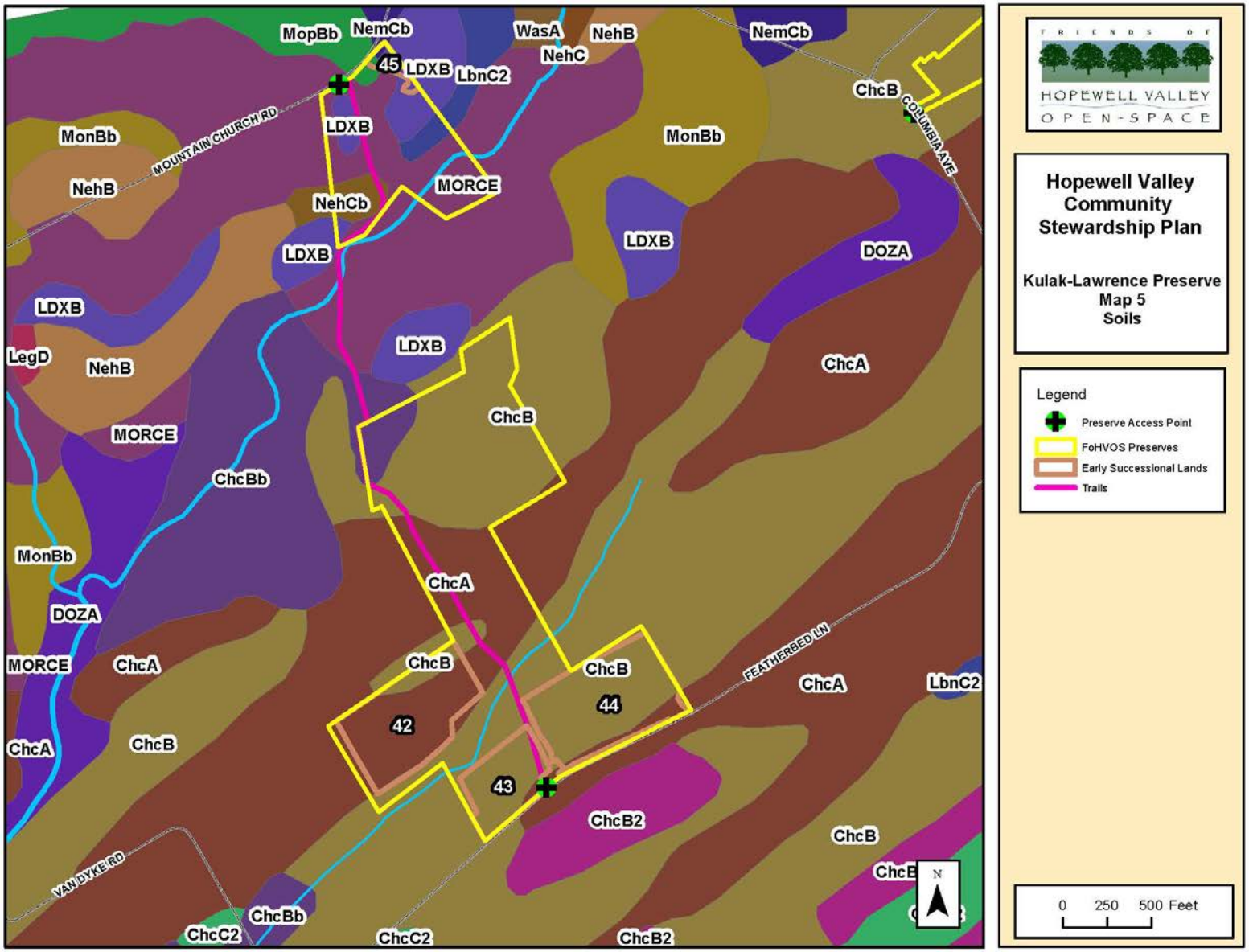
[1] The Infestation Index Score combines the extent of acreage infested and the intensity of the infestation. It was derived by multiplying the cover class number by the number of acres within each cover class.

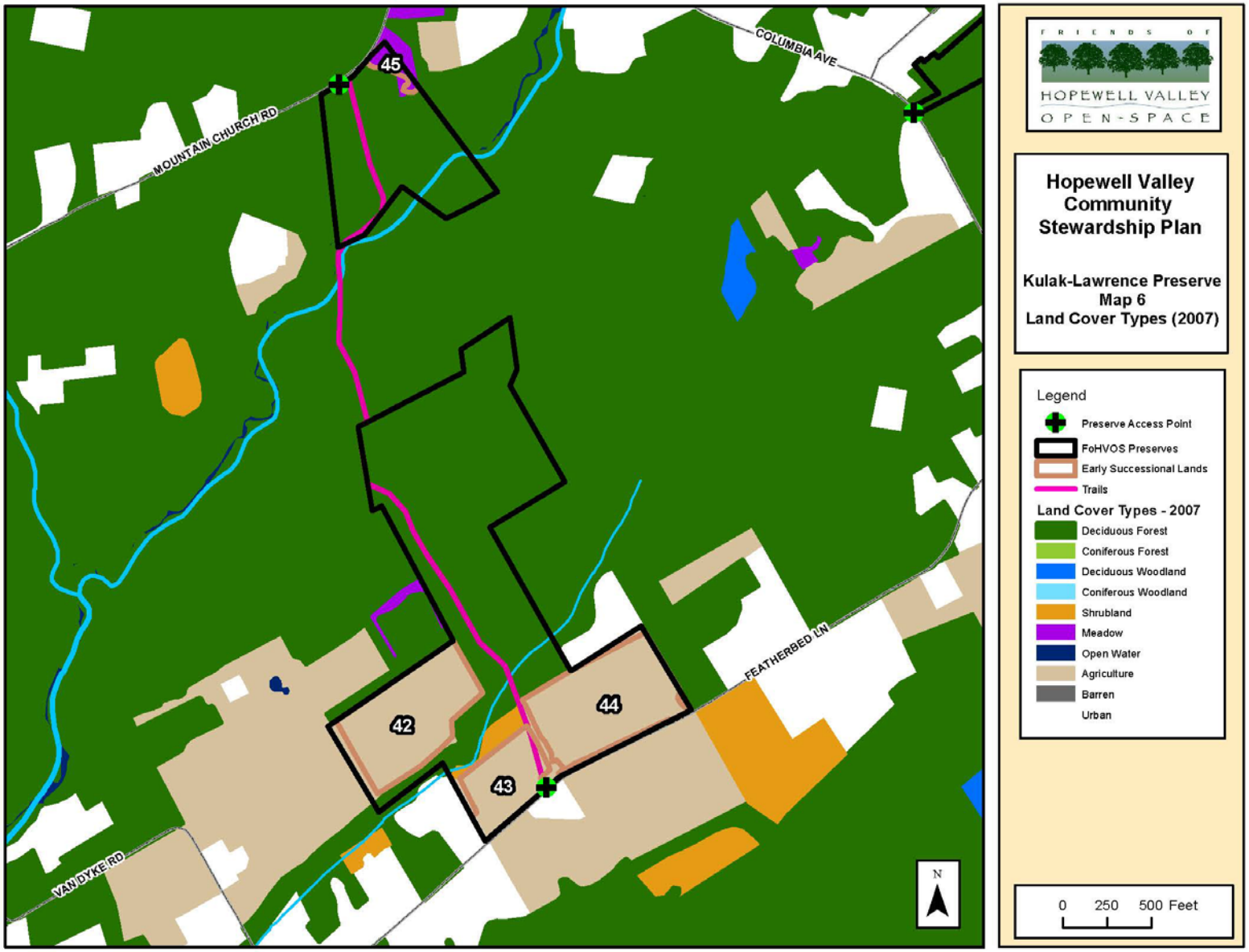

45
42
43
44
MOUNTAIN CHURCH RD
COLUMBIA AVE
FEATHERBED LN
VAN DYKE RD
N
FRIENDS OF
HOPEWELL VALLEY
OPEN-SPACE
Hopewell Valley Community Stewardship Plan
Kulak-Lawrence Preserve
Map 1
2007 Aerial Photography
Legend
Preserve Access Point
FoHVOS Preserves
Early Successional Lands
Trails
0 250 500 Feet

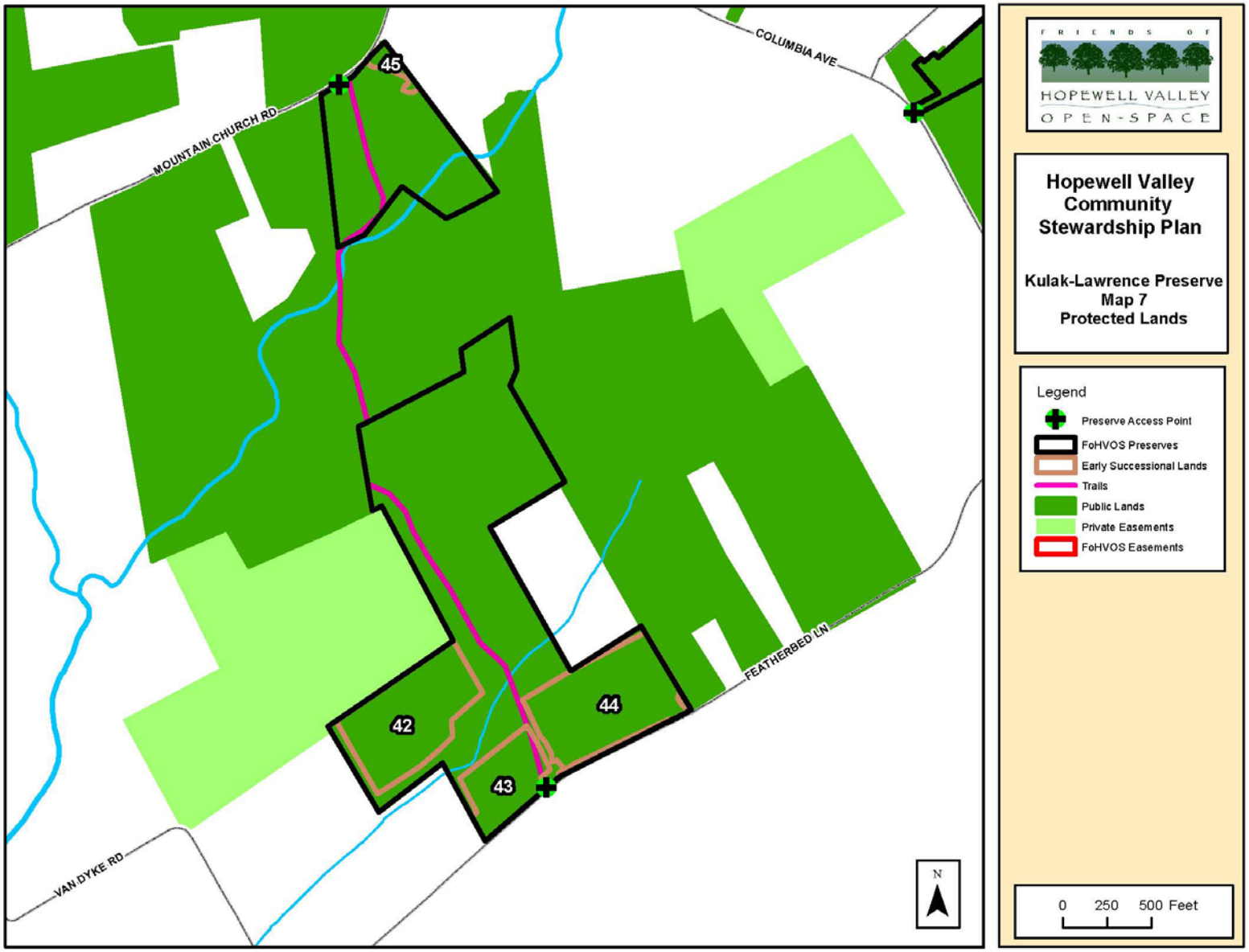

45
COLUMBIA AVE
MOUNTAIN CHURCH RD
42
43
44
FEATHERBED LN
VAN DYKE RD
N
FRIENDS OF
HOPEWELL VALLEY
OPEN-SPACE
Hopewell Valley Community Stewardship Plan
Kulak-Lawrence Preserve
Map 2
1930 Aerial Photography
Legend
Preserve Access Point
FoHVOS Preserves
Early Successional Lands
Trails
0 250 500 Feet

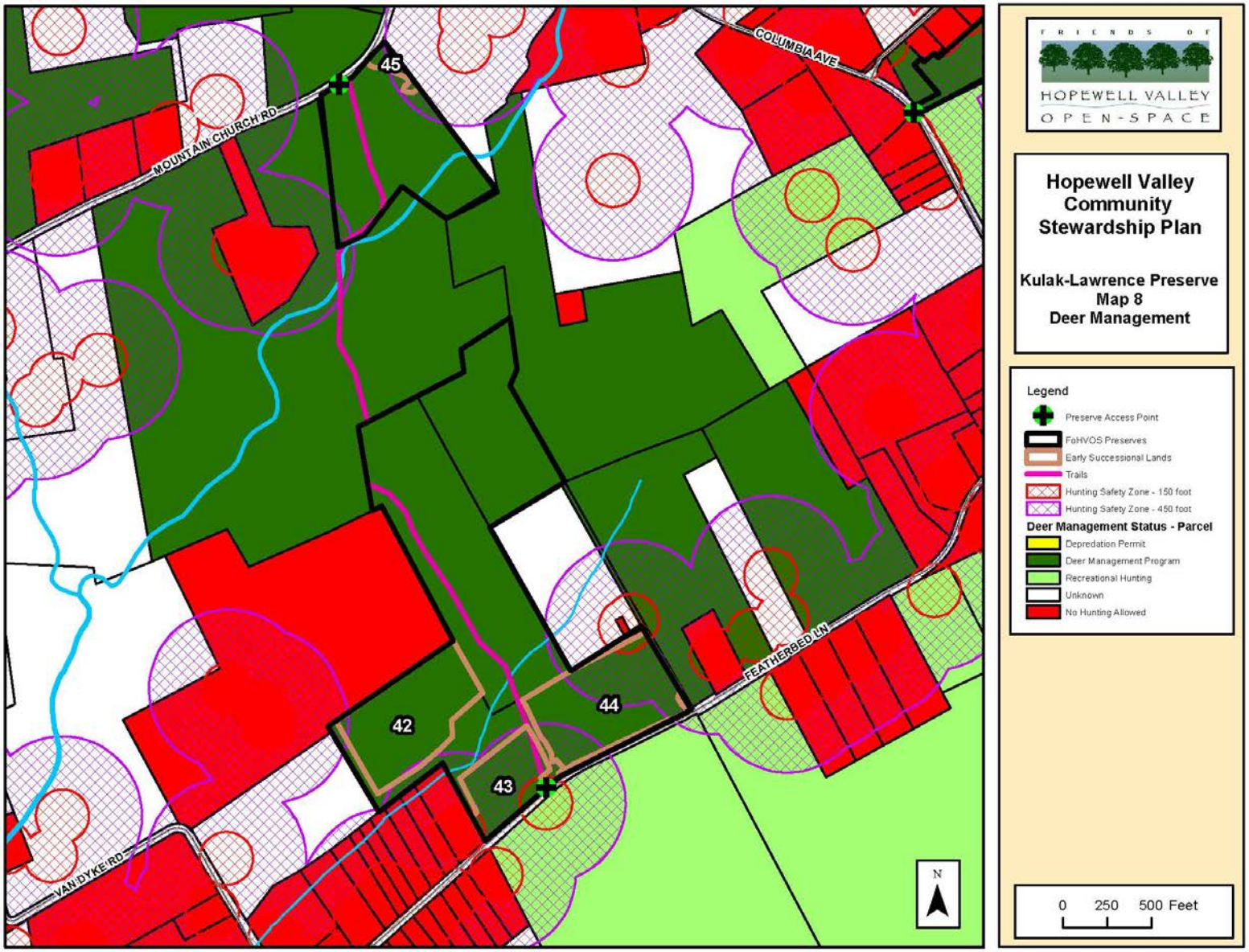

45
COLUMBIA AVE
MOUNTAIN CHURCH RD
CHURCH
440
LANE
FEATHERBED LN
BED
42
44
43
ROAD
VAN DYKE RD
N
FRIENDS OF
HOPEWELL VALLEY
OPEN-SPACE
Hopewell Valley Community Stewardship Plan
Kulak-Lawrence Preserve
Map 3
Topography
Legend
Preserve Access Point
FoHVOS Preserves
Early Successional Lands
Trails
0 250 500 Feet

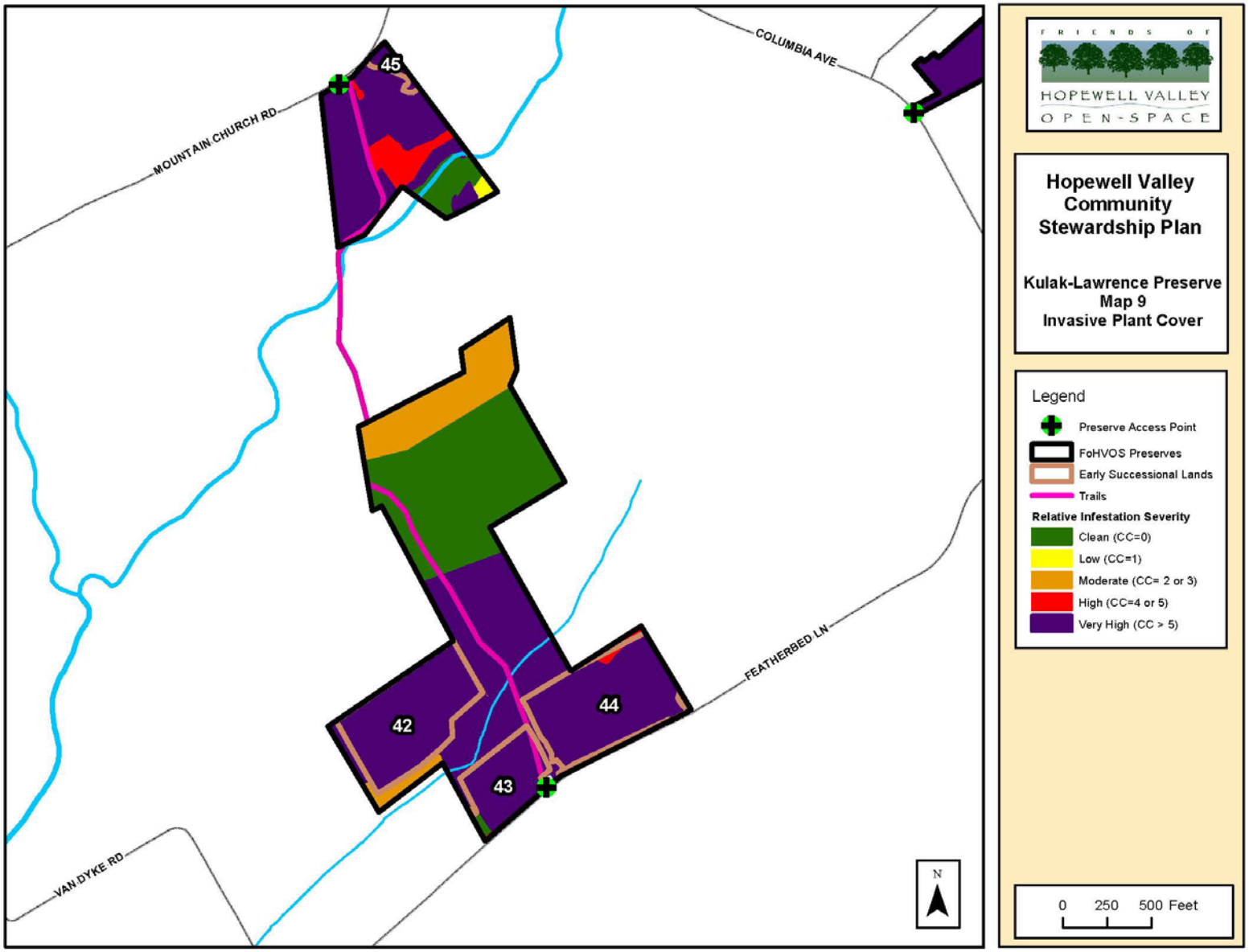

45
MOUNTAIN CHURCH RD
COLUMBIA AVE
42
43
44
FEATHERBED LN
VAN DYKE RD
N
FRIENDS OF
HOPEWELL VALLEY
OPEN-SPACE
Hopewell Valley Community Stewardship Plan
Kulak-Lawrence Preserve
Map 4
Bedrock Geology
Legend
Preserve Access Point
FoHVOS Preserves
Early Successional Lands
Trails
Bedrock Geology
Jurassic Diabase
Lockatong Formation
Stockton Formation
Passaic Formation
Passaic Formation Gray bed
0 250 500 Feet


MopBb
NemCb
WasA
NehB
NehC
NemCb
45
LDXB
LbnC2
ChcB
COLUMBIA AVE
MonBb
MOUNTAIN CHURCH RD
LDXB
MonBb
NehB
MORCE
NehCb
LDXB
LDXB
DOZA
LDXB
LDXB
LegD
NehB
ChcA
ChcB
MORCE
ChcBb
MonBb
ChcA
DOZA
MORCE
ChcA
ChcB
ChcB
ChcB
FEATHERBED LN
ChcA
LbnC2
42
44
ChcA
ChcB
43
ChcB2
ChcB
ChcB
VAN DYKE RD
ChcBb
ChcC2
ChcC2
ChcB2
N
Hopewell Valley Community Stewardship Plan
Kulak-Lawrence Preserve
Map 5
Soils
Legend
Preserve Access Point
FoHVOS Preserves
Early Successional Lands
Trails
0 250 500 Feet


45
COLUMBIA AVE
MOUNTAIN CHURCH RD
42
44
43
FEATHERBED LN
VAN DYKE RD
N
FRIENDS OF
HOPEWELL VALLEY
OPEN-SPACE
Hopewell Valley Community Stewardship Plan
Kulak-Lawrence 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


45
COLUMBIA AVE
MOUNTAIN CHURCH RD
42
43
44
FEATHERBED LN
VAN DYKE RD
N
FRIENDS OF
HOPEWELL VALLEY
OPEN-SPACE
Hopewell Valley Community Stewardship Plan
Kulak-Lawrence Preserve
Map 7
Protected Lands
Legend
Preserve Access Point
FoHVOS Preserves
Early Successional Lands
Trails
Public Lands
Private Easements
FoHVOS Easements
0 250 500 Feet


45
MOUNTAIN CHURCH RD
COLUMBIA AVE
42
43
44
FEATHERBED LN
VAN DYKE RD
N
FRIENDS OF
HOPEWELL VALLEY
OPEN-SPACE
Hopewell Valley Community Stewardship Plan
Kulak-Lawrence 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


MOUNTAIN CHURCH RD
COLUMBIA AVE
FEATHERBED LN
VAN DYKE RD
45
42
43
44
N
FRIENDS OF
HOPEWELL VALLEY
OPEN-SPACE
Hopewell Valley Community Stewardship Plan
Kulak-Lawrence 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