

METHODS

In 2019, surveys were conducted on October 2nd and October 17th. Fifteen plots were sampled inside the deer enclosure and ten were sampled outside. Plots were marked with fencepost markers. Within each 4x4 meter plot data was recorded for seedlings, saplings, and herbaceous invasive species.

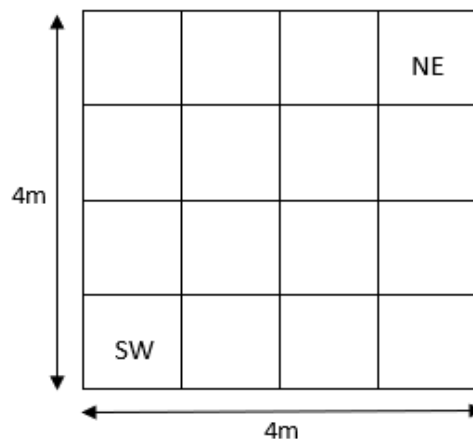
Seedlings: Any woody species <1 meter in height was considered a seedling. Seedlings were sampled within a 1m² area at the Northeast (NE) and Southwest (SW) corners of each 4x4 meter plot. Seedlings were identified and counted.

Saplings: Any woody vegetative growth >1 m in height was considered a sapling. Species were measured, identified and counted within the entire 4x4 meter plot.

Herbaceous Invasive Species: Herbaceous invasive species ("invasives") were noted within the 1m² area sampled at the NE and SW corners of each 4x4 m plot. Coverage was estimated using a coverages class scale of 0-4.

Coverage classes:

0: not present 1: present 2: ≤ 25% 3: 26 to 75% 4: ≥ 75%



SURVEY RESULTS

The charts below summarize the average seedling and sapling counts (overall, by species, and by status) and invasives covers (overall and by species). Saplings are measured per plot, while seedlings and invasives are measured by average per m² as only two 1-m² subplots were surveyed per plot. Using per-plot and per-m² values allows for comparison between the 10 external plots and the 15 internal plots. Species codes used in the by-species charts are from the USDA's PLANTS Database¹. A taxa table containing these codes can be found at the end of this document. Plants are characterized native, introduced, or invasive in accordance with the Flora of Virginia².

After the charts, species lists are provided for seedlings, saplings, and invasives. Species are listed in order of occurrence, or the number of plots in which the species were found. The maximum

¹ USDA, NRCS. 2019. The PLANTS Database (<http://plants.usda.gov>, 13 December 2019). National Plant Data Team, Greensboro, NC 27401-4901 USA.

² Weakley, A.S., J.C. Ludwig, and J.F. Townsend. 2012. Flora of Virginia. Bland Crowder, ed. Foundation of the Flora of Virginia Project Inc, Richmond. Fort Worth: Botanical Research Institute of Texas Press.

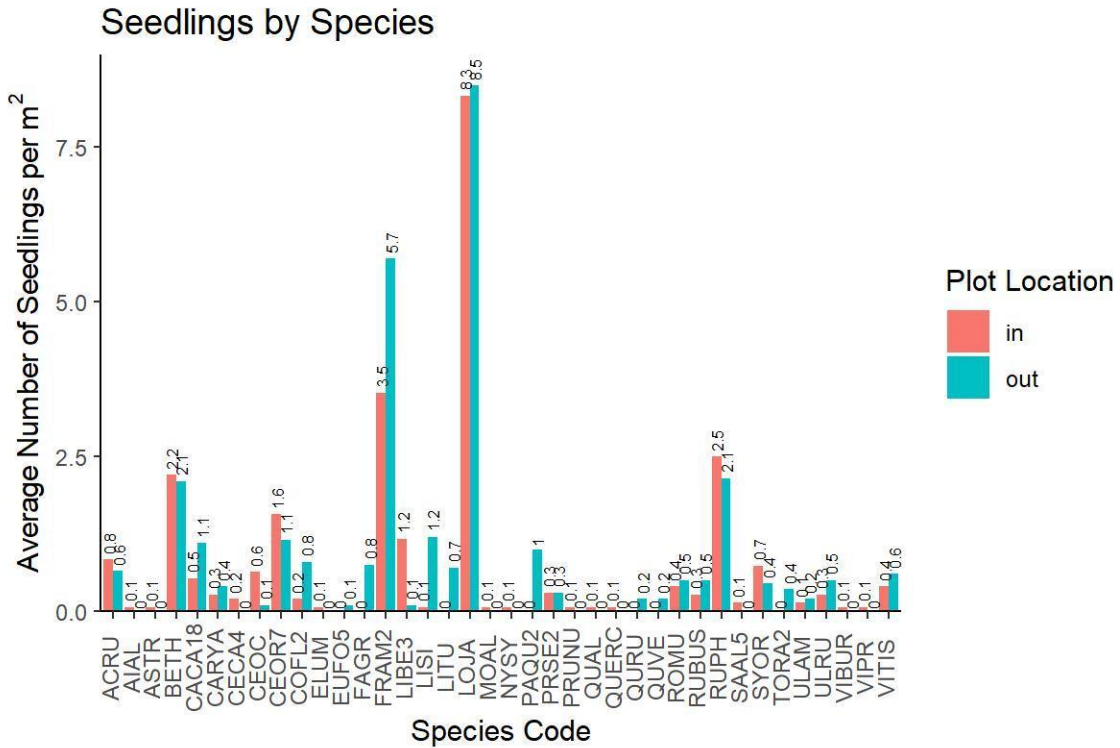


possible occurrence for the interior plots is 15 and the maximum possible occurrence for exterior plots is 10.

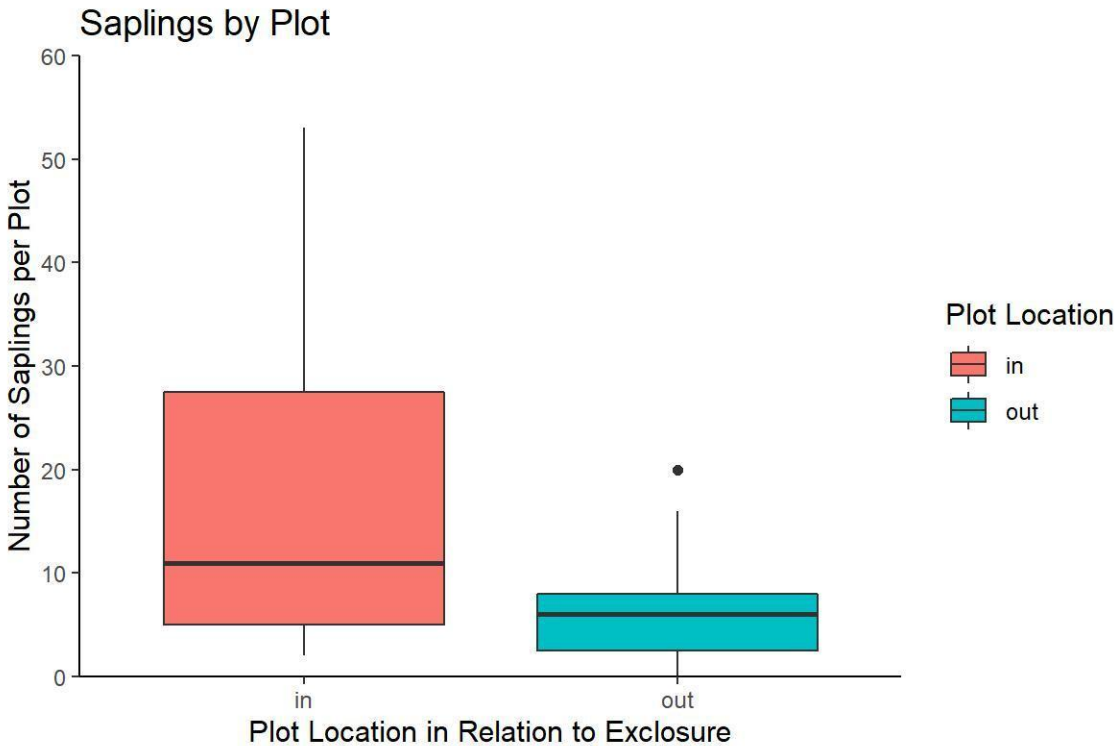


SEEDLINGS



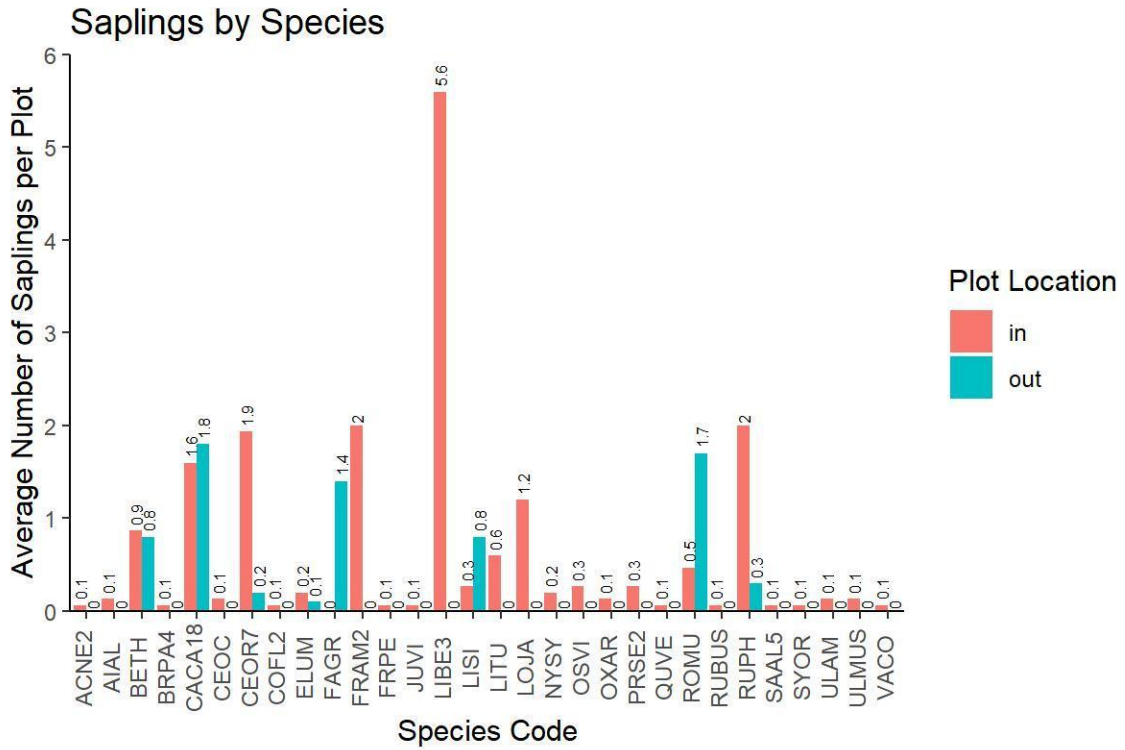


SAPLINGS



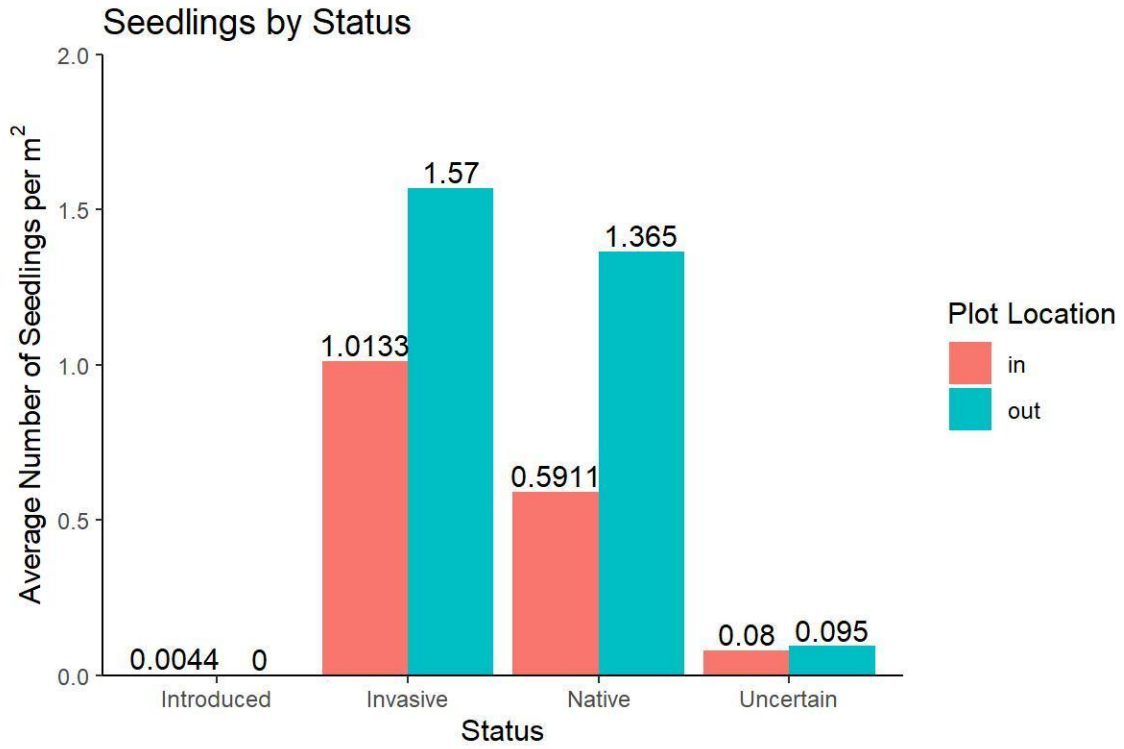


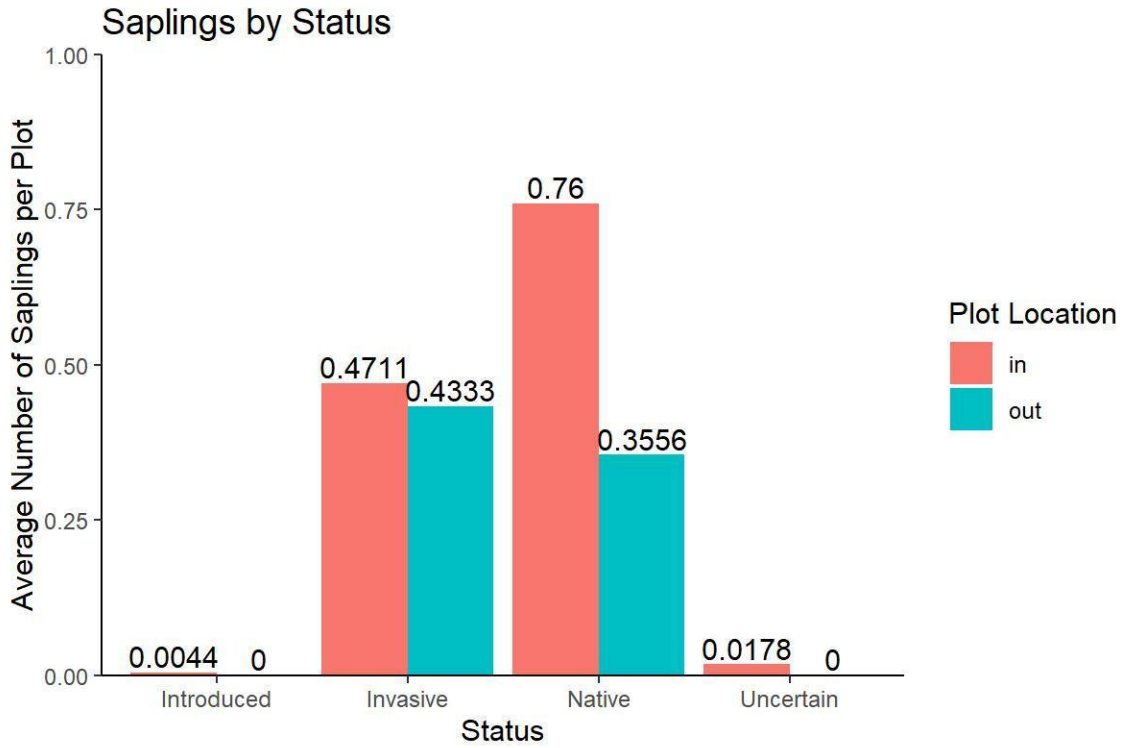
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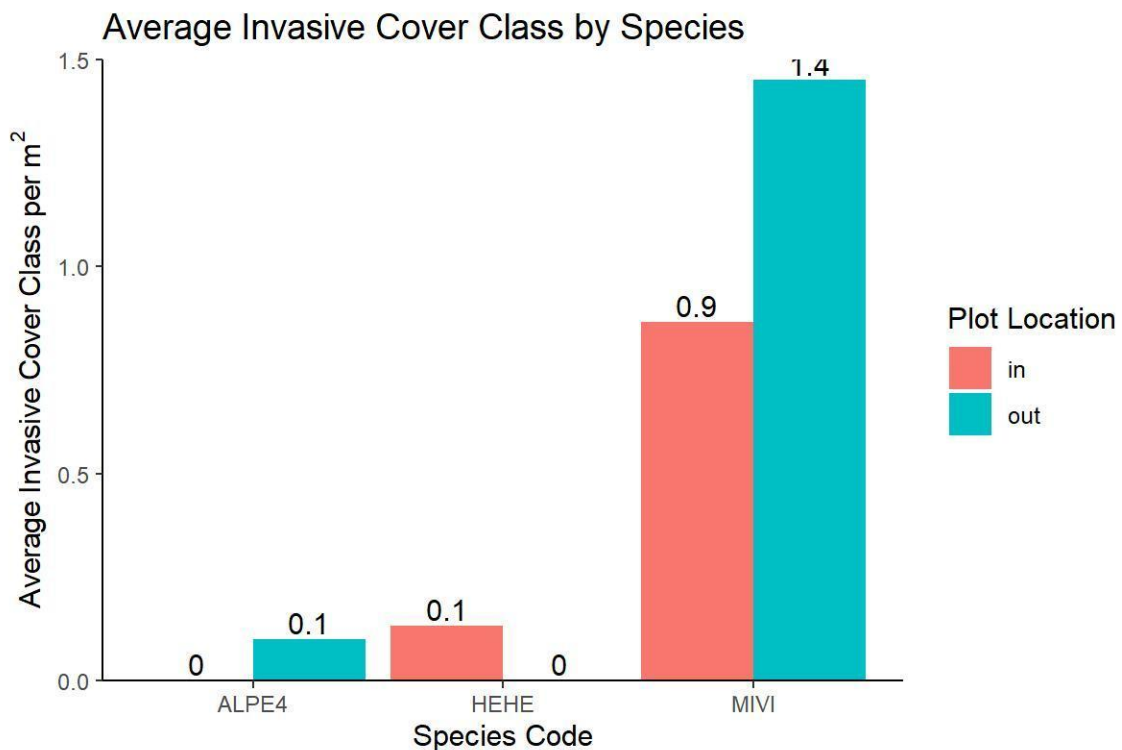
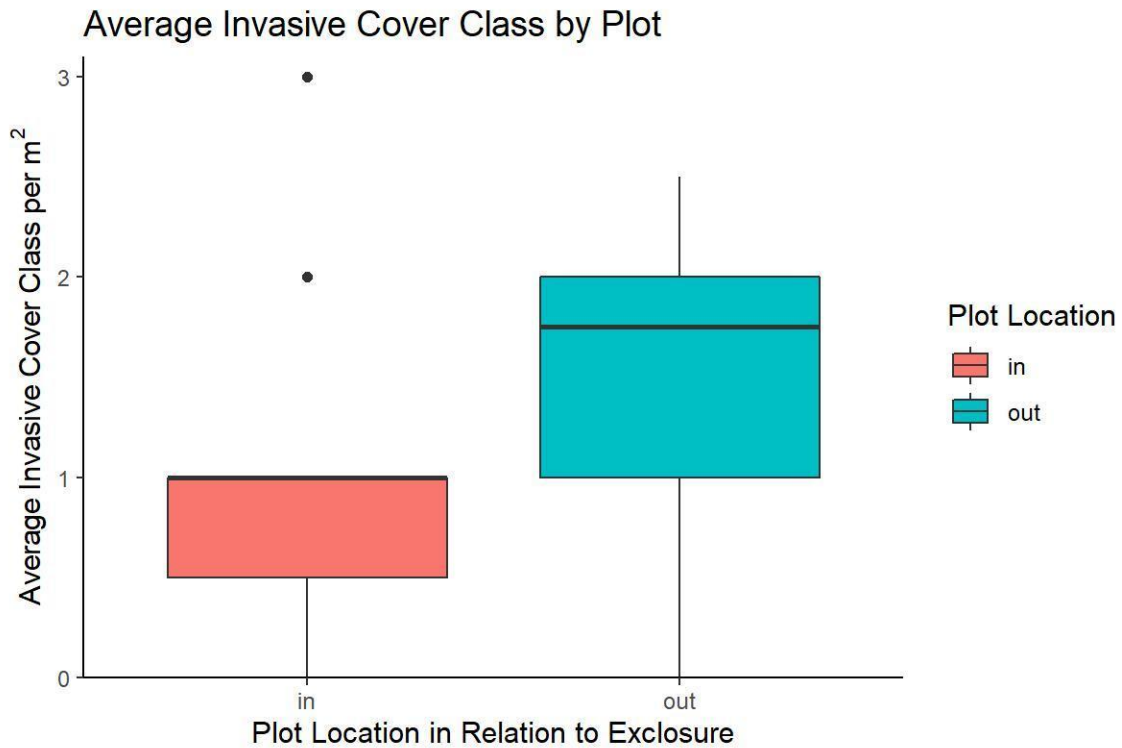




SEEDLINGS AND SAPLINGS BY STATUS









SEEDLINGS SPECIES LIST: INTERIOR PLOTS

Common Name	Latin Name	Habit	Status	Occurrence
Wineberry	<i>Rubus phoenicolasius</i>	Shrub	Invasive	13
Japanese Honeysuckle	<i>Lonicera japonica</i>	Vine	Invasive	12
White Ash	<i>Fraxinus americana</i>	Tree	Native	12
Japanese Barberry	<i>Berberis thunbergii</i>	Shrub	Invasive	11
Common Hackberry	<i>Celtis occidentalis</i>	Shrub/Tree	Native	8
Oriental Bittersweet	<i>Celastrus orbiculatus</i>	Vine	Invasive	8
Coralberry	<i>Symphoricarpos orbiculatus</i>	Shrub	Uncertain	6
Northern Spicebush	<i>Lindera benzoin</i>	Shrub/Tree	Native	6
Wild Grape	<i>Vitis spp.</i>	Vine	Native	6
American Hornbeam	<i>Carpinus caroliniana</i>	Shrub/Tree	Native	5
Red Maple	<i>Acer rubrum</i>	Tree	Native	5
Black Cherry	<i>Prunus serotina</i>	Shrub/Tree	Native	4
Slippery Elm	<i>Ulmus rubra</i>	Tree	Native	4
Blackberry	<i>Rubus sp. (not Wineberry)</i>	Shrub	Uncertain	3
Hickory	<i>Carya sp.</i>	Tree	Native	3
Multiflora Rose	<i>Rosa multiflora</i>	Shrub/Vine	Invasive	3
American Elm	<i>Ulmus americana</i>	Tree	Native	2
Eastern Redbud	<i>Cercis canadensis</i>	Shrub/Tree	Native	2
Sassafras	<i>Sassafras albidum</i>	Shrub/Tree	Native	2
Autumn Olive	<i>Elaeagnus umbellata</i>	Shrub	Invasive	1
Black Haw	<i>Viburnum prunifolium</i>	Shrub/Tree	Native	1
Blackgum	<i>Nyssa sylvatica</i>	Tree	Native	1
Chinese Privet	<i>Ligustrum sinense</i>	Shrub/Tree	Invasive	1
Flowering Dogwood	<i>Cornus florida</i>	Shrub/Tree	Native	1
Oak	<i>Quercus sp.</i>	Tree	Uncertain	1
Pawpaw	<i>Asimina triloba</i>	Shrub/Tree	Native	1
Plum	<i>Prunus sp.</i>	Shrub/Tree	Uncertain	1
Tree of Heaven	<i>Ailanthus altissima</i>	Tree	Invasive	1
Viburnum	<i>Viburnum sp.</i>	Shrub/Tree	Uncertain	1
White Mulberry	<i>Morus alba</i>	Shrub/Tree	Introduced	1
White Oak	<i>Quercus alba</i>	Tree	Native	1



SEEDLINGS SPECIES LIST: EXTERIOR PLOTS

Common	Latin	Habit	Status	Occurrence
Japanese Honeysuckle	<i>Lonicera japonica</i>	Vine	Invasive	9
Wineberry	<i>Rubus phoenicolasius</i>	Shrub	Invasive	9
Oriental Bittersweet	<i>Celastrus orbiculatus</i>	Vine	Invasive	8
White Ash	<i>Fraxinus americana</i>	Tree	Native	8
Virginia Creeper	<i>Parthenocissus quinquefolia</i>	Vine	Native	6
Chinese Privet	<i>Ligustrum sinense</i>	Shrub/Tree	Invasive	5
Flowering Dogwood	<i>Cornus florida</i>	Shrub/Tree	Native	5
Japanese Barberry	<i>Berberis thunbergii</i>	Shrub	Invasive	5
Red Maple	<i>Acer rubrum</i>	Tree	Native	5
Slippery Elm	<i>Ulmus rubra</i>	Tree	Native	4
Wild Grape	<i>Vitis spp.</i>	Vine	Native	4
Black Cherry	<i>Prunus serotina</i>	Shrub/Tree	Native	3
Coralberry	<i>Symphoricarpos orbiculatus</i>	Shrub	Uncertain	3
Hickory	<i>Carya sp.</i>	Tree	Native	3
Multiflora Rose	<i>Rosa multiflora</i>	Shrub/Vine	Invasive	3
Tuplip Poplar	<i>Liriodendron tulipifera</i>	Tree	Native	3
American Beech	<i>Fagus grandifolia</i>	Tree	Native	2
American Elm	<i>Ulmus americana</i>	Tree	Native	2
American Hornbeam	<i>Carpinus caroliniana</i>	Shrub/Tree	Native	2
Black Oak	<i>Quercus velutina</i>	Tree	Native	2
Blackberry	<i>Rubus sp. (not Wineberry)</i>	Shrub	Uncertain	2
Eastern Poison Ivy	<i>Toxicodendron radicans</i>	Shrub/Vine	Native	2
Red Oak	<i>Quercus rubra</i>	Tree	Native	2
Common Hackberry	<i>Celtis occidentalis</i>	Shrub/Tree	Native	1
Northern Spicebush	<i>Lindera benzoin</i>	Shrub/Tree	Native	1
Winter Creeper	<i>Euonymus fortunei</i>	Shrub/Vine	Invasive	1



SAPLINGS SPECIES LIST: INTERIOR PLOTS

Common Name	Latin Name	Habit	Status	Occurrence
Japanese Barberry	<i>Berberis thunbergii</i>	Shrub	Invasive	8
Oriental Bittersweet	<i>Celastrus orbiculatus</i>	Vine	Invasive	8
Northern Spicebush	<i>Lindera benzoin</i>	Shrub/Tree	Native	6
White Ash	<i>Fraxinus americana</i>	Tree	Native	6
Japanese Honeysuckle	<i>Lonicera japonica</i>	Vine	Invasive	5
Wineberry	<i>Rubus phoenicolasius</i>	Shrub	Invasive	5
American Hornbeam	<i>Carpinus caroliniana</i>	Shrub/Tree	Native	4
Hophornbeam	<i>Ostrya virginiana</i>	Shrub/Tree	Native	4
Multiflora Rose	<i>Rosa multiflora</i>	Shrub/Vine	Invasive	4
Black Cherry	<i>Prunus serotina</i>	Shrub/Tree	Native	3
Chinese Privet	<i>Ligustrum sinense</i>	Shrub/Tree	Invasive	3
Tuplip Poplar	<i>Liriodendron tulipifera</i>	Tree	Native	3
American Elm	<i>Ulmus americana</i>	Tree	Native	2
Autumn Olive	<i>Elaeagnus umbellata</i>	Shrub	Invasive	2
Black Oak	<i>Quercus velutina</i>	Tree	Native	1
Blackberry	<i>Rubus sp. (not Wineberry)</i>	Shrub	Uncertain	1
Blackgum	<i>Nyssa sylvatica</i>	Tree	Native	1
Boxelder	<i>Acer negundo</i>	Tree	Native	1
Common Hackberry	<i>Celtis occidentalis</i>	Shrub/Tree	Native	1
Coralberry	<i>Symphoricarpos orbiculatus</i>	Shrub	Uncertain	1
Eastern Redcedar	<i>Juniperus virginiana</i>	Tree	Native	1
Elm	<i>Ulmus sp.</i>	Tree	Uncertain	1
Flowering Dogwood	<i>Cornus florida</i>	Shrub/Tree	Native	1
Green Ash	<i>Fraxinus pennsylvanica</i>	Tree	Native	1
Highbush Blueberry	<i>Vaccinium corymbosum</i>	Shrub	Native	1
Paper Mulberry	<i>Broussonetia papyrifera</i>	Tree	Introduced	1
Sassafras	<i>Sassafras albidium</i>	Shrub/Tree	Native	1
Sourwood	<i>Oxydendrum arboreum</i>	Shrub/Tree	Native	1
Tree of Heaven	<i>Ailanthus altissima</i>	Tree	Invasive	1



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SAPLINGS SPECIES LIST: EXTERIOR PLOTS

Common Name	Latin Name	Habit	Status	Occurrence
Multiflora Rose	<i>Rosa multiflora</i>	Shrub/Vine	Invasive	7
Chinese Privet	<i>Ligustrum sinense</i>	Shrub/Tree	Invasive	4
Japanese Barberry	<i>Berberis thunbergii</i>	Shrub	Invasive	4
American Hornbeam	<i>Carpinus caroliniana</i>	Shrub/Tree	Native	2
Oriental Bittersweet	<i>Celastrus orbiculatus</i>	Vine	Invasive	2
Wineberry	<i>Rubus phoenicolasius</i>	Shrub	Invasive	2
American Beech	<i>Fagus grandifolia</i>	Tree	Native	1
Autumn Olive	<i>Elaeagnus umbellata</i>	Shrub	Invasive	1

INVASIVES SPECIES LIST: INTERIOR PLOTS

Common Name	Latin Name	Habit	Status	Occurrence
Japanese Stiltgrass	<i>Microstegium vimineum</i>	Graminoid	Invasive	9
English Ivy	<i>Hedera helix</i>	Vine	Invasive	2

INVASIVES SPECIES LIST: EXTERIOR PLOTS

Common Name	Latin Name	Habit	Status	Occurrence
Japanese Stiltgrass	<i>Microstegium vimineum</i>	Graminoid	Invasive	8
Garlic Mustard	<i>Alliaria petiolata</i>	Forb	Invasive	1



TAXA

Seedlings and Saplings:

Code	Latin	Common	Status	Habit
ACNE2	<i>Acer negundo</i>	Boxelder	Native	Tree
ACRU	<i>Acer rubrum</i>	Red Maple	Native	Tree
AIAL	<i>Ailanthus altissima</i>	Tree of Heaven	Invasive	Tree
ASTR	<i>Asimina triloba</i>	Pawpaw	Native	Shrub/Tree
BETH	<i>Berberis thunbergii</i>	Japanese Barberry	Invasive	Shrub
BRPA4	<i>Broussonetia papyrifera</i>	Paper Mulberry	Introduced	Tree
CACA18	<i>Carpinus caroliniana</i>	American Hornbeam	Native	Shrub/Tree
CAGL8	<i>Carya glabra</i>	Pignut Hickory	Native	Tree
CARYA	<i>Carya sp.</i>	Hickory	Native	Tree
CECA4	<i>Cercis canadensis</i>	Eastern Redbud	Native	Shrub/Tree
CEOC	<i>Celtis occidentalis</i>	Common Hackberry	Native	Shrub/Tree
CEOR7	<i>Celastrus orbiculatus</i>	Oriental Bittersweet	Invasive	Vine
COFL2	<i>Cornus florida</i>	Flowering Dogwood	Native	Shrub/Tree
ELUM	<i>Elaeagnus umbellata</i>	Autumn Olive	Invasive	Shrub
EUFO5	<i>Euonymus fortunei</i>	Winter Creeper	Invasive	Shrub/Vine
FAGR	<i>Fagus grandifolia</i>	American Beech	Native	Tree
FRAM2	<i>Fraxinus americana</i>	White Ash	Native	Tree
FRPE	<i>Fraxinus pennsylvanica</i>	Green Ash	Native	Tree
JUVI	<i>Juniperus virginiana</i>	Eastern Redcedar	Native	Tree
LIBE3	<i>Lindera benzoin</i>	Northern Spicebush	Native	Shrub/Tree
LISI	<i>Ligustrum sinense</i>	Chinese Privet	Invasive	Shrub/Tree
LITU	<i>Liriodendron tulipifera</i>	Tuplip Poplar	Native	Tree
LOJA	<i>Lonicera japonica</i>	Japanese Honeysuckle	Invasive	Vine
MOAL	<i>Morus alba</i>	White Mulberry	Introduced	Shrub/Tree
NYSY	<i>Nyssa sylvatica</i>	Blackgum	Native	Tree
OSVI	<i>Ostrya virginiana</i>	Hophornbeam	Native	Shrub/Tree
OXAR	<i>Oxydendrum arboreum</i>	Sourwood	Native	Shrub/Tree
PAQU2	<i>Parthenocissus quinquefolia</i>	Virginia Creeper	Native	Vine
PRAV	<i>Prunus avium</i>	Sweet Cherry	Introduced	Tree
PRUNU	<i>Prunus sp.</i>	Plum	Uncertain	Shrub/Tree
PRSE2	<i>Prunus serotina</i>	Black Cherry	Native	Shrub/Tree
QUERC	<i>Quercus sp.</i>	Oak	Uncertain	Tree
QUAL	<i>Quercus alba</i>	White Oak	Native	Tree
QURU	<i>Quercus rubra</i>	Red Oak	Native	Tree
QUVE	<i>Quercus velutina</i>	Black Oak	Native	Tree
ROMU	<i>Rosa multiflora</i>	Multiflora Rose	Invasive	Shrub/Vine



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RUBUS	<i>Rubus sp. (not Wineberry)</i>	Blackberry	Uncertain	Shrub
RUPH	<i>Rubus phoenicolasius</i>	Wineberry	Invasive	Shrub
SAAL5	<i>Sassafras albidium</i>	Sassafras	Native	Shrub/Tree
SMRO	<i>Smilax rotundifolia</i>	Greenbrier	Native	Shrub/Vine
SYOR	<i>Symphoricarpos orbiculatus</i>	Coralberry	Uncertain	Shrub
TORA2	<i>Toxicodendron radicans</i>	Eastern Poison Ivy	Native	Shrub/Vine
ULMUS	<i>Ulmus sp.</i>	Elm	Uncertain	Tree
ULAM	<i>Ulmus americana</i>	American Elm	Native	Tree
ULRU	<i>Ulmus rubra</i>	Slippery Elm	Native	Tree
VACO	<i>Vaccinium corymbosum</i>	Highbush Blueberry	Native	Shrub
VIBUR	<i>Viburnum sp.</i>	Viburnum	Uncertain	Shrub/Tree
VILE	<i>Viburnum lentago</i>	Nannyberry	Native	Shrub/Tree
VIPR	<i>Viburnum prunifolium</i>	Black Haw	Native	Shrub/Tree
VITIS	<i>Vitis spp.</i>	Wild Grape	Native	Vine

Invasive Plants:

Code	Latin	Common	Status	Habit
ALPE4	<i>Alliaria petiolata</i>	Garlic Mustard	Invasive	Forb
HEHE	<i>Hedera helix</i>	English Ivy	Invasive	Vine
MIVI	<i>Microstegium vimineum</i>	Japanese Stiltgrass	Invasive	Graminoid
OPHI	<i>Oplismenus hirtellus</i>	Wavy-Leaf Basketgrass	Invasive	Graminoid
PEPE35	<i>Persicaria perfoliata</i>	Mile-A-Minute	Invasive	Vine