

**FINAL REPORT**

**A Vascular Plant Inventory for Four Parks of the  
National Capital Network**

by

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### *Report and accompanying written and digital data*

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# **1. FINAL REPORT**

## **Abstract**

The Inventory and Monitoring Program of the National Park Service has a goal of documenting at least 90% of all species supported by each National Park. Towards this goal, we conducted a vascular plant inventory at four National Parks in the National Capital Region: Antietam National Battlefield (ANTI), Monocacy National Battlefield (MONO), Wolf Trap Farm Park (WOTR), and portions of Rock Creek Park (ROCR; Palisades and Glover Archbold). Plot sampling protocols developed by the North Carolina Vegetation Survey combined with walk-throughs were used to survey vegetation. Surveys were conducted from spring to fall in 2003 and 2004. We documented 529 species at ANTI, 438 at MONO, 197 at WOTR and 187 at ROCR. Species lists were carefully reviewed. A total of 156 collected vouchers were mounted for archiving. Species accumulation curves and Jackknife estimates suggest that more than 90% of all species were documented at each park.

## **Introduction**

Basic ecological information is still lacking for many of the Capital Region's National Parks. However, such information is crucial in documenting trends in the flora and fauna, such as changes in species distributions or non-native species invasions, and in understanding and maintaining the natural goods and services National Parks can provide. Therefore, the primary goal of this project was to conduct an inventory of vascular plants for Antietam National Battlefield, Monocacy National Battlefield, Wolf Trap Farm Park, and portions of Rock Creek Park. In doing so, the inventory provides park managers within the network, NPS policy-makers, and the public with scientifically sound information on the nature and status of the vascular plants within the three selected parks. Specifically, the objectives of the vascular plant inventories were:

1. to document through existing, verifiable data and scientifically sound field investigations the presence of at least 90% of vascular plant species in Antietam National Battlefield, Monocacy National Battlefield, Wolf Trap Farm Park, and the Palisades and Glover Archbold portions of Rock Creek Park (ROCR); and
2. to describe species richness of phylogenetic groups that have been underrepresented in previous inventories, such as Cyperaceae and Poaceae.

To accomplish these objectives, we used a combination of plot inventories and walk-throughs to document locally common and rare species in a diversity of habitats.

Vascular plant surveys are needed for Antietam National Battlefield (ANTI), Monocacy National Battlefield (MONO), Wolf Trap Farm Park (WOTR) and the Palisades and Glover Archbold portions of Rock Creek Park (ROCR). These parks contain a diversity of habitat types, ranging from relatively pristine to disturbed lands, and support several rare, threatened and endangered vascular plant species (Heritage & Biodiversity

Conservation Program 1995, 1997, 1998). While vascular plant inventories have already been conducted for ANTI and MONO by biologists with the Maryland Department of Natural Resources Heritage & Biodiversity Conservation Program, the focus of these inventories was on rare, threatened, and endangered species and on unique habitat types, such as limestone woods. The current inventory provides a balance to these efforts by directing inventory efforts towards habitats and groups of vascular plant species underrepresented in past efforts. By doing so, a comprehensive inventory of vascular plants was established that contributes to the National Capital Region's (NCN) primary goal of documenting 90% of all vascular plants in each of the NCN's parks.

### ***Antietam National Battlefield***

ANTI is managed as a cultural resource to commemorate a famous Civil War battle. However, the park is also an important ecological resource, providing a diversity of habitats that can potentially support a high number of species and supply important ecosystem services to humans, such as cleaning the water supply for human consumption, recharging ground-water, and providing recreational enjoyment. Some of the most noteworthy natural features are 1. the highly diverse limestone forest (Snively Ford Woods) that supports several rare, threatened or endangered species, 2. karsts and caves, 3. several springs and ephemeral streams throughout the park, and 4. a relatively extensive riparian forest along Antietam Creek. Antietam Creek is a tributary to the Potomac River, which flows into the Chesapeake Bay. Because riparian forests can decrease nutrient and sediment input to streams and rivers, the riparian forests at ANTI are valuable in enhancing the water quality of the Potomac watershed.

Several inventories have been conducted at ANTI, including 1. a wildflower inventory along Snively Ford Trail (National Park Service brochure); 2. a vascular plant inventory of Snively Ford Woods interior and edge (Langdon 1985); 3. a walk-through inventory by the Maryland Department of Natural Resources (Heritage & Biodiversity Conservation Programs 1997) directed predominantly at the interior of Snively Ford Woods and rare, threatened, and endangered species; and 4. a walk-through inventory of all habitats by C. Lea (National Park Service *unpublished data*) in 2002 in an effort to create a digital map of vegetation types. The 1997 inventory documented 59 woody species, including 9 non-native species, and 236 herbaceous species, including 58 non-native species, that are or are potentially invasive. Seven species of concern were observed.

### ***Monocacy National Battlefield***

Similar to ANTI, MONO is also primarily managed as a cultural resource; however its natural resource is equally fascinating and important to understand from a conservation/protection interest. Of interest is especially 1. the diverse limestone woods (Brooks Hill), 2. several streams (ephemeral and perennial) throughout the property, and 3. riparian forests along Bush Creek and the Monocacy River. Similar to Antietam Creek, the Monocacy is a tributary to the Potomac River; thus, riparian forests are important in enhancing the water quality of the streams flowing through and out of MONO.

Several inventories have been conducted at MONO, including 1. walk-through inventories by the Maryland Department of Natural Resources (Motivans 1995, Heritage & Biodiversity Conservation Programs 1998) directed at the Bush Creek tract and at the

limestone and floodplain woods of Brooks Hill, respectively, and 2. a walk-through inventory of all habitats by C. Lea (National Park Service *unpublished data*) in 2002 in an effort to create a digital vegetation map. The 1995 inventory observed 53 species (11 non-native) in a field edge plant community, 71 species (5 non-native) in an upland forest plant community, 24 species (4 non-native) in a floodplain/riparian community, and 18 species (4 non-native) in a scour bar community. The 1998 inventory documented 46 woody species (5 non-native) and 172 herbaceous species (43 non-native) in the limestone forest and floodplain habitats alone. The inventory also documented 15 woody species (6 non-native) and 13 herbaceous species (6 non-native) at field edges and along fence rows; however, many of the graminoid species were lumped. An additional 18 woody and herbaceous species were documented in a unique and small plant community at the edges of a rock scree. Eight species of concern were found in the habitats inventoried.

### ***Wolf Trap Farm Park***

WOTR is the smallest of the four parks for which natural resources are the least known. Its 53 ha are managed for the performing arts and are comprised of rolling hills and woods as well as a performing arts stage.

### ***Rock Creek Park***

Rock Creek Park is located in metropolitan Washington DC and is therefore heavily impacted by anthropogenic activities and the growth of invasive non-native plants. Palisades Park supports 55 acres of deciduous forest, lawn and successional meadow. Glover Archbold Park, including Battery Kemble, supports 183 acres of deciduous forest, successional meadow and a riparian zone along Foundry Branch, which is a stream that traverses the park along its long axis. Rock Creek Park has been intensively sampled for vascular vegetation. A detailed vegetation map has been created and 20x20m plots have been surveyed throughout the park. The flora is therefore relatively well known but managers are concerned that rare, threatened and endangered species may have been overlooked.

## **Methods**

### ***Plot placement***

Before the project began, we stratified ANTI and MONO into two general habitat types, forested upland habitat and habitat associated with streams and ponds. Both habitat types ranged from severely disturbed (e.g., woodlots surrounded by agriculture, grazed streams, plowed fields) to pristine (e.g., larger tracks of interior forest such as Snavelly Ford Woods at ANTI and Triangle Woods at MONO). Agricultural fields were not surveyed except in wet depressions and along streams. Using digital orthophotos and digital stream and topographical layers, we randomly picked, using ArcView, 102 locations for plots at ANTI and 70 plots at MONO. Some of these plots were not sampled because a) the plots were placed in scenic easements not under NPS ownership; b) the habitat or vegetation was destroyed, as was the case for some plots placed along streams in plowed agricultural fields or for plots that were placed in areas treated by the NPS invasive plant management team; and c) some plots were redundant and were taken out to allow more

time for walk-throughs. We sampled 78 plots at ANTI (40 in 2003 and 38 in 2004) and 50 plots at MONO (33 in 2003 and 17 in 2004). Plots from 2003 were resampled in 2004 to identify previously flagged species. Plot locations for ANTI and MONO can be found in Figures 1 and 2, respectively.

**Figure 1.** Plot locations at Antietam National Battlefield. Each plot is associated with two dots representing beginning and end of the plot centerline. Yellow represents upland habitats plots, green relatively pristine habitats associated with streams, and red agricultural areas next to streams.

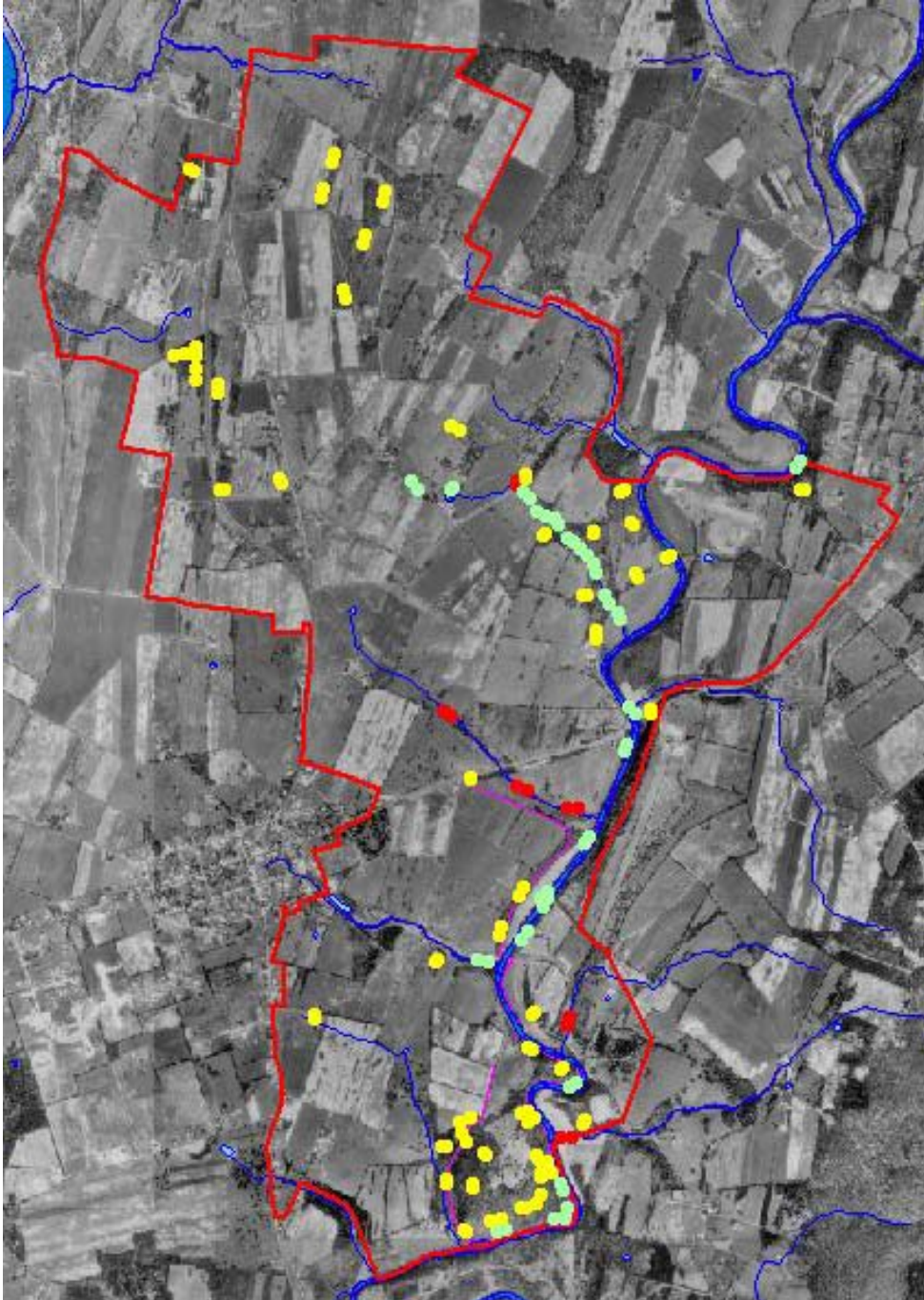
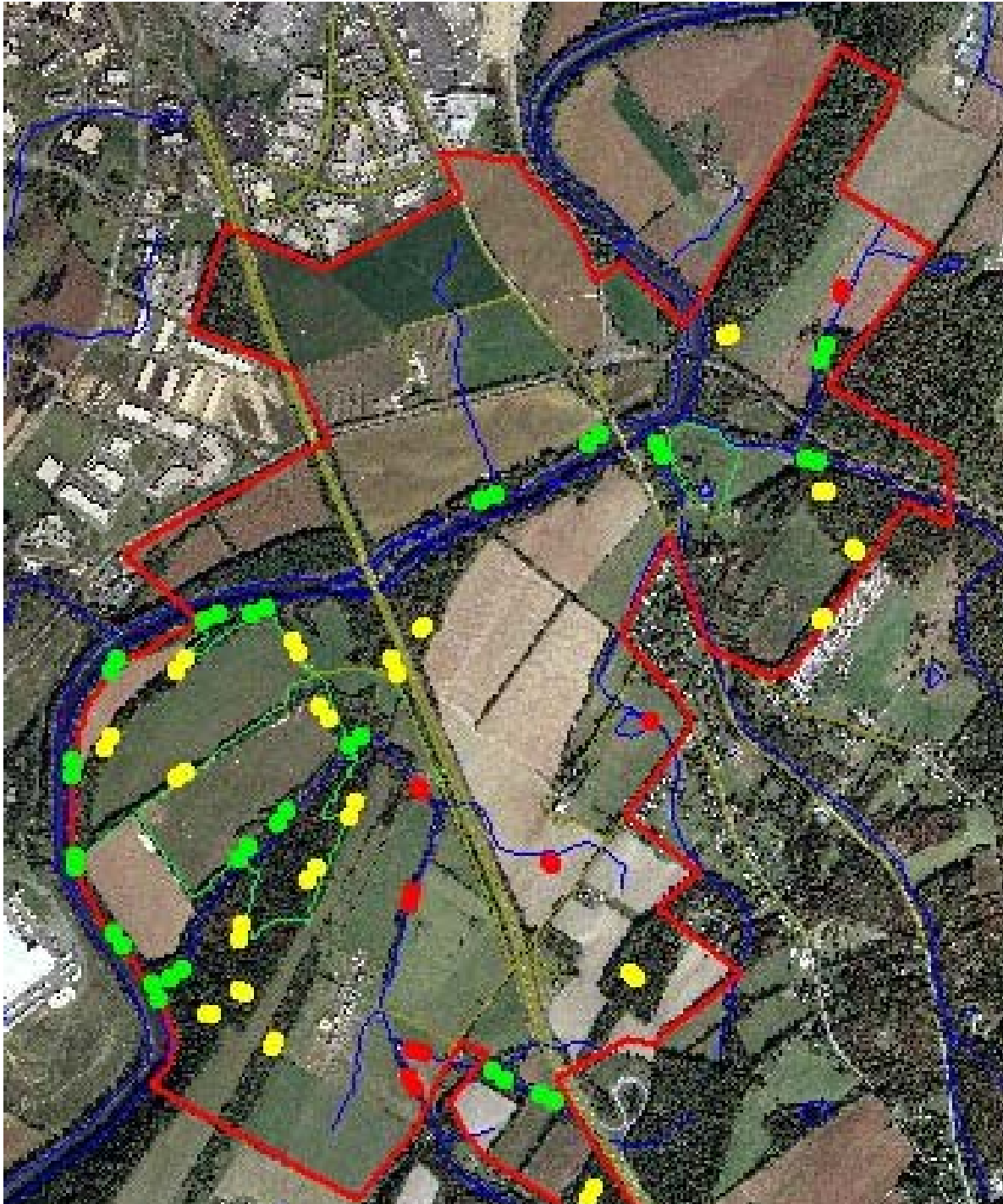


**Figure 2.** Plot locations at Monocacy National Battlefield. Each plot is associated with two dots representing beginning and end of the plot centerline. Yellow represents upland habitats plots, green relatively pristine habitats associated with streams, and red agricultural areas next to streams.



Plots at WOTR and the Palisades and Glover Archbold portions of ROCR were placed in representative habitats of the park. We used a map of WOTR to place 5 plots in upland and wet areas. The vegetation map developed and available for ROCR was used to place 4 plots in representative vegetative communities. Only four plots were inventoried to place greater emphasis on walk-throughs, a preference voiced by the natural resources manager of ROCR. Digital maps showing habitat layers and plot locations are not available for WOTR and ROCR and are therefore not included in this report.

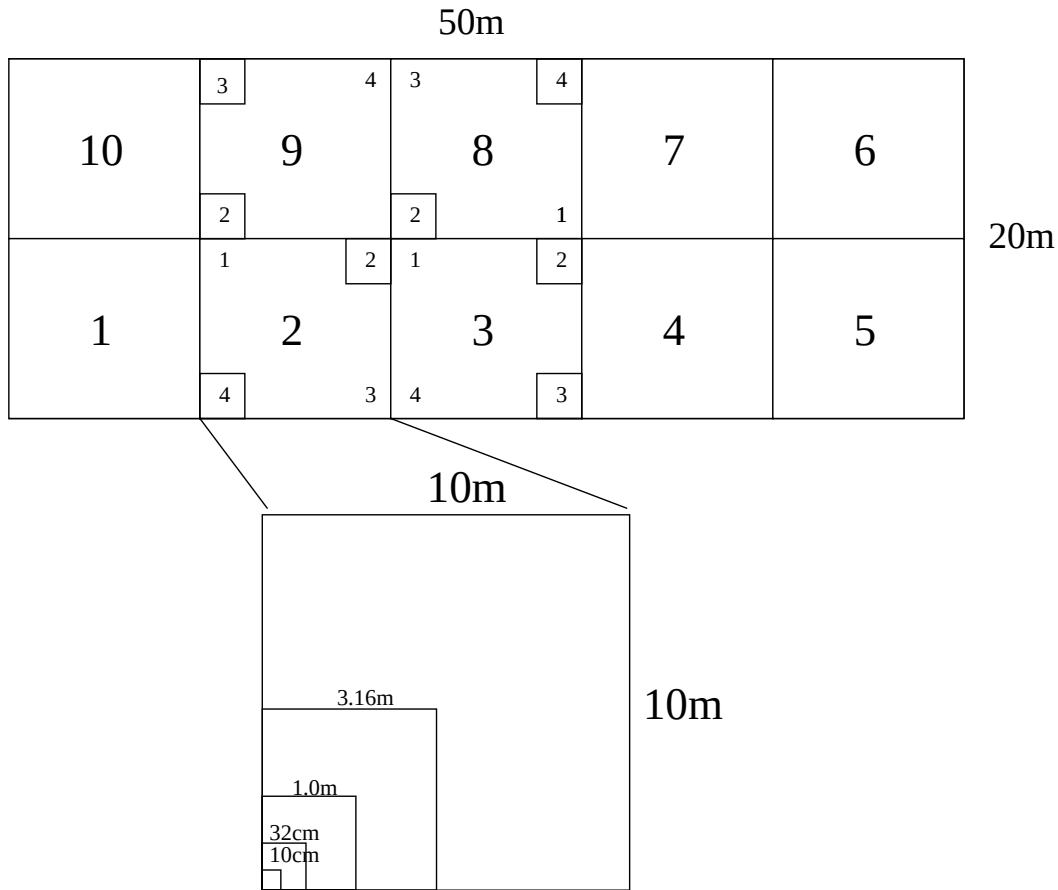
### ***Sampling framework***

A scientifically-sound sampling framework is crucial in understanding the distribution and abundance of vascular plants. Specifically, we established a sampling protocol that allowed us to document at least 90% of vascular plant species in each park. This was accomplished by sampling at various spatial scales within each major habitat type (Peet et al. 1998) and then using species-area curves to evaluate completeness of the inventories in different habitat types and in every park. We also placed special emphasis on graminoid communities because this group of species is typically species rich, but is often undersampled in inventories. While rare, threatened or endangered species were noted during all parts of the inventory, a directed and intensive search for these species was not conducted owing to previous excellent efforts in documenting such species at ANTI and MONO. We noted the presence of non-native species during all parts of the inventory, but did not conduct a special inventory on this group of species owing to ongoing efforts by NPS's Exotic Plant Management Team.

We adopted the vascular plant sampling protocol employed by the North Carolina Vegetation Survey (Peet et al. 1998). This method is highly effective because it is transferable between vegetation types, is flexible, scale transgressive, appropriate for long-term studies, compatible with other methodologies (e.g., Whittaker 1960, Braun-Blanquet 1964, Daubenmire 1968), and is easy to learn. It is now widely used by the U.S.D.A Forest Service and The Nature Conservancy (Peet et al. 1998).

The sampling unit was a 10X10m (0.01ha) quadrat. Multiple quadrats were combined to form a large, more representative sample area. Typically, 10 quadrats were placed in a 20 X 50m rectangle, representing a 0.1ha homogeneous area (Figure 3). Four of the 10 quadrats were intensively sampled by establishing nested subquadrats: 0.1 X 0.1m (0.01m<sup>2</sup>), 0.32 X 0.32m (0.1m<sup>2</sup>), 1.0 X 1.0m (1m<sup>2</sup>), 3.16 X 3.16 m (10m<sup>2</sup>). Nested subquadrats were placed in two corners per intensively sampled quadrat, where each nested subquadrat shares the same corner (Figure 3). Presence of each species was recorded for each subquadrat, quadrat, and sample area. Surveys were alternated among parks with no more than 10 days spent continuously at one park.

**Figure 3.** Sampling design adopted from Peet et al. (1998)



The corners of each module and the entire plot were temporarily marked with flags until project completion. Some agricultural plots (4) were not marked with flags because plowing or mowing would have frequently disturbed flags. The beginning and end of each flagged plot were georeferences at the centerline using a highly accurate global positioning system unit (Trimble). Elevation was recorded at the same time. Coordinates were differentially corrected to increase precision and accuracy. Slope, aspect, and orientation (compass direction of the center line standing at the beginning of the plot and looking towards the end) of each plot were recorded using compass and clinometer.

Walk-throughs were also conducted to document species richness not captured by focusing on plots. Walkthroughs were conducted every day when walking between plots; however, full-day walkthroughs were also conducted several times during the field season 2004.

### ***Data collection and handling***

We transferred field data first into an Excel spreadsheet and then into Access spreadsheets for queries. All species identifications were linked to species-specific numbers (TSN). We checked for correct spelling and for synonym problems (only names accepted by USDA were used, except for recent changes in *Carex* nomenclature that are incorrect in ITIS) and identified all duplicate identifications within a plot. The correctness of species ids was checked throughout the field seasons using collected vouchers or revisiting flagged species in the field. Chris Frye, Maryland state botanist, reviewed all species lists at completion of the inventory.

Data collection and handling followed procedures developed by the Sierra Nevada Network National Park Service (2001) and focussed on the following: 1. building relatedness among data sets through standardized field forms, site and event codes, and habitat measures; 2. ensuring that all important field data are documented using appropriate metadata standards; 3. assuring accurate implementation of appropriate sampling methods and data collection protocols; 4. establishing measurable minimum standards for collected data; and 5. independent verification of data transcription.

Standardized field forms were used to ensure compatibility among data sets for all inventories in the four parks. Standardized event and site codes were developed and used throughout the study. A standardized habitat worksheet documented the different habitat strata encountered during the inventories. Field data sheets showing the raw data are included in the final report.

### ***Data verification and accuracy assessment***

Data verification is the process of comparing digital data in databases with the original field form data. All investigators were required to complete quality control assessments that compare a representative sub-sample of data on field forms to the digital data entered from the field forms. Quality control assessments were done in triplicate to ensure accuracy of the data transcription. Copies of all field data sheets with a digital data dictionary describing individual fields are provided.

Another source of error is incorrect field interpretation. To ensure identification accuracy, experts in identifying particularly challenging groups of species, such as *Carex*, *Poa*, and *Bromus*, validated voucher specimens for accuracy. Prior to both field seasons, Chris Frye (state botanist, Maryland Department of Natural Resources) instructed all project personnel on grass and sedge identification in the lab and the field and proper collection and preservation of vouchers. The National Arboretum accepted to be the final depository of all vouchers (K. Conrad, *personal communication*).

### ***Voucher collection and identification***

Vouchers of vascular plant species observed during the surveys are extremely valuable to science because they can document the occurrence of species despite changes in taxonomy, and can contribute to evaluating and monitoring changes in species and

genetic diversity. However, inventories should serve to preserve the integrity of communities rather than adversely affect them. These considerations, along with curatorial costs and storage requirements, were considered in developing the voucher policy for the proposed inventory.

Species that could not be identified on-site were either flagged or collected for later identification. When few individuals of the species were apparent or when flowers were needed for positive identification, species were flagged. Those species that were abundant and easily identified in the field without doubt (e.g., *Rosa multiflora*, *Glechoma heteraceae*, *Alliaria petiolata*, *Duchesnia indica*) were not collected because the field with georeferenced plot locations is the best voucher depository for such species. Common species that were hard to identify in the field but could potentially be identified under a scope (e.g., *Carex* spp.) were collected and pressed. Vouchers that pressed well were later mounted and labeled. Because grasses and sedges are two types of vascular plants that are typically harder to identify, Chris Frye, the Maryland state botanist and a collaborator on the project, offered a two-day workshop at the beginning of each season to focus on grass and sedge identification. He and Dr. Linda Lyon, a faculty at Frostburg State University, also helped throughout the season with particularly hard species.

Voucher preparation followed guidelines outlined in 36 CFR and the Museum Handbook. NPS Management Policies, NPS 77, Natural Resources Management Guidelines, and Director's Order 24 for Museum Collections were also followed for collection of vouchers. Vouchers were processed and stored at the University of Maryland Center for Environmental Science's Appalachian Laboratory (UMCES-AL) and then deposited at the National Arboretum for best storage and curatorial arrangements that will ensure long-term maintenance and access. All vouchers collected on NPS lands, regardless of the final repository, are the property of NPS.

Enough plant material was collected to cover one 11X17 inch herbarium sheet. Roots were taken, disturbing the remaining plants as little as possible. Seedheads were taken when available because many grasses, sedges and rushes are most reliably identified by their inflorescence.

Specimens were protected from drying or wilting before placing them in a plant press. When dry, vouchers were placed in a freezer to minimize invertebrate damage to dried specimens and then placed back into a press.

### ***Data analysis***

The inventory is deemed to be complete when species richness reaches an asymptote as area sampled (or effort) increases (Krebs 1999, Rosenzweig 2000). This is done using species accumulation curves for all the species identified within modules. Number of species within each module, plot, habitat type and park were estimated using first- and second-order Jackknife procedures in PCOrd. These methods take a random subsample of all quadrats surveyed within each vegetation plot and within each habitat to develop measures of variance in species richness among sites (Krebs 1999) and an evaluation of how adequate the sample

size is to capture 90% of all vascular plant species. Species-area curves were also developed for individual plots inventoried in 2003 to evaluate whether size of plots accurately represent the habitat it was placed in. If so, the species-area curve should reach an asymptote at the plot scale.

## Results and Discussion

Species richness in plots represented the species richness of the overall habitat they were placed in well. Species-area curves of individual plots showed an asymptote at the plot scale (Figures 4-6).

**Figure 4.** Species are curves of 4 plots at Antietam National Battlefield placed in areas dominated by agriculture and adjacent to a stream. Note that y-axes differ among plots. Error bars are  $\pm 1$  STE

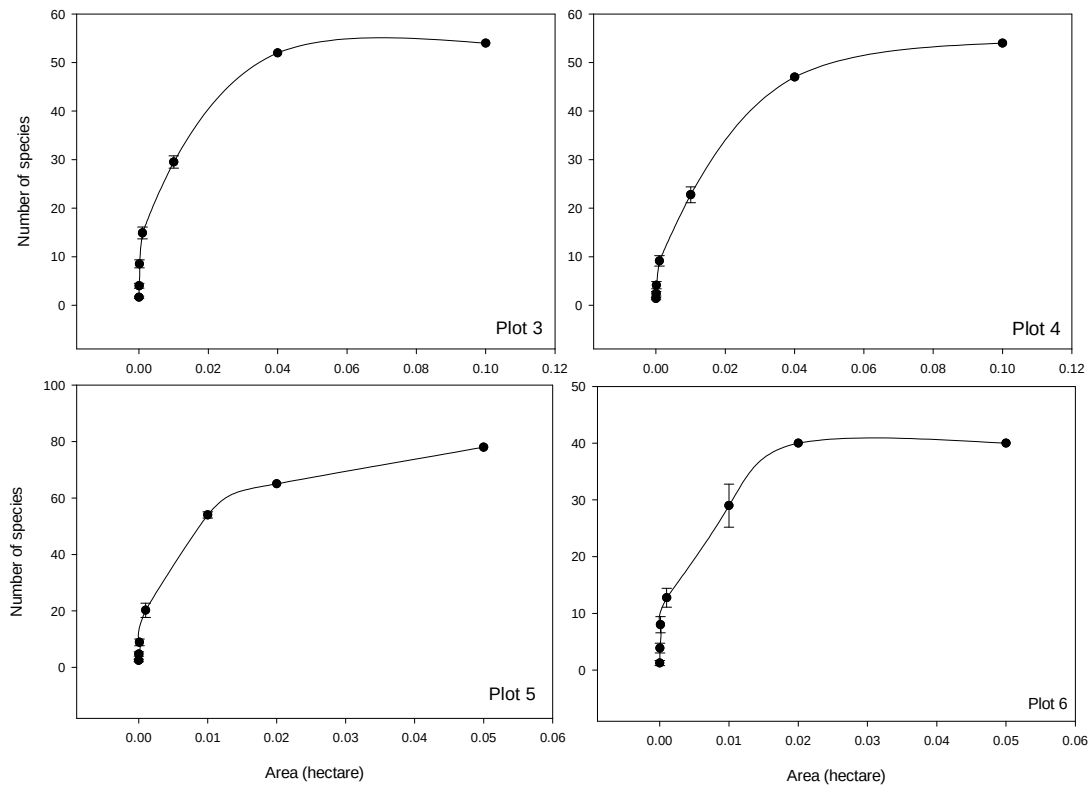


**Figure 5.** Species area curves of plots at Antietam National Battlefield placed in upland habitats in Westwoods. Plot 72 does not show an asymptote because a fallen tree covered half of the intensive modules, effectively changing the homogeneity of the plot. Error bars are  $\pm 1$  STE

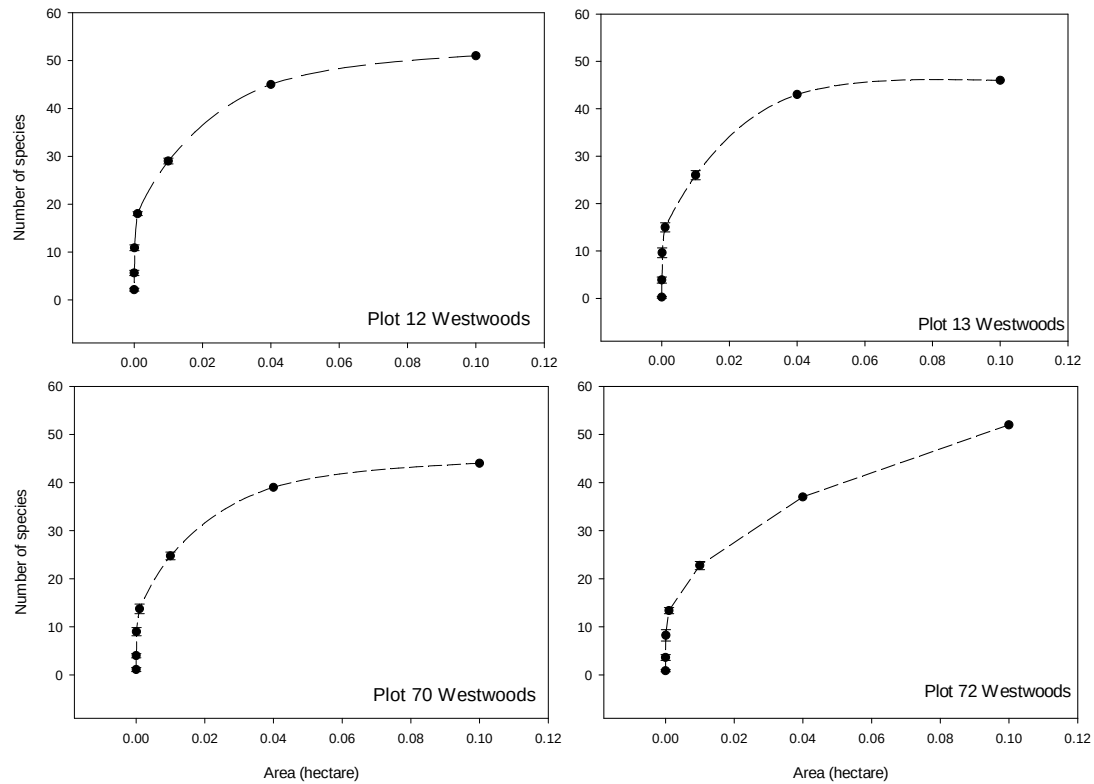
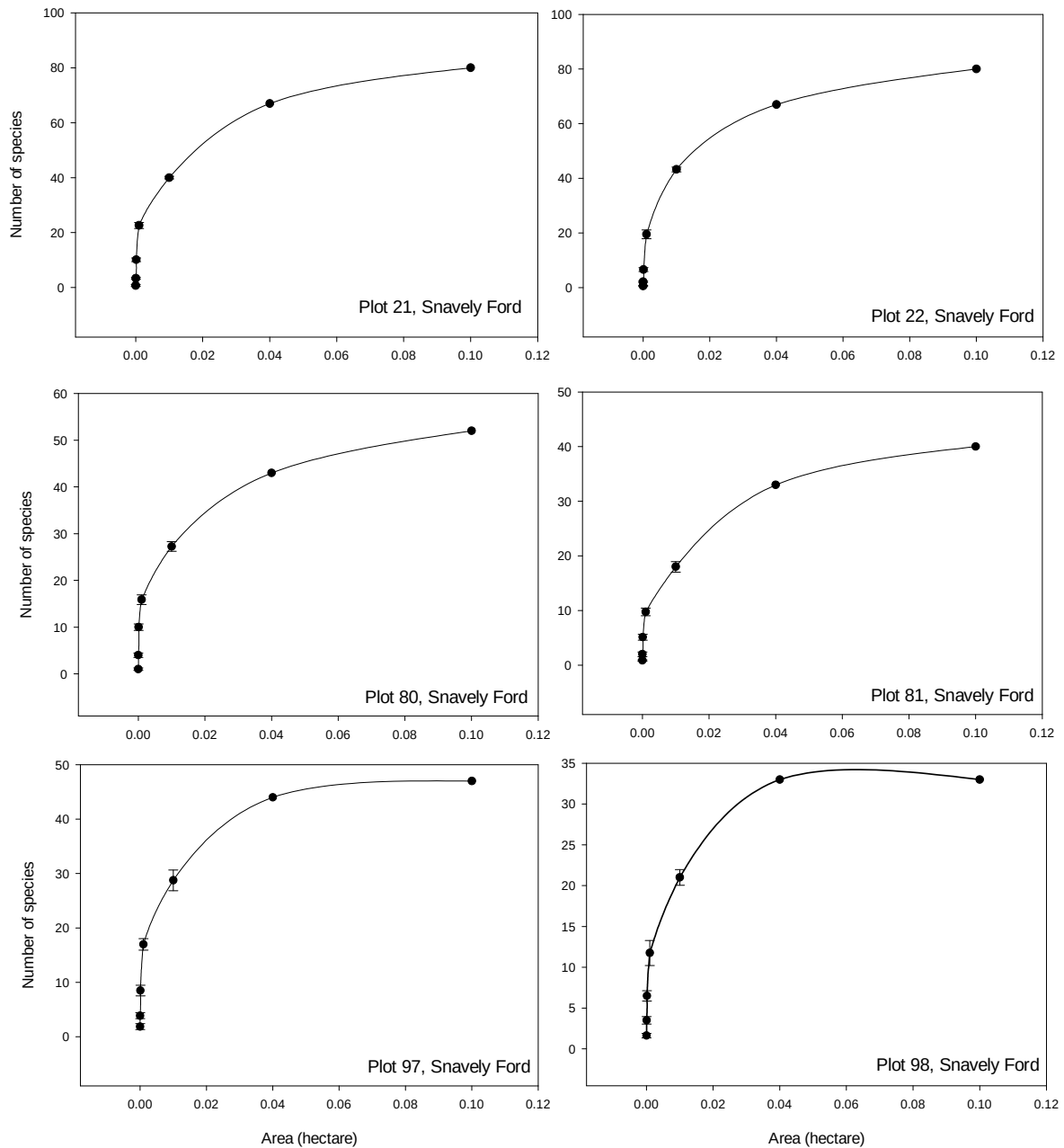


**Figure 6.** Species area curves of plots at Antietam National Battlefield placed in interior forest (plots 21 and 22) of Snavelly Ford Woods and in the floodplain of Antietam Creek (plots 80, 81, 97, and 98) in Snavelly Ford Woods. Note that y-axes differ among plots. Error bars are  $\pm 1$  STE



## Antietam National Battlefield

We identified 529 vascular plant species at ANTI (Table 1 and Appendix 1). Eighty-three percent of the species were found within plot boundaries and the rest (17%) in the vicinity of plots or in walkthroughs. Species accumulation curves (Figure 7) and estimates of total number of species using first and second order jackknife estimates (Table 1) show that the ANTI inventory is more than 90% complete. Across all plots, 91% and 86% of the first and second order jackknife estimates, respectively, were observed within plots. The 92 additional walkthrough species bridge the gap between estimated and observed species richness.

**Figure 7.** Species accumulation curves (“Average number of species”; ascending plot) and estimates of similarity (“Average distance”; descending plot) for species documented in plots at Antietam National Battlefield, Monocacy National Battlefield, Wolf Trap Farm Park and Rock Creek Park. Dotted lines represent confidence intervals. Graphs were generated in PCOrd.

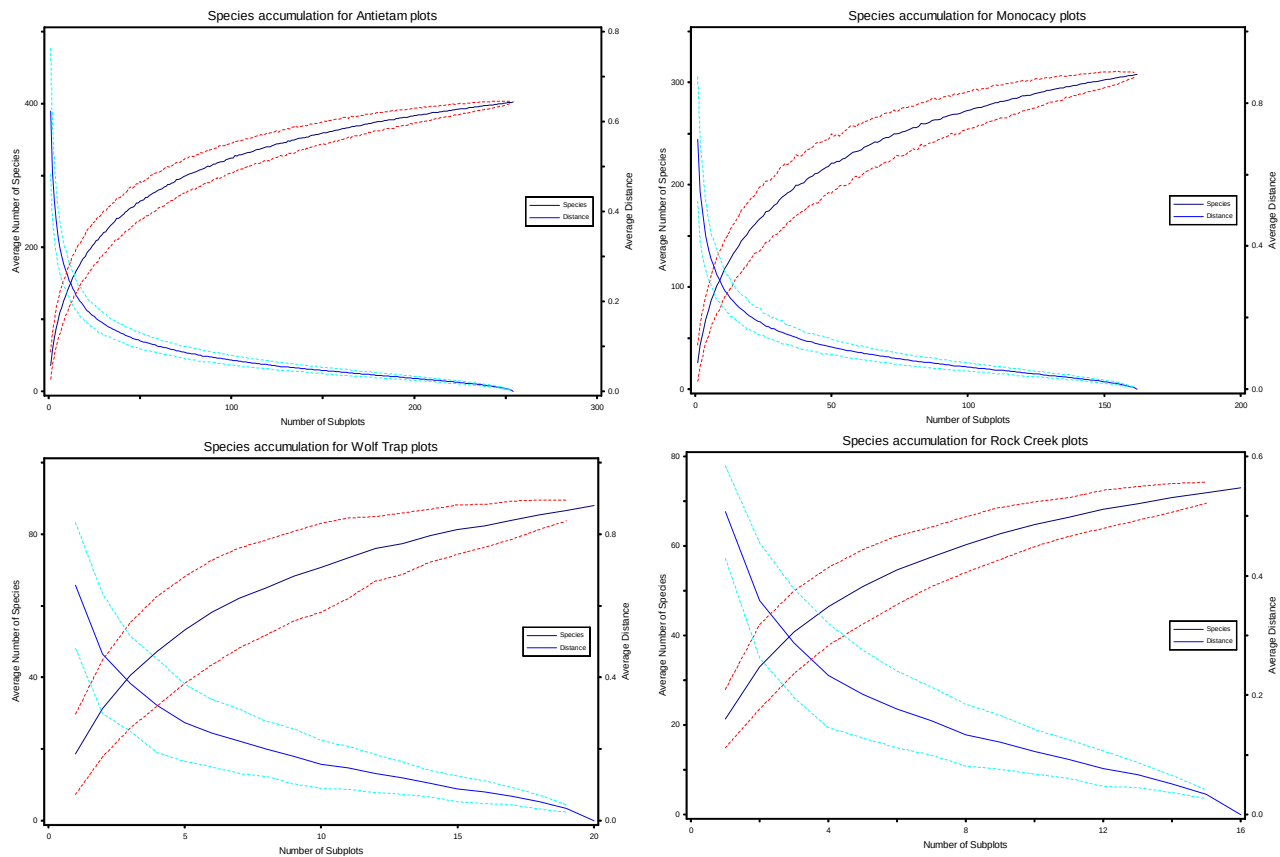


**Table 1.** Summary of results and evaluation of the completeness of the four inventories conducted at Antietam National Battlefield (ANTI), Monocacy National Battlefield (MONO), Wolf Trap Farm Park (WOTR) and the Palisades and Glover Archbold portions of Rock Creek Park (ROCR).

|                                 | ANTI     | MONO     | WOTR                     | ROCR                     |
|---------------------------------|----------|----------|--------------------------|--------------------------|
| # plots inventoried             | 78       | 50       | 5                        | 4                        |
| 2003                            | 40       | 33       | 0                        | 0                        |
| 2004                            | 38       | 17       | 5                        | 4                        |
| ag plots                        | 6        | 12       | 0                        | 0                        |
| upland plots                    | 49       | 20       | 3                        | 4                        |
| riparian plots                  | 23       | 18       | 2                        | 0                        |
| # observed species              | 529      | 438      | 197                      | 187                      |
| all plots                       | 437      | 325      | 86                       | 71                       |
| ag plots                        | 52       | 169      | 0                        | 0                        |
| upland plots                    | 332      | 205      | 71                       | 71                       |
| riparian plots                  | 281      | 186      | 50                       | 0                        |
| walkthroughs                    | 92       | 113      | 111                      | 116                      |
| 1991 inventory <sup>1</sup>     | 47       | 60       | 0                        | 0                        |
| Predicted all plots             |          |          |                          |                          |
| 1 <sup>st</sup> order jackknife | 479      | 378      | 112                      | 89                       |
| 2 <sup>nd</sup> order jackknife | 506      | 403      | 123                      | 95                       |
| Predicted ag                    |          |          |                          |                          |
| 1 <sup>st</sup> order jackknife | 183      | 205      | No analysis <sup>3</sup> | No analysis <sup>3</sup> |
| 2 <sup>nd</sup> order jackknife | 193      | 221      | No analysis <sup>3</sup> | No analysis <sup>3</sup> |
| Predicted upland                |          |          |                          |                          |
| 1 <sup>st</sup> order jackknife | 392      | 233      | No analysis <sup>3</sup> | No analysis <sup>3</sup> |
| 2 <sup>nd</sup> order jackknife | 404      | 242      | No analysis <sup>3</sup> | No analysis <sup>3</sup> |
| Predicted riparian              |          |          |                          |                          |
| 1 <sup>st</sup> order jackknife | 316      | 202      | No analysis <sup>3</sup> | No analysis <sup>3</sup> |
| 2 <sup>nd</sup> order jackknife | 352      | 217      | No analysis <sup>3</sup> | No analysis <sup>3</sup> |
| % complete <sup>2</sup>         |          |          |                          |                          |
| all observed species            | 110, 104 | 116, 109 | 176, 160                 | 210, 197                 |
| all plots                       | 91, 86   | 86, 81   | 77, 70                   | 80, 75                   |
| ag plots                        | 28, 27   | 82, 76   | No analysis <sup>3</sup> | No analysis <sup>3</sup> |
| upland plots                    | 85, 82   | 88, 85   | No analysis <sup>3</sup> | No analysis <sup>3</sup> |
| riparian plots                  | 89, 80   | 92, 86   | No analysis <sup>3</sup> | No analysis <sup>3</sup> |

<sup>1</sup> # species that were not found in the current inventory compared to a previous inventory of rare threatened and endangered species lead by R. Wiegand at ANTI and MONO.

<sup>2</sup> first and second entries in each cell are based on first and second order jackknife estimates, respectively.

<sup>3</sup> Plots were too few to develop separate species accumulation curves on different habitat categories.

When exploring agricultural (plots in agricultural areas next to streams or wet depressions), riparian and upland plots separately, riparian plots appear the most completely inventoried, followed by upland plots and agricultural plots. Species accumulation curves are only reliable when the surveyed areas are relatively homogeneous. This is not the case even when breaking all plots into three general habitat categories (agriculture, riparian, upland). The agriculture habitat type included plowed fields and grazed areas next to streams. These two management regimes support different species. Hence, surveys of the agriculture habitat type appear to be rather incomplete even though weedy species found in those habitat types should be well represented in the inventory.

We compared our species list to a species list developed by Richard Wiegand in the 1997 survey of Snavely Ford Woods (Heritage & Biodiversity Conservation Programs 1997) of rare, threatened and endangered species. We did not document 47 of the 282 species documented by the 1997 inventory owing to differences in survey design, goals, and, perhaps, differences in weather. A rare, threatened and endangered species survey focuses predominantly on unique habitats that support a diversity of species, whereas our survey was broad and encompassed common and rare habitats. Also, our inventory was conducted during two wet years where the lush vegetation or high water of Antietam Creek may have obscured some vegetation. The likelihood of the 47 species still existing at ANTI is very high and the species are therefore included in the final species list (Appendix 1) under a separate “Wiegand” category. This effectively increases the number of vascular plant species found at ANTI to 576 species. NPS may also consider including species found in some of the other recent surveys conducted at ANTI, such as the Chris Lea surveys for vegetation mapping. The NPSpecies list may not be reliable enough in its current form to be consulted.

The most abundant species at ANTI were *Celtis occidentalis* (found in 74 out of 78 plots), *Rosa multiflora* (74 plots), *Lonicera japonica* (74 plots), and *Alliaria petiolata* (74 plots). Three out of these four species are non-native.

No federally rare, threatened or endangered species were documented at ANTI. However, 15 species of concern were documented ranging from State Endangered to present on the State Watchlist for Maryland (Table 2). Specific locations of the species are not included here owing to data sensitivity.

**Table 2.** Species of concern observed at Antietam National Battlefield in 2003 and 2004.

| Species                     | Comments                                                              | Location |
|-----------------------------|-----------------------------------------------------------------------|----------|
| <i>Carex hitchcockiana</i>  | State Endangered. Snively has a very nice population of this species. | 1 plot   |
| <i>Carex molesta</i>        | State Rare (S1).                                                      | 2 plots  |
| <i>Carex sparganioides</i>  | State Rare (S1S2).                                                    | 9 plots  |
| <i>Clematis viorna</i>      | Watchlist.                                                            | 1 plot   |
| <i>Delphinium tricornes</i> | Watchlist.                                                            | 3 plots  |
| <i>Dodecatheon meadia</i>   | Watchlist.                                                            | 1 plot   |
| <i>Erigenia bulbosa</i>     | Watchlist.                                                            | 1 plot   |
| <i>Heracleum maximum</i>    | Watchlist.                                                            | 1 plot   |
| <i>Hybanthus concolor</i>   | Watchlist.                                                            | 2 plots  |
| <i>Hydrastis canadensis</i> | State Threatened. Declining nationally.                               | 5 plots  |
| <i>Juglans cinerea</i>      | Watchlist. Declining nationally.                                      | 3 plots  |
| <i>Liparis loeselii</i>     | Watchlist.                                                            | 1 plot   |
| <i>Scutellaria incana</i>   | Watchlist.                                                            | 1 plot   |
| <i>Scutellaria nervosa</i>  | State Endangered                                                      | 1 plot   |
| <i>Panax quinquefolius</i>  | Watchlist and of special conservation concern in Maryland.            | Walk     |

### Monocacy National Battlefield

We identified 438 species at MONO (Table 1, Appendix 2). 326 species (74%) were inventoried within the boundaries of the 50 plots, 113 species (26%) in the vicinity of the plots and in walkthroughs throughout MONO. A rare, threatened and endangered species inventory of MONO (Heritage & Biodiversity Conservation Programs 1998) found 60 species that we did not find. If those species are added to the MONO species list (Appendix 2), the overall species count for MONO is 498 species. Similar to ANTI, the species found by the 1998 inventory but not by us is likely due to differences in survey design, inventory goals and wet weather in 2003 and 2004. The likelihood of the 60 species still being present at MONO today is high.

Species accumulation curves (Figure 7) and estimates of total number of species using first and second order jackknife estimates (Table 1) show that the MONO inventory is more than 90% complete. Across all plots, 86% and 81% of the first and second order jackknife estimates, respectively, were observed. The 113 additional walkthrough species bridge the gap between estimated and observed species richness.

Similar to the ANTI inventory, riparian plots appear the most completely inventoried, followed by upland plots and agricultural plots (Table 1). The agricultural plots are more completely inventoried at MONO than in ANTI reflecting a greater number of plots placed in agricultural areas and more homogeneous habitat among agricultural areas. Hence, species accumulation curves are more reliable.

The most abundant species at MONO were *Alliaria petiolata* (47 out of 50 plots), *Toxicodendron radicans* (42 plots), *Celtis occidentalis* (41 plots), *Polygonum*

*caespitosum* (41 plots), *Oxalis stricta* (38 plots), and *Parthenocissus quinquefolia* (38 plots). Two of these six species are non-native.

No federally rare, threatened or endangered species were documented at MONO. Only one State Rare species (*Carex molesta*, S1 rank) was documented in a walkthrough. Other species of concern reported by the 1998 inventory (Heritage & Biodiversity Conservation Programs 1998) are likely still present at MONO but were not observed owing to high water in 2003 and 2004 (*Arabis shortii*; State Watchlist) or not visiting specific habitats at specific times of the year (*Erigenia bulbosa*, *Delphinium tricornis*, both on State Watchlist).

### Wolf Trap Farm Park

Because the park is so small and supports a variety of unique habitats, more emphasis was placed on walkthroughs than plot surveys. We identified 197 species at WOTR (Table 1, Appendix 3). Forty-four percent of the species were documented within the boundaries of 5 plots and 56% were observed in walk-throughs. The species accumulation curve developed for all plots at WOTR suggest that the species list developed solely from the plot data is 70-77% complete. Adding the walkthrough species bridges the gap between observed and estimated species richness such that the 90% inventory target was reached. In fact, calculations (Table 1) suggest that more than 100% of the species were found, which, of course, is not possible. This number is an artifact of the low number of plots used to estimate species richness at the park level. Because WOTR supports a variety of habitats, more species were found in walkthroughs than species accumulation curves based on plots could have reliably predicted. Nevertheless, the plot data combined with the walkthroughs suggest that the inventory is indeed thorough and complete.

The most abundant species at WOTR were *Viburnum dentatum* (5 out of 5 plots), *Liriodendron tulipifera* (5 plots), and *Acer rubrum* (5 plots). All of these species are native. In fact, only 32 of the 197 species (16%) were non-native, which is by far the lowest percentage of non-native species in the four surveyed parks (27% non-native species at ANTI and MONO, 26% at ROCR).

No federal or state listed species were documented.

### Palisades and Glover Archbold (Rock Creek Park)

Palisades and Glover Archbold Parks were visited throughout the summer and fall 2004 and in spring 2005 to document species richness throughout the growing season, similar to the surveys conducted at the other three parks. We identified 187 species in the Palisades and Glover Archbold portions of ROCR (Table 1, Appendix 4). Most of the species (62%) were documented in walkthroughs because management of the park requested the use of walkthroughs. The species accumulation curve calculated using the

four sampled plots show that species documented within plot boundaries represent 75-80% of the estimated species richness in the park. Walkthrough species bridges the gap between observed and estimated species richness. Similar to calculations at WOTR, the low number of plots used in the estimation of species richness overestimates completeness of the inventory. Nevertheless, plot data combined with walkthrough data suggest that the inventory is thorough and complete.

The most abundant species at ROCR were *Arisaema triphyllum* (4 out of 4 plots), *Fagus grandifolia* (4 plots), *Hedera helix* (4 plots), *Lindera benzoin* (4 plots), *Liriodendron tulipifera* (4 plots), *Prunus serotina* (4 plots) and *Viburnum dentatum* (4 plots). No federal or state listed species were documented during the survey period.

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Appendix 1. Identity and nativeness of species found at Antietam National Battlefield. Table also includes unique numbers for each species (TSN) and the number of times each species was encountered in 78 inventoried plots (Count). If the species was encountered immediately outside of the plots or in a walk-through, the entry is recorded as “out” or “walk”, respectively. Entries labeled as “Wiegand” are those species not documented in the current inventory but in a previous inventory of vascular plants lead by R. Wiegand (Heritage & Biodiversity Conservation Programs 1997).

| ID | Species                                          | Family        | TSN    | Nativeness | Count   |
|----|--------------------------------------------------|---------------|--------|------------|---------|
| 1  | <i>Abutilon theophrasti</i>                      | Malvaceae     | 21674  | Introduced | Walk    |
| 2  | <i>Acalypha rhomboidea</i>                       | Euphorbiaceae | 28193  | Native     | 7       |
| 3  | <i>Acer negundo</i>                              | Aceraceae     | 28749  | Native     | 70      |
| 4  | <i>Acer nigrum</i>                               | Aceraceae     | 182135 | Native     | 1       |
| 5  | <i>Acer platanoides</i>                          | Aceraceae     | 28755  | Introduced | 7       |
| 6  | <i>Acer rubrum</i>                               | Aceraceae     | 28728  | Native     | 7       |
| 7  | <i>Acer saccharinum</i>                          | Aceraceae     | 28757  | Native     | 7       |
| 8  | <i>Acer saccharum</i>                            | Aceraceae     | 28731  | Native     | 5       |
| 9  | <i>Achillea millefolium</i>                      | Asteraceae    | 35423  | Native     | 4       |
| 10 | <i>Adiantum pedatum</i>                          | Pteridaceae   | 17311  | Native     | 1       |
| 11 | <i>Agastache nepetoides</i>                      | Lamiaceae     | 32443  | Native     | Wiegand |
| 12 | <i>Ageratina altissima</i> var. <i>altissima</i> | Asteraceae    | 182398 | Native     | 41      |
| 13 | <i>Agrimonia gryposepala</i>                     | Rosaceae      | 25095  | Native     | Wiegand |
| 14 | <i>Agrimonia pubescens</i>                       | Rosaceae      | 25099  | Native     | 8       |
| 15 | <i>Agrimonia rostellata</i>                      | Rosaceae      | 25100  | Native     | 7       |
| 16 | <i>Agrostis stolonifera</i>                      | Poaceae       | 40400  | Native     | 3       |
| 17 | <i>Ailanthus altissima</i>                       | Simaroubaceae | 28827  | Introduced | 38      |
| 18 | <i>Alliaria petiolata</i>                        | Brassicaceae  | 184481 | Introduced | 72      |
| 19 | <i>Allium canadense</i>                          | Liliaceae     | 42635  | Native     | 44      |
| 20 | <i>Allium cernuum</i>                            | Liliaceae     | 42721  | Native     | Walk    |
| 21 | <i>Allium tricoccum</i>                          | Liliaceae     | 42672  | Native     | Wiegand |
| 22 | <i>Allium vineale</i>                            | Liliaceae     | 42637  | Introduced | 16      |
| 23 | <i>Alopecurus geniculatus</i>                    | Poaceae       | 40437  | Introduced | 1       |
| 24 | <i>Amaranthus hybridus</i>                       | Amaranthaceae | 20735  | Native     | Wiegand |
| 25 | <i>Ambrosia artemisiifolia</i>                   | Asteraceae    | 36496  | Native     | 25      |
| 26 | <i>Ambrosia trifida</i>                          | Asteraceae    | 36521  | Native     | 2       |
| 27 | <i>Ampelopsis brevipedunculata</i>               | Vitaceae      | 28632  | Introduced | 1       |
| 28 | <i>Amphicarpaea bracteata</i>                    | Fabaceae      | 182067 | Native     | 12      |
| 29 | <i>Anagallis arvensis</i>                        | Primulaceae   | 24043  | Introduced | 2       |
| 30 | <i>Andropogon gerardii</i>                       | Poaceae       | 40462  | Native     | 1       |
| 31 | <i>Anemone virginiana</i>                        | Ranunculaceae | 18451  | Native     | 8       |
| 32 | <i>Antennaria neglecta</i>                       | Asteraceae    | 36745  | Native     | Walk    |
| 33 | <i>Antennaria plantaginifolia</i>                | Asteraceae    | 36717  | Native     | 2       |
| 34 | <i>Anthemis cotula</i>                           | Asteraceae    | 36330  | Introduced | Walk    |
| 35 | <i>Anthoxanthum odoratum</i>                     | Poaceae       | 41395  | Introduced | 2       |
| 36 | <i>Aplectrum hyemale</i>                         | Orchidaceae   | 43489  | Native     | Wiegand |
| 37 | <i>Apocynum cannabinum</i>                       | Apocynaceae   | 30157  | Native     | 7       |
| 38 | <i>Aquilegia canadensis</i>                      | Ranunculaceae | 18730  | Native     | Walk    |
| 39 | <i>Arabis laevigata</i>                          | Brassicaceae  | 22706  | Native     | 4       |

|                                                |                  |        |            |         |
|------------------------------------------------|------------------|--------|------------|---------|
| 40 <i>Arabis lyrata</i>                        | Brassicaceae     | 22672  | Native     | Wiegand |
| 41 <i>Arctium minus</i>                        | Asteraceae       | 36546  | Introduced | 8       |
| 42 <i>Arisaema triphyllum</i>                  | Araceae          | 42525  | Native     | 15      |
| 43 <i>Aristolochia serpentaria</i>             | Aristolochiaceae | 18342  | Native     | 1       |
| 44 <i>Arnoglossum atriplicifolium</i>          | Asteraceae       | 36583  | Native     | 1       |
| 45 <i>Artemisia biennis</i>                    | Asteraceae       | 35451  | Introduced | Walk    |
| 46 <i>Artemisia vulgaris</i>                   | Asteraceae       | 35505  | Introduced | Wiegand |
| 47 <i>Asarum canadense</i>                     | Aristolochiaceae | 18353  | Native     | 17      |
| 48 <i>Asclepias quadrifolia</i>                | Asclepiadaceae   | 30297  | Native     | 1       |
| 49 <i>Asclepias syriaca</i>                    | Asclepiadaceae   | 30310  | Native     | 3       |
| 50 <i>Asclepias tuberosa</i>                   | Asclepiadaceae   | 30313  | Native     | Walk    |
| 51 <i>Asimina triloba</i>                      | Annonaceae       | 18117  | Native     | 35      |
| 52 <i>Asplenium platyneuron</i>                | Aspleniaceae     | 17355  | Native     | 34      |
| 53 <i>Asplenium rhizophyllum</i>               | Aspleniaceae     | 17359  | Native     | 2       |
| 54 <i>Asplenium trichomanes</i>                | Aspleniaceae     | 17364  | Native     | 1       |
| 55 <i>Athyrium filix-femina</i>                | Dryopteridaceae  | 17413  | Native     | 1       |
| 56 <i>Barbarea verna</i>                       | Brassicaceae     | 22743  | Introduced | 1       |
| 57 <i>Barbarea vulgaris</i>                    | Brassicaceae     | 22741  | Introduced | 2       |
| 58 <i>Berberis thunbergii</i>                  | Berberidaceae    | 18835  | Introduced | 23      |
| 59 <i>Betula alleghaniensis</i>                | Betulaceae       | 19481  | Native     | 1       |
| 60 <i>Betula nigra</i>                         | Betulaceae       | 19480  | Native     | 3       |
| 61 <i>Bidens bipinnata</i>                     | Asteraceae       | 500993 | Native     | 5       |
| 62 <i>Bidens connata</i>                       | Asteraceae       | 35718  | Native     | 1       |
| 63 <i>Bidens frondosa</i>                      | Asteraceae       | 35707  | Native     | 9       |
| 64 <i>Boehmeria cylindrica</i>                 | Urticaceae       | 19121  | Native     | 4       |
| 65 <i>Botrychium biternatum</i>                | Ophioglossaceae  | 17175  | Native     | 1       |
| 66 <i>Botrychium dissectum</i>                 | Ophioglossaceae  | 17171  | Native     | 1       |
| 67 <i>Botrychium multifidum</i>                | Ophioglossaceae  | 17187  | Native     | 1       |
| 68 <i>Botrychium virginianum</i>               | Ophioglossaceae  | 17173  | Native     | 12      |
| 69 <i>Brassica nigra</i>                       | Brassicaceae     | 23061  | Introduced | Wiegand |
| 70 <i>Bromus commutatus</i>                    | Poaceae          | 40497  | Introduced | 10      |
| 71 <i>Bromus inermis</i>                       | Poaceae          | 40502  | Introduced | 7       |
| 72 <i>Bromus pubescens</i>                     | Poaceae          | 40514  | Native     | 7       |
| 73 <i>Bromus sterilis</i>                      | Poaceae          | 40522  | Introduced | 17      |
| 74 <i>Bromus tectorum</i>                      | Poaceae          | 40524  | Introduced | 6       |
| 75 <i>Buglossoides arvensis</i>                | Boraginaceae     | 501090 | Introduced | Out     |
| 76 <i>Calystegia sepium</i> ssp. <i>sepium</i> | Convolvulaceae   | 30651  | Introduced | 13      |
| 77 <i>Campanulastrum americanum</i>            | Campanulaceae    | 501172 | Native     | 2       |
| 78 <i>Campsis radicans</i>                     | Bignoniaceae     | 34309  | Native     | 1       |
| 79 <i>Capsella bursa-pastoris</i>              | Brassicaceae     | 22766  | Introduced | Out     |
| 80 <i>Cardamine angustata</i>                  | Brassicaceae     | 22778  | Native     | 3       |
| 81 <i>Cardamine concatenata</i>                | Brassicaceae     | 22787  | Native     | 19      |
| 82 <i>Cardamine parviflora</i>                 | Brassicaceae     | 22806  | Native     | 12      |
| 83 <i>Cardamine pratensis</i>                  | Brassicaceae     | 22773  | Native     | 6       |
| 84 <i>Carduus acanthoides</i>                  | Asteraceae       | 35785  | Introduced | 7       |
| 85 <i>Carduus nutans</i>                       | Asteraceae       | 35787  | Introduced | 4       |
| 86 <i>Carex</i>                                | Cyperaceae       | 39369  | Native     | 2       |
| 87 <i>Carex aggregata</i>                      | Cyperaceae       | 39483  | Native     | 23      |

|                                                   |                 |                   |         |
|---------------------------------------------------|-----------------|-------------------|---------|
| 88 <i>Carex albicans</i>                          | Cyperaceae      | 565042 Native     | 1       |
| 89 <i>Carex amphibola</i>                         | Cyperaceae      | 39491 Native      | 26      |
| 90 <i>Carex blanda</i>                            | Cyperaceae      | 39379 Native      | 50      |
| 91 <i>Carex cephalophora</i>                      | Cyperaceae      | 39383 Native      | 9       |
| 92 <i>Carex communis</i>                          | Cyperaceae      | 39550 Native      | 1       |
| 93 <i>Carex conjuncta</i>                         | Cyperaceae      | 39555 Native      | 6       |
| 94 <i>Carex digitalis</i>                         | Cyperaceae      | 39576 Native      | 4       |
| 95 <i>Carex glaucoidea</i>                        | Cyperaceae      | 39616 Native      | Walk    |
| 96 <i>Carex grisea</i>                            | Cyperaceae      | 510206 Native     | 10      |
| 97 <i>Carex hirsutella</i>                        | Cyperaceae      | 39636 Native      | 2       |
| 98 <i>Carex hitchcockiana</i>                     | Cyperaceae      | 39640 Native      | 1       |
| 99 <i>Carex jamesii</i>                           | Cyperaceae      | 39404 Native      | 1       |
| 100 <i>Carex laxiflora</i>                        | Cyperaceae      | 39662 Native      | 5       |
| 101 <i>Carex molesta</i>                          | Cyperaceae      | 39704 Native      | 2       |
| 102 <i>Carex muehlenbergii</i>                    | Cyperaceae      | 39423 Native      | 5       |
| 103 <i>Carex normalis</i>                         | Cyperaceae      | 39720 Native      | Walk    |
| 104 <i>Carex oligocarpa</i>                       | Cyperaceae      | 39728 Native      | 9       |
| 105 <i>Carex pennsylvanica</i>                    | Cyperaceae      | 39749 Native      | 1       |
| 106 <i>Carex platyphylla</i>                      | Cyperaceae      | 39761 Native      | 4       |
| 107 <i>Carex radiata</i>                          | Cyperaceae      | 39778 Native      | 1       |
| 108 <i>Carex retroflexa</i>                       | Cyperaceae      | 39782 Native      | 1       |
| 109 <i>Carex rosea</i>                            | Cyperaceae      | 39429 Native      | 16      |
| 110 <i>Carex sparganioides</i>                    | Cyperaceae      | 39808 Native      | 9       |
| 111 <i>Carex spicata</i>                          | Cyperaceae      | 39812 Introduced  | Walk    |
| 112 <i>Carex stipata</i>                          | Cyperaceae      | 39434 Native      | 2       |
| 113 <i>Carex swanii</i>                           | Cyperaceae      | 39437 Native      | 1       |
| 114 <i>Carex tribuloides</i>                      | Cyperaceae      | 39438 Native      | Walk    |
| 115 <i>Carex umbellata</i>                        | Cyperaceae      | 39857 Native      | 1       |
| 116 <i>Carex willdenowii</i>                      | Cyperaceae      | 39443 Native      | 2       |
| 117 <i>Carpinus caroliniana</i>                   | Betulaceae      | 19504 Native      | Wiegand |
| 118 <i>Carya alba</i>                             | Juglandaceae    | 501306 Native     | 3       |
| 119 <i>Carya cordiformis</i>                      | Juglandaceae    | 19227 Native      | 50      |
| 120 <i>Carya glabra</i>                           | Juglandaceae    | 19231 Native      | 8       |
| 121 <i>Carya ovata</i>                            | Juglandaceae    | 19243 Native      | 1       |
| 122 <i>Castanea dentata</i>                       | Fagaceae        | 19454 Native      | Walk    |
| 123 <i>Catalpa speciosa</i>                       | Bignoniaceae    | 34315 Native      | Walk    |
| 124 <i>Caulophyllum thalictroides</i>             | Berberidaceae   | 18840 Native      | 3       |
| 125 <i>Celastrus orbiculatus</i>                  | Celastraceae    | 506068 Introduced | 3       |
| 126 <i>Celtis occidentalis</i>                    | Ulmaceae        | 19040 Native      | 75      |
| 127 <i>Centaurea cyanus</i>                       | Asteraceae      | 36954 Introduced  | Wiegand |
| 128 <i>Cerastium fontanum</i> ssp. <i>vulgare</i> | Caryophyllaceae | 523831 Introduced | 4       |
| 129 <i>Cercis canadensis</i>                      | Fabaceae        | 25782 Native      | 25      |
| 130 <i>Chaerophyllum procumbens</i>               | Apiaceae        | 29616 Native      | Wiegand |
| 131 <i>Chamaesyce nutans</i>                      | Euphorbiaceae   | 501442 Native     | 1       |
| 132 <i>Cheilanthes lanosa</i>                     | Pteridaceae     | 17448 Native      | Wiegand |
| 133 <i>Chelidonium majus</i>                      | Papaveraceae    | 501481 Introduced | 5       |
| 134 <i>Chenopodium album</i>                      | Chenopodiaceae  | 20592 Introduced  | 2       |
| 135 <i>Chenopodium ambrosioides</i>               | Chenopodiaceae  | 20590 Introduced  | Wiegand |

|     |                                                              |                 |        |            |         |
|-----|--------------------------------------------------------------|-----------------|--------|------------|---------|
| 136 | <i>Chimaphila maculata</i>                                   | Pyrolaceae      | 23767  | Native     | Walk    |
| 137 | <i>Cichorium intybus</i>                                     | Asteraceae      | 36763  | Introduced | 1       |
| 138 | <i>Cicuta maculata</i>                                       | Apiaceae        | 29456  | Native     | Wiegand |
| 139 | <i>Cimicifuga racemosa</i>                                   | Ranunculaceae   | 18757  | Native     | 10      |
| 140 | <i>Circaea lutetiana</i> ssp. <i>Canadensis</i>              | Onagraceae      | 27569  | Native     | 36      |
| 141 | <i>Cirsium arvense</i>                                       | Asteraceae      | 36335  | Introduced | 1       |
| 142 | <i>Cirsium vulgare</i>                                       | Asteraceae      | 36428  | Introduced | 4       |
| 143 | <i>Claytonia virginica</i>                                   | Portulacaceae   | 20382  | Native     | 25      |
| 144 | <i>Clematis viorna</i>                                       | Ranunculaceae   | 18715  | Native     | 1       |
| 145 | <i>Clematis virginiana</i>                                   | Ranunculaceae   | 18716  | Native     | 1       |
| 146 | <i>Clinopodium vulgare</i>                                   | Lamiaceae       | 501592 | Native     | 5       |
| 147 | <i>Collinsonia canadensis</i>                                | Lamiaceae       | 32474  | Native     | 1       |
| 148 | <i>Commelina communis</i>                                    | Commelinaceae   | 39127  | Introduced | 14      |
| 149 | <i>Conium maculatum</i>                                      | Apiaceae        | 29473  | Introduced | 5       |
| 150 | <i>Conoclinium coelestinum</i>                               | Asteraceae      | 511282 | Native     | 5       |
| 151 | <i>Conopholis americana</i>                                  | Orobanchaceae   | 34274  | Native     | Walk    |
| 152 | <i>Convolvulus arvensis</i>                                  | Convolvulaceae  | 30705  | Introduced | 2       |
| 153 | <i>Conyza canadensis</i>                                     | Asteraceae      | 37113  | Native     | 1       |
| 154 | <i>Cornus florida</i>                                        | Cornaceae       | 27806  | Native     | 17      |
| 155 | <i>Coronilla varia</i>                                       | Fabaceae        | 26553  | Introduced | 1       |
| 156 | <i>Corydalis flavula</i>                                     | Fumariaceae     | 19005  | Native     | 20      |
| 157 | <i>Crataegus</i>                                             | Rosaceae        | 24539  | Unknown    | 1       |
| 158 | <i>Cryptotaenia canadensis</i>                               | Apiaceae        | 29475  | Native     | 25      |
| 159 | <i>Cuscuta gronovii</i>                                      | Cuscutaceae     | 30712  | Native     | Wiegand |
| 160 | <i>Cynodon dactylon</i>                                      | Poaceae         | 41619  | Introduced | Walk    |
| 161 | <i>Cynoglossum officinale</i>                                | Boraginaceae    | 31890  | Introduced | 3       |
| 162 | <i>Cyperus echinatus</i>                                     | Cyperaceae      | 501920 | Native     | Walk    |
| 163 | <i>Cyperus strigosus</i>                                     | Cyperaceae      | 39901  | Native     | 2       |
| 164 | <i>Cystopteris bulbifera</i>                                 | Dryopteridaceae | 17481  | Native     | Walk    |
| 165 | <i>Cystopteris fragilis</i>                                  | Dryopteridaceae | 17482  | Native     | 1       |
| 166 | <i>Cystopteris protrusa</i>                                  | Dryopteridaceae | 17485  | Native     | 1       |
| 167 | <i>Dactylis glomerata</i>                                    | Poaceae         | 193446 | Introduced | 32      |
| 168 | <i>Danthonia spicata</i>                                     | Poaceae         | 41642  | Native     | 4       |
| 169 | <i>Datura stramonium</i>                                     | Solanaceae      | 30520  | Introduced | Walk    |
| 170 | <i>Daucus carota</i>                                         | Apiaceae        | 29477  | Introduced | 18      |
| 171 | <i>Delphinium tricornis</i>                                  | Ranunculaceae   | 18515  | Native     | 3       |
| 172 | <i>Desmodium canescens</i>                                   | Fabaceae        | 25792  | Native     | 1       |
| 173 | <i>Desmodium paniculatum</i>                                 | Fabaceae        | 25815  | Native     | 6       |
| 174 | <i>Desmodium perplexum</i>                                   | Fabaceae        | 25785  | Native     | 1       |
| 175 | <i>Dianthus armeria</i>                                      | Caryophyllaceae | 20276  | Introduced | 7       |
| 176 | <i>Dicentra canadensis</i>                                   | Fumariaceae     | 18943  | Native     | 5       |
| 177 | <i>Dicentra cucullaria</i>                                   | Fumariaceae     | 18945  | Native     | 20      |
| 178 | <i>Dichanthelium boscii</i>                                  | Poaceae         | 41655  | Native     | 1       |
| 179 | <i>Dichanthelium scabriusculum</i>                           | Poaceae         | 41670  | Native     | 4       |
| 180 | <i>Dichanthelium villosissimum</i> var. <i>villosissimum</i> | Poaceae         | 527707 | Native     | 1       |
| 181 | <i>Digitaria filiformis</i>                                  | Poaceae         | 40608  | Native     | 1       |
| 182 | <i>Dioscorea quaternata</i>                                  | Dioscoreaceae   | 43371  | Native     | 5       |
| 183 | <i>Dioscorea villosa</i>                                     | Dioscoreaceae   | 43367  | Native     | 5       |

|     |                                                 |                 |        |            |         |
|-----|-------------------------------------------------|-----------------|--------|------------|---------|
| 184 | <i>Diospyros virginiana</i>                     | Ebenaceae       | 23855  | Native     | Walk    |
| 185 | <i>Dipsacus fullonum</i> ssp. <i>sylvestris</i> | Dipsacaceae     | 524924 | Introduced | 2       |
| 186 | <i>Dodecatheon meadia</i>                       | Primulaceae     | 23969  | Native     | 1       |
| 187 | <i>Draba verna</i>                              | Brassicaceae    | 22923  | Introduced | Wiegand |
| 188 | <i>Dryopteris carthusiana</i>                   | Dryopteridaceae | 502157 | Native     | 2       |
| 189 | <i>Dryopteris marginalis</i>                    | Dryopteridaceae | 17541  | Native     | 5       |
| 190 | <i>Duchesnea indica</i>                         | Rosaceae        | 25163  | Introduced | 63      |
| 191 | <i>Echinochloa muricata</i>                     | Poaceae         | 40672  | Introduced | 1       |
| 192 | <i>Echium vulgare</i>                           | Boraginaceae    | 31899  | Introduced | 2       |
| 193 | <i>Eclipta prostrata</i>                        | Asteraceae      | 196226 | Native     | Wiegand |
| 194 | <i>Elaeagnus multiflora</i>                     | Elaeagnaceae    | 27772  | Introduced | 3       |
| 195 | <i>Elaeagnus umbellata</i>                      | Elaeagnaceae    | 27776  | Introduced | 13      |
| 196 | <i>Eleusine indica</i>                          | Poaceae         | 41692  | Introduced | Walk    |
| 197 | <i>Elymus hystrix</i>                           | Poaceae         | 40698  | Native     | 7       |
| 198 | <i>Elymus repens</i>                            | Poaceae         | 512839 | Introduced | 1       |
| 199 | <i>Elymus riparius</i>                          | Poaceae         | 40706  | Native     | 7       |
| 200 | <i>Elymus villosus</i>                          | Poaceae         | 40714  | Native     | 23      |
| 201 | <i>Elymus virginicus</i>                        | Poaceae         | 40681  | Native     | 17      |
| 202 | <i>Epifagus virginiana</i>                      | Orobanchaceae   | 34276  | Native     | Walk    |
| 203 | <i>Epilobium coloratum</i>                      | Onagraceae      | 27298  | Native     | 1       |
| 204 | <i>Equisetum arvense</i>                        | Equisetaceae    | 17152  | Native     | 1       |
| 205 | <i>Equisetum hyemale</i>                        | Equisetaceae    | 17154  | Native     | Out     |
| 206 | <i>Eragrostis spectabilis</i>                   | Poaceae         | 40717  | Native     | Walk    |
| 207 | <i>Erigenia bulbosa</i>                         | Apiaceae        | 29661  | Native     | 1       |
| 208 | <i>Erigeron annuus</i>                          | Asteraceae      | 35804  | Native     | 25      |
| 209 | <i>Erigeron philadelphicus</i>                  | Asteraceae      | 35809  | Native     | 4       |
| 210 | <i>Erigeron pulchellus</i>                      | Asteraceae      | 35808  | Native     | Walk    |
| 211 | <i>Erigeron strigosus</i>                       | Asteraceae      | 35951  | Native     | 2       |
| 212 | <i>Erythronium americanum</i>                   | Liliaceae       | 196365 | Native     | 1       |
| 213 | <i>Euonymus alata</i>                           | Celastraceae    | 502576 | Introduced | 1       |
| 214 | <i>Euonymus americana</i>                       | Celastraceae    | 502577 | Native     | 1       |
| 215 | <i>Euonymus atropurpurea</i>                    | Celastraceae    | 502579 | Native     | 4       |
| 216 | <i>Eupatorium dubium</i>                        | Asteraceae      | 502508 | Native     | Wiegand |
| 217 | <i>Eupatorium fistulosum</i>                    | Asteraceae      | 502509 | Native     | Walk    |
| 218 | <i>Eupatorium purpureum</i>                     | Asteraceae      | 502522 | Native     | Wiegand |
| 219 | <i>Euphorbia corollata</i>                      | Euphorbiaceae   | 28057  | Native     | Walk    |
| 220 | <i>Euphorbia dentata</i>                        | Euphorbiaceae   | 502535 | Introduced | Walk    |
| 221 | <i>Euphorbia esula</i>                          | Euphorbiaceae   | 28064  | Introduced | Wiegand |
| 222 | <i>Fagus grandifolia</i>                        | Fagaceae        | 19462  | Native     | 7       |
| 223 | <i>Festuca rubra</i>                            | Poaceae         | 40796  | Native     | 7       |
| 224 | <i>Festuca subverticillata</i>                  | Poaceae         | 502612 | Native     | 58      |
| 225 | <i>Floerkea proserpinacoides</i>                | Limnanthaceae   | 29167  | Native     | 2       |
| 226 | <i>Fraxinus americana</i>                       | Oleaceae        | 32931  | Native     | 32      |
| 227 | <i>Fraxinus pennsylvanica</i>                   | Oleaceae        | 32929  | Native     | 20      |
| 228 | <i>Galactia regularis</i>                       | Fabaceae        | 26699  | Native     | 1       |
| 229 | <i>Galactia volubilis</i>                       | Fabaceae        | 26703  | Native     | 1       |
| 230 | <i>Galearis spectabilis</i>                     | Orchidaceae     | 43591  | Native     | Wiegand |
| 231 | <i>Galinsoga quadriradiata</i>                  | Asteraceae      | 37415  | Introduced | 2       |

|                                               |                 |                   |         |
|-----------------------------------------------|-----------------|-------------------|---------|
| 232 Galium aparine                            | Rubiaceae       | 34797 Native      | 28      |
| 233 Galium circaezans                         | Rubiaceae       | 34800 Native      | 2       |
| 234 Galium concinnum                          | Rubiaceae       | 34848 Native      | 14      |
| 235 Galium lanceolatum                        | Rubiaceae       | 34882 Native      | 1       |
| 236 Galium parisiense                         | Rubiaceae       | 34905 Introduced  | 4       |
| 237 Galium triflorum                          | Rubiaceae       | 34933 Native      | 18      |
| 238 Geranium columbinum                       | Geraniaceae     | 29133 Introduced  | Wiegand |
| 239 Geranium maculatum                        | Geraniaceae     | 29107 Native      | 5       |
| 240 Geranium molle                            | Geraniaceae     | 29110 Introduced  | Walk    |
| 241 Geranium pusillum                         | Geraniaceae     | 29115 Introduced  | 1       |
| 242 Geum canadense                            | Rosaceae        | 24645 Native      | 68      |
| 243 Glechoma hederacea                        | Lamiaceae       | 502801 Introduced | 49      |
| 244 Gleditsia triacanthos                     | Fabaceae        | 26714 Native      | 5       |
| 245 Glyceria fluitans                         | Poaceae         | 40844 Introduced  | 2       |
| 246 Glyceria striata                          | Poaceae         | 40833 Native      | Walk    |
| 247 Gnaphalium obtusifolium var. obtusifolium | Asteraceae      | 528261 Native     | Walk    |
| 248 Gymnocladus dioicus                       | Fabaceae        | 502851 Native     | 1       |
| 249 Hackelia virginiana                       | Boraginaceae    | 31921 Native      | 58      |
| 250 Hamamelis virginiana                      | Hamamelidaceae  | 19033 Native      | 2       |
| 251 Hedera helix                              | Araliaceae      | 29393 Introduced  | 3       |
| 252 Hemerocallis fulva                        | Liliaceae       | 42943 Introduced  | 2       |
| 253 Hepatica nobilis var. acuta               | Ranunculaceae   | 528378 Native     | 2       |
| 254 Hepatica nobilis var. obtusa              | Ranunculaceae   | 528379 Native     | 1       |
| 255 Heracleum maximum                         | Apiaceae        | 502953 Native     | 1       |
| 256 Hesperis matronalis                       | Brassicaceae    | 23138 Introduced  | 12      |
| 257 Heuchera americana                        | Saxifragaceae   | 24340 Native      | 1       |
| 258 Hibiscus syriacus                         | Malvaceae       | 21638 Introduced  | Walk    |
| 259 Hieracium caespitosum                     | Asteraceae      | 503009 Introduced | 5       |
| 260 Hieracium venosum                         | Asteraceae      | 37734 Native      | 1       |
| 261 Hosta ventricosa                          | Liliaceae       | 42953 Introduced  | Walk    |
| 262 Houstonia purpurea                        | Rubiaceae       | 35051 Native      | Walk    |
| 263 Humulus japonicus                         | Cannabaceae     | 503065 Introduced | 5       |
| 264 Hybanthus concolor                        | Violaceae       | 22026 Native      | 2       |
| 265 Hydrangea arborescens                     | Hydrangeaceae   | 24195 Native      | 2       |
| 266 Hydrastis canadensis                      | Ranunculaceae   | 18781 Native      | 5       |
| 267 Hydrophyllum canadense                    | Hydrophyllaceae | 31390 Native      | 2       |
| 268 Hydrophyllum virginianum                  | Hydrophyllaceae | 31396 Native      | 14      |
| 269 Hypericum mutilum                         | Clusiaceae      | 21421 Native      | Walk    |
| 270 Hypericum perforatum                      | Clusiaceae      | 21454 Introduced  | 3       |
| 271 Hypericum punctatum                       | Clusiaceae      | 21422 Native      | 1       |
| 272 Impatiens capensis                        | Balsaminaceae   | 29182 Native      | 14      |
| 273 Impatiens pallida                         | Balsaminaceae   | 29189 Native      | 7       |
| 274 Ipomoea hederacea                         | Convolvulaceae  | 503177 Introduced | Walk    |
| 275 Ipomoea pandurata                         | Convolvulaceae  | 30786 Native      | 3       |
| 276 Jeffersonia diphylla                      | Berberidaceae   | 18844 Native      | 1       |
| 277 Juglans cinerea                           | Juglandaceae    | 19250 Native      | 3       |
| 278 Juglans nigra                             | Juglandaceae    | 19254 Native      | 47      |
| 279 Juncus tenuis                             | Juncaceae       | 39243 Native      | 10      |

|     |                                                    |                  |        |            |         |
|-----|----------------------------------------------------|------------------|--------|------------|---------|
| 280 | <i>Juniperus virginiana</i>                        | Cupressaceae     | 18048  | Native     | 39      |
| 281 | <i>Justicia americana</i>                          | Acanthaceae      | 34352  | Native     | Wiegand |
| 282 | <i>Lactuca</i>                                     | Asteraceae       | 36594  | Unknown    | 1       |
| 283 | <i>Lactuca biennis</i>                             | Asteraceae       | 36597  | Native     | 1       |
| 284 | <i>Lactuca canadensis</i>                          | Asteraceae       | 36596  | Native     | 1       |
| 285 | <i>Lactuca floridana</i>                           | Asteraceae       | 36599  | Native     | Walk    |
| 286 | <i>Lactuca serriola</i>                            | Asteraceae       | 36608  | Introduced | 1       |
| 287 | <i>Lamium album</i>                                | Lamiaceae        | 32538  | Introduced | Out     |
| 288 | <i>Lamium amplexicaule</i>                         | Lamiaceae        | 32539  | Introduced | Out     |
| 289 | <i>Lamium maculatum</i>                            | Lamiaceae        | 32541  | Introduced | Wiegand |
| 290 | <i>Lamium purpureum</i>                            | Lamiaceae        | 32543  | Introduced | 28      |
| 291 | <i>Laportea canadensis</i>                         | Urticaceae       | 19127  | Native     | 14      |
| 292 | <i>Lechea intermedia</i>                           | Cistaceae        | 22286  | Native     | 1       |
| 293 | <i>Leersia oryzoides</i>                           | Poaceae          | 40886  | Native     | 1       |
| 294 | <i>Lemna minor</i>                                 | Lemnaceae        | 42590  | Native     | 1       |
| 295 | <i>Leonurus cardiaca</i>                           | Lamiaceae        | 32548  | Introduced | 1       |
| 296 | <i>Lepidium campestre</i>                          | Brassicaceae     | 22954  | Introduced | 1       |
| 297 | <i>Lepidium virginicum</i>                         | Brassicaceae     | 22955  | Native     | 4       |
| 298 | <i>Leucanthemum vulgare</i>                        | Asteraceae       | 37903  | Introduced | 9       |
| 299 | <i>Ligustrum vulgare</i>                           | Oleaceae         | 32980  | Introduced | 2       |
| 300 | <i>Linaria vulgaris</i>                            | Scrophulariaceae | 33216  | Introduced | 3       |
| 301 | <i>Lindera benzoin</i>                             | Lauraceae        | 18147  | Native     | 39      |
| 302 | <i>Lindernia dubia</i>                             | Scrophulariaceae | 33221  | Native     | Wiegand |
| 303 | <i>Liparis liliifolia</i>                          | Orchidaceae      | 43622  | Native     | 1       |
| 304 | <i>Liparis loeselii</i>                            | Orchidaceae      | 43623  | Native     | 1       |
| 305 | <i>Liriodendron tulipifera</i>                     | Magnoliaceae     | 18086  | Native     | 20      |
| 306 | <i>Lobelia inflata</i>                             | Campanulaceae    | 34524  | Native     | 11      |
| 307 | <i>Lobelia puberula</i>                            | Campanulaceae    | 34529  | Native     | Walk    |
| 308 | <i>Lobelia siphilitica</i>                         | Campanulaceae    | 34531  | Native     | Walk    |
| 309 | <i>Lolium arundinaceum</i>                         | Poaceae          | 507979 | Introduced | 7       |
| 310 | <i>Lolium perenne</i> ssp. <i>perenne</i>          | Poaceae          | 524261 | Introduced | 1       |
| 311 | <i>Lolium pratense</i>                             | Poaceae          | 507983 | Introduced | 21      |
| 312 | <i>Lonicera japonica</i>                           | Caprifoliaceae   | 35283  | Introduced | 74      |
| 313 | <i>Lonicera maackii</i>                            | Caprifoliaceae   | 35298  | Introduced | 5       |
| 314 | <i>Lonicera morrowii</i>                           | Caprifoliaceae   | 35299  | Introduced | 25      |
| 315 | <i>Lonicera tatarica</i>                           | Caprifoliaceae   | 35306  | Introduced | Walk    |
| 316 | <i>Ludwigia alternifolia</i>                       | Onagraceae       | 27335  | Native     | 1       |
| 317 | <i>Ludwigia palustris</i>                          | Onagraceae       | 27336  | Native     | 1       |
| 318 | <i>Lycopus americanus</i>                          | Lamiaceae        | 32254  | Native     | Wiegand |
| 319 | <i>Lycopus virginicus</i>                          | Lamiaceae        | 32255  | Native     | 1       |
| 320 | <i>Lysimachia ciliata</i>                          | Primulaceae      | 23984  | Native     | Wiegand |
| 321 | <i>Lysimachia nummularia</i>                       | Primulaceae      | 23993  | Introduced | 9       |
| 322 | <i>Maclura pomifera</i>                            | Moraceae         | 19102  | Native     | 5       |
| 323 | <i>Maianthemum racemosum</i> ssp. <i>racemosum</i> | Liliaceae        | 524297 | Native     | 10      |
| 324 | <i>Matricaria discoidea</i>                        | Asteraceae       | 501470 | Introduced | Walk    |
| 325 | <i>Melilotus officinalis</i>                       | Fabaceae         | 26150  | Introduced | 1       |
| 326 | <i>Menispermum canadense</i>                       | Menispermaceae   | 18871  | Native     | 20      |
| 327 | <i>Mentha arvensis</i>                             | Lamiaceae        | 565302 | Native     | 1       |

|     |                                    |                  |        |            |         |
|-----|------------------------------------|------------------|--------|------------|---------|
| 328 | <i>Mentha spicata</i>              | Lamiaceae        | 32272  | Introduced | Wiegand |
| 329 | <i>Mertensia virginica</i>         | Boraginaceae     | 31673  | Native     | 9       |
| 330 | <i>Microstegium vimineum</i>       | Poaceae          | 503829 | Introduced | 41      |
| 331 | <i>Mikania scandens</i>            | Asteraceae       | 36043  | Native     | 2       |
| 332 | <i>Mimulus alatus</i>              | Scrophulariaceae | 33234  | Native     | 1       |
| 333 | <i>Mirabilis nyctaginea</i>        | Nyctaginaceae    | 19655  | Native     | Walk    |
| 334 | <i>Mitchella repens</i>            | Rubiaceae        | 35063  | Native     | Wiegand |
| 335 | <i>Mitella diphylla</i>            | Saxifragaceae    | 24407  | Native     | 1       |
| 336 | <i>Monarda clinopodia</i>          | Lamiaceae        | 32288  | Native     | Walk    |
| 337 | <i>Monarda fistulosa</i>           | Lamiaceae        | 565311 | Native     | Out     |
| 338 | <i>Morus alba</i>                  | Moraceae         | 19066  | Introduced | 14      |
| 339 | <i>Morus rubra</i>                 | Moraceae         | 19070  | Native     | 7       |
| 340 | <i>Muhlenbergia frondosa</i>       | Poaceae          | 41915  | Native     | 1       |
| 341 | <i>Muhlenbergia schreberi</i>      | Poaceae          | 41939  | Native     | 42      |
| 342 | <i>Muhlenbergia sobolifera</i>     | Poaceae          | 41941  | Native     | 1       |
| 343 | <i>Muhlenbergia tenuiflora</i>     | Poaceae          | 41943  | Native     | 1       |
| 344 | <i>Muscari botryoides</i>          | Liliaceae        | 42977  | Introduced | 3       |
| 345 | <i>Narcissus pseudonarcissus</i>   | Liliaceae        | 503930 | Introduced | 2       |
| 346 | <i>Nepeta cataria</i>              | Lamiaceae        | 32623  | Introduced | 7       |
| 347 | <i>Nyssa sylvatica</i>             | Nyssaceae        | 27821  | Native     | 2       |
| 348 | <i>Oenothera biennis</i>           | Onagraceae       | 27368  | Native     | Walk    |
| 349 | <i>Onoclea sensibilis</i>          | Dryopteridaceae  | 17637  | Native     | Walk    |
| 350 | <i>Ophioglossum vulgatum</i>       | Ophioglossaceae  | 565333 | Native     | 3       |
| 351 | <i>Ornithogalum nutans</i>         | Liliaceae        | 42755  | Introduced | 2       |
| 352 | <i>Ornithogalum umbellatum</i>     | Liliaceae        | 42754  | Introduced | 18      |
| 353 | <i>Osmorhiza claytonii</i>         | Apiaceae         | 29789  | Native     | Wiegand |
| 354 | <i>Osmorhiza longistylis</i>       | Apiaceae         | 29791  | Native     | 12      |
| 355 | <i>Osmunda cinnamomea</i>          | Osmundaceae      | 17219  | Native     | Wiegand |
| 356 | <i>Ostrya virginiana</i>           | Betulaceae       | 19511  | Native     | 2       |
| 357 | <i>Oxalis corniculata</i>          | Oxalidaceae      | 29067  | Native     | 1       |
| 358 | <i>Oxalis stricta</i>              | Oxalidaceae      | 29095  | Native     | 68      |
| 359 | <i>Oxalis violacea</i>             | Oxalidaceae      | 29098  | Native     | 1       |
| 360 | <i>Packera aurea</i>               | Asteraceae       | 518139 | Native     | Wiegand |
| 361 | <i>Panax quinquefolius</i>         | Araliaceae       | 29399  | Native     | Walk    |
| 362 | <i>Panicum</i>                     | Poaceae          | 40901  | Unknown    | 5       |
| 363 | <i>Panicum capillare</i>           | Poaceae          | 40914  | Native     | Walk    |
| 364 | <i>Parietaria pensylvanica</i>     | Urticaceae       | 19169  | Native     | 4       |
| 365 | <i>Paronychia canadensis</i>       | Caryophyllaceae  | 20325  | Native     | 1       |
| 366 | <i>Parthenocissus quinquefolia</i> | Vitaceae         | 28602  | Native     | 72      |
| 367 | <i>Paspalum dissectum</i>          | Poaceae          | 41018  | Native     | 1       |
| 368 | <i>Paspalum laeve</i>              | Poaceae          | 41024  | Native     | Wiegand |
| 369 | <i>Paspalum setaceum</i>           | Poaceae          | 41042  | Native     | 1       |
| 370 | <i>Paulownia tomentosa</i>         | Scrophulariaceae | 33460  | Introduced | Walk    |
| 371 | <i>Pellaea atropurpurea</i>        | Pteridaceae      | 17641  | Native     | Walk    |
| 372 | <i>Pennisetum glaucum</i>          | Poaceae          | 565385 | Introduced | Wiegand |
| 373 | <i>Perilla frutescens</i>          | Lamiaceae        | 32634  | Introduced | 37      |
| 374 | <i>Phacelia dubia</i>              | Hydrophyllaceae  | 31441  | Native     | Wiegand |
| 375 | <i>Phleum pratense</i>             | Poaceae          | 41062  | Introduced | 11      |

|     |                                                    |                  |                  |         |
|-----|----------------------------------------------------|------------------|------------------|---------|
| 376 | <i>Phlox divaricata</i>                            | Polemoniaceae    | 30934 Native     | 2       |
| 377 | <i>Phragmites australis</i>                        | Poaceae          | 41072 Native     | 1       |
| 378 | <i>Phryma leptostachya</i>                         | Verbenaceae      | 504348 Native    | 8       |
| 379 | <i>Phyla lanceolata</i>                            | Verbenaceae      | 32196 Native     | Wiegand |
| 380 | <i>Physalis heterophylla</i>                       | Solanaceae       | 30601 Native     | 3       |
| 381 | <i>Physalis longifolia</i> var. <i>subglabrata</i> | Solanaceae       | 529629 Native    | 2       |
| 382 | <i>Physalis virginiana</i>                         | Solanaceae       | 30612 Native     | Wiegand |
| 383 | <i>Phytolacca americana</i>                        | Phytolaccaceae   | 19523 Native     | 18      |
| 384 | <i>Pilea pumila</i>                                | Urticaceae       | 19130 Native     | 57      |
| 385 | <i>Pinus rigida</i>                                | Pinaceae         | 183376 Native    | Walk    |
| 386 | <i>Pinus strobes</i>                               | Pinaceae         | 183385 Native    | Walk    |
| 387 | <i>Pinus virginiana</i>                            | Pinaceae         | 183394 Native    | Wiegand |
| 388 | <i>Plantago aristata</i>                           | Plantaginaceae   | 32875 Native     | Walk    |
| 389 | <i>Plantago lanceolata</i>                         | Plantaginaceae   | 32874 Introduced | 7       |
| 390 | <i>Plantago major</i>                              | Plantaginaceae   | 32887 Native     | 13      |
| 391 | <i>Plantago rugelii</i>                            | Plantaginaceae   | 504439 Native    | 10      |
| 392 | <i>Platanus occidentalis</i>                       | Platanaceae      | 19020 Native     | 19      |
| 393 | <i>Poa annua</i>                                   | Poaceae          | 41107 Introduced | 1       |
| 394 | <i>Poa pratensis</i>                               | Poaceae          | 41088 Introduced | 7       |
| 395 | <i>Poa sylvestris</i>                              | Poaceae          | 41162 Native     | 6       |
| 396 | <i>Poa trivialis</i>                               | Poaceae          | 41163 Introduced | 48      |
| 397 | <i>Podophyllum peltatum</i>                        | Berberidaceae    | 18850 Native     | 19      |
| 398 | <i>Polygonatum biflorum</i>                        | Liliaceae        | 43006 Native     | 6       |
| 399 | <i>Polygonum aviculare</i>                         | Polygonaceae     | 20876 Introduced | 1       |
| 400 | <i>Polygonum caespitosum</i>                       | Polygonaceae     | 20852 Introduced | 67      |
| 401 | <i>Polygonum hydropiper</i>                        | Polygonaceae     | 20856 Introduced | 1       |
| 402 | <i>Polygonum hydropiperoides</i>                   | Polygonaceae     | 20857 Native     | 1       |
| 403 | <i>Polygonum lapathifolium</i>                     | Polygonaceae     | 20860 Native     | Wiegand |
| 404 | <i>Polygonum pensylvanicum</i>                     | Polygonaceae     | 20861 Native     | 2       |
| 405 | <i>Polygonum persicaria</i>                        | Polygonaceae     | 20915 Introduced | 7       |
| 406 | <i>Polygonum virginianum</i>                       | Polygonaceae     | 20931 Native     | 34      |
| 407 | <i>Polypodium virginianum</i>                      | Polypodiaceae    | 17242 Native     | 1       |
| 408 | <i>Polystichum acrostichoides</i>                  | Dryopteridaceae  | 17675 Native     | 8       |
| 409 | <i>Populus deltoides</i>                           | Salicaceae       | 22445 Native     | Wiegand |
| 410 | <i>Portulaca oleracea</i>                          | Portulacaceae    | 20422 Native     | Walk    |
| 411 | <i>Potentilla recta</i>                            | Rosaceae         | 24742 Introduced | 3       |
| 412 | <i>Potentilla simplex</i>                          | Rosaceae         | 24751 Native     | 2       |
| 413 | <i>Prenanthes trifoliolata</i>                     | Asteraceae       | 504596 Native    | Walk    |
| 414 | <i>Prunella vulgaris</i>                           | Lamiaceae        | 32381 Native     | 5       |
| 415 | <i>Prunus avium</i>                                | Rosaceae         | 24770 Introduced | 1       |
| 416 | <i>Prunus cerasus</i>                              | Rosaceae         | 24773 Introduced | 2       |
| 417 | <i>Prunus pensylvanica</i>                         | Rosaceae         | 24799 Native     | 7       |
| 418 | <i>Prunus serotina</i>                             | Rosaceae         | 24764 Native     | 53      |
| 419 | <i>Prunus virginiana</i>                           | Rosaceae         | 24806 Native     | 1       |
| 420 | <i>Pteridium aquilinum</i>                         | Dennstaedtiaceae | 17224 Native     | 1       |
| 421 | <i>Pyrola americana</i>                            | Pyrolaceae       | 504691 Native    | Walk    |
| 422 | <i>Quercus alba</i>                                | Fagaceae         | 19290 Native     | 5       |
| 423 | <i>Quercus bicolor</i>                             | Fagaceae         | 19300 Native     | Wiegand |

|     |                                                      |                  |        |            |         |
|-----|------------------------------------------------------|------------------|--------|------------|---------|
| 424 | <i>Quercus coccinea</i>                              | Fagaceae         | 19288  | Native     | Out     |
| 425 | <i>Quercus muehlenbergii</i>                         | Fagaceae         | 504714 | Native     | 19      |
| 426 | <i>Quercus prinus</i>                                | Fagaceae         | 19398  | Native     | 4       |
| 427 | <i>Quercus rubra</i>                                 | Fagaceae         | 19408  | Native     | 18      |
| 428 | <i>Quercus stellata</i>                              | Fagaceae         | 19422  | Native     | 1       |
| 429 | <i>Quercus velutina</i>                              | Fagaceae         | 19447  | Native     | 4       |
| 430 | <i>Ranunculus abortivus</i>                          | Ranunculaceae    | 18559  | Native     | 33      |
| 431 | <i>Ranunculus acris</i>                              | Ranunculaceae    | 18583  | Introduced | 12      |
| 432 | <i>Ranunculus bulbosus</i>                           | Ranunculaceae    | 18594  | Introduced | 3       |
| 433 | <i>Ranunculus hispidus</i>                           | Ranunculaceae    | 18613  | Native     | 1       |
| 434 | <i>Ranunculus recurvatus</i>                         | Ranunculaceae    | 18641  | Native     | 5       |
| 435 | <i>Ranunculus sardous</i>                            | Ranunculaceae    | 18645  | Introduced | 1       |
| 436 | <i>Ranunculus sceleratus</i>                         | Ranunculaceae    | 18576  | Native     | 1       |
| 437 | <i>Rhus aromatica</i>                                | Anacardiaceae    | 28779  | Native     | Walk    |
| 438 | <i>Rhus glabra</i>                                   | Anacardiaceae    | 28782  | Native     | Wiegand |
| 439 | <i>Rhus hirta</i>                                    | Anacardiaceae    | 504755 | Native     | Walk    |
| 440 | <i>Ribes cynosbati</i>                               | Grossulariaceae  | 24462  | Native     | 1       |
| 441 | <i>Robinia pseudoacacia</i>                          | Fabaceae         | 504804 | Native     | 18      |
| 442 | <i>Rosa multiflora</i>                               | Rosaceae         | 24833  | Introduced | 74      |
| 443 | <i>Rubus allegheniensis</i>                          | Rosaceae         | 24866  | Native     | 16      |
| 444 | <i>Rubus occidentalis</i>                            | Rosaceae         | 24854  | Native     | 35      |
| 445 | <i>Rubus pensilvanicus</i>                           | Rosaceae         | 504874 | Native     | Walk    |
| 446 | <i>Rubus phoenicolasius</i>                          | Rosaceae         | 25017  | Introduced | 47      |
| 447 | <i>Rudbeckia hirta</i>                               | Asteraceae       | 36765  | Native     | Walk    |
| 448 | <i>Rudbeckia laciniata</i>                           | Asteraceae       | 36775  | Native     | 7       |
| 449 | <i>Ruellia caroliniensis</i>                         | Acanthaceae      | 34373  | Native     | Walk    |
| 450 | <i>Rumex acetosella</i>                              | Polygonaceae     | 20934  | Introduced | Walk    |
| 451 | <i>Rumex crispus</i>                                 | Polygonaceae     | 20937  | Introduced | 4       |
| 452 | <i>Rumex hastatulus</i>                              | Polygonaceae     | 20938  | Native     | Walk    |
| 453 | <i>Rumex obtusifolius</i>                            | Polygonaceae     | 20939  | Introduced | 10      |
| 454 | <i>Rumex pulcher</i>                                 | Polygonaceae     | 20942  | Introduced | 1       |
| 455 | <i>Rumex verticillatus</i>                           | Polygonaceae     | 20946  | Native     | 1       |
| 456 | <i>Salix nigra</i>                                   | Salicaceae       | 22484  | Native     | 1       |
| 457 | <i>Salvia lyrata</i>                                 | Lamiaceae        | 32690  | Native     | Walk    |
| 458 | <i>Sambucus nigra</i> ssp. <i>canadensis</i>         | Caprifoliaceae   | 525079 | Native     | 3       |
| 459 | <i>Sanguinaria canadensis</i>                        | Papaveraceae     | 18990  | Native     | 11      |
| 460 | <i>Sanicula canadensis</i>                           | Apiaceae         | 29850  | Native     | 59      |
| 461 | <i>Sanicula odorata</i>                              | Apiaceae         | 505004 | Native     | 1       |
| 462 | <i>Saponaria officinalis</i>                         | Caryophyllaceae  | 20039  | Introduced | Walk    |
| 463 | <i>Sassafras albidum</i>                             | Lauraceae        | 18158  | Native     | 3       |
| 464 | <i>Saxifraga virginiana</i>                          | Saxifragaceae    | 24303  | Native     | 5       |
| 465 | <i>Schizachyrium scoparium</i> var. <i>scoparium</i> | Poaceae          | 530264 | Native     | Wiegand |
| 466 | <i>Scrophularia marilandica</i>                      | Scrophulariaceae | 34037  | Native     | 3       |
| 467 | <i>Scutellaria incana</i> var. <i>incana</i>         | Lamiaceae        | 196124 | Native     | 1       |
| 468 | <i>Scutellaria lateriflora</i>                       | Lamiaceae        | 32765  | Native     | 3       |
| 469 | <i>Scutellaria nervosa</i>                           | Lamiaceae        | 32808  | Native     | 1       |
| 470 | <i>Sedum ternatum</i>                                | Crassulaceae     | 24184  | Native     | 2       |
| 471 | <i>Setaria faberi</i>                                | Poaceae          | 41244  | Introduced | Walk    |

|                                                           |                  |        |            |         |
|-----------------------------------------------------------|------------------|--------|------------|---------|
| 472 <i>Setaria pumila</i>                                 | Poaceae          | 505192 | Introduced | Walk    |
| 473 <i>Setaria viridis</i>                                | Poaceae          | 41231  | Introduced | Wiegand |
| 474 <i>Sicyos angulatus</i>                               | Cucurbitaceae    | 22402  | Native     | 8       |
| 475 <i>Sida spinosa</i>                                   | Malvaceae        | 21732  | Native     | Walk    |
| 476 <i>Silene latifolia</i> ssp. <i>alba</i>              | Caryophyllaceae  | 524706 | Introduced | Wiegand |
| 477 <i>Silene stellata</i>                                | Caryophyllaceae  | 20127  | Native     | 2       |
| 478 <i>Silene vulgaris</i>                                | Caryophyllaceae  | 20142  | Introduced | Walk    |
| 479 <i>Sisymbrium altissimum</i>                          | Brassicaceae     | 23312  | Introduced | 2       |
| 480 <i>Sisymbrium officinale</i>                          | Brassicaceae     | 23316  | Introduced | 1       |
| 481 <i>Sisyrinchium angustifolium</i>                     | Iridaceae        | 43240  | Native     | 2       |
| 482 <i>Smallanthus uvedalius</i>                          | Asteraceae       | 505252 | Native     | 3       |
| 483 <i>Smilax rotundifolia</i>                            | Smilacaceae      | 43346  | Native     | 32      |
| 484 <i>Solanum carolinense</i>                            | Solanaceae       | 30413  | Native     | 22      |
| 485 <i>Solanum dulcamara</i>                              | Solanaceae       | 30414  | Introduced | Walk    |
| 486 <i>Solanum nigrum</i>                                 | Solanaceae       | 565525 | Introduced | 7       |
| 487 <i>Solidago bicolor</i>                               | Asteraceae       | 36234  | Native     | Wiegand |
| 488 <i>Solidago caesia</i>                                | Asteraceae       | 36238  | Native     | 1       |
| 489 <i>Solidago canadensis</i>                            | Asteraceae       | 36224  | Native     | 16      |
| 490 <i>Solidago canadensis</i> var. <i>hargeri</i>        | Asteraceae       | 530446 | Native     | 2       |
| 491 <i>Solidago canadensis</i> var. <i>scabra</i>         | Asteraceae       | 530448 | Native     | 2       |
| 492 <i>Solidago flexicaulis</i>                           | Asteraceae       | 36257  | Native     | 1       |
| 493 <i>Solidago juncea</i>                                | Asteraceae       | 36270  | Native     | Walk    |
| 494 <i>Solidago nemoralis</i>                             | Asteraceae       | 36281  | Native     | Wiegand |
| 495 <i>Solidago ulmifolia</i>                             | Asteraceae       | 36225  | Native     | 3       |
| 496 <i>Sonchus asper</i>                                  | Asteraceae       | 38424  | Introduced | 1       |
| 497 <i>Sorghastrum nutans</i>                             | Poaceae          | 42102  | Native     | Walk    |
| 498 <i>Sorghum halepense</i>                              | Poaceae          | 42111  | Introduced | Walk    |
| 499 <i>Sphenopholis nitida</i>                            | Poaceae          | 41281  | Native     | 1       |
| 500 <i>Sphenopholis obtusata</i>                          | Poaceae          | 41279  | Native     | 4       |
| 501 <i>Spiranthes lacera</i> var. <i>lacera</i>           | Orchidaceae      | 530530 | Native     | 1       |
| 502 <i>Staphylea trifolia</i>                             | Staphyleaceae    | 28646  | Native     | 4       |
| 503 <i>Stellaria graminea</i>                             | Caryophyllaceae  | 20181  | Introduced | Wiegand |
| 504 <i>Stellaria media</i>                                | Caryophyllaceae  | 20169  | Introduced | 42      |
| 505 <i>Stellaria pubera</i>                               | Caryophyllaceae  | 20193  | Native     | 15      |
| 506 <i>Stuckenia pectinatus</i>                           | Potamogetonaceae | 565547 | Native     | Out     |
| 507 <i>Symphoricarpos orbiculatus</i>                     | Caprifoliaceae   | 35337  | Native     | 1       |
| 508 <i>Symphyotrichum</i>                                 | Asteraceae       | 564906 | Native     | 3       |
| 509 <i>Symphyotrichum cordifolium</i>                     | Asteraceae       | 522193 | Native     | 1       |
| 510 <i>Symphyotrichum divaricatum</i>                     | Asteraceae       | 522198 | Native     | 7       |
| 511 <i>Symphyotrichum ericoides</i> var. <i>ericoides</i> | Asteraceae       | 566330 | Native     | 25      |
| 512 <i>Symphyotrichum shortii</i>                         | Asteraceae       | 522246 | Native     | 18      |
| 513 <i>Tanacetum vulgare</i>                              | Asteraceae       | 36328  | Introduced | Walk    |
| 514 <i>Taraxacum officinale</i>                           | Asteraceae       | 36213  | Introduced | 26      |
| 515 <i>Teucrium canadense</i>                             | Lamiaceae        | 32352  | Native     | 4       |
| 516 <i>Thalictrum dioicum</i>                             | Ranunculaceae    | 18669  | Native     | 7       |
| 517 <i>Thalictrum pubescens</i>                           | Ranunculaceae    | 18678  | Native     | Wiegand |
| 518 <i>Thalictrum thalictroides</i>                       | Ranunculaceae    | 18683  | Native     | 2       |
| 519 <i>Tilia americana</i>                                | Tiliaceae        | 21536  | Native     | 3       |

|                                 |                  |                  |         |
|---------------------------------|------------------|------------------|---------|
| 520 Toxicodendron radicans      | Anacardiaceae    | 28821 Native     | 70      |
| 521 Tragopogon dubius           | Asteraceae       | 38564 Introduced | Out     |
| 522 Tragopogon pratensis        | Asteraceae       | 38569 Introduced | Walk    |
| 523 Tridens flavus              | Poaceae          | 42227 Native     | Walk    |
| 524 Trifolium arvense           | Fabaceae         | 26221 Introduced | Walk    |
| 525 Trifolium aureum            | Fabaceae         | 26223 Introduced | 3       |
| 526 Trifolium campestre         | Fabaceae         | 26231 Introduced | 9       |
| 527 Trifolium dubium            | Fabaceae         | 26205 Introduced | 1       |
| 528 Trifolium hybridum          | Fabaceae         | 26261 Introduced | Walk    |
| 529 Trifolium pratense          | Fabaceae         | 26313 Introduced | 7       |
| 530 Trifolium repens            | Fabaceae         | 26206 Introduced | 8       |
| 531 Trillium sessile            | Liliaceae        | 43088 Native     | 10      |
| 532 Triticum aestivum           | Poaceae          | 42237 Introduced | 2       |
| 533 Typha latifolia             | Typhaceae        | 42326 Native     | 1       |
| 534 Ulmus americana             | Ulmaceae         | 19049 Native     | Wiegand |
| 535 Ulmus rubra                 | Ulmaceae         | 19050 Native     | 51      |
| 536 Urtica dioica               | Urticaceae       | 19152 Introduced | 61      |
| 537 Uvularia perfoliata         | Liliaceae        | 43110 Native     | 1       |
| 538 Uvularia puberula           | Liliaceae        | 43111 Native     | Walk    |
| 539 Vaccinium                   | Ericaceae        | 23571 Native     | Walk    |
| 540 Verbascum blattaria         | Scrophulariaceae | 33389 Introduced | Walk    |
| 541 Verbascum thapsus           | Scrophulariaceae | 33394 Introduced | 4       |
| 542 Verbena urticifolia         | Verbenaceae      | 32127 Native     | 25      |
| 543 Verbesina alternifolia      | Asteraceae       | 38597 Native     | 44      |
| 544 Vernonia noveboracensis     | Asteraceae       | 38644 Native     | Walk    |
| 545 Veronica anagallis-aquatica | Scrophulariaceae | 565594 Native    | 2       |
| 546 Veronica hederifolia        | Scrophulariaceae | 33418 Introduced | Wiegand |
| 547 Veronica officinalis        | Scrophulariaceae | 33398 Native     | 6       |
| 548 Veronica peregrina          | Scrophulariaceae | 33421 Native     | 3       |
| 549 Veronica persica            | Scrophulariaceae | 33405 Introduced | 45      |
| 550 Veronica serpyllifolia      | Scrophulariaceae | 33423 Introduced | Wiegand |
| 551 Viburnum acerifolium        | Caprifoliaceae   | 35255 Native     | 1       |
| 552 Viburnum prunifolium        | Caprifoliaceae   | 35253 Native     | 27      |
| 553 Vinca minor                 | Apocynaceae      | 30238 Introduced | Walk    |
| 554 Viola bicolor               | Violaceae        | 22047 Native     | 2       |
| 555 Viola blanda                | Violaceae        | 22050 Native     | 4       |
| 556 Viola palmata               | Violaceae        | 22125 Native     | 1       |
| 557 Viola pubescens             | Violaceae        | 22144 Native     | 9       |
| 558 Viola sororia               | Violaceae        | 22169 Native     | 64      |
| 559 Viola striata               | Violaceae        | 22171 Native     | 22      |
| 560 Vitis aestivalis            | Vitaceae         | 28607 Native     | 3       |
| 561 Vitis labrusca              | Vitaceae         | 28608 Native     | 1       |
| 562 Vitis riparia               | Vitaceae         | 28624 Native     | 60      |
| 563 Vitis rotundifolia          | Vitaceae         | 28609 Native     | 1       |
| 564 Vitis vulpina               | Vitaceae         | 28610 Native     | 3       |
| 565 Woodsia obtusa              | Dryopteridaceae  | 17744 Native     | 6       |
| 566 Xanthium strumarium         | Asteraceae       | 38692 Native     | 5       |
| 567 Zea mays                    | Poaceae          | 42269 Introduced | Walk    |

568 *Zizia aurea*

Apiaceae

29906 Native

Wiegand

Appendix 2. Identity and nativeness of species found at Monocacy National Battlefield. Table also includes unique numbers for each species (TSN) and the number of times each species was encountered in 50 inventoried plots (Count). If the species was encountered immediately outside of the plots or in a walk-through, the entry is recorded as “out” or “walk”, respectively. Entries labeled as “Wiegand” are those species not documented in the current inventory but in a previous inventory of vascular plants lead by R. Wiegand (Heritage & Biodiversity Conservation Programs 1998).

| ID | Species                                          | TSN    | family           | Native     | Count   |
|----|--------------------------------------------------|--------|------------------|------------|---------|
| 1  | <i>Abutilon theophrasti</i>                      | 21674  | Malvaceae        | Introduced | 1       |
| 2  | <i>Acalypha rhomboidea</i>                       | 28193  | Euphorbiaceae    | Native     | 11      |
| 3  | <i>Acer negundo</i>                              | 28749  | Aceraceae        | Native     | 35      |
| 4  | <i>Acer rubrum</i>                               | 28728  | Aceraceae        | Native     | 15      |
| 5  | <i>Acer saccharinum</i>                          | 28757  | Aceraceae        | Native     | 18      |
| 6  | <i>Acer saccharum</i>                            | 28731  | Aceraceae        | Native     | 1       |
| 7  | <i>Adiantum pedatum</i>                          | 17311  | Pteridaceae      | Native     | Wiegand |
| 8  | <i>Aesculus hippocastanum</i>                    | 28721  | Hippocastanaceae | Introduced | 1       |
| 9  | <i>Ageratina altissima</i> var. <i>altissima</i> | 182398 | Asteraceae       | Native     | 10      |
| 10 | <i>Agrimonia gryposepala</i>                     | 25095  | Rosaceae         | Native     | Wiegand |
| 11 | <i>Agrimonia pubescens</i>                       | 25099  | Rosaceae         | Native     | 1       |
| 12 | <i>Agrostis gigantea</i>                         | 40414  | Poaceae          | Introduced | 2       |
| 13 | <i>Agrostis perennans</i>                        | 40423  | Poaceae          | Native     | Walk    |
| 14 | <i>Agrostis stolonifera</i>                      | 40400  | Poaceae          | Native     | 2       |
| 15 | <i>Ailanthus altissima</i>                       | 28827  | Simaroubaceae    | Introduced | 20      |
| 16 | <i>Alisma subcordatum</i>                        | 38895  | Alismataceae     | Native     | 1       |
| 17 | <i>Alliaria petiolata</i>                        | 184481 | Brassicaceae     | Introduced | 45      |
| 18 | <i>Allium canadense</i>                          | 42635  | Liliaceae        | Native     | 7       |
| 19 | <i>Allium tricoccum</i>                          | 42672  | Liliaceae        | Native     | 1       |
| 20 | <i>Allium vineale</i>                            | 42637  | Liliaceae        | Introduced | 7       |
| 21 | <i>Amaranthus hybridus</i>                       | 20735  | Amaranthaceae    | Native     | Walk    |
| 22 | <i>Amaranthus retroflexus</i>                    | 20745  | Amaranthaceae    | Introduced | Walk    |
| 23 | <i>Amaranthus spinosus</i>                       | 20748  | Amaranthaceae    | Native     | 1       |
| 24 | <i>Ambrosia artemisiifolia</i>                   | 36496  | Asteraceae       | Native     | 12      |
| 25 | <i>Ambrosia trifida</i>                          | 36521  | Asteraceae       | Native     | 2       |
| 26 | <i>Amelanchier arborea</i>                       | 25110  | Rosaceae         | Native     | 2       |
| 27 | <i>Amphicarpaea bracteata</i>                    | 182067 | Fabaceae         | Native     | 8       |
| 28 | <i>Anagallis arvensis</i>                        | 24043  | Primulaceae      | Introduced | 2       |
| 29 | <i>Anemone virginiana</i>                        | 18451  | Ranunculaceae    | Native     | Wiegand |
| 30 | <i>Antennaria plantaginifolia</i>                | 36717  | Asteraceae       | Native     | Walk    |
| 31 | <i>Anthemis cotula</i>                           | 36330  | Asteraceae       | Introduced | 1       |
| 32 | <i>Apium graveolens</i>                          | 182184 | Apiaceae         | Introduced | 1       |
| 33 | <i>Aplectrum hyemale</i>                         | 43489  | Orchidaceae      | Native     | Wiegand |
| 34 | <i>Apocynum cannabinum</i>                       | 30157  | Apocynaceae      | Native     | Walk    |
| 35 | <i>Arabis laevigata</i>                          | 22706  | Brassicaceae     | Native     | Wiegand |
| 36 | <i>Arabis lyrata</i>                             | 22672  | Brassicaceae     | Native     | Wiegand |
| 37 | <i>Arabis shortii</i>                            | 22734  | Brassicaceae     | Native     | Wiegand |
| 38 | <i>Arctium minus</i>                             | 36546  | Asteraceae       | Introduced | 6       |
| 39 | <i>Arisaema triphyllum</i>                       | 42525  | Araceae          | Native     | 7       |

|                                                |                        |            |         |
|------------------------------------------------|------------------------|------------|---------|
| 40 <i>Artemisia biennis</i>                    | 35451 Asteraceae       | Introduced | Walk    |
| 41 <i>Artemisia vulgaris</i>                   | 35505 Asteraceae       | Introduced | 1       |
| 42 <i>Asarum canadense</i>                     | 18353 Aristolochiaceae | Native     | 3       |
| 43 <i>Asclepias incarnata</i>                  | 30241 Asclepiadaceae   | Native     | Out     |
| 44 <i>Asclepias syriaca</i>                    | 30310 Asclepiadaceae   | Native     | 1       |
| 45 <i>Asimina triloba</i>                      | 18117 Annonaceae       | Native     | 14      |
| 46 <i>Asplenium montanum</i>                   | 17351 Aspleniaceae     | Native     | Walk    |
| 47 <i>Asplenium platyneuron</i>                | 17355 Aspleniaceae     | Native     | 3       |
| 48 <i>Asplenium rhizophyllum</i>               | 17359 Aspleniaceae     | Native     | Wiegand |
| 49 <i>Athyrium filix-femina</i>                | 17413 Dryopteridaceae  | Native     | 1       |
| 50 <i>Avena sativa</i>                         | 41459 Poaceae          | Introduced | Walk    |
| 51 <i>Barbarea vulgaris</i>                    | 22741 Brassicaceae     | Introduced | 5       |
| 52 <i>Berberis thunbergii</i>                  | 18835 Berberidaceae    | Introduced | 6       |
| 53 <i>Betula lenta</i>                         | 19487 Betulaceae       | Native     | Wiegand |
| 54 <i>Bidens bipinnata</i>                     | 500993 Asteraceae      | Native     | 1       |
| 55 <i>Bidens coronata</i>                      | 35706 Asteraceae       | Native     | Out     |
| 56 <i>Bidens frondosa</i>                      | 35707 Asteraceae       | Native     | 12      |
| 57 <i>Boehmeria cylindrica</i>                 | 19121 Urticaceae       | Native     | 5       |
| 58 <i>Botrychium biternatum</i>                | 17175 Ophioglossaceae  | Native     | 1       |
| 59 <i>Botrychium dissectum</i>                 | 17171 Ophioglossaceae  | Native     | Walk    |
| 60 <i>Botrychium multifidum</i>                | 17187 Ophioglossaceae  | Native     | 2       |
| 61 <i>Botrychium virginianum</i>               | 17173 Ophioglossaceae  | Native     | 3       |
| 62 <i>Brassica nigra</i>                       | 23061 Brassicaceae     | Introduced | Out     |
| 63 <i>Brassica rapa</i>                        | 23063 Brassicaceae     | Introduced | 1       |
| 64 <i>Bromus catharticus</i>                   | 501066 Poaceae         | Introduced | 1       |
| 65 <i>Bromus commutatus</i>                    | 40497 Poaceae          | Introduced | 3       |
| 66 <i>Bromus inermis</i>                       | 40502 Poaceae          | Introduced | Walk    |
| 67 <i>Bromus pubescens</i>                     | 40514 Poaceae          | Native     | Wiegand |
| 68 <i>Bromus sterilis</i>                      | 40522 Poaceae          | Introduced | 2       |
| 69 <i>Bromus tectorum</i>                      | 40524 Poaceae          | Introduced | 1       |
| 70 <i>Calystegia sepium</i> ssp. <i>sepium</i> | 30651 Convolvulaceae   | Introduced | 4       |
| 71 <i>Campsis radicans</i>                     | 34309 Bignoniaceae     | Native     | 1       |
| 72 <i>Capsella bursa-pastoris</i>              | 22766 Brassicaceae     | Introduced | 1       |
| 73 <i>Cardamine bulbosa</i>                    | 22769 Brassicaceae     | Native     | Wiegand |
| 74 <i>Cardamine concatenata</i>                | 22787 Brassicaceae     | Native     | 3       |
| 75 <i>Carduus acanthoides</i>                  | 35785 Asteraceae       | Introduced | 3       |
| 76 <i>Carduus nutans</i>                       | 35787 Asteraceae       | Introduced | Out     |
| 77 <i>Carex</i>                                | 39369 Cyperaceae       | Native     | 5       |
| 78 <i>Carex abscondita</i>                     | 39475 Cyperaceae       | Native     | 1       |
| 79 <i>Carex albicans</i> var. <i>albicans</i>  | 527064 Cyperaceae      | Native     | 2       |
| 80 <i>Carex amphibola</i>                      | 39491 Cyperaceae       | Native     | 12      |
| 81 <i>Carex annectens</i>                      | 39373 Cyperaceae       | Native     | 1       |
| 82 <i>Carex argyrantha</i>                     | 39503 Cyperaceae       | Native     | 1       |
| 83 <i>Carex blanda</i>                         | 39379 Cyperaceae       | Native     | 10      |
| 84 <i>Carex caroliniana</i>                    | 39382 Cyperaceae       | Native     | Walk    |
| 85 <i>Carex cephalophora</i>                   | 39383 Cyperaceae       | Native     | 3       |
| 86 <i>Carex conjuncta</i>                      | 39555 Cyperaceae       | Native     | 4       |
| 87 <i>Carex digitalis</i>                      | 39576 Cyperaceae       | Native     | 2       |

|                                                     |                        |            |         |
|-----------------------------------------------------|------------------------|------------|---------|
| 88 <i>Carex frankii</i>                             | 39393 Cyperaceae       | Native     | 6       |
| 89 <i>Carex glaucoidea</i>                          | 39616 Cyperaceae       | Native     | 1       |
| 90 <i>Carex grayi</i>                               | 39622 Cyperaceae       | Native     | 10      |
| 91 <i>Carex grisea</i>                              | 510206 Cyperaceae      | Native     | 3       |
| 92 <i>Carex hirsutella</i>                          | 39636 Cyperaceae       | Native     | 1       |
| 93 <i>Carex intumescens</i>                         | 39403 Cyperaceae       | Native     | 1       |
| 94 <i>Carex jamesii</i>                             | 39404 Cyperaceae       | Native     | 4       |
| 95 <i>Carex laevivaginata</i>                       | 39410 Cyperaceae       | Native     | Walk    |
| 96 <i>Carex laxiculmis</i>                          | 39411 Cyperaceae       | Native     | 3       |
| 97 <i>Carex laxiflora</i>                           | 39662 Cyperaceae       | Native     | 1       |
| 98 <i>Carex lurida</i>                              | 39414 Cyperaceae       | Native     | 2       |
| 99 <i>Carex molesta</i>                             | 39704 Cyperaceae       | Native     | Walk    |
| 100 <i>Carex normalis</i>                           | 39720 Cyperaceae       | Native     | Walk    |
| 101 <i>Carex oligocarpa</i>                         | 39728 Cyperaceae       | Native     | 1       |
| 102 <i>Carex platyphylla</i>                        | 39761 Cyperaceae       | Native     | 1       |
| 103 <i>Carex radiata</i>                            | 39778 Cyperaceae       | Native     | 1       |
| 104 <i>Carex rosea</i>                              | 39429 Cyperaceae       | Native     | 2       |
| 105 <i>Carex swanii</i>                             | 39437 Cyperaceae       | Native     | 7       |
| 106 <i>Carex tonsa</i> var. <i>rugosperma</i>       | 566213 Cyperaceae      | Native     | 1       |
| 107 <i>Carex tribuloides</i>                        | 39438 Cyperaceae       | Native     | Walk    |
| 108 <i>Carex virescens</i>                          | 39867 Cyperaceae       | Native     | 2       |
| 109 <i>Carex vulpinoidea</i>                        | 39442 Cyperaceae       | Native     | Walk    |
| 110 <i>Carex willdenowii</i>                        | 39443 Cyperaceae       | Native     | 1       |
| 111 <i>Carpinus caroliniana</i>                     | 19504 Betulaceae       | Native     | 8       |
| 112 <i>Carya alba</i>                               | 501306 Juglandaceae    | Native     | 6       |
| 113 <i>Carya cordiformis</i>                        | 19227 Juglandaceae     | Native     | 21      |
| 114 <i>Carya glabra</i>                             | 19231 Juglandaceae     | Native     | 9       |
| 115 <i>Carya ovata</i>                              | 19243 Juglandaceae     | Native     | 2       |
| 116 <i>Catalpa speciosa</i>                         | 34315 Bignoniaceae     | Native     | Out     |
| 117 <i>Caulophyllum thalictroides</i>               | 18840 Berberidaceae    | Native     | Walk    |
| 118 <i>Celastrus orbiculatus</i>                    | 506068 Celastraceae    | Introduced | 2       |
| 119 <i>Celtis occidentalis</i>                      | 19040 Ulmaceae         | Native     | 41      |
| 120 <i>Cephalanthus occidentalis</i>                | 34786 Rubiaceae        | Native     | Walk    |
| 121 <i>Cerastium fontanum</i> ssp. <i>vulgare</i>   | 523831 Caryophyllaceae | Introduced | 2       |
| 122 <i>Cercis canadensis</i>                        | 25782 Fabaceae         | Native     | 1       |
| 123 <i>Chaerophyllum procumbens</i>                 | 29616 Apiaceae         | Native     | Wiegand |
| 124 <i>Chamaesyce maculata</i>                      | 565061 Euphorbiaceae   | Native     | 1       |
| 125 <i>Chelidonium majus</i>                        | 501481 Papaveraceae    | Introduced | Walk    |
| 126 <i>Chelone glabra</i>                           | 33182 Scrophulariaceae | Native     | Walk    |
| 127 <i>Chenopodium album</i>                        | 20592 Chenopodiaceae   | Introduced | 16      |
| 128 <i>Chenopodium ambrosioides</i>                 | 20590 Chenopodiaceae   | Introduced | Wiegand |
| 129 <i>Chimaphila maculata</i>                      | 23767 Pyrolaceae       | Native     | Walk    |
| 130 <i>Cichorium intybus</i>                        | 36763 Asteraceae       | Introduced | 1       |
| 131 <i>Cimicifuga racemosa</i>                      | 18757 Ranunculaceae    | Native     | Wiegand |
| 132 <i>Cinna arundinacea</i>                        | 40583 Poaceae          | Native     | Walk    |
| 133 <i>Circaea lutetiana</i> ssp. <i>canadensis</i> | 27569 Onagraceae       | Native     | 8       |
| 134 <i>Cirsium arvense</i>                          | 36335 Asteraceae       | Introduced | 4       |
| 135 <i>Cirsium vulgare</i>                          | 36428 Asteraceae       | Introduced | 2       |

|     |                                                        |        |                  |            |         |
|-----|--------------------------------------------------------|--------|------------------|------------|---------|
| 136 | <i>Claytonia virginica</i>                             | 20382  | Portulacaceae    | Native     | 25      |
| 137 | <i>Clematis virginiana</i>                             | 18716  | Ranunculaceae    | Native     | Wiegand |
| 138 | <i>Collinsonia canadensis</i>                          | 32474  | Lamiaceae        | Native     | Walk    |
| 139 | <i>Commelina communis</i>                              | 39127  | Commelinaceae    | Introduced | 5       |
| 140 | <i>Conium maculatum</i>                                | 29473  | Apiaceae         | Introduced | 5       |
| 141 | <i>Conoclinium coelestinum</i>                         | 511282 | Asteraceae       | Native     | Walk    |
| 142 | <i>Conopholis americana</i>                            | 34274  | Orobanchaceae    | Native     | Wiegand |
| 143 | <i>Conyza canadensis</i>                               | 37113  | Asteraceae       | Native     | Walk    |
| 144 | <i>Cornus amomum</i>                                   | 27799  | Cornaceae        | Native     | Walk    |
| 145 | <i>Cornus florida</i>                                  | 27806  | Cornaceae        | Native     | 6       |
| 146 | <i>Coronilla varia</i>                                 | 26553  | Fabaceae         | Introduced | Wiegand |
| 147 | <i>Corydalis flavula</i>                               | 19005  | Fumariaceae      | Native     | 6       |
| 148 | <i>Crataegus</i>                                       | 24539  | Rosaceae         | Unknown    | 1       |
| 149 | <i>Cruciata pedemontana</i>                            | 502717 | Rubiaceae        | Introduced | Walk    |
| 150 | <i>Cryptotaenia canadensis</i>                         | 29475  | Apiaceae         | Native     | 11      |
| 151 | <i>Cuphea viscosissima</i>                             | 501842 | Lythraceae       | Native     | Walk    |
| 152 | <i>Cuscuta gronovii</i>                                | 30712  | Cuscutaceae      | Native     | 2       |
| 153 | <i>Cynanchum laeve</i>                                 | 501893 | Asclepiadaceae   | Native     | Walk    |
| 154 | <i>Cynodon dactylon</i>                                | 41619  | Poaceae          | Introduced | 1       |
| 155 | <i>Cyperus strigosus</i>                               | 39901  | Cyperaceae       | Native     | 2       |
| 156 | <i>Dactylis glomerata</i>                              | 193446 | Poaceae          | Introduced | 11      |
| 157 | <i>Danthonia spicata</i>                               | 41642  | Poaceae          | Native     | 2       |
| 158 | <i>Datura stramonium</i>                               | 30520  | Solanaceae       | Introduced | Walk    |
| 159 | <i>Daucus carota</i>                                   | 29477  | Apiaceae         | Introduced | 3       |
| 160 | <i>Delphinium tricornis</i>                            | 18515  | Ranunculaceae    | Native     | Wiegand |
| 161 | <i>Dennstaedtia punctilobula</i>                       | 17491  | Dennstaedtiaceae | Native     | 2       |
| 162 | <i>Desmodium canescens</i>                             | 25792  | Fabaceae         | Native     | Walk    |
| 163 | <i>Desmodium nudiflorum</i>                            | 25812  | Fabaceae         | Native     | 2       |
| 164 | <i>Desmodium perplexum</i>                             | 25785  | Fabaceae         | Native     | Walk    |
| 165 | <i>Dianthus armeria</i>                                | 20276  | Caryophyllaceae  | Introduced | 2       |
| 166 | <i>Dicentra canadensis</i>                             | 18943  | Fumariaceae      | Native     | 1       |
| 167 | <i>Dicentra cucullaria</i>                             | 18945  | Fumariaceae      | Native     | 2       |
| 168 | <i>Dichanthelium boscii</i>                            | 41655  | Poaceae          | Native     | Walk    |
| 169 | <i>Dichanthelium depauperatum</i>                      | 41658  | Poaceae          | Native     | Walk    |
| 170 | <i>Dichanthelium dichotomum</i> var. <i>dichotomum</i> | 527691 | Poaceae          | Native     | 1       |
| 171 | <i>Digitaria filiformis</i>                            | 40608  | Poaceae          | Native     | Out     |
| 172 | <i>Dioscorea quaternata</i>                            | 43371  | Dioscoreaceae    | Native     | 5       |
| 173 | <i>Dipsacus fullonum</i> ssp. <i>sylvestris</i>        | 524924 | Dipsacaceae      | Introduced | Walk    |
| 174 | <i>Dryopteris carthusiana</i>                          | 502157 | Dryopteridaceae  | Native     | Walk    |
| 175 | <i>Dryopteris intermedia</i>                           | 17538  | Dryopteridaceae  | Native     | 1       |
| 176 | <i>Dryopteris marginalis</i>                           | 17541  | Dryopteridaceae  | Native     | 2       |
| 177 | <i>Duchesnea indica</i>                                | 25163  | Rosaceae         | Introduced | 29      |
| 178 | <i>Echinochloa crus-galli</i>                          | 502210 | Poaceae          | Introduced | 4       |
| 179 | <i>Eclipta prostrata</i>                               | 196226 | Asteraceae       | Native     | 2       |
| 180 | <i>Elaeagnus umbellata</i>                             | 27776  | Elaeagnaceae     | Introduced | Out     |
| 181 | <i>Eleocharis ovata</i>                                | 40061  | Cyperaceae       | Native     | Walk    |
| 182 | <i>Eleusine indica</i>                                 | 41692  | Poaceae          | Introduced | Out     |
| 183 | <i>Elymus hystrix</i> var. <i>hystrix</i>              | 527866 | Poaceae          | Native     | Wiegand |

|     |                                  |        |                |            |         |
|-----|----------------------------------|--------|----------------|------------|---------|
| 184 | <i>Elymus repens</i>             | 512839 | Poaceae        | Introduced | 1       |
| 185 | <i>Elymus riparius</i>           | 40706  | Poaceae        | Native     | 15      |
| 186 | <i>Elymus villosus</i>           | 40714  | Poaceae        | Native     | Walk    |
| 187 | <i>Elymus virginicus</i>         | 40681  | Poaceae        | Native     | 6       |
| 188 | <i>Elymus wiegandii</i>          | 40715  | Poaceae        | Native     | Walk    |
| 189 | <i>Epifagus virginiana</i>       | 34276  | Orobanchaceae  | Native     | 2       |
| 190 | <i>Erigenia bulbosa</i>          | 29661  | Apiaceae       | Native     | Wiegand |
| 191 | <i>Erigeron annuus</i>           | 35804  | Asteraceae     | Native     | 6       |
| 192 | <i>Erigeron philadelphicus</i>   | 35809  | Asteraceae     | Native     | Wiegand |
| 193 | <i>Erigeron pulchellus</i>       | 35808  | Asteraceae     | Native     | 1       |
| 194 | <i>Erythronium americanum</i>    | 196365 | Liliaceae      | Native     | 2       |
| 195 | <i>Eupatorium fistulosum</i>     | 502509 | Asteraceae     | Native     | Walk    |
| 196 | <i>Eupatorium perfoliatum</i>    | 35980  | Asteraceae     | Native     | 1       |
| 197 | <i>Eurybia divaricata</i>        | 513440 | Asteraceae     | Native     | 11      |
| 198 | <i>Eurybia macrophylla</i>       | 513449 | Asteraceae     | Native     | Walk    |
| 199 | <i>Fagus grandifolia</i>         | 19462  | Fagaceae       | Native     | 11      |
| 200 | <i>Festuca rubra</i>             | 40796  | Poaceae        | Native     | 1       |
| 201 | <i>Festuca subverticillata</i>   | 502612 | Poaceae        | Native     | 29      |
| 202 | <i>Floerkea proserpinacoides</i> | 29167  | Limnanthaceae  | Native     | 2       |
| 203 | <i>Forsythia viridissima</i>     | 32963  | Oleaceae       | Introduced | Walk    |
| 204 | <i>Fraxinus americana</i>        | 32931  | Oleaceae       | Native     | 9       |
| 205 | <i>Fraxinus pennsylvanica</i>    | 32929  | Oleaceae       | Native     | 26      |
| 206 | <i>Galactia volubilis</i>        | 26703  | Fabaceae       | Native     | 1       |
| 207 | <i>Galearis spectabilis</i>      | 43591  | Orchidaceae    | Native     | Wiegand |
| 208 | <i>Galinsoga parviflora</i>      | 37414  | Asteraceae     | Introduced | Wiegand |
| 209 | <i>Galinsoga quadriradiata</i>   | 37415  | Asteraceae     | Introduced | 1       |
| 210 | <i>Galium aparine</i>            | 34797  | Rubiaceae      | Native     | 3       |
| 211 | <i>Galium asprellum</i>          | 34798  | Rubiaceae      | Native     | Wiegand |
| 212 | <i>Galium circaezans</i>         | 34800  | Rubiaceae      | Native     | 6       |
| 213 | <i>Galium concinnum</i>          | 34848  | Rubiaceae      | Native     | 7       |
| 214 | <i>Galium mollugo</i>            | 34891  | Rubiaceae      | Introduced | 4       |
| 215 | <i>Galium tinctorium</i>         | 34803  | Rubiaceae      | Native     | Wiegand |
| 216 | <i>Galium triflorum</i>          | 34933  | Rubiaceae      | Native     | 2       |
| 217 | <i>Gaylussacia baccata</i>       | 23660  | Ericaceae      | Native     | 1       |
| 218 | <i>Geranium maculatum</i>        | 29107  | Geraniaceae    | Native     | Wiegand |
| 219 | <i>Geranium pusillum</i>         | 29115  | Geraniaceae    | Introduced | 2       |
| 220 | <i>Geum canadense</i>            | 24645  | Rosaceae       | Native     | 32      |
| 221 | <i>Glechoma hederacea</i>        | 502801 | Lamiaceae      | Introduced | 20      |
| 222 | <i>Gleditsia triacanthos</i>     | 26714  | Fabaceae       | Native     | 4       |
| 223 | <i>Glyceria striata</i>          | 40833  | Poaceae        | Native     | Walk    |
| 224 | <i>Goodyera pubescens</i>        | 43594  | Orchidaceae    | Native     | Wiegand |
| 225 | <i>Gymnocladus dioica</i>        | 502851 | Fabaceae       | Native     | 1       |
| 226 | <i>Hackelia virginiana</i>       | 31921  | Boraginaceae   | Native     | 10      |
| 227 | <i>Hamamelis virginiana</i>      | 19033  | Hamamelidaceae | Native     | 2       |
| 228 | <i>Hedeoma pulegioides</i>       | 32520  | Lamiaceae      | Native     | 1       |
| 229 | <i>Hedera helix</i>              | 29393  | Araliaceae     | Introduced | 1       |
| 230 | <i>Helenium autumnale</i>        | 36006  | Asteraceae     | Native     | Out     |
| 231 | <i>Helianthus decapetalus</i>    | 502923 | Asteraceae     | Native     | Wiegand |

|     |                                           |        |                  |            |         |
|-----|-------------------------------------------|--------|------------------|------------|---------|
| 232 | <i>Hemerocallis fulva</i>                 | 42943  | Liliaceae        | Introduced | Walk    |
| 233 | <i>Hepatica nobilis</i> var. <i>obtus</i> | 528379 | Ranunculaceae    | Native     | Wiegand |
| 234 | <i>Hesperis matronalis</i>                | 23138  | Brassicaceae     | Introduced | 2       |
| 235 | <i>Heuchera americana</i>                 | 24340  | Saxifragaceae    | Native     | Walk    |
| 236 | <i>Hibiscus syriacus</i>                  | 21638  | Malvaceae        | Introduced | Walk    |
| 237 | <i>Hieracium kalmii</i>                   | 503023 | Asteraceae       | Native     | Walk    |
| 238 | <i>Hieracium scabrum</i>                  | 37727  | Asteraceae       | Native     | 1       |
| 239 | <i>Hieracium venosum</i>                  | 37734  | Asteraceae       | Native     | Wiegand |
| 240 | <i>Houstonia longifolia</i>               | 35045  | Rubiaceae        | Native     | 1       |
| 241 | <i>Humulus japonicus</i>                  | 503065 | Cannabaceae      | Introduced | 11      |
| 242 | <i>Hydrangea arborescens</i>              | 24195  | Hydrangeaceae    | Native     | Walk    |
| 243 | <i>Hydrophyllum virginianum</i>           | 31396  | Hydrophyllaceae  | Native     | 8       |
| 244 | <i>Hylotelephium telephioides</i>         | 565232 | Crassulaceae     | Native     | Walk    |
| 245 | <i>Hypericum canadense</i>                | 21417  | Clusiaceae       | Native     | Wiegand |
| 246 | <i>Hypericum perforatum</i>               | 21454  | Clusiaceae       | Introduced | 2       |
| 247 | <i>Hypericum punctatum</i>                | 21422  | Clusiaceae       | Native     | 2       |
| 248 | <i>Hypoxis hirsuta</i>                    | 503146 | Iridaceae        | Native     | 1       |
| 249 | <i>Impatiens capensis</i>                 | 29182  | Balsaminaceae    | Native     | 24      |
| 250 | <i>Impatiens pallida</i>                  | 29189  | Balsaminaceae    | Native     | Walk    |
| 251 | <i>Ipomoea hederacea</i>                  | 503177 | Convolvulaceae   | Introduced | 1       |
| 252 | <i>Ipomoea lacunosa</i>                   | 30776  | Convolvulaceae   | Native     | 2       |
| 253 | <i>Juglans nigra</i>                      | 19254  | Juglandaceae     | Native     | 18      |
| 254 | <i>Juncus effusus</i>                     | 39232  | Juncaceae        | Native     | 3       |
| 255 | <i>Juncus tenuis</i>                      | 39243  | Juncaceae        | Native     | 16      |
| 256 | <i>Juniperus virginiana</i>               | 18048  | Cupressaceae     | Native     | 1       |
| 257 | <i>Justicia americana</i>                 | 34352  | Acanthaceae      | Native     | Walk    |
| 258 | <i>Kalmia latifolia</i>                   | 23677  | Ericaceae        | Native     | 1       |
| 259 | <i>Lactuca biennis</i>                    | 36597  | Asteraceae       | Native     | 1       |
| 260 | <i>Lactuca floridana</i>                  | 36599  | Asteraceae       | Native     | 1       |
| 261 | <i>Lactuca serriola</i>                   | 36608  | Asteraceae       | Introduced | 1       |
| 262 | <i>Lamium purpureum</i>                   | 32543  | Lamiaceae        | Introduced | 6       |
| 263 | <i>Laportea canadensis</i>                | 19127  | Urticaceae       | Native     | 11      |
| 264 | <i>Leersia oryzoides</i>                  | 40886  | Poaceae          | Native     | 1       |
| 265 | <i>Leonurus cardiaca</i>                  | 32548  | Lamiaceae        | Introduced | 1       |
| 266 | <i>Lepidium campestre</i>                 | 22954  | Brassicaceae     | Introduced | 1       |
| 267 | <i>Lespedeza virginica</i>                | 25915  | Fabaceae         | Native     | Walk    |
| 268 | <i>Ligustrum vulgare</i>                  | 32980  | Oleaceae         | Introduced | 2       |
| 269 | <i>Linaria vulgaris</i>                   | 33216  | Scrophulariaceae | Introduced | Walk    |
| 270 | <i>Lindera benzoin</i>                    | 18147  | Lauraceae        | Native     | 25      |
| 271 | <i>Lindernia dubia</i>                    | 33221  | Scrophulariaceae | Native     | Wiegand |
| 272 | <i>Liriodendron tulipifera</i>            | 18086  | Magnoliaceae     | Native     | 16      |
| 273 | <i>Lobelia cardinalis</i>                 | 34505  | Campanulaceae    | Native     | Walk    |
| 274 | <i>Lobelia inflata</i>                    | 34524  | Campanulaceae    | Native     | 9       |
| 275 | <i>Lobelia siphilitica</i>                | 34531  | Campanulaceae    | Native     | 1       |
| 276 | <i>Lobelia spicata</i>                    | 34532  | Campanulaceae    | Native     | 1       |
| 277 | <i>Lolium perenne</i>                     | 40893  | Poaceae          | Introduced | 1       |
| 278 | <i>Lolium pratense</i>                    | 507983 | Poaceae          | Introduced | 10      |
| 279 | <i>Lonicera japonica</i>                  | 35283  | Caprifoliaceae   | Introduced | 33      |

|     |                                                    |        |                  |            |         |
|-----|----------------------------------------------------|--------|------------------|------------|---------|
| 280 | <i>Lonicera maackii</i>                            | 35298  | Caprifoliaceae   | Introduced | 5       |
| 281 | <i>Lonicera morrowii</i>                           | 35299  | Caprifoliaceae   | Introduced | 8       |
| 282 | <i>Ludwigia alternifolia</i>                       | 27335  | Onagraceae       | Native     | Wiegand |
| 283 | <i>Ludwigia palustris</i>                          | 27336  | Onagraceae       | Native     | Wiegand |
| 284 | <i>Luzula multiflora</i>                           | 39333  | Juncaceae        | Native     | Wiegand |
| 285 | <i>Lycopus americanus</i>                          | 32254  | Lamiaceae        | Native     | Wiegand |
| 286 | <i>Lycopus virginicus</i>                          | 32255  | Lamiaceae        | Native     | 4       |
| 287 | <i>Lysimachia ciliata</i>                          | 23984  | Primulaceae      | Native     | Wiegand |
| 288 | <i>Lysimachia nummularia</i>                       | 23993  | Primulaceae      | Introduced | 11      |
| 289 | <i>Maclura pomifera</i>                            | 19102  | Moraceae         | Native     | 8       |
| 290 | <i>Maianthemum racemosum</i> ssp. <i>racemosum</i> | 524297 | Liliaceae        | Native     | 7       |
| 291 | <i>Malus sylvestris</i>                            | 25264  | Rosaceae         | Unknown    | Walk    |
| 292 | <i>Malva neglecta</i>                              | 21836  | Malvaceae        | Introduced | Walk    |
| 293 | <i>Matricaria discoidea</i>                        | 501470 | Asteraceae       | Introduced | Walk    |
| 294 | <i>Medeola virginiana</i>                          | 42963  | Liliaceae        | Native     | Wiegand |
| 295 | <i>Medicago lupulina</i>                           | 503721 | Fabaceae         | Introduced | Out     |
| 296 | <i>Melilotus alba</i>                              | 26149  | Fabaceae         | Introduced | Walk    |
| 297 | <i>Melilotus officinalis</i>                       | 26150  | Fabaceae         | Introduced | Out     |
| 298 | <i>Menispermum canadense</i>                       | 18871  | Menispermaceae   | Native     | 3       |
| 299 | <i>Mentha X piperita</i>                           | 32275  | Lamiaceae        | Introduced | 1       |
| 300 | <i>Mertensia virginica</i>                         | 31673  | Boraginaceae     | Native     | 13      |
| 301 | <i>Microstegium vimineum</i>                       | 503829 | Poaceae          | Introduced | 28      |
| 302 | <i>Mimulus alatus</i>                              | 33234  | Scrophulariaceae | Native     | 1       |
| 303 | <i>Mimulus ringens</i>                             | 33235  | Scrophulariaceae | Native     | Wiegand |
| 304 | <i>Mitchella repens</i>                            | 35063  | Rubiaceae        | Native     | Walk    |
| 305 | <i>Mollugo verticillata</i>                        | 19899  | Molluginaceae    | Native     | 1       |
| 306 | <i>Monotropa uniflora</i>                          | 23778  | Monotropaceae    | Native     | 1       |
| 307 | <i>Morus alba</i>                                  | 19066  | Moraceae         | Introduced | 3       |
| 308 | <i>Morus rubra</i>                                 | 19070  | Moraceae         | Native     | 4       |
| 309 | <i>Muhlenbergia frondosa</i>                       | 41915  | Poaceae          | Native     | 4       |
| 310 | <i>Muhlenbergia schreberi</i>                      | 41939  | Poaceae          | Native     | 18      |
| 311 | <i>Nepeta cataria</i>                              | 32623  | Lamiaceae        | Introduced | 3       |
| 312 | <i>Nyssa sylvatica</i>                             | 27821  | Nyssaceae        | Native     | 7       |
| 313 | <i>Oenothera biennis</i>                           | 27368  | Onagraceae       | Native     | Walk    |
| 314 | <i>Onoclea sensibilis</i>                          | 17637  | Dryopteridaceae  | Native     | Walk    |
| 315 | <i>Ornithogalum umbellatum</i>                     | 42754  | Liliaceae        | Introduced | Out     |
| 316 | <i>Osmorhiza claytonii</i>                         | 29789  | Apiaceae         | Native     | Wiegand |
| 317 | <i>Osmorhiza longistylis</i>                       | 29791  | Apiaceae         | Native     | 2       |
| 318 | <i>Ostrya virginiana</i>                           | 19511  | Betulaceae       | Native     | 3       |
| 319 | <i>Oxalis stricta</i>                              | 29095  | Oxalidaceae      | Native     | 37      |
| 320 | <i>Packera aurea</i>                               | 518139 | Asteraceae       | Native     | Wiegand |
| 321 | <i>Panicum</i>                                     | 40901  | Poaceae          | Unknown    | 2       |
| 322 | <i>Panicum rigidulum</i> var. <i>pubescens</i>     | 529368 | Poaceae          | Native     | Walk    |
| 323 | <i>Parietaria pensylvanica</i>                     | 19169  | Urticaceae       | Native     | 2       |
| 324 | <i>Paronychia canadensis</i>                       | 20325  | Caryophyllaceae  | Native     | Walk    |
| 325 | <i>Paronychia fastigiata</i>                       | 20334  | Caryophyllaceae  | Native     | Wiegand |
| 326 | <i>Parthenocissus quinquefolia</i>                 | 28602  | Vitaceae         | Native     | 37      |
| 327 | <i>Paulownia tomentosa</i>                         | 33460  | Scrophulariaceae | Introduced | 2       |

|     |                                                    |        |                 |            |         |
|-----|----------------------------------------------------|--------|-----------------|------------|---------|
| 328 | <i>Pennisetum glaucum</i>                          | 565385 | Poaceae         | Introduced | Walk    |
| 329 | <i>Perilla frutescens</i>                          | 32634  | Lamiaceae       | Introduced | 18      |
| 330 | <i>Phalaris arundinacea</i>                        | 41335  | Poaceae         | Native     | Walk    |
| 331 | <i>Phleum pratense</i>                             | 41062  | Poaceae         | Introduced | 4       |
| 332 | <i>Phlox divaricata</i>                            | 30934  | Polemoniaceae   | Native     | Wiegand |
| 333 | <i>Phlox paniculata</i>                            | 30973  | Polemoniaceae   | Native     | Wiegand |
| 334 | <i>Phryma leptostachya</i>                         | 504348 | Verbenaceae     | Native     | Walk    |
| 335 | <i>Phyla lanceolata</i>                            | 32196  | Verbenaceae     | Native     | Wiegand |
| 336 | <i>Physalis longifolia</i> var. <i>subglabrata</i> | 529629 | Solanaceae      | Native     | Walk    |
| 337 | <i>Phytolacca americana</i>                        | 19523  | Phytolaccaceae  | Native     | 31      |
| 338 | <i>Picea abies</i>                                 | 183289 | Pinaceae        | Introduced | Out     |
| 339 | <i>Pilea pumila</i>                                | 19130  | Urticaceae      | Native     | 26      |
| 340 | <i>Pinus rigida</i>                                | 183376 | Pinaceae        | Native     | Walk    |
| 341 | <i>Pinus strobus</i>                               | 183385 | Pinaceae        | Native     | 1       |
| 342 | <i>Pinus virginiana</i>                            | 183394 | Pinaceae        | Native     | Walk    |
| 343 | <i>Plantago lanceolata</i>                         | 32874  | Plantaginaceae  | Introduced | 4       |
| 344 | <i>Plantago major</i>                              | 32887  | Plantaginaceae  | Native     | 7       |
| 345 | <i>Plantago rugelii</i>                            | 504439 | Plantaginaceae  | Native     | 3       |
| 346 | <i>Platanus occidentalis</i>                       | 19020  | Platanaceae     | Native     | 8       |
| 347 | <i>Poa annua</i>                                   | 41107  | Poaceae         | Introduced | 1       |
| 348 | <i>Poa pratensis</i>                               | 41088  | Poaceae         | Introduced | 5       |
| 349 | <i>Poa sylvestris</i>                              | 41162  | Poaceae         | Native     | 1       |
| 350 | <i>Poa trivialis</i>                               | 41163  | Poaceae         | Introduced | 25      |
| 351 | <i>Podophyllum peltatum</i>                        | 18850  | Berberidaceae   | Native     | 3       |
| 352 | <i>Polygonatum biflorum</i>                        | 43006  | Liliaceae       | Native     | 2       |
| 353 | <i>Polygonum arifolium</i>                         | 20849  | Polygonaceae    | Native     | Walk    |
| 354 | <i>Polygonum aviculare</i>                         | 20876  | Polygonaceae    | Introduced | 3       |
| 355 | <i>Polygonum caespitosum</i>                       | 20852  | Polygonaceae    | Introduced | 40      |
| 356 | <i>Polygonum erectum</i>                           | 20893  | Polygonaceae    | Native     | 1       |
| 357 | <i>Polygonum hydropiperoides</i>                   | 20857  | Polygonaceae    | Native     | 5       |
| 358 | <i>Polygonum lapathifolium</i>                     | 20860  | Polygonaceae    | Native     | 2       |
| 359 | <i>Polygonum pensylvanicum</i>                     | 20861  | Polygonaceae    | Native     | 4       |
| 360 | <i>Polygonum perfoliatum</i>                       | 20914  | Polygonaceae    | Introduced | 2       |
| 361 | <i>Polygonum persicaria</i>                        | 20915  | Polygonaceae    | Introduced | 19      |
| 362 | <i>Polygonum sagittatum</i>                        | 20863  | Polygonaceae    | Native     | 4       |
| 363 | <i>Polygonum virginianum</i>                       | 20931  | Polygonaceae    | Native     | 13      |
| 364 | <i>Polypodium virginianum</i>                      | 17242  | Polypodiaceae   | Native     | Walk    |
| 365 | <i>Polystichum acrostichoides</i>                  | 17675  | Dryopteridaceae | Native     | 1       |
| 366 | <i>Populus deltoides</i>                           | 22445  | Salicaceae      | Native     | Wiegand |
| 367 | <i>Potentilla canadensis</i>                       | 24698  | Rosaceae        | Native     | 1       |
| 368 | <i>Potentilla recta</i>                            | 24742  | Rosaceae        | Introduced | Wiegand |
| 369 | <i>Potentilla simplex</i>                          | 24751  | Rosaceae        | Native     | Wiegand |
| 370 | <i>Prenanthes trifoliolata</i>                     | 504596 | Asteraceae      | Native     | 1       |
| 371 | <i>Prunella vulgaris</i>                           | 32381  | Lamiaceae       | Native     | 1       |
| 372 | <i>Prunus avium</i>                                | 24770  | Rosaceae        | Introduced | Walk    |
| 373 | <i>Prunus cerasus</i>                              | 24773  | Rosaceae        | Introduced | 1       |
| 374 | <i>Prunus pensylvanica</i>                         | 24799  | Rosaceae        | Native     | 11      |
| 375 | <i>Prunus serotina</i>                             | 24764  | Rosaceae        | Native     | 27      |

|     |                                              |        |                  |            |         |
|-----|----------------------------------------------|--------|------------------|------------|---------|
| 376 | <i>Prunus virginiana</i>                     | 24806  | Rosaceae         | Native     | 1       |
| 377 | <i>Quercus alba</i>                          | 19290  | Fagaceae         | Native     | 6       |
| 378 | <i>Quercus bicolor</i>                       | 19300  | Fagaceae         | Native     | 1       |
| 379 | <i>Quercus coccinea</i>                      | 19288  | Fagaceae         | Native     | 1       |
| 380 | <i>Quercus palustris</i>                     | 19281  | Fagaceae         | Native     | Walk    |
| 381 | <i>Quercus prinus</i>                        | 19398  | Fagaceae         | Native     | 5       |
| 382 | <i>Quercus rubra</i>                         | 19408  | Fagaceae         | Native     | 9       |
| 383 | <i>Quercus velutina</i>                      | 19447  | Fagaceae         | Native     | 8       |
| 384 | <i>Ranunculus abortivus</i>                  | 18559  | Ranunculaceae    | Native     | 4       |
| 385 | <i>Ranunculus acris</i>                      | 18583  | Ranunculaceae    | Introduced | Wiegand |
| 386 | <i>Ranunculus bulbosus</i>                   | 18594  | Ranunculaceae    | Introduced | 1       |
| 387 | <i>Ranunculus recurvatus</i>                 | 18641  | Ranunculaceae    | Native     | Walk    |
| 388 | <i>Ranunculus sardous</i>                    | 18645  | Ranunculaceae    | Introduced | Out     |
| 389 | <i>Ranunculus sceleratus</i>                 | 18576  | Ranunculaceae    | Native     | 1       |
| 390 | <i>Rhexia mariana</i>                        | 27685  | Melastomataceae  | Native     | 2       |
| 391 | <i>Robinia pseudoacacia</i>                  | 504804 | Fabaceae         | Native     | 16      |
| 392 | <i>Rorippa nasturtium-aquaticum</i>          | 22993  | Brassicaceae     | Native     | Walk    |
| 393 | <i>Rorippa sylvestris</i>                    | 23017  | Brassicaceae     | Introduced | Out     |
| 394 | <i>Rosa multiflora</i>                       | 24833  | Rosaceae         | Introduced | 32      |
| 395 | <i>Rubus allegheniensis</i>                  | 24866  | Rosaceae         | Native     | 18      |
| 396 | <i>Rubus occidentalis</i>                    | 24854  | Rosaceae         | Native     | 6       |
| 397 | <i>Rubus phoenicolasius</i>                  | 25017  | Rosaceae         | Introduced | 3       |
| 398 | <i>Rudbeckia hirta</i>                       | 36765  | Asteraceae       | Native     | 1       |
| 399 | <i>Rudbeckia laciniata</i>                   | 36775  | Asteraceae       | Native     | Walk    |
| 400 | <i>Rumex crispus</i>                         | 20937  | Polygonaceae     | Introduced | 3       |
| 401 | <i>Rumex hastatulus</i>                      | 20938  | Polygonaceae     | Native     | 1       |
| 402 | <i>Rumex obtusifolius</i>                    | 20939  | Polygonaceae     | Introduced | 13      |
| 403 | <i>Salix nigra</i>                           | 22484  | Salicaceae       | Native     | 3       |
| 404 | <i>Sambucus nigra</i> ssp. <i>canadensis</i> | 525079 | Caprifoliaceae   | Native     | 1       |
| 405 | <i>Sanguinaria canadensis</i>                | 18990  | Papaveraceae     | Native     | 2       |
| 406 | <i>Sanicula canadensis</i>                   | 29850  | Apiaceae         | Native     | 16      |
| 407 | <i>Sassafras albidum</i>                     | 18158  | Lauraceae        | Native     | 3       |
| 408 | <i>Saururus cernuus</i>                      | 18221  | Saururaceae      | Native     | Wiegand |
| 409 | <i>Saxifraga virginiana</i>                  | 24303  | Saxifragaceae    | Native     | 1       |
| 410 | <i>Scirpus atrovirens</i>                    | 40227  | Cyperaceae       | Native     | Walk    |
| 411 | <i>Scrophularia marilandica</i>              | 34037  | Scrophulariaceae | Native     | 2       |
| 412 | <i>Scutellaria elliptica</i>                 | 32796  | Lamiaceae        | Native     | Wiegand |
| 413 | <i>Scutellaria nervosa</i>                   | 32808  | Lamiaceae        | Native     | 1       |
| 414 | <i>Sedum ternatum</i>                        | 24184  | Crassulaceae     | Native     | 2       |
| 415 | <i>Senna hebecarpa</i>                       | 505155 | Fabaceae         | Native     | 1       |
| 416 | <i>Setaria</i>                               | 41229  | Poaceae          | Introduced | 1       |
| 417 | <i>Setaria faberi</i>                        | 41244  | Poaceae          | Introduced | Walk    |
| 418 | <i>Setaria pumila</i>                        | 505192 | Poaceae          | Introduced | Walk    |
| 419 | <i>Sicyos angulatus</i>                      | 22402  | Cucurbitaceae    | Native     | 3       |
| 420 | <i>Sida spinosa</i>                          | 21732  | Malvaceae        | Native     | 1       |
| 421 | <i>Silene latifolia</i> ssp. <i>alba</i>     | 524706 | Caryophyllaceae  | Introduced | Walk    |
| 422 | <i>Silene stellata</i>                       | 20127  | Caryophyllaceae  | Native     | Walk    |
| 423 | <i>Sisymbrium officinale</i>                 | 23316  | Brassicaceae     | Introduced | Out     |

|     |                                                           |        |                  |            |         |
|-----|-----------------------------------------------------------|--------|------------------|------------|---------|
| 424 | <i>Sisyrinchium angustifolium</i>                         | 43240  | Iridaceae        | Native     | 1       |
| 425 | <i>Smilax rotundifolia</i>                                | 43346  | Smilacaceae      | Native     | 16      |
| 426 | <i>Solanum carolinense</i>                                | 30413  | Solanaceae       | Native     | 6       |
| 427 | <i>Solanum dulcamara</i>                                  | 30414  | Solanaceae       | Introduced | 2       |
| 428 | <i>Solanum nigrum</i>                                     | 565525 | Solanaceae       | Introduced | 5       |
| 429 | <i>Solidago</i>                                           | 36223  | Asteraceae       | Native     | 2       |
| 430 | <i>Solidago bicolor</i>                                   | 36234  | Asteraceae       | Native     | Walk    |
| 431 | <i>Solidago caesia</i>                                    | 36238  | Asteraceae       | Native     | 1       |
| 432 | <i>Solidago canadensis</i>                                | 36224  | Asteraceae       | Native     | 12      |
| 433 | <i>Solidago flexicaulis</i>                               | 36257  | Asteraceae       | Native     | 2       |
| 434 | <i>Solidago juncea</i>                                    | 36270  | Asteraceae       | Native     | Wiegand |
| 435 | <i>Solidago rugosa</i>                                    | 36299  | Asteraceae       | Native     | Walk    |
| 436 | <i>Sonchus asper</i>                                      | 38424  | Asteraceae       | Introduced | Walk    |
| 437 | <i>Sorghastrum nutans</i>                                 | 42102  | Poaceae          | Native     | 2       |
| 438 | <i>Sorghum halepense</i>                                  | 42111  | Poaceae          | Introduced | Out     |
| 439 | <i>Sphenopholis obtusata</i>                              | 41279  | Poaceae          | Native     | 1       |
| 440 | <i>Stachys palustris</i>                                  | 32344  | Lamiaceae        | Native     | Wiegand |
| 441 | <i>Stachys tenuifolia</i>                                 | 32323  | Lamiaceae        | Native     | 1       |
| 442 | <i>Staphylea trifolia</i>                                 | 28646  | Staphyleaceae    | Native     | Wiegand |
| 443 | <i>Stellaria graminea</i>                                 | 20181  | Caryophyllaceae  | Introduced | 1       |
| 444 | <i>Stellaria media</i>                                    | 20169  | Caryophyllaceae  | Introduced | 11      |
| 445 | <i>Stellaria pubera</i>                                   | 20193  | Caryophyllaceae  | Native     | 23      |
| 446 | <i>Symphyotrichum</i>                                     | 564906 | Asteraceae       | Native     | 3       |
| 447 | <i>Symphyotrichum cordifolium</i>                         | 522193 | Asteraceae       | Native     | 1       |
| 448 | <i>Symphyotrichum divaricatum</i>                         | 522198 | Asteraceae       | Native     | Walk    |
| 449 | <i>Symphyotrichum lanceolatum</i> var. <i>lanceolatum</i> | 566832 | Asteraceae       | Native     | Out     |
| 450 | <i>Symphyotrichum patens</i> var. <i>patens</i>           | 566339 | Asteraceae       | Native     | Wiegand |
| 451 | <i>Symphyotrichum shortii</i>                             | 522246 | Asteraceae       | Native     | 2       |
| 452 | <i>Symplocarpus foetidus</i>                              | 42538  | Araceae          | Native     | Walk    |
| 453 | <i>Taraxacum officinale</i>                               | 36213  | Asteraceae       | Introduced | 20      |
| 454 | <i>Teucrium canadense</i> var. <i>canadense</i>           | 530630 | Lamiaceae        | Native     | 3       |
| 455 | <i>Thalictrum thalictroides</i>                           | 18683  | Ranunculaceae    | Native     | Walk    |
| 456 | <i>Thelypteris noveboracensis</i>                         | 17261  | Thelypteridaceae | Native     | 1       |
| 457 | <i>Tilia americana</i>                                    | 21536  | Tiliaceae        | Native     | Wiegand |
| 458 | <i>Toxicodendron radicans</i>                             | 28821  | Anacardiaceae    | Native     | 42      |
| 459 | <i>Tragopogon dubius</i>                                  | 38564  | Asteraceae       | Introduced | Walk    |
| 460 | <i>Tridens flavus</i>                                     | 42227  | Poaceae          | Native     | Walk    |
| 461 | <i>Trifolium aureum</i>                                   | 26223  | Fabaceae         | Introduced | Out     |
| 462 | <i>Trifolium campestre</i>                                | 26231  | Fabaceae         | Introduced | 2       |
| 463 | <i>Trifolium pratense</i>                                 | 26313  | Fabaceae         | Introduced | 3       |
| 464 | <i>Trifolium repens</i>                                   | 26206  | Fabaceae         | Introduced | 6       |
| 465 | <i>Trillium sessile</i>                                   | 43088  | Liliaceae        | Native     | Wiegand |
| 466 | <i>Triticum aestivum</i>                                  | 42237  | Poaceae          | Introduced | 2       |
| 467 | <i>Tsuga canadensis</i>                                   | 183397 | Pinaceae         | Native     | Walk    |
| 468 | <i>Ulmus americana</i>                                    | 19049  | Ulmaceae         | Native     | 7       |
| 469 | <i>Ulmus rubra</i>                                        | 19050  | Ulmaceae         | Native     | 29      |
| 470 | <i>Urtica dioica</i>                                      | 19152  | Urticaceae       | Introduced | 10      |
| 471 | <i>Uvularia perfoliata</i>                                | 43110  | Liliaceae        | Native     | Wiegand |

|     |                               |        |                  |            |         |
|-----|-------------------------------|--------|------------------|------------|---------|
| 472 | <i>Uvularia sessilifolia</i>  | 43112  | Liliaceae        | Native     | 1       |
| 473 | <i>Vaccinium pallidum</i>     | 23610  | Ericaceae        | Native     | 1       |
| 474 | <i>Vaccinium stamineum</i>    | 23615  | Ericaceae        | Native     | 1       |
| 475 | <i>Verbascum blattaria</i>    | 33389  | Scrophulariaceae | Introduced | Out     |
| 476 | <i>Verbascum thapsus</i>      | 33394  | Scrophulariaceae | Introduced | 3       |
| 477 | <i>Verbena urticifolia</i>    | 32127  | Verbenaceae      | Native     | 8       |
| 478 | <i>Verbesina alternifolia</i> | 38597  | Asteraceae       | Native     | 18      |
| 479 | <i>Veronica americana</i>     | 33399  | Scrophulariaceae | Native     | 1       |
| 480 | <i>Veronica arvensis</i>      | 33411  | Scrophulariaceae | Introduced | 11      |
| 481 | <i>Veronica officinalis</i>   | 33398  | Scrophulariaceae | Native     | 2       |
| 482 | <i>Veronica persica</i>       | 33405  | Scrophulariaceae | Introduced | Out     |
| 483 | <i>Veronica serpyllifolia</i> | 33423  | Scrophulariaceae | Introduced | 2       |
| 484 | <i>Viburnum dentatum</i>      | 35251  | Caprifoliaceae   | Native     | Wiegand |
| 485 | <i>Viburnum prunifolium</i>   | 35253  | Caprifoliaceae   | Native     | 5       |
| 486 | <i>Vinca minor</i>            | 30238  | Apocynaceae      | Introduced | 2       |
| 487 | <i>Viola bicolor</i>          | 22047  | Violaceae        | Native     | 1       |
| 488 | <i>Viola palmata</i>          | 22125  | Violaceae        | Native     | Wiegand |
| 489 | <i>Viola pubescens</i>        | 22144  | Violaceae        | Native     | Walk    |
| 490 | <i>Viola sororia</i>          | 22169  | Violaceae        | Native     | 29      |
| 491 | <i>Viola striata</i>          | 22171  | Violaceae        | Native     | 3       |
| 492 | <i>Vitis aestivalis</i>       | 28607  | Vitaceae         | Native     | 1       |
| 493 | <i>Vitis riparia</i>          | 28624  | Vitaceae         | Native     | 32      |
| 494 | <i>Vitis rotundifolia</i>     | 28609  | Vitaceae         | Native     | 1       |
| 495 | <i>Vitis vulpina</i>          | 28610  | Vitaceae         | Native     | 3       |
| 496 | <i>Wolffia brasiliensis</i>   | 505750 | Lemnaceae        | Native     | Walk    |
| 497 | <i>Xanthium strumarium</i>    | 38692  | Asteraceae       | Native     | 4       |
| 498 | <i>Zea mays</i>               | 42269  | Poaceae          | Introduced | 2       |

Appendix 3. Identity and nativeness of species found at Wolf Trap Farm Park. The table also includes unique numbers for each species (TSN) and the number of times each species was encountered in 5 inventoried plots (Count). If the species was encountered outside of the plots in a walk-through, the entry is recorded as “0”.

| ID | Species                                       | Family          | TSN   | Nativeness | Count |
|----|-----------------------------------------------|-----------------|-------|------------|-------|
| 1  | <i>Acalypha rhomboidea</i>                    | Euphorbiaceae   | 28193 | Native     | 0     |
| 2  | <i>Acer platanoides</i>                       | Aceraceae       | 28755 | Introduced | 0     |
| 3  | <i>Acer rubrum</i>                            | Aceraceae       | 28728 | Native     | 5     |
| 4  | <i>Acer saccharinum</i>                       | Aceraceae       | 28757 | Native     | 0     |
| 5  | <i>Ailanthus altissima</i>                    | Simaroubaceae   | 28827 | Introduced | 1     |
| 6  | <i>Albizia julibrissin</i>                    | Fabaceae        | 26449 | Introduced | 0     |
| 7  | <i>Alliaria petiolata</i>                     | Brassicaceae    | 18448 | Introduced | 1     |
| 8  | <i>Ambrosia trifida</i>                       | Asteraceae      | 36521 | Native     | 0     |
| 9  | <i>Amelanchier arborea</i>                    | Rosaceae        | 25110 | Native     | 2     |
| 10 | <i>Amphicarpaea bracteata</i>                 | Fabaceae        | 18206 | Native     | 2     |
| 11 | <i>Anthoxanthum odoratum</i>                  | Poaceae         | 41395 | Introduced | 0     |
| 12 | <i>Apocynum cannabinum</i>                    | Apocynaceae     | 30157 | Native     | 0     |
| 13 | <i>Arisaema triphyllum</i>                    | Araceae         | 42525 | Native     | 1     |
| 14 | <i>Artemisia vulgaris</i>                     | Asteraceae      | 35505 | Introduced | 0     |
| 15 | <i>Asplenium platyneuron</i>                  | Aspleniaceae    | 17355 | Native     | 1     |
| 16 | <i>Athyrium filix-femina</i>                  | Dryopteridaceae | 17413 | Native     | 1     |
| 17 | <i>Berberis thunbergii</i>                    | Berberidaceae   | 18835 | Introduced | 0     |
| 18 | <i>Betula nigra</i>                           | Betulaceae      | 19480 | Native     | 1     |
| 19 | <i>Bidens frondosa</i>                        | Asteraceae      | 35707 | Native     | 1     |
| 20 | <i>Boehmeria cylindrica</i>                   | Urticaceae      | 19121 | Native     | 1     |
| 21 | <i>Botrychium virginianum</i>                 | Ophioglossaceae | 17173 | Native     | 0     |
| 22 | <i>Carex aggregata</i>                        | Cyperaceae      | 39483 | Native     | 0     |
| 23 | <i>Carex crinita</i>                          | Cyperaceae      | 39385 | Native     | 0     |
| 24 | <i>Carex debilis</i>                          | Cyperaceae      | 39572 | Native     | 1     |
| 25 | <i>Carex grisea</i>                           | Cyperaceae      | 51020 | Native     | 0     |
| 26 | <i>Carex intumescens</i>                      | Cyperaceae      | 39403 | Native     | 0     |
| 27 | <i>Carex laevivaginata</i>                    | Cyperaceae      | 39410 | Native     | 0     |
| 28 | <i>Carex laxiculmis</i>                       | Cyperaceae      | 39411 | Native     | 0     |
| 29 | <i>Carex longii</i>                           | Cyperaceae      | 50124 | Native     | 0     |
| 30 | <i>Carex lurida</i>                           | Cyperaceae      | 39414 | Native     | 0     |
| 31 | <i>Carex platyphylla</i>                      | Cyperaceae      | 39761 | Native     | 1     |
| 32 | <i>Carex radiata</i>                          | Cyperaceae      | 39778 | Native     | 0     |
| 33 | <i>Carex swanii</i>                           | Cyperaceae      | 39437 | Native     | 1     |
| 34 | <i>Carex tribuloides</i>                      | Cyperaceae      | 39438 | Native     | 0     |
| 35 | <i>Carex vulpinoidea</i>                      | Cyperaceae      | 39442 | Native     | 0     |
| 36 | <i>Carpinus caroliniana</i>                   | Betulaceae      | 19504 | Native     | 2     |
| 37 | <i>Carya alba</i>                             | Juglandaceae    | 50130 | Native     | 2     |
| 38 | <i>Carya glabra</i>                           | Juglandaceae    | 19231 | Native     | 4     |
| 39 | <i>Castanea dentata</i>                       | Fagaceae        | 19454 | Native     | 1     |
| 40 | <i>Celastrus orbiculatus</i>                  | Celastraceae    | 50606 | Introduced | 2     |
| 41 | <i>Cerastium fontanum</i> ssp. <i>Vulgare</i> | Caryophyllaceae | 52383 | Introduced | 0     |
| 42 | <i>Chimaphila maculata</i>                    | Pyrolaceae      | 23767 | Native     | 3     |

|    |                                                           |                  |                   |   |
|----|-----------------------------------------------------------|------------------|-------------------|---|
| 43 | <i>Chionanthus virginicus</i>                             | Oleaceae         | 32950 Native      | 1 |
| 44 | <i>Cichorium intybus</i>                                  | Asteraceae       | 36763 Introduced  | 0 |
| 45 | <i>Cinna arundinacea</i>                                  | Poaceae          | 40583 Native      | 1 |
| 46 | <i>Circaea lutetiana</i> ssp. <i>canadensis</i>           | Onagraceae       | 27569 Native      | 1 |
| 47 | <i>Commelina communis</i>                                 | Commelinaceae    | 39127 Introduced  | 1 |
| 48 | <i>Conyza canadensis</i>                                  | Asteraceae       | 37113 Native      | 0 |
| 49 | <i>Cornus canadensis</i>                                  | Cornaceae        | 27816 Native      | 0 |
| 50 | <i>Cornus florida</i>                                     | Cornaceae        | 27806 Native      | 2 |
| 51 | <i>Coronilla varia</i>                                    | Fabaceae         | 26553 Introduced  | 0 |
| 52 | <i>Cuscuta gronovii</i>                                   | Cuscutaceae      | 30712 Native      | 1 |
| 53 | <i>Cyperus echinatus</i>                                  | Cyperaceae       | 501920 Native     | 0 |
| 54 | <i>Cyperus strigosus</i>                                  | Cyperaceae       | 39901 Native      | 0 |
| 55 | <i>Cypripedium acaule</i>                                 | Orchidaceae      | 43534 Native      | 0 |
| 56 | <i>Dennstaedtia punctilobula</i>                          | Dennstaedtiaceae | 17491 Native      | 3 |
| 57 | <i>Desmodium glabellum</i>                                | Fabaceae         | 25799 Native      | 0 |
| 58 | <i>Desmodium nudiflorum</i>                               | Fabaceae         | 25812 Native      | 3 |
| 59 | <i>Dichanthelium boscii</i>                               | Poaceae          | 41655 Native      | 1 |
| 60 | <i>Dichanthelium clandestinum</i>                         | Poaceae          | 41656 Native      | 0 |
| 61 | <i>Dichanthelium dichotomum</i> var. <i>dichotomum</i>    | Poaceae          | 41659 Native      | 1 |
| 62 | <i>Dichanthelium sphaerocarpon</i> var. <i>isophyllum</i> | Poaceae          | 527701 Native     | 0 |
| 63 | <i>Dioscorea quaternata</i>                               | Dioscoreaceae    | 43371 Native      | 1 |
| 64 | <i>Dioscorea villosa</i>                                  | Dioscoreaceae    | 43367 Native      | 2 |
| 65 | <i>Duchesnea indica</i>                                   | Rosaceae         | 25163 Introduced  | 0 |
| 66 | <i>Elephantopus carolinianus</i>                          | Asteraceae       | 37297 Native      | 0 |
| 67 | <i>Elymus virginicus</i>                                  | Poaceae          | 40681 Native      | 1 |
| 68 | <i>Euonymus americana</i>                                 | Celastraceae     | 502577 Native     | 0 |
| 69 | <i>Eupatorium fistulosum</i>                              | Asteraceae       | 502509 Native     | 0 |
| 70 | <i>Eupatorium purpureum</i>                               | Asteraceae       | 502522 Native     | 0 |
| 71 | <i>Euphorbia dentata</i>                                  | Euphorbiaceae    | 502535 Introduced | 0 |
| 72 | <i>Fagus grandifolia</i>                                  | Fagaceae         | 19462 Native      | 0 |
| 73 | <i>Festuca subverticillata</i>                            | Poaceae          | 502612 Native     | 0 |
| 74 | <i>Fraxinus americana</i>                                 | Oleaceae         | 32931 Native      | 0 |
| 75 | <i>Fraxinus pennsylvanica</i>                             | Oleaceae         | 32929 Native      | 1 |
| 76 | <i>Galium circaezans</i>                                  | Rubiaceae        | 34800 Native      | 0 |
| 77 | <i>Galium lanceolatum</i>                                 | Rubiaceae        | 34882 Native      | 0 |
| 78 | <i>Galium triflorum</i>                                   | Rubiaceae        | 34933 Native      | 0 |
| 79 | <i>Gaylussacia baccata</i>                                | Ericaceae        | 23660 Native      | 2 |
| 80 | <i>Geum canadense</i>                                     | Rosaceae         | 24645 Native      | 1 |
| 81 | <i>Glyceria obtusa</i>                                    | Poaceae          | 40832 Native      | 0 |
| 82 | <i>Glyceria striata</i>                                   | Poaceae          | 40833 Native      | 0 |
| 83 | <i>Hamamelis virginiana</i>                               | Hamamelidaceae   | 19033 Native      | 1 |
| 84 | <i>Hieracium kalmii</i>                                   | Asteraceae       | 503023 Native     | 0 |
| 85 | <i>Houstonia longifolia</i>                               | Rubiaceae        | 35045 Native      | 0 |
| 86 | <i>Houstonia purpurea</i>                                 | Rubiaceae        | 35051 Native      | 0 |
| 87 | <i>Hypoxis hirsuta</i>                                    | Iridaceae        | 503146 Native     | 0 |
| 88 | <i>Ilex opaca</i>                                         | Aquifoliaceae    | 27982 Native      | 2 |
| 89 | <i>Ilex verticillata</i>                                  | Aquifoliaceae    | 27985 Native      | 1 |
| 90 | <i>Impatiens capensis</i>                                 | Balsaminaceae    | 29182 Native      | 2 |

|     |                                                    |                 |        |            |   |
|-----|----------------------------------------------------|-----------------|--------|------------|---|
| 91  | <i>Juncus effusus</i>                              | Juncaceae       | 39232  | Native     | 0 |
| 92  | <i>Juncus tenuis</i>                               | Juncaceae       | 39243  | Native     | 0 |
| 93  | <i>Juniperus virginiana</i>                        | Cupressaceae    | 18048  | Native     | 0 |
| 94  | <i>Kalmia latifolia</i>                            | Ericaceae       | 23677  | Native     | 3 |
| 95  | <i>Leucothoe racemosa</i>                          | Ericaceae       | 23549  | Native     | 4 |
| 96  | <i>Lindera benzoin</i>                             | Lauraceae       | 18147  | Native     | 2 |
| 97  | <i>Liriodendron tulipifera</i>                     | Magnoliaceae    | 18086  | Native     | 5 |
| 98  | <i>Lobelia cardinalis</i>                          | Campanulaceae   | 34505  | Native     | 0 |
| 99  | <i>Lobelia inflata</i>                             | Campanulaceae   | 34524  | Native     | 0 |
| 100 | <i>Lolium arundinaceum</i>                         | Poaceae         | 507979 | Introduced | 0 |
| 101 | <i>Lolium perenne</i>                              | Poaceae         | 40893  | Introduced | 0 |
| 102 | <i>Lonicera japonica</i>                           | Caprifoliaceae  | 35283  | Introduced | 1 |
| 103 | <i>Lonicera maackii</i>                            | Caprifoliaceae  | 35298  | Introduced | 0 |
| 104 | <i>Luzula acuminata</i>                            | Juncaceae       | 39336  | Native     | 0 |
| 105 | <i>Lycopodium digitatum</i>                        | Lycopodiaceae   | 17028  | Native     | 0 |
| 106 | <i>Lycopus virginicus</i>                          | Lamiaceae       | 32255  | Native     | 1 |
| 107 | <i>Lysimachia ciliata</i>                          | Primulaceae     | 23984  | Native     | 0 |
| 108 | <i>Lysimachia nummularia</i>                       | Primulaceae     | 23993  | Introduced | 0 |
| 109 | <i>Maianthemum canadense</i>                       | Liliaceae       | 503653 | Native     | 0 |
| 110 | <i>Maianthemum racemosum</i> ssp. <i>Racemosum</i> | Liliaceae       | 524297 | Native     | 1 |
| 111 | <i>Medeola virginiana</i>                          | Liliaceae       | 42963  | Native     | 2 |
| 112 | <i>Microstegium vimineum</i>                       | Poaceae         | 503829 | Introduced | 2 |
| 113 | <i>Mitchella repens</i>                            | Rubiaceae       | 35063  | Native     | 1 |
| 114 | <i>Monotropa uniflora</i>                          | Monotropaceae   | 23778  | Native     | 1 |
| 115 | <i>Muhlenbergia schreberi</i>                      | Poaceae         | 41939  | Native     | 0 |
| 116 | <i>Nyssa sylvatica</i>                             | Nyssaceae       | 27821  | Native     | 3 |
| 117 | <i>Oenothera biennis</i>                           | Onagraceae      | 27368  | Native     | 0 |
| 118 | <i>Onoclea sensibilis</i>                          | Dryopteridaceae | 17637  | Native     | 1 |
| 119 | <i>Osmunda cinnamomea</i>                          | Osmundaceae     | 17219  | Native     | 1 |
| 120 | <i>Osmunda regalis</i>                             | Osmundaceae     | 17218  | Native     | 1 |
| 121 | <i>Oxalis stricta</i>                              | Oxalidaceae     | 29095  | Native     | 1 |
| 122 | <i>Parthenocissus quinquefolia</i>                 | Vitaceae        | 28602  | Native     | 4 |
| 123 | <i>Phytolacca americana</i>                        | Phytolaccaceae  | 19523  | Native     | 0 |
| 124 | <i>Picea abies</i>                                 | Pinaceae        | 183289 | Introduced | 0 |
| 125 | <i>Pilea pumila</i>                                | Urticaceae      | 19130  | Native     | 1 |
| 126 | <i>Pinus virginiana</i>                            | Pinaceae        | 183394 | Native     | 2 |
| 127 | <i>Plantago lanceolata</i>                         | Plantaginaceae  | 32874  | Introduced | 0 |
| 128 | <i>Plantago rugelii</i>                            | Plantaginaceae  | 504439 | Native     | 0 |
| 129 | <i>Platanus occidentalis</i>                       | Platanaceae     | 19020  | Native     | 0 |
| 130 | <i>Poa trivialis</i>                               | Poaceae         | 41163  | Introduced | 0 |
| 131 | <i>Podophyllum peltatum</i>                        | Berberidaceae   | 18850  | Native     | 0 |
| 132 | <i>Polygonatum biflorum</i>                        | Liliaceae       | 43006  | Native     | 2 |
| 133 | <i>Polygonum arifolium</i>                         | Polygonaceae    | 20849  | Native     | 0 |
| 134 | <i>Polygonum caespitosum</i>                       | Polygonaceae    | 20852  | Introduced | 1 |
| 135 | <i>Polygonum hydropiper</i>                        | Polygonaceae    | 20856  | Introduced | 1 |
| 136 | <i>Polygonum perfoliatum</i>                       | Polygonaceae    | 20914  | Introduced | 1 |
| 137 | <i>Polygonum persicaria</i>                        | Polygonaceae    | 20915  | Introduced | 0 |
| 138 | <i>Polygonum sagittatum</i>                        | Polygonaceae    | 20863  | Native     | 1 |

|     |                                                       |                  |                  |   |
|-----|-------------------------------------------------------|------------------|------------------|---|
| 139 | <i>Polygonum virginianum</i>                          | Polygonaceae     | 20931 Native     | 1 |
| 140 | <i>Polypodium virginianum</i>                         | Polypodiaceae    | 17242 Native     | 0 |
| 141 | <i>Polystichum acrostichoides</i>                     | Dryopteridaceae  | 17675 Native     | 1 |
| 142 | <i>Potentilla simplex</i>                             | Rosaceae         | 24751 Native     | 0 |
| 143 | <i>Prenanthes</i>                                     | Asteraceae       | 38268 Native     | 1 |
| 144 | <i>Prunella vulgaris</i>                              | Lamiaceae        | 32381 Native     | 0 |
| 145 | <i>Prunus serotina</i>                                | Rosaceae         | 24764 Native     | 0 |
| 146 | <i>Quercus alba</i>                                   | Fagaceae         | 19290 Native     | 4 |
| 147 | <i>Quercus coccinea</i>                               | Fagaceae         | 19288 Native     | 1 |
| 148 | <i>Quercus imbricaria</i>                             | Fagaceae         | 19359 Native     | 0 |
| 149 | <i>Quercus michauxii</i>                              | Fagaceae         | 19279 Native     | 0 |
| 150 | <i>Quercus palustris</i>                              | Fagaceae         | 19281 Native     | 0 |
| 151 | <i>Quercus prinus</i>                                 | Fagaceae         | 19398 Native     | 3 |
| 152 | <i>Quercus rubra</i>                                  | Fagaceae         | 19408 Native     | 2 |
| 153 | <i>Quercus velutina</i>                               | Fagaceae         | 19447 Native     | 3 |
| 154 | <i>Ranunculus ambigens</i>                            | Ranunculaceae    | 18589 Native     | 0 |
| 155 | <i>Rhododendron periclymenoides</i>                   | Ericaceae        | 23726 Native     | 0 |
| 156 | <i>Rosa multiflora</i>                                | Rosaceae         | 24833 Introduced | 1 |
| 157 | <i>Rubus allegheniensis</i>                           | Rosaceae         | 24866 Native     | 1 |
| 158 | <i>Rudbeckia hirta</i>                                | Asteraceae       | 36765 Native     | 0 |
| 159 | <i>Rumex obtusifolius</i>                             | Polygonaceae     | 20939 Introduced | 0 |
| 160 | <i>Salix nigra</i>                                    | Salicaceae       | 22484 Native     | 0 |
| 161 | <i>Sambucus nigra</i> ssp. <i>Canadensis</i>          | Caprifoliaceae   | 525079 Native    | 0 |
| 162 | <i>Sassafras albidum</i>                              | Lauraceae        | 18158 Native     | 3 |
| 163 | <i>Saururus cernuus</i>                               | Saururaceae      | 18221 Native     | 1 |
| 164 | <i>Scirpus</i>                                        | Cyperaceae       | 40225 Native     | 0 |
| 165 | <i>Scutellaria integrifolia</i>                       | Lamiaceae        | 32801 Native     | 0 |
| 166 | <i>Scutellaria nervosa</i>                            | Lamiaceae        | 32808 Native     | 0 |
| 167 | <i>Smilax glauca</i>                                  | Smilacaceae      | 43342 Native     | 3 |
| 168 | <i>Smilax rotundifolia</i>                            | Smilacaceae      | 43346 Native     | 4 |
| 169 | <i>Solanum carolinense</i>                            | Solanaceae       | 30413 Native     | 0 |
| 170 | <i>Solidago caesia</i>                                | Asteraceae       | 36238 Native     | 0 |
| 171 | <i>Solidago nemoralis</i>                             | Asteraceae       | 36281 Native     | 0 |
| 172 | <i>Solidago odora</i>                                 | Asteraceae       | 36284 Native     | 0 |
| 173 | <i>Symphyotrichum divaricatum</i>                     | Asteraceae       | 522198 Native    | 0 |
| 174 | <i>Symphyotrichum ericoides</i> var. <i>ericoides</i> | Asteraceae       | 566330 Native    | 0 |
| 175 | <i>Symplocarpus foetidus</i>                          | Araceae          | 42538 Native     | 1 |
| 176 | <i>Teucrium canadense</i>                             | Lamiaceae        | 32352 Native     | 0 |
| 177 | <i>Thalictrum dioicum</i>                             | Ranunculaceae    | 18669 Native     | 0 |
| 178 | <i>Thalictrum pubescens</i>                           | Ranunculaceae    | 18678 Native     | 0 |
| 179 | <i>Thelypteris noveboracensis</i>                     | Thelypteridaceae | 17261 Native     | 0 |
| 180 | <i>Toxicodendron radicans</i>                         | Anacardiaceae    | 28821 Native     | 3 |
| 181 | <i>Toxicodendron vernix</i>                           | Anacardiaceae    | 28823 Native     | 1 |
| 182 | <i>Trientalis borealis</i>                            | Primulaceae      | 24053 Native     | 0 |
| 183 | <i>Trifolium repens</i>                               | Fabaceae         | 26206 Introduced | 0 |
| 184 | <i>Triodanis perfoliata</i>                           | Campanulaceae    | 34615 Native     | 0 |
| 185 | <i>Tussilago farfara</i>                              | Asteraceae       | 38583 Introduced | 0 |
| 186 | <i>Ulmus rubra</i>                                    | Ulmaceae         | 19050 Native     | 0 |

|     |                             |                  |       |            |   |
|-----|-----------------------------|------------------|-------|------------|---|
| 187 | <i>Vaccinium corymbosum</i> | Ericaceae        | 23573 | Native     | 4 |
| 188 | <i>Vaccinium pallidum</i>   | Ericaceae        | 23610 | Native     | 2 |
| 189 | <i>Veratrum viride</i>      | Liliaceae        | 42764 | Native     | 0 |
| 190 | <i>Verbascum thapsus</i>    | Scrophulariaceae | 33394 | Introduced | 0 |
| 191 | <i>Verbena urticifolia</i>  | Verbenaceae      | 32127 | Native     | 0 |
| 192 | <i>Veronica peregrina</i>   | Scrophulariaceae | 33421 | Native     | 0 |
| 193 | <i>Viburnum acerifolium</i> | Caprifoliaceae   | 35255 | Native     | 3 |
| 194 | <i>Viburnum dentatum</i>    | Caprifoliaceae   | 35251 | Native     | 5 |
| 195 | <i>Viburnum prunifolium</i> | Caprifoliaceae   | 35253 | Native     | 0 |
| 196 | <i>Vitis aestivalis</i>     | Vitaceae         | 28607 | Native     | 2 |
| 197 | <i>Vitis labrusca</i>       | Vitaceae         | 28608 | Native     | 0 |

Appendix 4. Identity and nativeness of species found at Palisades and Glover Archbold in Rock Creek Park. The table also includes unique numbers for each species (TSN) and the number of times each species was encountered in 4 inventoried plots (Count). If the species was encountered outside of the plots in a walk-through, the entry is recorded as “0”.

| ID | Species                                     | Family          | TSN    | native     | Count |
|----|---------------------------------------------|-----------------|--------|------------|-------|
| 1  | <i>Acalypha rhomboidea</i>                  | Euphorbiaceae   | 28193  | Native     | 0     |
| 2  | <i>Acer negundo</i>                         | Aceraceae       | 28749  | Native     | 3     |
| 3  | <i>Acer palmatum</i>                        | Aceraceae       | 182136 | Introduced | 1     |
| 4  | <i>Acer platanoides</i>                     | Aceraceae       | 28755  | Introduced | 0     |
| 5  | <i>Acer rubrum</i>                          | Aceraceae       | 28728  | Native     | 3     |
| 6  | <i>Acer saccharum</i>                       | Aceraceae       | 28731  | Native     | 0     |
| 7  | <i>Agrimonia pubescens</i>                  | Rosaceae        | 25099  | Native     | 0     |
| 8  | <i>Agrostis stolonifera</i>                 | Poaceae         | 40400  | Native     | 0     |
| 9  | <i>Alliaria petiolata</i>                   | Brassicaceae    | 184481 | Introduced | 3     |
| 10 | <i>Ambrosia trifida</i>                     | Asteraceae      | 36521  | Native     | 0     |
| 11 | <i>Amelanchier canadensis</i>               | Rosaceae        | 25112  | Native     | 0     |
| 12 | <i>Amphicarpaea bracteata</i>               | Fabaceae        | 182067 | Native     | 0     |
| 13 | <i>Arctium minus</i>                        | Asteraceae      | 36546  | Introduced | 0     |
| 14 | <i>Arisaema triphyllum</i>                  | Araceae         | 42525  | Native     | 4     |
| 15 | <i>Artemisia vulgaris</i>                   | Asteraceae      | 35505  | Introduced | 0     |
| 16 | <i>Arundinaria gigantea</i>                 | Poaceae         | 40477  | Native     | 0     |
| 17 | <i>Asimina triloba</i>                      | Annonaceae      | 18117  | Native     | 1     |
| 18 | <i>Athyrium filix-femina</i>                | Dryopteridaceae | 17413  | Native     | 0     |
| 19 | <i>Berberis thunbergii</i>                  | Berberidaceae   | 18835  | Introduced | 0     |
| 20 | <i>Bidens bipinnata</i>                     | Asteraceae      | 500993 | Native     | 0     |
| 21 | <i>Bidens frondosa</i>                      | Asteraceae      | 35707  | Native     | 2     |
| 22 | <i>Boehmeria cylindrica</i>                 | Urticaceae      | 19121  | Native     | 1     |
| 23 | <i>Calystegia sepium</i> ssp. <i>Sepium</i> | Convolvulaceae  | 30651  | Introduced | 0     |
| 24 | <i>Cardamine concatenata</i>                | Brassicaceae    | 22787  | Native     | 0     |
| 25 | <i>Cardamine parviflora</i>                 | Brassicaceae    | 22806  | Native     | 0     |
| 26 | <i>Carex digitalis</i>                      | Cyperaceae      | 39576  | Native     | 1     |
| 27 | <i>Carex grisea</i>                         | Cyperaceae      | 510206 | Native     | 0     |
| 28 | <i>Carex laevivaginata</i>                  | Cyperaceae      | 39410  | Native     | 0     |
| 29 | <i>Carex rosea</i>                          | Cyperaceae      | 39429  | Native     | 0     |
| 30 | <i>Carex virescens</i>                      | Cyperaceae      | 39867  | Native     | 1     |
| 31 | <i>Carpinus caroliniana</i>                 | Betulaceae      | 19504  | Native     | 0     |
| 32 | <i>Carya alba</i>                           | Juglandaceae    | 501306 | Native     | 0     |
| 33 | <i>Carya cordiformis</i>                    | Juglandaceae    | 19227  | Native     | 2     |
| 34 | <i>Carya glabra</i>                         | Juglandaceae    | 19231  | Native     | 2     |
| 35 | <i>Celastrus orbiculatus</i>                | Celastraceae    | 506068 | Introduced | 2     |
| 36 | <i>Celastrus scandens</i>                   | Celastraceae    | 27974  | Native     | 0     |
| 37 | <i>Cercis canadensis</i>                    | Fabaceae        | 25782  | Native     | 0     |
| 38 | <i>Chenopodium album</i>                    | Chenopodiaceae  | 20592  | Introduced | 0     |
| 39 | <i>Cimicifuga racemosa</i>                  | Ranunculaceae   | 18757  | Native     | 0     |
| 40 | <i>Circaea lutetiana</i>                    | Onagraceae      | 27568  | Native     | 1     |
| 41 | <i>Claytonia virginicum</i>                 | Portulacaceae   | 20382  | Native     | 0     |
| 42 | <i>Collinsonia canadensis</i>               | Lamiaceae       | 32474  | Native     | 0     |

|    |                                   |                |        |            |   |
|----|-----------------------------------|----------------|--------|------------|---|
| 43 | <i>Commelina communis</i>         | Commelinaceae  | 39127  | Introduced | 1 |
| 44 | <i>Cornus florida</i>             | Cornaceae      | 27806  | Native     | 0 |
| 45 | <i>Crataegus</i>                  | Rosaceae       | 24539  | Native     | 0 |
| 46 | <i>Cryptotaenia canadensis</i>    | Apiaceae       | 29475  | Native     | 0 |
| 47 | <i>Dactylis glomerata</i>         | Poaceae        | 193446 | Introduced | 0 |
| 48 | <i>Desmodium nudiflorum</i>       | Fabaceae       | 25812  | Native     | 1 |
| 49 | <i>Dicentra cucullaria</i>        | Fumariaceae    | 18945  | Native     | 0 |
| 50 | <i>Dichanthelium clandestinum</i> | Poaceae        | 41656  | Native     | 0 |
| 51 | <i>Dichanthelium latifolium</i>   | Poaceae        | 41648  | Native     | 0 |
| 52 | <i>Digitaria sanguinalis</i>      | Poaceae        | 40604  | Native     | 0 |
| 53 | <i>Dioscorea quaternata</i>       | Dioscoreaceae  | 43371  | Native     | 0 |
| 54 | <i>Dioscorea villosa</i>          | Dioscoreaceae  | 43367  | Native     | 2 |
| 55 | <i>Disporum lanuginosum</i>       | Liliaceae      | 42919  | Native     | 0 |
| 56 | <i>Duchesnea indica</i>           | Rosaceae       | 25163  | Introduced | 2 |
| 57 | <i>Elephantopus carolinianus</i>  | Asteraceae     | 37297  | Native     | 0 |
| 58 | <i>Eleusine indica</i>            | Poaceae        | 41692  | Introduced | 0 |
| 59 | <i>Epifagus virginiana</i>        | Orobanchaceae  | 34276  | Native     | 0 |
| 60 | <i>Euonymus atropurpurea</i>      | Celastraceae   | 502579 | Native     | 3 |
| 61 | <i>Euonymus fortunei</i>          | Celastraceae   | 27950  | Introduced | 0 |
| 62 | <i>Eupatorium purpureum</i>       | Asteraceae     | 502522 | Native     | 0 |
| 63 | <i>Fagus grandifolia</i>          | Fagaceae       | 19462  | Native     | 4 |
| 64 | <i>Festuca subverticillata</i>    | Poaceae        | 502612 | Native     | 0 |
| 65 | <i>Fraxinus americana</i>         | Oleaceae       | 32931  | Native     | 0 |
| 66 | <i>Fraxinus pennsylvanica</i>     | Oleaceae       | 32929  | Native     | 3 |
| 67 | <i>Galium mollugo</i>             | Rubiaceae      | 34891  | Introduced | 0 |
| 68 | <i>Galium triflorum</i>           | Rubiaceae      | 34933  | Native     | 0 |
| 69 | <i>Geranium maculatum</i>         | Geraniaceae    | 29107  | Native     | 0 |
| 70 | <i>Geum canadense</i>             | Rosaceae       | 24645  | Native     | 1 |
| 71 | <i>Glechoma hederacea</i>         | Lamiaceae      | 502801 | Introduced | 0 |
| 72 | <i>Hamamelis virginiana</i>       | Hamamelidaceae | 19033  | Native     | 0 |
| 73 | <i>Hedera helix</i>               | Araliaceae     | 29393  | Introduced | 4 |
| 74 | <i>Hydrangea arborescens</i>      | Hydrangeaceae  | 24195  | Native     | 1 |
| 75 | <i>Ilex opaca</i>                 | Aquifoliaceae  | 27982  | Native     | 2 |
| 76 | <i>Impatiens capensis</i>         | Balsaminaceae  | 29182  | Native     | 2 |
| 77 | <i>Juglans nigra</i>              | Juglandaceae   | 19254  | Native     | 0 |
| 78 | <i>Juncus tenuis</i>              | Juncaceae      | 39243  | Native     | 0 |
| 79 | <i>Juniperus virginiana</i>       | Cupressaceae   | 18048  | Native     | 0 |
| 80 | <i>Lactuca canadensis</i>         | Asteraceae     | 36596  | Native     | 0 |
| 81 | <i>Lamium purpureum</i>           | Lamiaceae      | 32543  | Introduced | 0 |
| 82 | <i>Laportea canadensis</i>        | Urticaceae     | 19127  | Native     | 1 |
| 83 | <i>Leucothoe racemosa</i>         | Ericaceae      | 23549  | Native     | 1 |
| 84 | <i>Ligustrum vulgare</i>          | Oleaceae       | 32980  | Introduced | 0 |
| 85 | <i>Lindera benzoin</i>            | Lauraceae      | 18147  | Native     | 4 |
| 86 | <i>Liriodendron tulipifera</i>    | Magnoliaceae   | 18086  | Native     | 4 |
| 87 | <i>Lonicera japonica</i>          | Caprifoliaceae | 35283  | Introduced | 3 |
| 88 | <i>Lonicera maackii</i>           | Caprifoliaceae | 35298  | Introduced | 0 |
| 89 | <i>Luzula echinata</i>            | Juncaceae      | 39342  | Native     | 0 |
| 90 | <i>Luzula luzuloides</i>          | Juncaceae      | 39344  | Introduced | 0 |

|     |                                                    |                 |        |            |   |
|-----|----------------------------------------------------|-----------------|--------|------------|---|
| 91  | <i>Luzula multiflora</i>                           | Juncaceae       | 39333  | Native     | 0 |
| 92  | <i>Lysimachia ciliata</i>                          | Primulaceae     | 23984  | Native     | 0 |
| 93  | <i>Mahonia</i>                                     | Berberidaceae   | 18845  | Introduced | 1 |
| 94  | <i>Maianthemum racemosum</i> ssp. <i>Racemosum</i> | Liliaceae       | 524297 | Native     | 1 |
| 95  | <i>Malus coronaria</i>                             | Rosaceae        | 25257  | Native     | 0 |
| 96  | <i>Menispermum canadense</i>                       | Menispermaceae  | 18871  | Native     | 0 |
| 97  | <i>Mertensia virginica</i>                         | Boraginaceae    | 31673  | Native     | 0 |
| 98  | <i>Microstegium vimineum</i>                       | Poaceae         | 503829 | Introduced | 0 |
| 99  | <i>Mimosa quadrivalvis</i>                         | Fabaceae        | 507073 | Native     | 0 |
| 100 | <i>Morus rubra</i>                                 | Moraceae        | 19070  | Native     | 0 |
| 101 | <i>Muscari botryoides</i>                          | Liliaceae       | 42977  | Introduced | 1 |
| 102 | <i>Narcissus pseudonarcissus</i>                   | Liliaceae       | 503930 | Introduced | 0 |
| 103 | <i>Nyssa sylvatica</i>                             | Nyssaceae       | 27821  | Native     | 1 |
| 104 | <i>Ornithogalum umbellatum</i>                     | Liliaceae       | 42754  | Introduced | 0 |
| 105 | <i>Osmanthus americanus</i>                        | Oleaceae        | 32992  | Native     | 0 |
| 106 | <i>Osmorhiza claytonii</i>                         | Apiaceae        | 29789  | Native     | 0 |
| 107 | <i>Osmorhiza longistylis</i>                       | Apiaceae        | 29791  | Native     | 1 |
| 108 | <i>Oxalis stricta</i>                              | Oxalidaceae     | 29095  | Native     | 0 |
| 109 | <i>Pachysandra procumbens</i>                      | Buxaceae        | 28027  | Native     | 0 |
| 110 | <i>Parthenocissus quinquefolia</i>                 | Vitaceae        | 28602  | Native     | 3 |
| 111 | <i>Perilla frutescens</i>                          | Lamiaceae       | 32634  | Introduced | 0 |
| 112 | <i>Phleum pratense</i>                             | Poaceae         | 41062  | Introduced | 0 |
| 113 | <i>Phlox divaricata</i>                            | Polemoniaceae   | 30934  | Native     | 0 |
| 114 | <i>Phryma leptostachya</i>                         | Verbenaceae     | 504348 | Native     | 0 |
| 115 | <i>Phytolacca americana</i>                        | Phytolaccaceae  | 19523  | Native     | 1 |
| 116 | <i>Picea abies</i>                                 | Pinaceae        | 183289 | Introduced | 0 |
| 117 | <i>Picea glauca</i>                                | Pinaceae        | 183295 | Native     | 0 |
| 118 | <i>Pilea pumila</i>                                | Urticaceae      | 19130  | Native     | 1 |
| 119 | <i>Pinus strobus</i>                               | Pinaceae        | 183385 | Native     | 0 |
| 120 | <i>Pinus virginiana</i>                            | Pinaceae        | 183394 | Native     | 0 |
| 121 | <i>Plantago lanceolata</i>                         | Plantaginaceae  | 32874  | Introduced | 0 |
| 122 | <i>Plantago major</i>                              | Plantaginaceae  | 32887  | Native     | 0 |
| 123 | <i>Platanus occidentalis</i>                       | Platanaceae     | 19020  | Native     | 1 |
| 124 | <i>Poa trivialis</i>                               | Poaceae         | 41163  | Introduced | 0 |
| 125 | <i>Podophyllum peltatum</i>                        | Berberidaceae   | 18850  | Native     | 3 |
| 126 | <i>Polygonatum biflorum</i>                        | Liliaceae       | 43006  | Native     | 1 |
| 127 | <i>Polygonum aviculare</i>                         | Polygonaceae    | 20876  | Introduced | 0 |
| 128 | <i>Polygonum caespitosum</i>                       | Polygonaceae    | 20852  | Introduced | 3 |
| 129 | <i>Polygonum cuspidatum</i>                        | Polygonaceae    | 20889  | Introduced | 0 |
| 130 | <i>Polygonum hydropiper</i>                        | Polygonaceae    | 20856  | Introduced | 0 |
| 131 | <i>Polygonum perfoliatum</i>                       | Polygonaceae    | 20914  | Introduced | 0 |
| 132 | <i>Polygonum persicaria</i>                        | Polygonaceae    | 20915  | Introduced | 0 |
| 133 | <i>Polygonum virginianum</i>                       | Polygonaceae    | 20931  | Native     | 3 |
| 134 | <i>Polystichum acrostichoides</i>                  | Dryopteridaceae | 17675  | Native     | 1 |
| 135 | <i>Prunus serotina</i>                             | Rosaceae        | 24764  | Native     | 4 |
| 136 | <i>Prunus virginiana</i>                           | Rosaceae        | 24806  | Native     | 3 |
| 137 | <i>Quercus alba</i>                                | Fagaceae        | 19290  | Native     | 1 |
| 138 | <i>Quercus falcata</i>                             | Fagaceae        | 19277  | Native     | 0 |

|     |                                              |                  |        |            |   |
|-----|----------------------------------------------|------------------|--------|------------|---|
| 139 | <i>Quercus muehlenbergii</i>                 | Fagaceae         | 504714 | Native     | 0 |
| 140 | <i>Quercus prinus</i>                        | Fagaceae         | 19398  | Native     | 1 |
| 141 | <i>Quercus rubra</i>                         | Fagaceae         | 19408  | Native     | 1 |
| 142 | <i>Quercus velutina</i>                      | Fagaceae         | 19447  | Native     | 0 |
| 143 | <i>Ranunculus abortivus</i>                  | Ranunculaceae    | 18559  | Native     | 0 |
| 144 | <i>Ranunculus ficaria</i>                    | Ranunculaceae    | 18603  | Introduced | 0 |
| 145 | <i>Ranunculus recurvatus</i>                 | Ranunculaceae    | 18641  | Native     | 0 |
| 146 | <i>Robinia pseudoacacia</i>                  | Fabaceae         | 504804 | Native     | 2 |
| 147 | <i>Rosa multiflora</i>                       | Rosaceae         | 24833  | Introduced | 2 |
| 148 | <i>Rubus allegheniensis</i>                  | Rosaceae         | 24866  | Native     | 3 |
| 149 | <i>Rubus occidentalis</i>                    | Rosaceae         | 24854  | Native     | 0 |
| 150 | <i>Rubus phoenicolasius</i>                  | Rosaceae         | 25017  | Introduced | 2 |
| 151 | <i>Rumex obtusifolius</i>                    | Polygonaceae     | 20939  | Introduced | 0 |
| 152 | <i>Sambucus nigra</i> ssp. <i>Canadensis</i> | Caprifoliaceae   | 525079 | Native     | 0 |
| 153 | <i>Sanguinaria canadensis</i>                | Papaveraceae     | 18990  | Native     | 1 |
| 154 | <i>Sanicula canadensis</i>                   | Apiaceae         | 29850  | Native     | 2 |
| 155 | <i>Sanicula odorata</i>                      | Apiaceae         | 505004 | Native     | 0 |
| 156 | <i>Sassafras albidum</i>                     | Lauraceae        | 18158  | Native     | 1 |
| 157 | <i>Silene stellata</i>                       | Caryophyllaceae  | 20127  | Native     | 1 |
| 158 | <i>Smilax glauca</i>                         | Smilacaceae      | 43342  | Native     | 1 |
| 159 | <i>Smilax rotundifolia</i>                   | Smilacaceae      | 43346  | Native     | 3 |
| 160 | <i>Solanum nigrum</i>                        | Solanaceae       | 565525 | Introduced | 0 |
| 161 | <i>Solidago</i>                              | Asteraceae       | 36223  | Native     | 0 |
| 162 | <i>Stellaria media</i>                       | Caryophyllaceae  | 20169  | Introduced | 0 |
| 163 | <i>Stellaria pubera</i>                      | Caryophyllaceae  | 20193  | Native     | 0 |
| 164 | <i>Symphytotrichum cordifolium</i>           | Asteraceae       | 522193 | Native     | 0 |
| 165 | <i>Symphytotrichum divaricatum</i>           | Asteraceae       | 522198 | Native     | 1 |
| 166 | <i>Taraxacum officinale</i>                  | Asteraceae       | 36213  | Introduced | 0 |
| 167 | <i>Thalictrum thalictroides</i>              | Ranunculaceae    | 18683  | Native     | 1 |
| 168 | <i>Tilia americana</i>                       | Tiliaceae        | 21536  | Native     | 1 |
| 169 | <i>Toxicodendron radicans</i>                | Anacardiaceae    | 28821  | Native     | 3 |
| 170 | <i>Trifolium repens</i>                      | Fabaceae         | 26206  | Introduced | 0 |
| 171 | <i>Trillium sessile</i>                      | Liliaceae        | 43088  | Native     | 0 |
| 172 | <i>Ulmus americana</i>                       | Ulmaceae         | 19049  | Native     | 0 |
| 173 | <i>Ulmus rubra</i>                           | Ulmaceae         | 19050  | Native     | 3 |
| 174 | <i>Uvularia perfoliata</i>                   | Liliaceae        | 43110  | Native     | 1 |
| 175 | <i>Vaccinium pallidum</i>                    | Ericaceae        | 23610  | Native     | 1 |
| 176 | <i>Verbesina alternifolia</i>                | Asteraceae       | 38597  | Native     | 0 |
| 177 | <i>Veronica arvensis</i>                     | Scrophulariaceae | 33411  | Introduced | 0 |
| 178 | <i>Viburnum acerifolium</i>                  | Caprifoliaceae   | 35255  | Native     | 2 |
| 179 | <i>Viburnum dentatum</i>                     | Caprifoliaceae   | 35251  | Native     | 4 |
| 180 | <i>Viburnum plicatum</i>                     | Caprifoliaceae   | 35272  | Introduced | 0 |
| 181 | <i>Viburnum prunifolium</i>                  | Caprifoliaceae   | 35253  | Native     | 0 |
| 182 | <i>Vinca minor</i>                           | Apocynaceae      | 30238  | Introduced | 3 |
| 183 | <i>Viola blanda</i>                          | Violaceae        | 22050  | Native     | 0 |
| 184 | <i>Viola pubescens</i>                       | Violaceae        | 22144  | Native     | 0 |
| 185 | <i>Viola sororia</i>                         | Violaceae        | 22169  | Native     | 0 |
| 186 | <i>Viola striata</i>                         | Violaceae        | 22171  | Native     | 0 |

187 *Vitis riparia*

Vitaceae

28624 Native

3

## 2. SENSITIVE DATA ISSUES

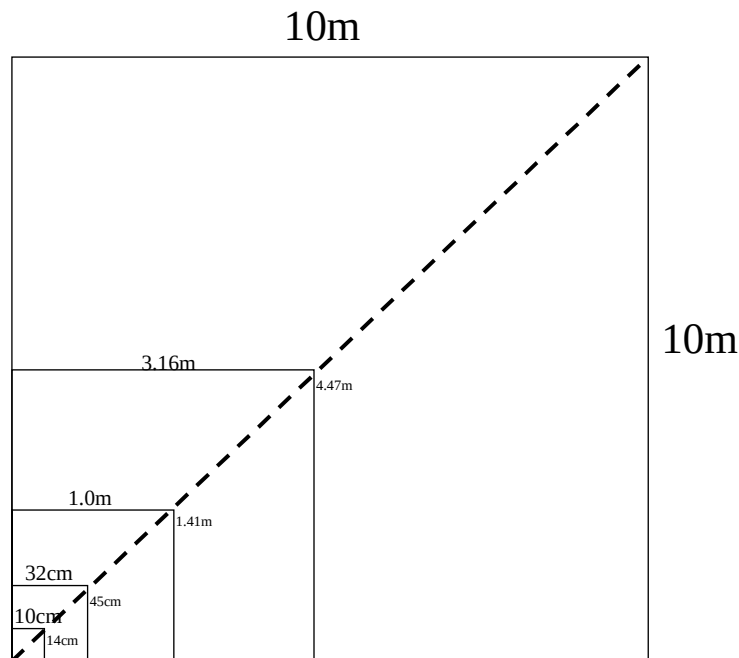
Species of concern in Maryland were documented at ANTI and MONO. While locations of the species are important to record for monitoring purposes, locations should not be broadly distributed to the general public. This is especially the case for species of economic significance, such as *Panax quinquefolius* (Ginseng) and *Hydrastis canadensis* (Goldenseal). Because most of the species of concern were documented in plots, plot locations should not be broadly distributed.

### 3. METADATA

**Plot inventories:** Four undergraduate and graduate interns, Samantha Tessel, Herbert Clark, Bradley Eichelberger, and Adam Kavalier, were hired in 2003 to inventory vascular plants at ANTI and MONO. Mikaila Milton from the National Park Service, Center for Urban Ecology helped substantially in plot set-up and inventories throughout 2003. Samantha Tessel, Bradley Eichelberger, and Tara Schoenwetter were hired in 2004 to inventory plots.

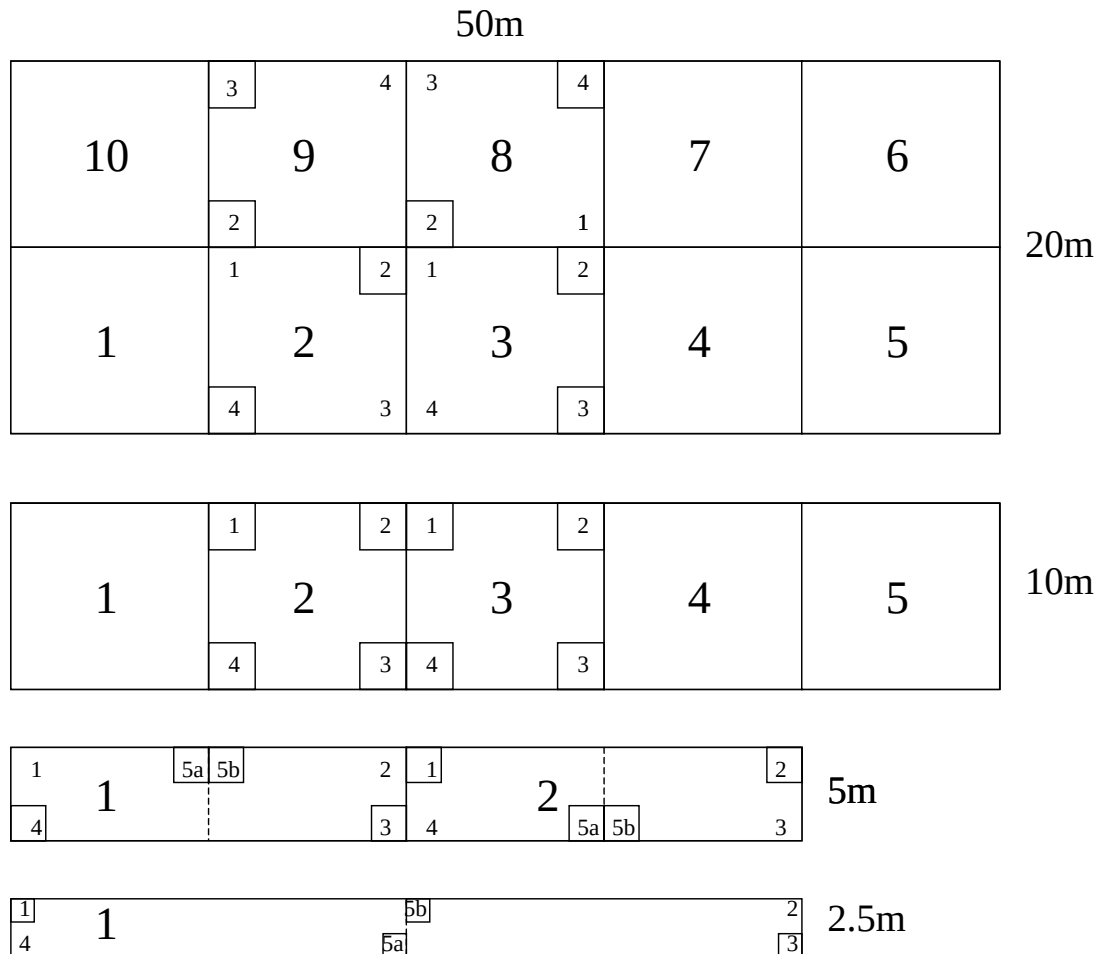
Plots were placed randomly in different habitats (upland interior forest, upland edge forest, riparian interior forest, riparian edge forest, wet depressions of agricultural fields, agriculture next to streams, fence rows). Plots were set up using chaining pins and 50m tape measures. The interns recorded the presence of all species within nested subquadrats within modules and within the entire plot. They would start by recording all species within a 10cmX10cm area (0.000001ha). All species found within the area were recorded on the field data sheet either as a new species for the entire plot (added to the end of the species list of the plot) or as an already recorded species. Each species found within the area would receive a “5” designation on the data sheet to reflect that it was found within depth 5, the term used for the 10cmX10cm area. The interns then added to the species list by recording additional species in a 0.00001ha (depth 4), followed by a 0.0001ha (depth 3), 0.001ha (depth 2) and a 0.01ha area (depth 1). Depth 1 is also called a “module”. All subquadrats had one corner in common (Figure 8).

Figure 8. Placement of corners and quadrats within a module following Peet et al. 1998.



Up to 4 modules per 0.1ha plot were sampled in this fashion. The other modules of the plot called “residuals” were sampled less intensively with a thorough walkthrough. How many modules were intensively sampled depended on plot configuration, which was recorded on each field data sheet for each plot (Figure 9).

Figure 9. Configuration of plots depending on habitat size. Plots were placed in homogeneous habitats; hence when habitats were small or narrow, plot configuration was changed. Module area, however, was constant at 0.01ha.



This design allows development of species-area curves for each plot, which indicate whether the plot is representative of the general habitat it is placed in. Two adjustments were made to the 2004 plot design to increase the efficiency of inventorying plots.

- a) We did not sample residuals of the 2004 plots. The 2003 data showed that residuals contributed few additional species to the species list. These species could easily be documented with walk-throughs. Hence, the plots in 2004 were effectively 20X20m in size. Exceptions were made for 4 plots associated with streams, where we continued to use 2003 sampling protocols. This was done because stream plots sampled in 2004 were narrow and sampling of residuals increased the sampled area.
- b) We documented presence of species at the module (10x10m) level and did not use nested subquadrats (except for plots associated with streams). Species-area curves on individual plots from 2003 showed us that plots were adequate in representing the diversity of the habitat the plots were placed in. An exception was made for the 4 stream plots that were sampled using the 2003 protocol.

Plots were visited several times throughout the year (spring, early summer, late summer, fall). How many times a plot was revisited depended on how many unidentified plants were recorded in the plot. Immature plants were flagged for later identification. Vouchers of species that could not be identified in the field but were present in the field in sufficient number were collected and identified in the laboratory. Identifications were verified or corrected by Chris Frye, Maryland State Botanist.

**Walkthroughs:** Plots were placed throughout the parks and therefore represented habitats broadly. To complete the species, we also recorded species found immediately outside of plots (“Out” in species lists) and in walkthroughs (“Walk” in species lists) that were conducted in areas between plots. Some areas were too steep to safely establish a plot and were therefore surveyed with walkthroughs. Cliffs were not surveyed. Species found in walkthroughs were generally not georeferenced using GPS equipment.

**Georeferencing plots:** A hand-held Garmin GPS unit was used for daily navigation to flagged plots. At ANTI and MONO, plots were georeferenced using a highly accurate GPS Unit (Trimble unit supplied by the parks) during leaf-off for better reception. Two locations were recorded per plot; the beginning and end of each plot along the centerline between modules 1 and 10 (beginning) and between modules 5 and 6 (end). The p-dop was set between 6 (standard) and 8 (maximum). Over ten points (usually between 18-20) were collected at each location and post-processing software selected the four closest points for averaging. Locations were later differentially corrected using the Hagerstown base station as a reference. Spatial Metadata for the plot data sets are included in this report. ROCR plots were georeferenced by park personnel (Sue Salmons) using a park-supplied Trimble unit. The park has the coordinates. WOTR plots were georeferenced using a hand-held Garmin unit used for navigation because a Trimble unit was unavailable. Spatial Metadata for ANTI and MONO plot data are included in this report.

**Elevation, slope, aspect and plot orientation:** Elevation of the plots was recorded using the Trimble unit used for georeferencing plots. Slope of the plot along the length of the

plot was recorded using a clinometer. Aspect and orientation of the plot was recorded using a compass. Orientation of the plot is useful to determine the beginning and end of a plot. These measurements were only recorded for ANTI and MONO.

#### 4. FIELD DEFINITIONS

|                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|-------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ANTI              | Antietam National Battlefield                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Aspect            | Compass direction of the slope, if > 0.                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Collected         | Indicates whether the species was collected (“c” = “yes” = “y”) or flagged (“F”) for later identification                                                                                                                                                                                                                                                                                                                                                  |
| Collection number | Voucher number. Numbering starts at 1 at each park. Some numbers are missing because quality of the pressed and mounted voucher did not meet project standards.                                                                                                                                                                                                                                                                                            |
| Comments          | In the XXXXgpsplots spreadsheets of ANTI and MONO. Provides a description of the location and the size of the plot.                                                                                                                                                                                                                                                                                                                                        |
| Corner (1 – 8)    | Indicates what corner each species was observed in. Entries indicate what depth the species was found in where 5 = 0.000001ha, 4 = 0.00001, 3 = 0.0001, 2 = 0.001, 1 = 0.01 = module.                                                                                                                                                                                                                                                                      |
| Count             | Number of times the species was found in the inventory of a specific park. “Out” indicates that the species was immediately outside of a plot. “Walk” indicates that the species was found in a walkthrough. “Wiegand” indicates that the species was not found by the current inventory but by a 1997 or 1998 rare, threatened and endangered species inventory at ANTI and MONO. The vascular plant portion of the inventory was led by Richard Wiegand. |
| Date              | Date that a voucher was collected or a plot was inventoried. In some cases, plots were inventoried twice, once in the summer and once in the spring. This is indicated as “date summer” and “date spring”.                                                                                                                                                                                                                                                 |
| Easting           | Longitude of the GPS location measured in UTM                                                                                                                                                                                                                                                                                                                                                                                                              |
| Eventid           | Identifies park (ANTI, MONO, WOTR, ROCR) and plot (numeric).                                                                                                                                                                                                                                                                                                                                                                                               |
| Family            | Family designation of each species                                                                                                                                                                                                                                                                                                                                                                                                                         |
| GPS_height        | Elevation of the plot in meters.                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Habitat           | General description of the habitat a species was collected from.                                                                                                                                                                                                                                                                                                                                                                                           |
| ID                | Unique numeric identifier given to each entry in a dataset                                                                                                                                                                                                                                                                                                                                                                                                 |

|             |                                                                                                                                                                                                                          |
|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Modules     | Number of modules in a plot. Four modules were typically placed in a 0.1ha (20mx50m) plot. However, some plots had to be smaller to keep the habitat homogeneous. In those cases, number of modules decreased to 1 or 2. |
| MONO        | Monocacy National Battlefield                                                                                                                                                                                            |
| Nativeness  | Identifies whether the species is native or introduced in the Eastern United States.                                                                                                                                     |
| Northing    | Latitude of the GPS location measured in UTM                                                                                                                                                                             |
| Orientation | Direction of the plot along its long axis standing at the beginning of the plot and looking towards the end.                                                                                                             |
| Out         | An entry of “1” indicates that a species was observed just outside of the plot.                                                                                                                                          |
| Plot        | Unique number given to each plot starting at 1 at each park.                                                                                                                                                             |
| Plot_id     | Identifies park (ANTI, MONO) and plot (numeric). In some files beginning and end of the plot is identified as a and b, respectively.                                                                                     |
| Res         | = Residual. An entry of “1” indicates that a species was observed in the residual of the plot.                                                                                                                           |
| ROCR        | Rock Creek Park                                                                                                                                                                                                          |
| Site        | Park identifier – ANTI, MONO, WOTR, ROCR                                                                                                                                                                                 |
| Size        | Identifies the dimensions of each plot.                                                                                                                                                                                  |
| Slope       | Slope of the plot measured using a clinometer                                                                                                                                                                            |
| Species     | Latin name (genus and species) of each species                                                                                                                                                                           |
| Stratum     | Identifies the habitat stratum (agriculture next to streams or in wet depressions (“ag” = “agstream”), upland forest, woodland or meadow (“upland”), and forest next to stream or river (“riparian” = “stream”).         |
| TSN         | Unique numeric identifier given to each species by the USDA Integrated Taxonomic Information System database ( <a href="http://www.itis.usda.gov">www.itis.usda.gov</a> ). TSNs are reported for accepted latin names.   |

WOTR

Wolf Trap Farm Park

Year

Year (2003 or 2004) that a plot was inventoried.

## 5. CD CONTENT

### ***The compact disk contains 8 file folders:***

1. The report folder labeled “Report” contains the final report in digital format and accompanying documents, such as Metadata.
2. The dataset folders labeled “Antietam National Battlefield”, “Monocacy National Battlefield”, “Wolf Trap Farm Park”, and “Rock Creek Park”) contain data files pertaining to the four parks that were surveyed.
3. The GIS coverage folders labeled “GIS coverage ANTI” and “GIS coverage MONO” contain ArcView layers of plot locations and the boundary layer for each of the two parks for reference. They also contain spatial metadata files for the plot datasets. WOTR and ROCR do not have digital plot location data included in this report because a) ROCR already has the information and b) WOTR does not have digital data layers and accurate GPS equipment was not available for use at the park.
4. The pictures folder labeled “Pictures” contains pictures of species and personnel taken throughout the project. These pictures were not used for vouchers, although they could be, but are included for general interest.

### ***The report folder contains the following files:***

- “Finalreport.doc” is the digital version of final report submitted to the National Park Service to finish tasks summarized under cooperative agreements # 1443CA309701200 (ANTI, MONO, WOTR inventories) and #H309701200 (ROCR inventory).
- “Sensistiveissues.doc” is the digital version of the Sensitive Issues statement included in the final report.
- “Fielddefinitions.doc” is the digital version of Field Definitions included in the final report.
- “Metadata.doc” is the digital version of the Metadata included in the final report.

### ***The dataset folders contain the following files that all start with the four letter abbreviated identifier of each park (ANTI, MONO, WOTR, ROCR). The four letters are then followed by a file descriptor.***

- “XXXXsplist.xls” is the digital version of the species list at each of the four parks (replace “XXXX” by the four letter park identifier).
- “XXXXgpsplots.xls” is a spreadsheet containing the differentially corrected GPS locations of the plots at each park. ROCR data not included because the park already has the data. WOTR data not included because precise locations of the plots using a Trimble unit are not available.

- “XXXXplotdata.xls” is the master database containing detailed plot information for each park”.
- “XXXXvouchers.xls” is a list of vouchers collected, mounted and labeled for each park.
- “XXXXdates.xls” is a list of dates that the plots were inventoried for the first time. Dates of re-visits were not recorded except for spring visits.

***The GIS coverage folders contain the following files:***

- “antiag”, “antirip”, and ”antiup” with appropriate extentions (dbf, prj, shp, shx) are the datasets associated with the plot datalayers developed for agricultural plots, riparian plots, and upland plots at Antietam National Battlefield. A boundary layer supplied by the park is included as a reference. Other layers are not included to save space and because NPS already owns them.
- “monoag”, “monorip”, and ”monoup” with appropriate extentions (dbf, prj, shp, shx) are the datasets associated with the plot datalayers developed for agricultural plots, riparian plots, and upland plots at Monocacy National Battlefield. A boundary layer supplied by the park is included as a reference. Other layers are not included to save space and because NPS already owns them.
- “XXXXspatialmetadata.xls” is the spatial metadata associated with plot locations. Three files are generated for each park; one for agricultural plots, one for riparian plots and one for upland plots.

***The picture folder contains folders labeled:***

- “Ephemeral” – included are pictures of spring ephemerals.
- “Species” – included are pictures of species found throughout the summer.
- “Plots” – included are pictures of plots
- “Interns” – included are pictures of the summer interns working in the field.



As the nation's principal conservation agency, the Department of the Interior has the responsibility for most of our nationally owned public lands and natural resources. This includes fostering sound use of our land and water resources; protecting our fish, wildlife, and biological diversity; preserving the environment and cultural values of our national parks and historical places; and providing for the enjoyment of life through outdoor recreation. The department assesses our energy and mineral resources and works to ensure that their development is in the best interests of all our people by encouraging stewardship and citizen participation in their care. The department also has a major responsibility for American Indian reservation communities and for people who live in island territories under U.S. administration.

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