Native Vascular Flora
City of Alexandria, Virginia

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ABSTRACT

The vascular flora of the City of Alexandria was surveyed from 2000 through 2015. Alexandria is situated in extreme northeastern Virginia, almost entirely within the Coastal Plain Province, and occupies an area of 39.68 km² (15.32 mi²) or 3,968 ha (9,804.8 ac). In addition to field surveys, herbaria were searched for historical collections. However, only native taxa are included in an attempt to document Alexandria's indigenous flora as an aid to conservation planning. This section of Virginia, including the two neighboring counties Fairfax and Arlington, contains a broad variety of habitats and is perhaps the most floristically diverse in the state. Surveys and historical collections yielded a total of 838 native species (including infraspecific taxa and hybrids) representing 385 genera and 131 families. An annotated checklist of the taxa is presented, including common names and information on habitat, distribution, and rarity. Natural communities within the City were also quantitatively sampled and described. A map and gazetteer are included as a guide to old and current place names and collecting areas. Voucher specimens are deposited in the City of Alexandria Herbarium (AVCH). Replicate specimens are deposited at Virginia Department of Conservation and Recreation, Division of Natural Heritage herbarium (dnh), Frostburg State University herbarium, GMUF, George Washington Memorial Parkway herbarium, MARY, MICH, NA, TAWES, URV, DC Herbarium at US,VPI, WCUH, and WILLI.

INTRODUCTION

Alexandria is one of the oldest cities in the eastern U.S. and was famous as Virginia's primary northern shipping and trade port in the 18th and early 19th centuries. It is situated almost entirely within the Coastal Plain Province between the Fall Line (Zone) and the tidal Potomac River, about 7 miles south of the District of Columbia. For much of its history, the City's land area was roughly that of "Old Town", the lowland section along the river. However, after annexing large areas from Arlington and Fairfax counties in 1915 and 1930 (Alexandria Public Library, Arlington County 1967) and a large upland section from Fairfax County in 1952 (Alexandria Library), Alexandria today occupies 39.68 km² (15.32 mi²) or 3,968 ha (9,804.8 ac) and is one of the most densely developed cities in the nation.

STUDY AREA

Climate

The climate of Alexandria is humid subtropical, with warm to hot temperatures in summer months, relatively mild winters, and an average annual precipitation of about 1118 mm (44.01 in). Strong winter winds, as well as thunderstorms during the late spring and summer months, are frequent occurrences. Ice storms, hurricanes, and tornadoes occur infrequently but often inflict widespread damage from ice weight, high winds, and flooding.

However, since the late 1990s, prolonged, nearly consecutive, growing season droughts have been a local occurrence, negatively affecting native flora. In effect, this recent pattern of summer and early fall drought has disrupted rainfall patterns, resulting in an approximation of a rainy season-dry season regime. Whether or not this phenomenon is normal for the region or is an effect of climate change is unknown.

Geology and Soils

Alexandria rises in elevation from near sea level at the Potomac River to elevations of 280 feet and higher in western areas of the City near the Fall Zone. Most of Alexandria is underlain by deep beds of sand, gravel, silt, and clay of the early Cretaceous Potomac Formation that were deposited by ancient river systems carrying material from the eroding Appalachians and Piedmont (Mixon et al. 2000, Fleming 2015). The unit as a whole was gradually deposited in an eastward-thickening wedge with sediments reaching thousands of feet deep at the continental margin. Locally, the unit varies irregularly in thickness from less than 20 feet to more than 100 feet near the Fall Zone and increases in depth eastward to a depth of 400 or more beneath the Old Town waterfront (Drake and Froelich 1986; Fleming 2015b). The average thickness of the unit is about 500 feet (Obermeir 1984). The Potomac Formation sand, gravel, silt, and clay deposits vary considerably and occur as interbedded strata or small to massive, heterogeneous lenses (Fleming 2005a). Fleming (2015b) divided the Potomac Formation in Alexandria into six informal members, including from highest to lowest: Shooters Hill gravel; Arell clay; Chinquapin Hollow fine sandy clay; Winkler sand; Lincolnia silty clay; and Cameron Valley sand. The Potomac Formation is the main water-bearing unit in the region (Johnston 1964).

Overlying and "capping" the Potomac Formation members are four major upland terraces, including from highest to lowest: Seminary terrace, with an average surface elevation of 265 to 275 feet; Dowden terrace, with surface elevations of 240 to 250 feet; Chinquapin Village terrace, with a surface elevation between 185 and 205 feet; and Beverley Hills terrace, with an average surface elevation of 145 to 150 feet (Fleming 2015e).

The Jefferson Park escarpment separates the Chinquapin Village and Beverley Hills terraces; the Fort Ward escarpment consists of two distinct sections - a southern section that separates the Seminary and Chinquapin Village terraces and a northern section that separates the Dowden and Chinquapin Village terraces; and the Varsity Park escarpment separates the Seminary and Dowden terraces (Fleming 2015e).

The terraces generally descend eastward in a step-like succession, from highest and oldest to lowest and more recent. The three lower terraces in Alexandria are presumed to be of Pliocene age and the Seminary terrace is presumed to be of Miocene age. To the west of the City are older terraces of Miocene age which cap ancient crystalline rocks at elevations ranging from 390 to 520 feet (Tysons Corner) in Fairfax County, and represent the western limits of Coastal Plain soils in northern Virginia (Johnston 1964, Drake and Froelich 1997).

Gravel terraces are composed of interbedded lenses of gravel, sand, silt, and clay deposited over broad plains as river channel alluvium and overbank deposits by ancient river systems during glacial episodes, which give them a characteristic flatness except where dissected by streams (Wentworth 1930, Obermeier 1984). They vary in depth from 3 to 60 feet, with an average thickness of about 20 feet (Obermeier 1984). The soils are highly weathered, are very low in base cation saturation, are rich in iron, and are strongly acidic with an average pH of 4.0 (Simmons 1995). Oak-Heath Forest communities thrive in these conditions and are the characteristic vegetation of the terraces.

Gravel deposits hold large amounts of rainwater in the porous sand and gravel soils, forming perched

aquifers, and are important resources for groundwater infiltration. Hillside seeps and springs often occur on slopes where a perched aquifer intersects the ground surface above an impervious layer of clay. Slabs of "bog iron" or iron conglomerate sandstone are typically present in these areas, indicating that this geohydrologic process has been occurring for millenia.

Over long periods of time, gravel terraces and the underlying Potomac Formation throughout the region have become deeply dissected, especially near large streams and rivers, creating an extensive, dendritic drainage system and a landscape of steep slopes, numerous seeps and streams, and large, deep valleys. Consequently, most of the mid to upper ravine slopes in Alexandria are characterized by a gravelly layer of colluvium of varying depths that may exceed 10 feet in places (Fleming 2005). Large, possibly "ice-rafted" cobbles that are a meter or more in size are also infrequently scattered along the lower slopes of ravines and small streams of upper terraces (Wentworth 1930). In Alexandria, these massive cobbles are locally abundant along Timber Branch at Ivy Hill Cemetery.

Occasionally, colluvial fans ranging in composition from sandy loam to clayey loam derived from a mixture of upland Tertiary gravels and the older Potomac Formation are also found along ravine slopes in uplands throughout the City. These gentle, fan-like slopes and benches represent areas of ancient slope failure and soil slumping and are typically more mesic and less acidic than the gravel terraces and steep, upper slopes. These areas are often small in size, but support a remarkable diversity of plant species, including many that are otherwise rare or absent on the Coastal Plain.

The lowest and youngest gravel terraces in the City are the river terrace deposits of Pleistocene age that occur between 35 and 105 feet in elevation along the Potomac River and its major tributaries - Four Mile Run and the Eisenhower Valley complex of streams (Johnston 1964, Drake and Froelich 1986, Fleming et al. 1994, Fleming 2005). Most of Old Town is built on Pleistocene river terraces, as well as much of downtown Washington, D.C. (Johnston 1964, Obermeier 1984). The Old Town terrace is composed of sand, gravel, and silty clay, with abundant organic horizons (Fleming 2015e).

Running southward along the toe slope of the cliff-like Mount Ida escarpment, which looms to the west above Commonwealth Avenue and “separates the central and western highlands of the City from the massive late Pleistocene river terrace occupied by Del Ray and Old Town,” is the “southward continuation beneath the coastal plain of the Rock Creek Shear Zone (RCSZ; Fleming and Drake 1998), a major fault zone well exposed for many miles in the Washington West and Kensington Quadrangles to the north” (Fleming 2008). The escarpment may be the result of long periods of weathering during an earlier time when it abutted the ancient Potomac River shoreline.

Quaternary alluvium underlies modern floodplains and depositional bars close to and along streams in the City, and is as much as 20 feet thick in places (Drake and Froelich 1986). The unit is comprised of sand, silt, gravel, and clay, generally with coarser material towards the bottom. Most of the material is derived from Coastal Plain sediments resulting from streams draining the upland terraces and Potomac Formation.

Exposed crystalline rocks of the Piedmont and Fall Zone occur in westernmost Alexandria at the eastern limits of the Holmes Run Gorge at Rynex Natural Area, Dora Kelley Nature Park, and Holmes Run

Scenic Easement. Bedrock outcrops consist of metamorphosed sedimentary rocks of the Indian Run Formation, Lake Barcroft Metasandstone, and Accotink Schist intruded by early Ordovician plutons of Falls Church Tonalite and Occoquan Granite (Fleming 2015).

The History of Botanical Studies in Alexandria

Although this study represents the first verifiable, comprehensive floristic study, Alexandria has had a rich history of botanical collecting and exploration, dating back to the 19th century.

In the early days of American botany and expeditions into the wilds of the eastern U.S., Samuel Constantine Rafinesque (1836) was apparently the first to explore areas near Alexandria. He writes, "I came to North America in 1802, and traveled chiefly on foot until 1804, over New Jersey, Pennsylvania, Delaware, Maryland, and Virginia, from the Juniata to the Sea Shore, and from the Alleghany Mountains beyond Easton, to the Potomac beyond Washington and Alexandria." A few years later in 1807, Scottish nurseryman and plant hunter John Lyon travelled from Philadelphia to Alexandria and southward along the Fall Zone through Stafford County and on to Richmond, Petersburg, and points south, noting a number of "southern" plants at their presumed northern limits in the Richmond-Petersburg area (Lyon 1807, Weakley et al. 2012).

The earliest known botanical collections from Alexandria were of Curtiss' Milkwort (*Polygala curtissii*) in 1865 and Small Waterwort (*Elatine minima*) [unknown date] by Allen H. Curtiss. The milkwort was sent to Asa Gray at Harvard University for identification, and was named for Curtiss by Gray (Gray 1868, Hitchcock and Standley 1919). It remains a possible type specimen.

Drawn to the pristine and exceptionally diverse tidal freshwater communities at Four Mile Run and Hunting Creek, numerous botanists and collectors came to Alexandria in the late 19th century from the Smithsonian Institution, USDA, Galludet College, University of Maryland, National Arboretum, and other nearby institutions and locales. Transportation was readily available from these places via the well-established railroad lines and, later in 1892, when electric trolley cars began operation in Alexandria (Merriken 1987).

Exploration during this time occurred mainly along the Potomac River and its tidal estuaries, largely because transportation routes were well developed to these areas, but also because much of the land to the west was heavily forested, rural and fenced off, or generally inaccessible. Early significant collectors in Alexandria include J.W. Chickering, Jr., F.M. Comstock, Frederick V. Coville, Dr. Edward Foreman, H.W. Henshaw, W. Hunter, T.H. Kearney, Jr., Charles Louis Pollard, Joseph Nelson Rose, Edward S. Steele, G.B. Sudworth, David LeRoy Topping, George Vasey, and Lester F. Ward. Ward was a prolific collector who also published a flora of Washington, D.C. and vicinity (1881), which had numerous references to Alexandria. Ward (1895) also visited locales in Alexandria and the extensive sand and gravel pits in the Franconia region of Springfield, Virginia in the 1890s with William M. Fontaine and documented the exposed paleoflora of the Potomac Formation.

The early years of the 20th century through the 1920s ushered in a whole new group of collectors in Alexandria, many of whom were successors at the aforementioned institutions. Of the previous

generation, Edward S. Steele continued to collect occasionally, with Mrs. Steele. Aided by the newly expanded electric trolley routes and improved roads, mainly along the Four Mile Run valley and into parts of upland Alexandria, botanists were able to explore new areas (McAtee 1918). Prominent collectors of this period were Harley Harris Bartlett, James E. Benedict, Jr., Sydney F. Blake, Agnes Chase, Philip Dowell, Mr. and Mrs. Oliver M. Freeman, Albert Spear Hitchcock, Homer D. House, Ellsworth P. Killip, F.N. Layton, Emery C. Leonard, Gerrit S. Miller, Jr., Waldo Lee McAtee, William R. Maxon, John Bitting Smith Norton, Joseph H. Painter, William Palmer, Francis W. Pennell, W.H. Seaman, George H. Shull, Paul C. Standley, and Ivar Tidestrom.

A.S. Hitchcock and Agnes Chase mainly confined their collecting to grasses in the lower Four Mile Run area, while G.S. Miller, Jr., Mr. and Mrs. Steele, and Paul C. Standley were apparently the first collectors to move from the Potomac region westward into the heavily wooded, upland regions of Alexandria. William Palmer was apparently the first to collect at what is today the western edge of the City in the Lincolnia area, around the turn of the 20th century. Nellie C. Knappen, who evidently did not collect locally, visited numerous important sites throughout the region, including Alexandria, and made invaluable contributions by documenting flora. Harvard botanist M.L. Fernald annotated collections of pondweeds from Alexandria and included them in his treatment of *Potomogeton* (1932) and Alfred Rheder examined collections of various woody plants from Alexandria and vicinity and published his findings in the Journal of the Arnold Arboretum. Two landmark publications during this period on the flora and natural communities of the Washington D.C. area in which Alexandria is represented were produced by McAtee (1918) and Hitchcock and Standley (1919).

After the second wave of collecting subsided, botanical exploration picked up again in the late 1930s and continued through the 1940s. Carleton R. Ball, C.E. Chambliss, C.O. Erlanson, Neil Hotchkiss, Francis R. Fosberg, and Francis M. Uhler were prominent figures of this time. A decades-long hiatus followed this period until Ted Bradley begun surveying flora along streams in the Eisenhower Valley region in the early 1970s. Bradley also surveyed areas along the Potomac River and railroad tracks at Potomac Yard in the early 1980s.

The most thorough botanical documentation thus far occurred in the mid-1980s when Bill Olson began systematically inventorying the flora of the newly created Winkler Botanical Preserve, which at the time was a large tract of fairly pristine, old-age forest and seepage wetlands near the western edge of the City. Ted Dudley, Peter Skaller, Peter Hornbeck, and others also contributed in part to the early surveys of the Preserve, beginning in the late 1970s. Several checklists of the Preserve's flora were produced by Olson in the late 1980s. Steve Hootman, Keith Tomlinson, Gary Hopper, Tom Sundin, Richard Falcone, Rod Simmons, and John Walsh continued to document the flora into the 1990s and added considerably to the original checklist with numerous revisions. Tomlinson (1989) described the vegetation of a highly rare, acidic woodland seep at the Preserve (Fall Line Magnolia Bog community). Sundin (1994) inventoried and described the forest cover types of the Preserve. Simmons (1995) also extensively surveyed other terrace gravel Oak-Heath Forest communities in Alexandria and vicinity through the mid-1990s. Floristic inventories of the Winkler Botanical Preserve from this time yielded a total of 323 naturally-occurring, native species (38.54% of the City's documented native taxa). Also in the 1980s, Larry Morse and Mark Strong conducted surveys of the tidal freshwater communities at the mouth of Hunting Creek for rare species that were historically known from that site.

Later in the 1990s, exploration of some of the City's more remote natural areas was conducted by Andrew Macdonald, with botanical assistance from Rod Simmons. Floristic details of many of these forays were described in the weekly "Earth Watch" column of the Alexandria Gazette Packet newspaper.

Traditional botanical studies resumed in the 21st century with vegetation surveys of Holmes Run, Cameron Run, and tidal Hunting Creek by Rod Simmons and Mark Strong. In the mid-2000s, John Parrish, Mark Strong, John Walsh, Tony Fleming, Greg Zell, Lou Aronica, and Joe Metzger, Jr. assisted with surveys in various areas throughout the City. Gyula Nagy mapped the local distribution of *Bolboschoenus fluviatilis* for a NOVA biology research project. Brent Steury surveyed National Park Service property along the George Washington Memorial Parkway (GWMP) in Alexandria. Recently, Carl Taylor, Jim Montgomery, Karla Jamir, and the Virginia Native Plant Society's "Grass Bunch" explored various sites in the City. In June and July 2015, Vicki Funk and Smithsonian undergraduate interns from the University of Delaware, Kristen Van Neste and Sarah Gabler, collected flora along the Potomac River shoreline at the north end of the City for the National Museum of Natural History's Global Genome Initiative project.

METHODS

During the growing seasons of 2000 through 2015, the vegetation of the City of Alexandria was extensively surveyed. Voucher specimens were collected for each species observed and deposited in the City of Alexandria Herbarium (AVCH). Replicate specimens of noteworthy flora are deposited at Virginia Department of Conservation and Recreation, Division of Natural Heritage herbarium (dnh), Frostburg State University herbarium, GMUF, George Washington Memorial Parkway herbarium, MARY, MICH, NA, TAWES, URV, DC Herbarium at US, VPI, WCUH, and WILLI. (Capitalized herbarium acronyms follow Index Herbariorum, a worldwide database of herbaria, located at http://sweetgum.nybg.org/ih/.) In a few cases, a photographic voucher substitutes for taxa too rare or diminutive to responsibly allow a collection.

Additionally, quantitative compositional and environmental data were collected from ten 400 m² sample plots, one 200 m² plot, and six 100 m² plots in the City of Alexandria: fifteen by Rod Simmons and two by Rod Simmons and Virginia Natural Heritage Program (VANHP) ecologist Kristin Taverna in 2005. Vegetation sampling data from five 400 m² plots of virtually identical forested communities from adjacent Arlington County were also gathered during this time, as well as seven 400 m² plots and one 100 m² plot from nearby lands in Fairfax County: thirteen by Rod Simmons, with assistance from Gary Fleming and Kristin Taverna of VANHP at two plots and assistance at one plot from John Parrish. Plots were sampled using the relevé method (sensu Peet et al. 1998).

All natural community data were analyzed using a combination of cluster analysis, statistical analyses, and ordination by the Virginia Department of Conservation and Recreation, Division of Natural Heritage (DCR-DNH), as part of the United States National Vegetation Classification (USNVC)-National Park Service, National Capital Region (NCR) project.

RESULTS AND DISCUSSION

Floristic Summary

Hundreds of acres of forest, wetlands, waterways, and open field have been lost in the City since the mid-2000s when surveys for the previous Alexandria Flora were conducted - largely as a result of the Potomac Yard and Potomac Greens developments; Capital Beltway (495) expansion; Carlyle, Hoffman Center, and Old Cameron Run Channel developments; and construction of the BRAC Building and subsequent widening of Shirley Highway (395). Floristic surveys since that time revealed a number of extinctions of localized flora known from habitats that no longer exist; discoveries of plants previously unknown in Alexandria; and a few discoveries of extant historical species.

Surveys and herbaria collections yielded a total of 838 native vascular plants (including infraspecific taxa and hybrids) representing 385 genera and 131 families. In species richness, the largest families are Asteraceae (104); Cyperaceae (103), 70 of which are *Carex*; and Poaceae (79). The next largest in size are Fabaceae (34); Rosaceae (32); Fagaceae (29); and Ericaceae (21).

Most species of uncertain nativity in the Flora of Virginia and Digital Atlas of the Virginia Flora observed in Alexandria are not included here except for a very few considered by the author to be native to northern Virginia.

Seven Alexandria historical species are also listed as historical in Virginia, including *Micranthemum micranthemoides*, which is also considered globally historic (Townsend 2015). The two *Dryopteris clintoniana* hybrids are also considered historical in Virginia, but hybrid taxa are not ranked by NatureServe and the Natural Heritage Network. Of the highly rare extant flora in Alexandria that are also state-listed, three are ranked S1 (critically imperiled), including *Osmundastrum cinnamomeum* var. *glandulosum*, *Carex cristatella*, and *Crataegus calpodendron*; *Bolboschoenus fluviatilis* is ranked S2 (imperiled); and three are on the "watchlist" with S3 status, including *Carex conjuncta*, *Diplachne fusca* var. *fascicularis*, and *Sparganium eurycarpum* (Townsend 2015).

Of the 2,540 vascular plants considered native to Virginia (John Townsend, pers. comm.), remarkably nearly a third occur in Alexandria. This is astounding when one compares Alexandria's 15.32 square mile land area to Virginia's 42,326 square miles!

The total number of documented, native historical species is 116 (13.84% of the known flora of Alexandria). Reflecting the increasing trend of urbanization throughout the City, including the conversion of natural areas and open space from a wild condition to artificial, landscaped settings, are the 388 total species that are ranked as very rare and critically imperiled in Alexandria (A1 and A2; see Key to City Rank). A further index of species rarity owing largely to loss of habitat are the 134 uncommon to rare, "watchlist" plants listed for Alexandria (A3; see Key to City Rank).

Combining the total numbers of historical, imperiled, and uncommon to rare flora (76.13% of the City's total native flora!), the outlook for the future sustainability and preservation of much of Alexandria's native flora and biodiversity is bleak at best. A moratorium on any further net loss of natural lands –

especially City-owned parkland, waterways, and open space – and continued natural lands management and stewardship will go a long way towards halting this trend and stabilizing dwindling, fragmented populations.

Biodiversity is not evenly distributed, but occurs in small, now-isolated remnants throughout the City. In 2012, Natural Resources Division began designating with signage those areas in Alexandria that comprise notable remnants of natural heritage and floral biodiversity ("Native Plant Conservation Zone").

Natural Communities and Habitats

The natural communities of Alexandria can be broadly divided into four groups: tidal freshwater communities; alluvial communities; non-alluvial wetlands; and upland forest communities. Other habitats mainly include disturbed sites, such as open areas and fields, successional forest, railroad tracks, abandoned sand and gravel mines, and impoundment wetlands.

The following communities are presented from lowest in surface elevation to highest, more or less as they appear in the landscape. Global, State, and City ranks for each community based on its rarity are included for each (see Keys to Global, State, and City ranks).

Freshwater Tidal Wetlands (Estuarine System)

Tidal Freshwater Wetlands comprise a number of diverse, regularly or irregularly flooded, lunar tidal communities. Unfortunately, most freshwater tidal wetlands are now globally uncommon to rare as a result of restricted global range, sea level rise, non-native invasive plants, habitat loss, and other factors (Fleming et al. 2013).

Common Spatterdock Mudflat Type: *Nuphar advena* Tidal Herbaceous Vegetation (USNVC: CEGL004472).

Spatterdock (*Nuphar advena*) grows in nearly monospecific stands on low intertidal to subtidal mudflats that are barely exposed at low tide in deeper water beyond the marshes and along old tidal channels. This community has the longest hydroperiod and occupies the lowest landscape position among non-submersed freshwater tidal wetlands. Alexandria's last surviving examples of this community type occur at the mouth of Hunting Creek south and west of Jones Point Park to the Fairfax County shoreline. Global/State/Alexandria Ranks: G4G5/S3/A1.

Narrow, linear, gravelly, sandy, or muddy bars occur in shallow water inwards from the mudflats along high-energy low intertidal shores, channel edges, and tidal flats of Hunting Creek, and to a lesser extent Four Mile Run. The mouth of Hunting Creek (Great Hunting Creek; Mussel Creek) in the 1600s extended nearly a mile inland from the Potomac River (Moxham 1974), and once supported pristine, high-energy intertidal shore habitats with colonies of state-historical Smith's Bulrush (*Schoenoplectus smithii* var. *levisetus*) and Nuttall's Micranthemum (*Micranthemum micranthemoides*), as well as pristine water quality indicators like Shore Quillwort (*Isoetes riparia*), Parker's Pipewort (*Eriocaulon parkeri*), Golden Club (*Orontium aquaticum*), Bog Yellow-eyed Grass (*Xyris difformis*), Heart-leaved Plantain

(*Plantago cordata*), and others.

In addition to a sparsely vegetated, scoured mudflat with colonies of Needle Spikerush (*Eleocharis acicularis*) along the channel of Hunting Creek west of the GWMP bridge, the following two types are mostly what remain of the High-Energy Tidal River Shores group in Alexandria today.

High-Energy Tidal River Shore (Common Threesquare / Northern Type): *Schoenoplectus pungens* Tidal Herbaceous Vegetation (USNVC: CEGL004188).

Common Threesquare (*Schoenoplectus pungens* var. *pungens*) forms dense, nearly pure stands in high-energy intertidal shores. Ice-scouring is an important environmental factor in shaping the sparse vegetation and gravelly-cobbly substrates of this community type in northern Virginia (Fleming et al. 2013).

Examples in Alexandria mainly occur along the Potomac River at Canal Center Plaza Park, Oronoco Bay Park, and Jones Point Park, with smaller occurrences along lower Four Mile Run and Hunting Creek. Global/State/Alexandria Ranks: GNR/S1?/A1.

High-Energy Tidal River Shore (Water-Willow Type): *Justicia americana* Tidal Herbaceous Vegetation (USNVC: CEGL006579).

This community is characterized by monospecific or sparsely mixed colonies of Common Water-willow (*Justicia americana*) that form dense colonies on flood-scoured, gravelly bars. Dotted Smartweed (*Persicaria punctata*) and Water-hemp (*Amaranthus cannabinus*) are common associates of this type.

Good examples in Alexandria occur along the Potomac River at Oronoco Bay Park and Jones Point Park. Global/State/Alexandria Ranks: GNR/SU/A1.

Tidal Freshwater / Oligohaline Aquatic Bed (Tapegrass Type): *Vallisneria americana - Myriophyllum spicatum* Semipermanently Flooded - Tidal Herbaceous Vegetation [Provisional] (USNVC: CEGL006048 (in part).

Submerged tidal aquatic beds occur along shallow stream channels just beyond the gravel bars and subtidal mud flats in water depths greater than tolerated by emergent aquatic vegetation. The mouth of Hunting Creek and Four Mile Run, as well as areas along the Potomac River shoreline in Old Town such as Oronoco Bay, once supported exceptionally diverse beds of submerged and floating aquatic plants, including a wide array of pondweeds (*Potamogeton* spp.), waterweeds (*Elodea* spp.), Tapegrass (*Vallisneria americana*), waternymphs (*Najas* spp.), Coontail (*Ceratophyllum demersum*), and Greater Bladderwort (*Utricularia macrorhiza*). Urbanization of these watersheds throughout the 20th century and recent years has caused major sediment deposits and other disturbances, resulting in the extinction of most of the aquatic beds.

Today, colonies of Coontail and Tapegrass represent the dominant vegetation of these habitats and mainly occur in shallow water along the Potomac River from Daingerfield Island to the mouth of Hunting

Creek. Though less abundant, Water Stargrass (*Heteranthera dubia*) is also a frequent associate of this community, along with large floating mats of Greater Duckweed (*Spirodela polyrrhiza*) and Pale Duckweed (*Lemna valdiviana*) in sluggish water of sheltered coves and shores. Brazilian Watermeal (*Wolffia brasiliensis*) is locally abundant in the quiet-water cove at Windmill Hill Park.

Unfortunately, these habitats have been degraded by extensive colonies of non-native, highly invasive Hydrilla (*Hydrilla verticillata*) and Brittle Naiad (*Najas minor*), as well as floating plastics and litter. Global/State/Alexandria Ranks: GNR/SU/A1.

Tidal Freshwater Marsh (Mixed High Marsh Type): *Impatiens capensis - Persicaria arifolia - Peltandra virginica - (Typha angustifolia)* Tidal Herbaceous Vegetation (USNVC: CEGL006325).

Tidal Freshwater Marsh (Mixed High Marsh Type) is the principal freshwater tidal marsh community in northern Virginia, Maryland, and Delaware (NatureServe 2014) and are diverse habitats characterized by regular lunar tidal flooding and permanently saturated, mucky soils intermixed with sand and gravel. They occupy the highest landscape position in the tidal channel and have the shortest hydroperiod.

Large expanses of freshwater tidal marsh once covered the mouth of Hunting Creek and tidal Cameron Run; inlets along the Potomac River such as Oronoco Bay; areas along the GWMP at Daingerfield Island; and the tidal section of Four Mile Run. The largest remaining stands occur at the mouth of Hunting Creek near Jones Point Park, despite major recent losses and degradation resulting from the Woodrow Wilson Bridge expansion and widening of the Capital Beltway. Very old remnant marshes occur at Four Mile Run Park and Daingerfield Island along the GWMP, with the several-acre marsh at Four Mile Run Park being the best example. Remnant tidal marshes are somewhat isolated from direct tidal flooding as a result of altered land use in the early 20th century, but remain largely intact owing to the deep, permanently saturated, mucky soils that have existed in these places for millennia.

Herbaceous vegetation characterizes these communities, with River Bulrush (*Bolboschoenus fluviatilis*), Bottlebrush Sedge (*Carex comosa*), Soft-stem Bulrush (*Schoenoplectus tabernaemontani*), Rice Cutgrass (*Leersia oryzoides*), Wild Rice (*Zizania aquatica* var. *aquatica*), Cattails (*Typha* spp.), Halberd-leaf Tearthumb (*Persicaria arifolia*), Pennsylvania Smartweed (*Persicaria pensylvanica*), Dotted Smartweed (*Persicaria punctata*), Arrow-leaf Tearthumb (*Persicaria sagittata*), Water-hemp (*Amaranthus cannabinus*), Orange Jewelweed (*Impatiens capensis*), Swamp Rose-mallow (*Hibiscus moscheutos*), Halberd-leaf Rose Mallow (*Hibiscus laevis*), Common Dodder (*Cuscuta gronovii*), Nodding Bur-marigold (*Bidens cernua*), Smooth Bur-marigold (*Bidens laevis*), and Climbing Hempweed (*Mikania scandens*) the dominant species. Wild Rice was once abundant in freshwater tidal marshes in the City, especially at Four Mile Run and along the GWMP, but today is known only sparingly at the remnant tidal marsh at Four Mile Run Park.

Broad-leaved Arrowhead (*Sagittaria latifolia*), Common Three-square (*Schoenoplectus pungens* var. *pungens*), Arrow-arum (*Peltandra virginica*), and Pickerelweed (*Pontederia cordata* var. *cordata*) are also common species of freshwater tidal marshes, but typically form extensive, nearly monospecific or co-dominant stands in the low intertidal zone between the mixed marsh and mudflats.

The highly invasive and difficult to control Common Reed (*Phragmites australis* ssp. *australis*) and Purple Loosestrife (*Lythrum salicaria*) are major threats to Tidal Freshwater Marsh communities, requiring considerable effort and expense in attempts to eradicate them. Global/State/Alexandria Ranks: GNR/S4?/A1.

Freshwater Tidal Shrub Swamp: *Alnus serrulata - Salix nigra / Pilea (fontana, pumila)* Tidal Shrubland (USNVC: CEGL006843).

Tidal shrub swamps are ecotones that occur along narrow, regularly flooded shorelines between tidal marshes and slightly elevated tidal swamp forests.

The vegetation is typically a diverse mixture of herbaceous species, shrubs, and trees, comprising flora common to both tidal marshes and tidal swamp forests. In addition to characteristic tidal marsh species, tidal shrub swamps in Alexandria generally contain stands of Green Ash (*Fraxinus pennsylvanica*), Black Willow (*Salix nigra*), Tall Indigo-bush (*Amorpha fruticosa*), and Buttonbush (*Cephalanthus occidentalis*). Pumpkin Ash (*Fraxinus profunda*), Carolina Willow (*Salix caroliniana*), and Swamp Rose (*Rosa palustris*) also occur along tidal shores in Alexandria, but are rare. Virginia Sweetspire (*Itea virginica*) is a historic component of tidal shrub swamps in Alexandria, last seen at Hunting Creek in 1915 by W.H. Seaman.

Good examples of tidal shrub swamps undoubtedly once occurred in Alexandria along the Potomac River and its major tributaries, but today are largely represented by narrow tidal shores as a result of past infilling and clearing of swamps. Examples today occur at the mouth of Hunting Creek, Jones Point Park, and Oronoco Bay Park. Global/State/Alexandria Ranks: GNR/SU/A1.

Freshwater Tidal Hardwood Swamp: *Fraxinus profunda - Nyssa biflora - (Fraxinus pennsylvanica) / Ilex verticillata / Persicaria arifolia* Tidal Forest (USNVC: CEGL006287).

Regularly flooded Tidal Hardwood Swamp Forest is characterized by hummock-and-hollow microtopography and diverse hydrophytic herbs and shrubs, and occupies the slightly higher ground between the marshes and tidal shrub swamps and the floodplain and uplands. The original extent of this community in Alexandria was substantially diminished following the expansion of Old Town and various waterfront industries centuries ago, resulting in stands of degraded alluvial floodplain forest on lands formerly occupied by Freshwater Tidal Hardwood Swamp.

Characteristic species of this community include Green Ash (*Fraxinus pennsylvanica*), American Elm (*Ulmus americana*), Silky Dogwood (*Cornus amomum*), Arrow-arum (*Peltandra virginica*), Lizard's-tail (*Saururus cernuus*), Common Wood Reedgrass (*Cinna arundinacea*), Fowl Mannagrass (*Glyceria striata*), Gray's Sedge (*Carex grayi*), Hop Sedge (*Carex lupulina*), Blunt Broom Sedge (*Carex tribuloides* var. *tribuloides*), Virginia Dayflower (*Commelina virginica*), Halberd-leaf Tearthumb (*Persicaria arifolia*), Orange Jewelweed (*Impatiens capensis*), Water-hemlock (*Cicuta maculata* var. *maculata*), Water Parsnip (*Sium suave*), Canada Germander (*Teucrium canadense*), Cardinal Flower (*Lobelia cardinalis*), Panicled Aster (*Symphyotrichum lanceolatum*), and others.

Remaining examples in Alexandria occur at the mouth of Hunting Creek at Jones Point Park, Daingerfield Island, GWMP, and Four Mile Run Park. Global/State/Alexandria Ranks: G3/S3/A1.

Successional Black Willow Shrub Swamp

This community forms on disturbed, open to semi-open tidal channels and former Tidal Hardwood Swamp Forest where regular tidal flooding regimes are mostly cut off, but permanently saturated, mucky soils remain intact.

Black Willow (*Salix nigra*) comprises the dominant vegetation, with many reaching great size. Green Ash (*Fraxinus pennsylvanica*) American Elm (*Ulmus americana*), Silky Dogwood (*Cornus amomum*), Barnyard Grass (*Echinochloa* spp.), Fowl Mannagrass (*Glyceria striata*), Blunt Broom Sedge (*Carex tribuloides* var. *tribuloides*), Orange Jewelweed (*Impatiens capensis*), Florida Grape (*Vitis cinerea* var. *floridana*), Water-hemlock (*Cicuta maculata* var. *maculata*), and others are also common associates.

Common Reed (*Phragmites australis* ssp. *australis*), Sweet Autumn Clematis (*Clematis terniflora*), and Porcelain-berry (*Ampelopsis brevipedunculata*) are especially troublesome non-native invasive weeds of this community.

Examples of this important wildlife habitat in Alexandria occur along the boardwalk at Daingerfield Island, Four Mile Run Park, Jones Point Park, and along the tidal reaches of Hooff's Run at African American Heritage Park. GNR/SNR/A1.

Alluvial Floodplain Communities (Palustrine System)

Coastal Plain / Piedmont Floodplain Swamp (Green Ash - Red Maple Type): *Acer rubrum - Fraxinus pennsylvanica / Saururus cernuus* Forest (USNVC: CEGL006606).

This seasonally or semipermanently flooded, forested wetlands occupies the lowest and wettest depressional hollows of the floodplain. Characteristic species include Red Maple (*Acer rubrum*), Green Ash (*Fraxinus pennsylvanica*), large colonies of Lizard's-tail (*Saururus cernuus*), Fowl Mannagrass (*Glyceria striata*), Blunt Broom Sedge (*Carex tribuloides* var. *tribuloides*), False Nettle (*Boehmeria cylindrica*), and others.

This community type was undoubtedly more widespread along the Potomac River and large streams in Alexandria in the past. Today, examples remain at Four Mile Run Park, Daingerfield Island, Old Cameron Run Channel Floodplain Forest, and Clermont Swamp Forest. Global/State/Alexandria Ranks: G3G4/S3S4/A1.

Northern Coastal Plain / Inner Piedmont Mixed Oak Floodplain Swamp: *Quercus (phellos, palustris, michauxii) - Liquidambar styraciflua / Cinna arundinacea* Forest (USNVC: CEGL006605).

These forested "backswamps" occupy extensive, seasonally saturated depressions over impermeable clay within alluvial floodplains of large streams and rivers along the Fall Zone and inner Coastal Plain of

the Washington, D.C. area.

Dominant species include Swamp White Oak (*Quercus bicolor*), Pin Oak (*Quercus palustris*), Sweetgum (*Liquidambar styraciflua*), Red Maple (*Acer rubrum*), Green Ash (*Fraxinus pennsylvanica*), Bitternut Hickory (*Carya cordiformis*), and American Elm (*Ulmus americana*). The stands of Swamp White Oak at Alexandria sites are the largest remaining in the City.

In Alexandria, the dominance of Swamp White Oak (*Quercus bicolor*) at most remaining backswamp sites suggests a transitional type between CEGL006605 and the slightly more westerly Piedmont / Central Appalachian Floodplain Swamp (Pin Oak - Swamp White Oak Type): *Quercus palustris - Quercus bicolor* / *Carex tribuloides - Carex radiata - (Carex squarrosa)* Forest (USNVC: CEGL006497). Swamp Chestnut Oak (*Quercus michauxii*) and Beadle's Oak (*Quercus* x *beadlei*) – a natural hybrid between White Oak (*Quercus alba*) and Swamp Chestnut Oak - occur sparingly in an ancient backswamp remnant along the old Cameron Run channel at Cameron Run Regional Park. (Old canopy Swamp Chestnut Oak and Swamp White Oak are intermixed together at Eakin Park along Accotink Creek in Fairfax County, Virginia and Swamp Chestnut Oak is dominant along Patuxent River backswamps west of the Baltimore-Washington Parkway in Prince George's County, Maryland.)

Today, the most extensive examples of this type in Alexandria occur at Clermont Swamp Forest along seepage braids of the Bush Hill tributary of Backlick Run south of the stream and the railroad tracks, with smaller stands at the Old Cameron Run Channel Floodplain Forest. Tarleton Park and eastern parts of Ben Brenman Park (formerly Cameron Station) at the convergence of Backlick Run and Holmes Run represent an ancient mosaic of backswamps and braided microchannels of this type with hydrology now cut off resulting from the reconfigured Holmes Run stream channel. Massive, old-age bottomland oaks along Ashby Street, E. Glebe Road, and interior parts of Auburn Village, as well as Manning Street, are also relics of a vast, ancient backswamp community that once occupied parts of lower Four Mile Run.

Large-scale past dumping of glass, metals, industrial material, and dredgings into forested swamps along the north side of Eisenhower Avenue in the mid-to-late 20th century has also seriously degraded these sites, as well as the rash of invasive weeds following widespread soil disturbance. Global/State/Alexandria Ranks: G3G4/S3?/A1.

Southern Piedmont / Inner Coastal Plain Floodplain Terrace Forest: *Liquidambar styraciflua - Quercus (michauxii, shumardii) - Carya cordiformis / Ilex decidua / Carex amphibola* Forest (USNVC: CEGL007006).

This floristically diverse, bottomland forest community typically occupies rich, well-drained levees and floodplains of oxbow channels and braided streams, with a primary range to the south of our area. The Alexandria site encompasses a several-acre expanse of rich, alluvial floodplain forest along an ancient oxbow channel of Cameron Run at Cameron Run Regional Park and behind the Vola Lawson Animal Shelter (small sections of rich floodplain forest and flora also occur directly to the northeast at the Old Cameron Run Channel Floodplain Forest). This tract, which is referred to as "Ward's Woods" by some, is the sole remaining example of this type in the City and probably represents a northern extension of a community that was once likely more widespread throughout the lower Cameron Run watershed.

In 1881, Lester F. Ward published the landmark flora of Washington, D.C. and vicinity, which included many of his collections from similar places in the Cameron Run watershed: "Passing next to the Lower Potomac, the localities of special interest are…Hunting Creek, a large estuary below Alexandria, including Cameron Run, the stream which debouches into it with its tributaries, Backlick Run and Holmes Run, which unite to form it. Here have been found at various points *Clematis ochroleuca*, [*Matelea carolinensis*], *Itea virginica…Micranthemum* [*micranthemoides*], [*Platanthera flava* var. *flava*], *Quercus* [*bicolor*], *Carex gracillima, Geum* [*laciniatum*], *Galium asprellum,* and very many other rare plants."

Bitternut Hickory (*Carya cordiformis*) is the dominant canopy tree throughout this site, with co-dominant White Ash (*Fraxinus americana*) and Northern Red Oak (*Quercus rubra*). Swamp Chestnut Oak (*Quercus michauxii*) and Sweetgum (*Liquidambar styraciflua*) are also components of the site, though to a lesser degree. Redbud (*Cercis canadensis*), Red Mulberry (*Morus rubra*), and Pawpaw (*Asimina triloba*) mainly comprise the shrub and understory layers, with Bladdernut (*Staphylea trifolia*) and Canada Moonseed (*Menispermum canadense*) prominent along the banks of the old channel.

Herbs are diverse and include many that are common to both alluvial floodplains and Basic Mesic Forest communities, such as Bottlebrush Grass (*Elymus hystrix* var. *hystrix*), Hairy Wild Rye (*Elymus villosus* var. *villosus*), Autumn Bluegrass (*Poa autumnalis*), Early Bluegrass (*Poa cuspidata*), Eastern Narrow-leaved Sedge (*Carex amphibola*), Flat-spiked Sedge (*Carex planispicata*), Green Dragon (*Arisaema dracontium*), Yellow Trout Lily (*Erythronium americanum* ssp. *americanum*), Sessile Bellwort (*Uvularia sessilifolia*), Spring Beauty (*Claytonia virginica*), Mayapple (*Podophyllum peltatum*), Bloodroot (*Sanguinaria canadensis*), Yellow Corydalis (*Corydalis flavula*), Dutchman's Breeches (*Dicentra cucullaria*), Violet Wood-sorrel (*Oxalis violacea*), Potato Dwarf-dandelion (*Krigia dandelion*), and others. Global/State/Alexandria Ranks: G3G4/S3/A1.

Piedmont / Central Appalachian Silver Maple Forest: *Acer saccharinum - Acer negundo / Ageratina altissima - Laportea canadensis - (Elymus virginicus, Elymus macgregoryi)* Forest (USNVC: CEGL006217).

In Alexandria, this closed-canopy, forested community occurs on well-drained, temporarily flooded, silty alluvial floodplains of the Potomac River.

Silver Maple (*Acer saccharinum*) and Green Ash (*Fraxinus pennsylvanica*) are the dominant canopy trees, with Sycamore (*Platanus occidentalis*), Boxelder (*Acer negundo* var. *negundo*), Eastern Cottonwood (*Populus deltoides* ssp. *deltoides*), and American Elm (*Ulmus americana*) co-dominant.

Silky Dogwood (*Cornus amomum*), Smooth Arrow-wood (*Viburnum dentatum* var. *lucidum*), and Spicebush (*Lindera benzoin*) are prominent in the shrub layer. The ground layer is carpeted with a diversity of herbaceous plants, especially graminoids such as Early Wild Rye (*Elymus macgregorii*), Common Wood Reedgrass (*Cinna arundinacea*), Eastern Narrow-leaved Sedge (*Carex amphibola*), Eastern Woodland Sedge (*Carex blanda*), Soft Fox Sedge (*Carex conjuncta*), and Inflated Narrow-leaved Sedge (*Carex grisea*).

Most remaining sites of this type in Alexandria are highly degraded and weedy, with the best remaining examples occurring at Jones Point Park. Smothering, evergreen carpets of non-native invasive plants such as English Ivy (*Hedera* spp.), Winter Creeper (*Euonymus fortunei*), and Lilyturf (*Liriope* spp.) are serious threats to the future sustainability of these forest communities. Global/State/Alexandria Ranks: G4/S4/A1.

Piedmont / Central Appalachian River Birch - Sycamore Forest: *Betula nigra - Platanus occidentalis* Forest (USNVC: CEGL002086).

This alluvial community occurs on deep, mesic, sandy-loamy soils of floodplains and stream banks of large streams and rivers. In Alexandria, it comprises the dominant vegetation along Holmes Run from the eastern end of the Holmes Run Gorge at Shirley Highway to the confluence with Backlick Run, as well as along Backlick Run.

Sycamore (*Platanus occidentalis*), River Birch (*Betula nigra*), Bitternut Hickory (*Carya cordiformis*), Green Ash (*Fraxinus pennsylvanica*), Northern Red Oak (*Quercus rubra*), White Oak (*Quercus alba*), Willow Oak (*Quercus phellos*), Sweetgum (*Liquidambar styraciflua*), Red Maple (*Acer rubrum*), and Common Persimmon (*Diospyros virginiana*) are characteristic canopy species. River Birch, in particular, reaches great size and age along this stretch of Holmes Run.

Ironwood (*Carpinus caroliniana*) is the predominant understory tree. Poison Ivy (*Toxicodendron radicans* var. *radicans*), Virginia-creeper (*Parthenocissus quinquefolia*), and high-climbing grapes (*Vitis* spp.) are important vines. Spicebush (*Lindera benzoin*) mainly represents the sparse shrub layer.

Herbs are diverse and include Virginia Wild Rye (*Elymus virginicus* var. *virginicus*), Eastern Narrow-leaved Sedge (*Carex amphibola*), Eastern Woodland Sedge (*Carex blanda*), violets (*Viola* spp.), and many others.

Highly invasive Oriental Bittersweet (*Celastrus orbiculatus*), Porcelain-berry (*Ampelopsis brevipedunculata*), Multiflora Rose (*Rosa multiflora*), English Ivy (*Hedera* sp.), and others have overtaken large sections of this community in the last several decades, probably resulting from the multitude of sanitary sewer easements and other disturbances along Holmes Run.
Global/State/Alexandria Ranks: G5/SU/A1.

Coastal Plain / Piedmont Small-Stream Floodplain Forest: *Liquidambar styraciflua - Liriodendron tulipifera / Lindera benzoin / Arisaema triphyllum* Forest (USNVC: CEGL004418).

This is the typical vegetation of alluvial floodplains along the upper reaches of many small- to medium-sized streams in Alexandria and surrounding areas of the Fall Zone and inner Coastal Plain throughout the greater Washington, D.C. region.

Unlike the rich floodplains of large streams and rivers, these perennially damp forest communities are flooded very rarely by stream overflows and are mainly fed by a mosaic of seeps and springs that emanate from the porous sandy-gravelly soils of slopes along the stream valleys. They occur at the lowest

landscape position in the stream valley along banks and flat alluvial benches just above the streams on acidic, sandy-clayey loams, often over underlying clay. They are included within the Palustrine System in the vegetation classification hierarchy (Fleming et al. 2013, Harrison 2004), but are not swamps or bogs.

Vegetation varies somewhat with stream size, soil and moisture conditions, and geography, but Tuliptree (*Liriodendron tulipifera*), Sweetgum (*Liquidambar styraciflua*), and Red Maple (*Acer rubrum*) are typically the dominant canopy trees of this community type. Tuliptree is characteristic of well-drained sites along small order streams of the Fall Zone and adjoining Coastal Plain of our area, with Red Maple to a lesser extent. Sweetgum can also occur as a canopy co-dominant, but becomes increasingly important on poorer-drained soils and on the Coastal Plain. Occasionally, oak species - mainly White Oak (*Quercus alba*) near the Fall Zone and Southern Red Oak (*Quercus falcata*) on the Coastal Plain - and American Beech (*Fagus grandifolia*) are also co-dominant. Many of the canopy trees are old-age and reach great size.

The understory and shrub layers are usually sparse, with Spicebush (*Lindera benzoin*) the characteristic shrub. The herbaceous layer is diverse, though large expanses of the forest floor are typically carpeted in lush colonies of New York Fern (*Parathelypteris noveboracensis*), intermixed to a lesser extent with Southern Lady Fern (*Athyrium asplenioides*). Jack-in-the-pulpit (*Arisaema triphyllum*) is frequent in areas not dominated by fern colonies, along with Sessile Bellwort (*Uvularia sessilifolia*), Patridge-berry (*Mitchella repens*), numerous carices (*Carex* spp.), and other herbaceous plants. Extensive colonies of Dwarf Ginseng (*Panax trifolius*) and Wood Anemone (*Anemone quinquefolia*) are fairly common in spring.

As recently as three decades ago, many of the region's interior stream valleys were largely free of significant populations of invasive exotic plants. However, Japanese Stiltgrass (*Microstegium vimineum*) has since become established and represents a serious threat to the future sustainability of these forest communities because of its rampant growth rate, pervasive seed bank, negative effects on soil microorganisms, and ability to thrive in areas of soil disturbance, such as along trails and areas frequented by White-tailed Deer (Brewer 2010).

Small examples of this community occur in Alexandria at Rynex Natural Area, Chinquapin Park, First Baptist Church property on the south side of Taylor Run, and along Timber Branch. Some of the region's best remaining examples occur along Still Creek and North Branch Still Creek at Greenbelt Park in Prince George's County, Maryland and along the east branch of Turkeycock Run in Lincolnia, Fairfax County, Virginia. Global/State/Alexandria Ranks: G4/S4/A1.

Piedmont / Central Appalachian Sand Bar / River Shore (Low Herbs Type): *Eragrostis hypnoides - Lindernia dubia - Ludwigia palustris - Cyperus squarrosus* Herbaceous Vegetation (USNVC: CEGL006483).

This floristically diverse community forms on sand and gravel depositional bars and low muddy shores of rivers and large, high-energy streams and is dominated by low herbaceous species that are adapted to seed bank dormancy during cool season flooding cycles and fast growth during drawdown exposure in

late summer and fall.

Characteristic flora includes Creeping Lovegrass (*Eragrostis hypnoides*), Tufted Lovegrass (*Eragrostis pectinacea* var. *pectinacea*), Awned Flatsedge (*Cyperus squarrosus*), Mud Plantain (*Heteranthera reniformis*), Ditch Stonecrop (*Penthorum sedoides*), Spotted Spurge (*Euphorbia maculata*), Scarlet Ammannia (*Ammannia coccinea*), Toothcup (*Rotala ramosior*), Marsh Seedbox (*Ludwigia palustris*), Long-stalked False Pimpernel (*Lindernia dubia* var. *anagallidea*), False Pimpernel (*Lindernia dubia* var. *dubia*), and many others.

Rampantly growing Floating Primrose-willow (*Ludwigia peploides* var. *glabrescens*), Joint-head Grass (*Arthraxon hispidus* var. *hispidus*), Pasture Spikesedge (*Kyllinga gracillima*), and other non-native invasive weeds are significant threats to these communities.

The best examples of this community in Alexandria occur along Holmes Run from N. Van Dorn Street to Duke Street and Cameron Run between Ben Brenman Park and the Capital Beltway (495) crossing. Global/State/Alexandria Ranks: G3/S3/A1.

Piedmont / Central Appalachian Sand Bar / River Shore (Tall Herbs Type): *Eupatorium serotinum - Persicaria (lapathifolia, punctata, pensylvanica)* Herbaceous Vegetation (USNVC: CEGL006481).

This community is similar to the preceding type but forms along rivers and large, high-energy streams on deep sand and gravel depositional bars and boulder bars that are exposed for much of the growing season.

Tall herbaceous plants are the characteristic vegetation of this type and include Rough Barnyard Grass (*Echinochloa muricata* var. *microstachya*), Spreading Panic Grass (*Panicum dichotomiflorum* var. *dichotomiflorum*), Dock-leaf Smartweed (*Persicaria lapathifolia*), Pennsylvania Smartweed (*Persicaria pensylvanica*), Dotted Smartweed (*Persicaria punctata*), Halberd-leaf Rose-mallow (*Hibiscus laevis*), Blue Vervain (*Verbena hastata*), Mistflower (*Conoclinium coelestinum*), Late Thoroughwort (*Eupatorium serotinum*), Hybrid Eupatorium (*Eupatorium* x *polyneuron*), Annual Salt-marsh Aster (*Symphyotrichum subulatum*), Common Cocklebur (*Xanthium strumarium*), and numerous others.

Black Willow (*Salix nigra*) is ubiquitous, as well as stunted, flood-battered Sycamore (*Platanus occidentalis*) and River Birch (*Betula nigra*). Carolina Willow (*Salix caroliniana*) is also an infrequent component along Cameron Run.

Troublesome weeds such as Johnson Grass (*Sorghum halepense*), Curly Dock (*Rumex crispus* ssp. *crispus*), Mexican Tea (*Dysphania ambrosioides*), Purple Loosestrife (*Lythrum salicaria*), Perilla (*Perilla frutescens*), Sweet Wormwood (*Artemisia annua*), Common Mugwort (*Artemisia vulgaris* var. *vulgaris*), and others are serious threats to these communities, as well as Mimosa (*Albizia julibrissin*) and Porcelain-berry (*Ampelopsis brevipedunculata*).

Good examples in Alexandria are found along Holmes Run from N. Van Dorn Street to Duke Street and Cameron Run between Ben Brenman Park and the Capital Beltway (495) crossing, with weedier

examples along lower Four Mile Run. Global/State/Alexandria Ranks: GNR/S2S3/A1.

Non-Alluvial Wetlands (Palustrine System)

Woodland Seeps

Woodland seeps commonly occur as acidic seepages on forested slopes slightly above bogs in permanently damp, springy soil where the water table is just below the surface (capillary fringe). Such areas are typically characterized by extensive carpets of Common Ground-pine (*Dendrolycopodium obscurum*), Cinnamon Fern (*Osmundastrum cinnamomeum* var. *cinnamomeum*), Sessile Bellwort (*Uvularia sessilifolia*), Indian Cucumber-root (*Medeola virginiana*), Canada Mayflower (*Maianthemum canadense*), Large Whorled Pogonia (*Isotria verticillata*), Wild Sarsaparilla (*Aralia nudicaulis*), and scattered ericads. Old-age Tuliptree (*Liriodendron tulipifera*) typically grow at the ecotone between the damp and saturated soils of the seeps.

Wetter, permanently saturated woodland seeps and springheads are characterized by deep, mucky soils and dense colonies of Skunk Cabbage (*Symplocarpus foetidus*) and Spicebush (*Lindera benzoin*), with American False-hellebore (*Veratrum viride* var. *viride*) to a lesser extent.

Extensive, nearly continuous mosaics of spring-fed seepage wetlands along the toe slopes of ravines and swales below Oak-Heath Forest typically support stands of Southern Lady Fern (*Athyrium asplenioides*), Evergreen Wood Fern (*Dryopteris intermedia*), Cinnamon Fern, Royal Fern (*Osmunda spectabilis*), Slender Spikegrass (*Chasmanthium laxum*), Prickly Bog Sedge (*Carex atlantica* ssp. *atlantica*), White-edged Sedge (*Carex debilis*), Weak Stellate Sedge (*Carex seorsa*), Wild Yam (*Dioscorea villosa*), Smooth Alder (*Alnus serrulata*), Sweetbay Magnolia (*Magnolia virginiana*), Canadian Serviceberry (*Amelanchier canadensis*), Red Chokeberry (*Aronia arbutifolia*), Poison Sumac (*Toxicodendron vernix*), Winterberry (*Ilex verticillata*), Marsh Blue Violet (*Viola cucullata*), Primrose-leaved Violet (*Viola primulifolia*), Fetterbush (*Eubotrys racemosus*), Dangleberry (*Gaylussacia frondosa*), Maleberry (*Lyonia ligustrina* var. *ligustrina*), Swamp Azalea (*Rhododendron viscosum*), Highbush Blueberry (*Vaccinium corymbosum*), Fringetree (*Chionanthus virginicus*), Southern Wild Raisin (*Viburnum nudum*), and others.

Woodland seeps are not as diverse as Magnolia Bogs despite many floristic similarities, nor do they occupy a landscape position and topography necessary for the formation of bogs and Acidic Seepage Swamps. Nonetheless, they are freshwater springs and regionally uncommon to rare water resources that support a diversity of wetland plants and wildlife, many of which are highly rare in Alexandria.

Countless incipient seedlings of highly invasive, non-native weeds, such as English Ivy (*Hedera* spp.), Burning Bush (*Euonymus alatus*), Oriental Bittersweet (*Celastrus orbiculatus*), Wineberry (*Rubus phoenicolasius*), Higan Cherry (*Prunus subhirtella*), Japanese Holly (*Ilex crenata*), and others, spread by birds from ornamental plantings and woods edges into interior seepage areas, are especially troublesome and require constant vigilance in their removal. Japanese Stiltgrass (*Microstegium vimineum*), largely spread by White-tailed Deer traversing the seeps, has also become a serious problem in these areas.

High quality woodland seeps in Alexandria are found at Rynex Natural Area, Dora Kelley Nature Park,

and the Winkler Botanical Preserve. Global/State/Alexandria Ranks: GNR/SNR/A1.

Northern Coastal Plain Terrace Gravel Bog: *Nyssa sylvatica - Magnolia virginiana - (Pinus rigida) / Rhododendron viscosum - Toxicodendron vernix / Smilax pseudochina* Woodland (USNVC: CEGL006219).

"Magnolia Bogs" are acidic, fen-like seeps uniquely associated with gravel terraces of the inner Coastal Plain near the Fall Zone that are named for a characteristic assemblage of Sweetbay Magnolia (*Magnolia virginiana*), Sphagnum moss (*Sphagnum* spp.), and other bog flora (McAtee 1918). They typically form on a slumped bench at the toe slope of hillsides where a strong-flowing spring or seep flows from an upland gravel and sand aquifer over a thick, impervious layer of underlying clay, which prevents the downward infiltration of water. This seepage flow and highly acidic, exposed sands and gravels of the Cretaceous-age Potomac Formation create optimal conditions for the formation of bogs.

With floristic affinities to similar communities in the New Jersey Pine Barrens region, their global distribution generally follows the Fall Zone in a narrow, east-west band from the Jessup area at the northern extent of their range in Howard County, Maryland to their southern extent near Fredericksburg, Virginia (Strong and Simmons, in prep.). Throughout their range, they were never very common or large, usually occupying an acre or less in size. Nonetheless, they are vitally important resources both for the pure, naturally filtered waters which flow continuously from them – even during periods of drought – and the relic populations of ancient northward and westward migrations of rare Coastal Plain flora, which have persisted in these small communities well inland and fairly close to the Piedmont (Simmons and Strong 2002).

Historically, fire may have been an important factor in limiting the growth of shrubs and trees and maintaining open, herbaceous areas, but the geohydrologic conditions and effects of permanently saturated soils ("root pruning") that cause blowdowns of large trees (except *Pinus rigida* and *Nyssa sylvatica*) have also been observed to be prominent factors. Ice storms, which are frequent over time throughout the natural range of this community, also maintain an open mosaic.

Habitats are characterized by dense, shaded thickets of ferns, shrubs, and stunted trees, as well as sunnier, peaty-saturated open areas dominated by graminoids, herbaceous plants, and scattered shrubs. Sphagnum moss is often a ubiquitous groundcover. Vegetation is very diverse and typically includes Cinnamon Fern (*Osmundastrum cinnamomeum* var. *cinnamomeum*), Royal Fern (*Osmunda spectabilis*), Virginia Chain Fern (*Woodwardia virginica*), Pitch Pine (*Pinus rigida*), Nuttall's Reedgrass (*Calamagrostis coarctata*), Prickly Bog Sedge (*Carex atlantica* ssp. *atlantica*), Northern Long Sedge (*Carex folliculata*), Bristly-stalk Sedge (*Carex leptalea*), Twisted Spikerush (*Eleocharis tortilis*), Slender Beaksedge (*Rhynchospora gracilenta*), Long's Rush (*Juncus longii*), Coastal Carrion-flower (*Smilax pseudochina*), Sweetbay Magnolia (*Magnolia virginiana*), Canadian Serviceberry (*Amelanchier canadensis*), Red Chokeberry (*Aronia arbutifolia*), Poison Sumac (*Toxicodendron vernix*), Winterberry (*Ilex verticillata*), Black Gum (*Nyssa sylvatica*), Virginia Meadow Beauty (*Rhexia virginica*), Fetterbush (*Eubotrys racemosus*), Dangleberry (*Gaylussacia frondosa*), Swamp Azalea (*Rhododendron viscosum*), Highbush blueberries (*Vaccinium* spp.), Fringetree (*Chionanthus virginicus*), Southern Wild Raisin (*Viburnum nudum*), Vervain Thoroughwort (*Eupatorium pilosum*), and numerous others (Strong and

Simmons, in prep.).

Historically, Magnolia Bogs were known in Alexandria near Hume Spring and St. Elmo; near Hunting Creek; and scattered throughout the western parts of the City, mainly from Lincolnia northeast through the Winkler property and down the Lucky Run drainage to Four Mile Run. William Palmer collected Clinton's Wood Fern (*Dryopteris clintoniana*), *Dryopteris* hybrids, and other bog flora in 1899 from a "cold spring bog" in the Lincolnia area; G.S. Miller, Jr. in 1902 collected Bog Bunchflower (*Veratrum virginicum*), Red Milkweed (*Asclepias rubra*), and Downy Lobelia (*Lobelia puberula*) from a "small swamp 3 miles west of Alexandria"; J.H. Painter in 1905 collected Nodding Ladies'-tresses (*Spiranthes cernua*) "in swamp" at Hunting Creek; Paul C. Standley in 1918 collected Nodding Ladies'-tresses from a "bog near St. Elmo" and Nellie C. Knappen in 1922 reported Small White Fringed Orchid (*Platanthera blephariglottis*) from a "spring near Alexandria" (both locations are probably the historic Hume Spring in the lower Four Mile Run Valley); Nellie C. Knappen also reported a "bog" at "Alexandria Reservoir", as well as Nodding Ladies'-tresses at "Lincolnia" and "Alexandria Reservoir" in 1921 (Alexandria Reservoir is also the name on the 1917 USGS map for Lake Barcroft, which was built in 1915 as a water supply for Alexandria and is situated along Holmes Run near the western boundary of the City in Fairfax County); J.E. Benedict, Jr. collected Nodding Ladies'-tresses from a "swamp near Alexandria, Virginia" in 1923; W.L. McAtee (1930) collected Swamp Sunflower (*Helianthus angustifolius*) "in the bog adjoining cemetery in Alexandria"; and E.H. Walker, H.G. Deignan, and F.R. Fosberg in 1945 collected Long's Rush (*Juncus longii*) and other bog flora from the old sand and gravel mine complex and bog adjoining Turkeycock Run very near today's boundary with Fairfax County. The term "swamp" was often analogous to "bog" in common usage in the early 20th century.

Today, less than two dozen or so sites remain throughout their global range, degraded to varying degrees by hydrologic disturbance, non-native invasive plants, possible fire exclusion, woody succession, and various anthropogenic impacts. With the destruction of one of the finest of the last surviving Magnolia Bogs and Alexandria's last pristine occurrence of this community in 1996 for the construction of the Institute for Defense Analyses building at 5110 Mark Center Drive, the less-than-pristine but irreplaceable Beatley Bog complex remains Alexandria's sole surviving Magnolia Bog. Global/State/Alexandria Ranks: G1/S1/A1.

Coastal Plain / Outer Piedmont Acidic Seepage Swamp: *Acer rubrum - Nyssa sylvatica - Magnolia virginiana / Viburnum nudum / Osmundastrum cinnamomeum - Woodwardia areolata* Forest (USNVC: CEGL006238).

Acidic Seepage Swamp communities typically form along braided, perennial streams outflowing seeps and bogs. Soils are permanently saturated, deep, and mucky, with high organic material content. Vegetation typically includes many of the same species as woodland seeps and bogs, but differs in floristic composition and is not nearly as diverse.

In our area, these forested swamps are characterized by an overstory of Red Maple (*Acer rubrum*) and Black Gum (*Nyssa sylvatica*), with Pin Oak (*Quercus palustris*) occasionally inhabiting the wettest zones. Sweetbay Magnolia (*Magnolia virginiana*) is common in the understory, though is absent from the Alexandria sites. Southern Wild Raisin (*Viburnum nudum*) forms extensive colonies and is the most

abundant shrub. Winterberry (*Ilex verticillata*), Highbush blueberries (*Vaccinium* spp.), and Smooth Alder (*Alnus serrulata*) are also common.

The shaded ground layer is typically carpeted by large expanses of Skunk Cabbage (*Symplocarpus foetidus*) and Cinnamon Fern (*Osmundastrum cinnamomeum* var. *cinnamomeum*). Netted Chain Fern (*Woodwardia areolata*) and Marsh Fern (*Thelypteris palustris* var. *pubescens*) are common in deeply saturated areas. Prickly Bog Sedge (*Carex atlantica* ssp. *atlantica*), Bladder Sedge (*Carex intumescens* var. *intumescens*), Weak Stellate Sedge (*Carex seorsa*), Fowl Mannagrass (*Glyceria striata*), and other graminoids are frequently scattered throughout.

Alexandria's largest and best remaining example of this community occurs along the toe slope of the Chinquapin Village terrace on the south side of Taylor Run at Chinquapin Park ("Chinquapin Hollow" of L.F. Ward). Smaller examples occur to the west at 1201 Key Drive and along lower Winkler Run. Global/State/Alexandria Ranks: G3?/S3/A1.

Coastal Plain Depression Swamp (Willow Oak - Red Maple - Sweetgum Type): *Quercus phellos - Acer rubrum - Liquidambar styraciflua / Vaccinium (formosum, fuscatum)* Forest (USNVC: CEGL006110).

Upland Depression Swamps are forested, seasonally flooded, drawdown wetlands that occupy shallow depressions over hardpan clay. These naturally sparse communities occur most commonly in the Piedmont, yet are globally rare throughout their range.

In Alexandria, Willow Oak (*Quercus phellos*), White Oak (*Quercus alba*), and Sweetgum (*Liquidambar styraciflua*) are the dominant canopy trees, with Pin Oak (*Quercus palustris*), Black Gum (*Nyssa sylvatica*) and Red Maple (*Acer rubrum*) to a lesser extent. Black Highbush Blueberry (*Vaccinium fuscatum*) is the typical shrub, along with shrubby thickets of Common Greenbrier (*Smilax rotundifolia*). The herb layer is sparse, mainly represented by scattered colonies of Blunt Broom Sedge (*Carex tribuloides* var. *tribuloides*).

This community was once prevalent in Alexandria on poorly drained sections of the Seminary, Dowden, and Chinquapin Village terraces. Today, one undeveloped site remains on the vacant lot at 2707 N. Rosser Street and a contiguous section in the back yard of the residence at 2709 N. Rosser Street. Global/State/Alexandria Ranks: G3/S2/A1.

Low-Elevation Mesic Forests (Terrestrial System)

Coastal Plain / Outer Piedmont Basic Mesic Forest: *Fagus grandifolia - Liriodendron tulipifera - Carya cordiformis / Lindera benzoin / Podophyllum peltatum* Forest (USNVC: CEGL006055).

This lush forest community occurs along large streams and rivers of the Fall Zone and inner Coastal Plain and occupies rich, well-drained floodplain terraces and alluvial levees, cove slopes, and ravines with base-rich soils.

Northern Red Oak (*Quercus rubra*), American Beech (*Fagus grandifolia*), Bitternut Hickory (*Carya cordiformis*), White Ash (*Fraxinus americana*), and Black Walnut (*Juglans nigra*) are the dominant canopy species, with Tuliptree (*Liriodendron tulipifera*) common in coves and ravines. Pawpaw (*Asimina triloba*) is the typical understory species, with the stand on the broad alluvial levee at the western end of Dora Kelley Nature Park the largest and finest in the City. Spicebush (*Lindera benzoin*) is the dominant shrub.

The herbaceous layer is characteristically lush and diverse in spring, including extensive carpets of Mayapple (*Podophyllum peltatum*), Silvery Spleenwort (*Deparia acrostichoides*), Toadshade (*Trillium sessile*), Puttyroot (*Aplectrum hyemale*), Wild Ginger (*Asarum canadense*), Common Black Cohosh (*Actaea racemosa*), Slender Toothwort (*Cardamine angustata*), Cut-leaf Toothwort (*Cardamine concatenata*), Sweet Cicely (*Osmorhiza claytonii*), Virginia Waterleaf (*Hydrophyllum virginianum*), Golden Ragwort (*Packera aurea*), and numerous other spring wildflowers and ferns. Flat-spiked Sedge (*Carex planispicata*), Hairy Woodland Brome (*Bromus pubescens*), and Bottlebrush Grass (*Elymus hystrix* var. *hystrix*) are typical graminoids.

The rich alluvial levee along Holmes Run at the western end of Dora Kelley Nature Park; sections of rich floodplain and cove slopes of the Holmes Run Gorge at Dora Kelley Nature Park; and the Holmes Run Scenic Easement are all good examples of Basic Mesic Forest in Alexandria.

Amur Honeysuckle (*Lonicera maackii*), Burning Bush (*Euonymus alatus*), Oriental Bittersweet (*Celastrus orbiculatus*), Garlic Mustard (*Alliaria petiolata*), and other invasive weeds are serious threats to this community. Global/State/Alexandria Ranks: G4?/S3/A1.

Northern Coastal Plain / Piedmont Mesic Mixed Hardwood Forest: *Fagus grandifolia - Quercus (alba, rubra) - Liriodendron tulipifera / (Ilex opaca) / Polystichum acrostichoides* Forest (USNVC: CEGL006075).

This regionally common forest community is the classic vegetation type of forested stream banks and lower and mid-slopes on well-drained, mesic to submesic, relatively infertile, acidic loams.

Characteristic species of this community include Tuliptree (*Liriodendron tulipifera*), American Beech (*Fagus grandifolia*), White Oak (*Quercus alba*), Northern Red Oak (*Quercus rubra*), Mockernut Hickory (*Carya tomentosa*), Ironwood (*Carpinus caroliniana*), Flowering Dogwood (*Cornus florida*), Strawberry-bush (*Euonymus americanus*), Christmas Fern (*Polystichum acrostichoides*), Mayapple (*Podophyllum peltatum*), White Wood Aster (*Eurybia divaricata*), and others. Many of the oldest and largest trees in the City are associated with this type.

Japanese Stiltgrass (*Microstegium vimineum*), Amur Honeysuckle (*Lonicera maackii*), Burning Bush (*Euonymus alatus*), English Ivy (*Hedera* spp.), Oriental Bittersweet (*Celastrus orbiculatus*), Garlic Mustard (*Alliaria petiolata*), and others are especially troublesome invasive weeds of these sites.

Good examples of Mesic Mixed Hardwood Forest occur in Alexandria at Dora Kelley Nature Park, Monticello Park, and St. Stephen's and St. Agnes School: Lower School Campus.

Global/State/Alexandria Ranks: G5/S5/A3.

Low-Elevation Dry and Dry-Mesic Forests and Woodlands (Terrestrial System)

Piedmont Acidic Oak-Hickory Forest: *Quercus alba - Quercus rubra - Carya tomentosa / Cornus florida / Vaccinium stamineum / Hylodesmum nudiflorum* Forest (USNVC: CEGL008475).

At the Fall Zone and inner Coastal Plain of our area, this community generally occurs as a gradient between Oak-Heath Forest and Mesic Mixed Hardwood Forest, often on dry to submesic, acidic, west-facing and southwest-facing slopes with high solar exposure (Simmons 2013). Typical examples of Acidic Oak-Hickory Forest are often much more species rich than Oak-Heath Forest and include a diversity of upland oaks (*Quercus* spp.) and hickories (*Carya* spp.) in the canopy, a fairly diverse understory, and a host of woodland sedges, grasses, and wildflowers in the herb layer.

The flora and gravelly uplands of the Fall Zone and inner Coastal Plain of Montgomery and Prince George's counties, Maryland; District of Columbia; and City of Alexandria and Arlington, Fairfax, Prince William, and Stafford counties, Virginia are virtually identical. Throughout this region, Acidic Oak-Hickory Forest is especially well developed on ancient colluvial slopes and benches, with soils derived from underlying lenses of weathered montmorillonite clay of the Potomac Formation. The small degree of base cation saturation provided by the clayey soils may also contribute to greater species richness than otherwise occurs in leached, acidic environments.

These interesting communities have long attracted botanists who were drawn to the exceptional diversity of wildflowers and graminoids more characteristic of the Piedmont to the west. Sites throughout the region were undoubtedly much more common and nearly continuous in the past.

The Alexandria habitats comprise a diverse assemblage of flora, including Bosc's Panic Grass (*Dichanthelium boscii*), Variable Panic Grass (*Dichanthelium commutatum* var. *commutatum*), Two-flower Melic (*Melica mutica*), Lined Sedge (*Carex striatula*), Bashful Bulrush (*Trichophorum planifolium*), Devil's Bit (*Chamaelirium luteum*), Lily-leaved Twayblade (*Liparis liliifolia*), Virginia Snakeroot (*Endodeca serpentaria*), Starry Campion (*Silene stellata*), Round-lobed Hepatica (*Hepatica americana*), hawthorns (*Crataegus* spp.), Cream Avens (*Geum virginianum*), Pasture Rose (*Rosa carolina* ssp. *carolina*), Butterfly Pea (*Clitoria mariana* var. *mariana*), Smooth Tick-trefoil (*Desmodium laevigatum*), Round-leaf Tick-trefoil (*Desmodium rotundifolium*), Violet Bush-clover (*Lespedeza frutescens*), Hairy Bush-clover (*Lespedeza hirta* var. *hirta*), New Jersey Tea (*Ceanothus americanus*), Hairy Angelica (*Angelica venenosa*), Yellow Pimpernel (*Taenidia integerrima*), Hairy-jointed Meadow Parsnip (*Thaspium barbinode*), Fringetree (*Chionanthus virginicus*), Striped Gentian (*Gentiana villosa*), Wild Dittany (*Cunila origanoides*), Wild Bergamot (*Monarda fistulosa*), Narrow-leaf Mountain-mint (*Pycnanthemum tenuifolium*), Hairy Skullcap (*Scutellaria elliptica* var. *elliptica*), Virginia Ground-cherry (*Physalis virginiana*), Fern-leaf Yellow False Foxglove (*Aureolaria pedicularia*), Black Haw (*Viburnum prunifolium*), Small White Snakeroot (*Ageratina aromatica*), Cornel-leaved Aster (*Doellingeria infirma*), Godfrey's Thoroughwort (*Eupatorium godfreyanum*), Hairy Thoroughwort (*Eupatorium pubescens*), Upland Boneset (*Eupatorium sessilifolium*), Woodland Sunflower (*Helianthus divaricatus*), Pale-leaved Sunflower (*Helianthus strumosus*), Whorled Rosinweed (*Silphium asteriscus* var. *trifoliatum*), Elm-leaf

Goldenrod (*Solidago ulmifolia* var. *ulmifolia*), Wavy-leaved Aster (*Symphyotrichum undulatum*), Upland Ironweed (*Vernonia glauca*), and others.

The south- and west-facing slopes of the Winkler Botanical Preserve and northwest-facing slopes at Parkfairfax Woods comprise the best remaining examples in Alexandria of Acidic Oak-Hickory Forest. Weedy but important stands also occur at Yoakum Parkway Woods, Stevenson Park, Dora Kelley Nature Park, NOVA Alexandria Campus along N. Beauregard Street, INOVA Alexandria Hospital Scenic Easement, and St. Andrew's United Methodist Church.

Reflecting past soil disturbance resulting from a former land use as wooded pastureland, non-native invasive plants such as Japanese Honeysuckle (*Lonicera japonica*), Amur Honeysuckle (*Lonicera maackii*), Oriental Bittersweet (*Celastrus orbiculatus*), and others have become readily established at most sites. Global/State/Alexandria Ranks: G4G5/S4S5/A1.

Piedmont / Central Appalachian Mixed Oak / Heath Forest: *Quercus alba - Quercus (coccinea, velutina, montana) / Gaylussacia baccata* Forest (USNVC: CEGL008521).

This common forest type is characterized by extensive colonies of Black Huckleberry (*Gaylussacia baccata*), Lowbush Blueberry (*Vaccinium pallidum*), Deerberry (*Vaccinium stamineum*), and other low, deciduous shrubs of the Heath Family (Ericaceae). It occupies dry to submesic, acidic uplands and usually forms a mosaic with the evergreen type of Oak-Heath Forest dominated by Mountain Laurel (*Kalmia latifolia*).

An assemblage of White Oak (*Quercus alba*), Scarlet Oak (*Quercus coccinea*), Southern Red Oak (*Quercus falcata*), Chestnut Oak (*Quercus montana*), and Black Oak (*Quercus velutina*) typically comprise the overstory. Black Gum (*Nyssa sylvatica*), Red Maple (*Acer rubrum*), and Sassafras (*Sassafras albidum*) are prominent in the understory. Allegheny Chinquapin (*Castanea pumila*) is frequent in the tall shrub layer at a number of sites. Intermixed colonies of Maple-leaf Viburnum (*Viburnum acerifolium*) are also typical.

Herbs are generally sparse to lacking, with Bracken Fern (*Pteridium aquilinum* var. *latiusculum*), Pink Lady's-slipper (*Cypripedium acaule*), Large Whorled Pogonia (*Isotria verticillata*), and Yellow Wild Indigo (*Baptisia tinctoria*) the most common species. Eastern Bastard Toadflax (*Comandra umbellata* var. *umbellata*) is known from only one site in Alexandria, but is also typical of this community.

As little as two decades ago, Alexandria hosted some of the largest and finest expanses of this community in northeastern Virginia on Mark Winkler Company lands at Mark Center and the heavily forested Stone Tract along W. Braddock Road. Unfortunately, all of these sites were developed since that time. Smaller, good examples in Alexandria are found at Dora Kelley Nature Park, Winkler Botanical Preserve, NOVA Alexandria Campus behind the Bisdorf Building, Polk Avenue Park, Seminary Forest, Patrick Henry Park, INOVA Alexandria Hospital Scenic Easement, Episcopal High School woods along N. Quaker Lane, Robert Leider Park, Forest Park, and Stevenson Park. Global/State/Alexandria Ranks: G5/S5/A2.

Central Appalachian / Inner Piedmont Chestnut Oak Forest: *Quercus montana - (Quercus coccinea, Quercus rubra) / Kalmia latifolia / Vaccinium pallidum* Forest (USNVC: CEGL006299).

This evergreen type of Oak-Heath Forest is the predominant vegetation of most high-elevation, upland terraces and north-facing slopes in the City, as well as similar settings throughout the region.

This community type is often densely vegetated but naturally sparse floristically, with Chestnut Oak (*Quercus montana*) and Mountain Laurel (*Kalmia latifolia*) the co-dominant species. Soils are highly weathered, gravelly-cobbly, dry to submesic, acidic loams (average pH 4.0), with decaying leaves and organic debris the functioning groundcover.

Black Gum (*Nyssa sylvatica*) and Red Maple (*Acer rubrum*) to a lesser extent comprise the understory. Small colonies of Lowbush Blueberry (*Vaccinium pallidum*) and other deciduous ericads are commonly intermixed in the shrub layer. The ground layer is typically covered with imbedded quartzite cobbles, woodland duff, and colonies of Cushion Moss (*Leucobryum glaucum*) and Common Haircap Moss (*Polytrichum commune* var. *commune*). Scattered carices (*Carex* spp.), Spotted Wintergreen (*Chimaphila maculata*), and Pink Lady's-slipper (*Cypripedium acaule*) mainly comprise the sparse herbs.

The steep slope variant of this community, characterized by co-dominant Witch Hazel (*Hamamelis virginiana*) and Northern Red Oak (*Quercus rubra*) in addition to the above species and occasionally American Beech (*Fagus grandifolia*), comprises the vegetation of steep, acidic, north-facing, gravelly slopes above streams. Trailing Arbutus (*Epigaea repens*) is also frequently associated with this community and typically occurs on steep, mossy ravine slopes above streams.

American Chestnut (*Castanea dentata*) was once a major component of this forest type and variant, but was decimated throughout its range by the Chestnut Blight Fungus (*Chryphonectria parasitica*), an exotic fungal pathogen introduced in New York in 1904 that migrated to Virginia shortly thereafter. The blight girdles mature trunks but does not kill the roots. Today, American Chestnut persists in greatly reduced numbers throughout its range, mostly as stump re-sprouts and small understory trees.

In the mid-20th century throughout the region, American Beech (*Fagus grandifolia*) greatly expanded its range from lower slopes and stream banks of mesic forest into upland Oak-Heath Forest communities, perhaps resulting from the favorable conditions provided by widespread selective logging and clearing of upland forests during the 1930s and 40s. Fire exclusion is also inferred by many ecologists to be a factor in the opportunistic expansion of fire-intolerant species like American Beech into uplands (Abrams 1992, Abrams and Steiner 2013, Brewer 2015). Today, innumerable, shade-tolerant American Beech saplings and small trees occur throughout the understory of many Oak-Heath Forest sites and are outcompeting and slowly replacing the natural recruitment of oak species.

The large, north-facing slope at the Winkler Botanical Preserve and the similar-aspect site at Monticello Park are the best remaining examples of the evergreen Oak-Heath Forest type in Alexandria. Other good examples are found at Rynex Natural Area, Dora Kelley Nature Park, Polk Avenue Park, residence at 4875 Maury Lane above the Beatley Bog, Seminary Forest, and Parkfairfax Woods along Gunston Road. Global/State/Alexandria Ranks: G5/S5/A2.

Semi-Natural Habitats

Good examples of the following habitats are rare in Alexandria. However, they are not ranked, despite containing rare species, because they are semi-natural environments.

Impoundment Wetlands

Impoundment wetlands are man-made structures that impound streams, groundwater flow, or rainwater, such as ponds, ditches and swales, and reservoirs. Clean water sites are very important for wildlife, especially species of amphibians and odonates (dragonflies and damselflies).

American Bur-reed (*Sparganium americanum*), Frogfruit (*Phyla lanceolata*), and Large Water-starwort (*Callitriche heterophylla* ssp. *heterophylla*) are plants restricted to impoundment wetlands in Alexandria.

The large, shallowly ponded impoundment wetland at Dora Kelley Nature Park, formed by impeding the flow of two groundwater seepages and diverting some of the flow from the Chambliss tributary into the wetlands; spring-fed pond at the center of the Beatley Bog complex; wet ditch in the footprint of the old Dominion Mill Race along Wheeler Avenue; shallow impounded water at the floor of the abandoned Alexandria Reservoir; old tidal channel along the west side of the GWMP adjoining Potomac Greens Park; and wet ditches along the edge of the historic Tidal Freshwater Marsh community at Daingerfield Island are all valuable habitats.

Open Areas, Meadows, and Hedgerows

These sites comprise woods edges and semi-open groves; open, grassy areas; old fields; hedgerows; cemeteries; abandoned sand and gravel pits; road edges and banks; railroad tracks; and managed meadows.

Semi-open conditions along woodland edges and in glades give rise to a diverse suite of light-demanding native flora. Species that primarily occur in woodland edges and glades include Poverty Oatgrass (*Danthonia spicata*), Bulbous Woodrush (*Luzula bulbosa*), Spreading Woodrush (*Luzula echinata*), Bush's Oak (*Quercus* x *bushii*), *Quercus* x *incomita*, Blackjack Oak (*Quercus marilandica* var. *marilandica*), Sweet Crabapple (*Malus coronaria*), Pasture Rose (*Rosa carolina* spp. *carolina*), sumacs (*Rhus* spp.), St. Andrew's Cross (*Hypericum hypericoides* ssp. *hypericoides*), Low St. Andrew's Cross (*Hypericum hypericoides* ssp. *multicaule*), pinweeds (*Lechea* spp.), Wild Basil (*Clinopodium vulgare*), American Pennyroyal (*Hedeoma pulegioides*), Virginia Ground-cherry (*Physalis virginiana*), Common Bluets (*Houstonia caerulea*), pussytoes (*Antennaria* spp.), Hairy Thoroughwort (*Eupatorium pubescens*), Roundleaf Thoroughwort (*Eupatorium rotundifolium*), Grass-leaf Blazing Star (*Liatris pilosa*), and others.

Open, grassy areas, roadsides, and managed meadows are important refugia in Alexandria for native grass species, such as Broomsedge (*Andropogon virginicus* var. *virginicus*), Prairie Three-awn Grass (*Aristida oligantha*) and other *Aristida* spp., Panic Grass (*Dichanthelium* spp.), Paspalum (*Paspalum* spp.), Little Bluestem (*Schizachyrium scoparium* var. *scoparium*), Knotroot Bristlegrass (*Setaria*

parviflora), Indian Grass (*Sorghastrum nutans*), Purpletop Grass (*Tridens flavus* var. *flavus*), and others, as well as Eastern Redcedar (*Juniperus virginiana* var. *virginiana*), Lopsided Rush (*Juncus secundus*), Hairy Forked Nailwort (*Paronychia fastigiata*), Sand Blackberry (*Rubus cuneifolius*), Tick-trefoils (*Desmodium* spp.), Bush-clovers (*Lespedeza* spp.), Common Milkweed (*Asclepias syriaca*), Foxglove Beard-tongue (*Penstemon digitalis*), Virginia Plantain (*Plantago virginica*), Purple Cudweed (*Gamochaeta purpurea*), Dwarf-dandelion (*Krigia virginica*), and numerous others.

Emerging naturally in managed meadows following the abatement of regular mowing practices are several plants unknown elsewhere in Alexandria, including Southern Slender Ladies'-tresses (*Spiranthes lacera* var. *gracilis*), Green Milkweed (*Asclepias viridiflora*), and Southern Sneezeweed (*Helenium flexuosum*).

Alexandria's complex of railroad tracks are among the nation's oldest (c. 1840s). The tracks were built on low ground, mainly over vast expanses of Cameron Valley sand (Fleming 2015). The extensive open lands bordering the railroad tracks are valuable open space and provide unique habitats for many plants not found elsewhere in Alexandria, including Splitbeard Bluestem (*Andropogon ternarius* var. *ternarius*), Southeastern Wild Rye (*Elymus glabriflorus* var. *glabriflorus*), Switchgrass (*Panicum virgatum*), Florida Paspalum (*Paspalum floridanum*), Sleepy Catchfly (*Silene antirrhina*), Pink Wild Bean (*Strophostyles umbellata*), Eastern Prickly-pear (*Opuntia humifusa* var. *humifusa*), Hairy-fruit Chervil (*Chaerophyllum tainturieri*), Tall Thoroughwort (*Eupatorium altissimum*), and Camphorweed (*Heterotheca subaxillaris*).

Successional Forest

Successional forest in our region is a transitional vegetation type of past-cleared upland forest that is comprised of mature, tall stands of Virginia Pine (*Pinus virginiana*) intermixed with a diversity of maturing hardwoods and other flora. Such areas are important for wildlife and are refugia for light-demanding Virginia Pine and other conifers.

Plants of successional forest that are unknown today from other habitats in Alexandria include Curtiss' Milkwort (*Polygala curtissii*), Common Running-cedar (*Diphasiastrum digitatum*), and *Quercus* x *subfalcata.*

Stands at Forest Park, Fort Ward Park, and the Winkler Botanical Preserve are the best remaining examples of successional forest in Alexandria.

Old Town Masonry

The exterior stone and brick walls of the historic Wilkes Street Tunnel (old Orange & Alexandria Railroad, c. 1851) between S. Royal and S. Fairfax streets in Old Town, as well as the brick masonry seawall along the north side of the Windmill Hill Park cove, are the only known stations in Alexandria for Purple Cliff-brake (*Pellaea atropurpurea*) – a fern that primarily grows on exposed rock. Rock Pellitory (*Parietaria pensylvanica*) frequently grows on brick and stone walls of Old Town; Trailing Pearlwort (*Sagina decumbens* ssp. *decumbens*) is common in cracks of brick sidewalks and cobblestone streets throughout Old Town. The masonry of the Hooff's Run Bridge of the old Orange & Alexandria Railroad

supports the only known station in the City for Blunt-lobed Woodsia (*Woodsia obtusa* ssp. *obtusa*).

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____. 2015a. Plate 3: map showing bedrock geology, topography of the bedrock surface, and areas of bedrock outcrop in the City of Alexandria, Virginia and vicinity – expanded explanation.
____. 2015b. Geologic map of the Potomac Formation (early Cretaceous) in the City of Alexandria, Virginia and vicinity.
____. 2015c. Plate 4: geologic map of the Potomac Formation in the City of Alexandria, Virginia and vicinity – expanded explanation.
____. 2015d. Geologic map of the City of Alexandria, Virginia and vicinity, showing surficial geology, landforms, and major areas of artificially modified land.
____. 2015e. Plate 5: geologic map of the City of Alexandria, Virginia and vicinity, showing surficial geology, landforms, and major areas of artificially modified land – expanded explanation.
____. 2015f. Map of the piezometric surface of the Cameron valley sand member (lower aquifer) of the Potomac Formation and other aspects of urba hydrogeology, City of Alexandria, Virginia and vicinity.
____. 2015g. Plate 6: map of the piezometric surface of the Cameron valley sand member (lower aquifer) of the Potomac Formation and other aspects of urba hydrogeology, City of Alexandria, Virginia and vicinity – expanded explanantion.

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ANNOTATED LIST OF VASCULAR PLANTS

Families, genera, species, and subtaxa are arranged alphabetically within major taxonomic divisions. The scientific name is listed first with the author(s), followed by the common name.

Taxonomy and nomenclature largely follow the Digital Atlas of the Virginia Flora and the Flora of Virginia. Family designations follow the Flora of Virginia and those of the Angiosperm Phylogeny Group (APG3). Synonyms for some recently revised species that may be unfamiliar, as well as notes and comments, are included in brackets.

If a plant is uncommon to rare or generally restricted to a particular location, an abbreviated Alexandria place name will follow the common name (see Key to Alexandria Place Names and Locations). Up to 10 place names will be listed for uncommon to rare flora. Uncommon flora that occurs in more stations than 10, though not frequently, will be designated as "infrequent" and will not include place names. Likewise, if a plant is frequent to common in Alexandria, it will also not have a place name or location noted. In any case, a descriptor to the frequency of occurrence is included for all taxa (see Key to Frequency of Occurrence of Species).

A description of the habitat(s) follows next, with the most typical listed first. Plants that are known only historically in Alexandria will not include a frequency of occurrence or habitat information, as that information is not known. (Some plants from the former Winkler site that are designated as "historical" do include descriptors of the frequency of occurrence and habitat because that information is known.)

After the habitat description(s), follows the abbreviation for the collector(s) name and specimen voucher number, both italicized:

RHS = Roderick H. Simmons
MTS = Mark T. Strong
JMP = John M. Parrish
BWS = Brent W. Steury
s.n. = sans numero (a specimen with collector name, date, and location, but without a collection number)
pv = photo voucher (in rare cases, a photo of the plant is substituted for an actual specimen)

Following the collector information is the City rank for each species based on its rarity (see Key to City Rank). For state rare species (S1 and S2, as well as "Watchlist"- S3), the assigned state and global ranks are given, including status, if any.

An exsiccatae of all known historical collection(s) and credible past reportings of City of Alexandria taxa are included in parentheses below the above information, with multiple collections separated by a semicolon and arranged chronologically. All habitat and descriptive information from the specimen label (and field notebooks, etc.) are included in quotations.

Key to Frequency of Occurrence of Species:

Abundant: occurring usually in large numbers or occupying large areas.
Common: plentiful throughout.
Frequent: widely distributed; occasionally plentiful.
Infrequent: occurring only occasionally.
Rare: not often found owing to its scarcity.
Local: restricted to a particular area.

Key to City Rank (unofficial designation based on occurrences within the City of Alexandria):

A1: At very high risk of extirpation from Alexandria owing to extreme rarity (5 or fewer populations), very steep declines, or other factors.
A2: Very rare and imperiled with 6 to 20 occurrences, steep declines, or other factors making it vulnerable to extirpation in Alexandria.
A3: Uncommon to rare in Alexandria with between 20 and 40 occurrences; may have fewer occurrences if found to be common or abundant at some of these locations; may be somewhat vulnerable to extirpation in Alexandria.
A4: Uncommon but not rare in Alexandria; some cause for long-term concern due to declines or other factors.
A5: Common, widespread, and abundant in Alexandria.
AH: Formerly part of the Alexandria biota with expectation that it may be rediscovered.
AX: Believed extirpated from Alexandria with virtually no likelihood of rediscovery.
AU: Alexandria status unknown.
A_?: Denotes inexact numeric rank (e.g., A3?).

Key to State Rank (Townsend 2015)**:**

S1: At very high risk of extirpation from the state due to extreme rarity (often 5 or fewer populations), very steep declines, or other factors.
S2: At high risk of extirpation from the state due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors.
S3: At moderate risk of extirpation from the state due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors.
S4: Uncommon but not rare; some cause for long-term concern due to declines or other factors.
S5: Common, widespread, and abundant.
SH: Known only from historical occurrences but still some hope of rediscovery
SX: Not located despite intensive searches and virtually no likelihood of rediscovery.
SU: Currently unrankable due to lack of information or due to substantially conflicting information about status or trends.
S_?: Denotes inexact numeric rank (e.g., S3?).

Key to Global Rank (NatureServe 2015, Townsend 2015)**:**

G1: At very high risk of extinction due to extreme rarity (often 5 or fewer populations), very steep declines, or other factors.
S2: At high risk of extinction due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors.
G3: At moderate risk of extinction due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors.
G4: Uncommon but not rare; some cause for long-term concern due to declines or other factors.
G5: Common, widespread, and abundant.
GH: Known only from historical occurrences but still some hope of rediscovery
GX: Not located despite intensive searches and virtually no likelihood of rediscovery.
GU: Currently unrankable due to lack of information or due to substantially conflicting information about status or trends.
G_?: Denotes inexact numeric rank (e.g., G3?).
G_Q: Taxonomic distinctiveness of this entity at the current level is questionable; resolution of this uncertainty may result in change from a species to a subspecies or hybrid, or the inclusion of this taxon in another taxon, with the resulting taxon having a lower conservation priority (e.g., G3Q).
G_T_: Signifies the rank of a subspecies or variety.
GNR: Global rank not yet assessed.

Key to Alexandria and Vicinity Place Names and Locations (see Plate 1: *Map of Place Names and Remnant Natural Communities in the City of Alexandria, Virginia and Vicinity* on page 104 for current and historic locations)**:**

AAHP (1) = African American Heritage Park; **AB (2)** = Alexandria Brickyard; **AC (3)** = Alexandria Canal; **AL (4)** = Alexandria Lighthouse ("Alexandria Light" on old herbarium labels); **ANC (5)** = Alexandria National Cemetery; **AR (6)** = Alexandria Reservoir ("Duke Street Reservoirs", c. 1852 and 1875; "Alexandria Reservoir is also the name on the 1917 USGS map for Lake Barcroft, which was built in 1915 as a water supply for Alexandria and is situated along Holmes Run near the western boundary of the City in Fairfax County); **AV (7)** = Auburn Village Condominium; **BB (8)** = Beatley Bog; area spanning the private residence and main headwaters at 1401 N. Pegram Street, private residence and main body of bog at 1377 N. Pegram Street, and outflow at 1335 N. Pegram Street; **BC (9)** = Bennington Crossings Apartments woodland remnant; **BE (10)** = Beth El Hebrew Congregation; **BG (11)** = Buzzard Gap, including private residences at 4801 and 4875 Maury Lane; **BH (12)** = Bush Hill; **BHC (13)** = Beauregard Heights Condominium Association; several-acre forest remnant along a steep, gravelly ridge between N. Morgan Street and N. Beauregard Street; **BHCE (14)** = Battery Heights Conservation Easement; **BP (15)** = Beverly Park; **BW (16)** = Beauregard Woods; small woodland remnants along the east side of N. Beauregard Street just north and south of the intersection with Braddock Road; also small wooded areas along the west side of Beauregard Street just north of Fillmore Avenue and woodland adjoining St. James Methodist Church and the Hermitage in Northern Virginia on the south side of Fillmore Avenue; **C (17)** = Cameron Run (the name of the section of Holmes Run from the confluence of Backlick Run and Holmes Run southeastward to the confluence with Hooff's Run); **CC (18)** = Canal Center Plaza Park (privately owned waterfront with public access); **CH (19)** = Chambliss Park; **CNP (20)**

= Clermont Natural Park; **CP (21)** = Chinquapin Park ("Chinquapin Hollow" of L.F. Ward); **CR (22)** = Cameron Run Regional Park; rich alluvial levee and bottomland forest along the old Cameron Run channel ("Lake Cook Woods" in the previous Flora; also referred to by some as "Ward's Woods" after L.F. Ward who botanized the area in the late 1800s); **CS (23)** = Cowden Station ("Cowden", "Cowdens", and "Cowdons" on old herbarium labels); **CSF (24)** = Clermont Swamp Forest; seepage braids and swamp forest of the Bush Hill tributary of Backlick Run south of the stream and the railroad tracks, north of Eisenhower Avenue, and west of Clermont Avenue; **CV (25)** = Chinquapin Village terrace; seasonally wet woodland at 822 Marshall Lane; **DI (26)** = Daingerfield Island; **DK (27)** = Dora Kelley Nature Park; **DM (28)** = Dominion Mill Race along Wheeler Avenue (Dominion Mill was later named Phoenix Mill and Watkins Mill; today it mostly occupies a wet ditch along the railroad tracks behind the industrial park in the 4000 block of Wheeler Avenue and at Tarleton Park); **DT (29)** = Dowden Terrace Upland Depression Swamp spanning the private residences at 2707 and 2709 N. Rosser Street; **EP (30)** = S. Early Street Park; **ES (31)** = Edsall Seep; **EV (32)** = Eisenhower Valley; broad stream valley between the Capital Beltway (495) and Duke Street; **EW (33)** = Episcopal High School Woods; **EWW (34)** = Episcopal High School Woods West; old Loblolly Pine (*Pinus taeda*) plantation and successional areas along N. Howard Street near Fort Ward Park; **FBC (35)** = First Baptist Church lands along the south side of Taylor Run; **FH (36)** = historic Federal Hill ("Federal Spring" is situated at the toe slope of the Mount Ida escarpment at 1904 Russell Road); **FMR (37)** = Four Mile Run Park; **FP (38)** = Forest Park; **FW (39)** = Fort Ward Park; **FWP (40)** = Fort Williams Park; **GHP (41)** = Goat Hill Park; **GM (42)** = George Mason Park; **GWMP (43)** = George Washington Memorial Parkway; **H (44)** = Holmes Run (east side of Shirley Highway); **HC (45)** = tidal wetlands at mouth of Hunting Creek; **HR (46)** = Hooff's Run; tidal portion of stream; **HRP (47)** = Holmes Run Park; **HRS (48)** = Holmes Run Scenic Easement; **HS (49)** = Hammond School; **HU (50)** = Hume Spring; **HW (51)** = Hospital Woods West; **HWE (52)** = Hospital Woods East; **HWS (53)** = Hospital Woods South; **IHC (54)** = Ivy Hill Cemetery; **JDC (55)** = small forested swamp below Juvenile Detention Center at 200 S. Whiting Street; **JL (56)** = large seep along West Branch Taylor Run above 801 Janney's Lane; **JMP (57)** = James Mulligan Park; **JP (58)** = Jones Point Park; **KC (59)** = Kust Conservation Easement; **KD (60)** = small Acidic Seepage Swamp, grassy edge, and woodland at private residence at 1201 Key Drive; **KSP (61)** = King Street Park; **L (62)** = Lincolnia ("Lebanon" prior to the Civil War); **LA (63)** = woodland adjacent to Cameron Mills Road behind Lloyd Apartments; **LC (64)** = Lebanon Cemetery; **LW (65)** = Landmark Woods; **M (66)** = Monticello Park; **ME (67)** = remnant woodland below Mount Eagle atop Parkfairfax; **MI (68)** = Mount Ida; **MJP (69)** = Mount Jefferson Park and Greenway; **N (70)** = Nauck (Nauck Station, "Nauck Springs"); **NOVA (71)** = woods on the NOVA Alexandria Campus; **OB (72)** = Oronoco Bay Park; **OCC (73)** = Old Cameron Run Channel Floodplain Forest at the confluence of Strawberry Run and old Cameron Run channel; **OHC (74)** = old Holmes Run channel and forested stream bank remnants adjoining the Beatley Library and All Veterans Park; **OT (75)** = Old Town; **P (76)** = historic Town of Potomac; **PA (77)** = Polk Avenue Park; **PC (78)** = Park Center Woods; **PEP (79)** = sandy-gravelly bluffs along the Potomac River below the Potomac Electric Power Company plant (Mirant Plant); **PF (80)** = Parkfairfax Woods ("600 Woods"); **PG (81)** = Potomac Greens Park; **PH (82)** = Patrick Henry Park; **PL (83)** = Point Lumley Park; **PY (84)** = Potomac Yard; **QR (85)** = Quaker Ridge: large, semi-open, upland seepage swamp formerly situated on land now occupied by the residences at 85 and 89 Arell Court; **R (86)** = Rynex Natural Area; **RG (87)** = Rivergate Park; **RLP (88)** = Robert Leider Park; **RW (89)** = Reservoir Woods; **SA (90)** = St. Andrew's United Methodist Church Woods; **SF (91)** = Seminary Forest; **SH (92)** = Virginia Department of Transportation right-of-way easements along Shirley Highway (395);

SP (93) = Stevenson Park; **SR (94)** = forested ravine behind 3834 and 3832 Seminary Road that forms the headwaters of Strawberry Run; **SRS (95)** = S. Reynolds Street Woods; **SS (96)** = old Seminary Station; **SSE (97)** = Stonegate Scenic Easement; **SS&SA-LC (98)** = St. Stephen's and St. Agnes School: Lower School Campus; **SS&SA-UC (99)** = St. Stephen's and St. Agnes School: Upper School Campus; **ST (100)** = Stone Tract (historical); **STA (101)** = St. Asaph; **STE (102)** = St. Elmo; **STM (103)** = St. Mary's Catholic Church cemetery ("Catholic Cemetery" on old herbarium labels); **T&D (104)** = Telegraph & Duke Meadow; **TBP (105)** = Timberbranch Parkway; **TLP (106)** = Tide Lock Park; **TP (107)** = Tarleton Park; **UFWP (108)** = Upper Fort Williams Park; **UP (109)** = Upland Park at the north edge of Shuter's Hill; **VTS (110)** = Virginia Theological Seminary ("Episcopal Seminary", "Fairfax Seminary", and "Convalescent Camp" on old herbarium labels); **W (111)** = former Mark Winkler Company properties beyond the Winkler Botanical Preserve that are now owned by JBG Companies, federal government, and others; **WBP (112)** = Winkler Botanical Preserve; **WE (113)** = West End; **WF (114)** = historic Washington Forest remnant; **WH (115)** = Windmill Hill Park; **WP (116)** = small Oak-Heath Forest remnant situated on a gravelly ridge between Shirley Highway (395) and the southeast side of building 5420 of Woodmont Park Apartments; **WSCC (117)** = Wilkes Street Cemetery Complex; **WST (118)** = Wilkes Street Tunnel; **YP (119)** = Yoakum Parkway Woods.

LYCOPHYTES

Isoetaceae (Quillwort Family)

Isoetes riparia Engelm. ex A. Braun Shore Quillwort G5/S3/AH
(*F.V. Coville s.n.*, 22 Jul 1888, "Hunting Creek, by bridge near its mouth"; *F.V. Coville 123*, 19 Nov 1895, "south margin of Four Mile Run"; *E.S. Steele s.n.*, 8 Oct 1898, "tide mud, Four Mile Run, on the bay at mouth of creek"; *W.R. Maxon s.n.*, 7 Sep 1901, "Hunting Creek"; *G.H. Shull 200*, 11 Aug 1902, "in shallow water among pebbles by road [Rt. 1] across Hunting Creek, SW Alexandria, north of the bridge"; *G.H. Shull 252*, 22 Aug 1902, "along gravelly south shore of Four Mile Run, mostly between tides"; *I. Tidestrom s.n.*, Aug 1903, "in tidal mud, Four Mile Run"; *W.R. Maxon 3886*, 16 Sep 1906, "at right bank of wagon bridge [Rt. 1] over Hunting Creek – an area of the Potomac. In sand and gravel; in six inches of water or exposed at ebb tide."; *P. Dowell 6455*, 13 Aug 1910, "Hunting Creek, Alexandria"; *N. Hotchkiss 6038*, 5 Sep 1938, "between tides along Potomac R., at north end of Alexandria")

Lycopodiaceae (Clubmoss Family)

Dendrolycopodium obscurum (L.) A. Haines Common Ground-pine DK, R, WBP Rare, often locally abundant. Forms colonies in damp soil (capillary fringe) surrounding woodland seeps. *RHS 1920* A1

Diphasiastrum digitatum (Dill. ex A. Braun) Holub Common Running-cedar FP Local Seasonally wet soil of old successional *Pinus virginiana* forest atop terrace. *RHS 1465* A1

Huperzia lucidula (Michx.) Trevisan Shining Clubmoss AH
(*W. Palmer s.n.*, 9 Jul 1899, "Lincolnia, well shaded bank near spring")

PTERIDOPHYTES

Aspleniaceae (Spleenwort Family)

Asplenium platyneuron (L.) B.S.P. Ebony Spleenwort Infrequent Rock outcrops and banks along Holmes Run (DK); mesic upland forest, usually in disturbed areas; masonry of Wilkes Street Tunnel. *RHS 2561* A3

Blechnaceae (Chain Fern Family)

Woodwardia areolata (L.) T. Moore Netted Chain Fern CP, W Rare Acidic Seepage Swamp and shallow banks of Taylor Run (CP); woodland seep along Winkler Run (W). *RHS 1817* A1
(Reported for "Alexandria Reservoir" on 23 Sep c. 1921 by Nellie C. Knappen)

Dennstaedtiaceae (Bracken Family)

Dennstaedtia punctilobula (Michx.) T. Moore Hay-scented Fern DK, EWW, FP, R, W Rare Dry to mesic upland forest. *RHS 2274* A1

Pteridium aquilinum (L.) Kuhn var. *latiusculum* (Desv.) Hulten Bracken Fern Infrequent, occasionally locally abundant. Dry to mesic upland forest. *RHS 1793* A3

Dryopteridaceae (Wood Fern Family)

Dryopteris carthusiana (Vill.) H.P. Fuchs Spinulose Wood Fern CP, FBC, SS&SA-LC Rare Acidic Seepage Swamp (CP); woodland seeps along Taylor Run (CP, FBC); bank of small seepage stream (SS&SA-LC). *RHS 3310* A1

Dryopteris clintoniana (D.C. Eat.) Dowell Clinton's Wood Fern G5/SH/AH (*W. Palmer s.n., 311a, 311e, 311h*, 9 Jul 1899, "Lincolnia, cold spring bog, well shaded"; *W. Palmer s.n.*, 2 Jun 1902, "Lincolnia, one colony in cold spring bog")

Dryopteris clintoniana x *cristata* AH (*W. Palmer s.n.*, 9 Jul 1899, "Lincolnia, cold spring bog, well shaded")

Dryopteris clintoniana x *marginalis* AH (*W. Palmer s.n., 311c, 311f, 311i*, 9 Jul 1899, "Lincolnia, cold spring bog, well shaded"; *W. Palmer s.n.*, 2 Jun 1902, "Lincolnia, one colony in cold spring bog")

Dryopteris intermedia (Muhl. ex Willd.) Gray Evergreen Wood Fern CP, DK, FBC, R Rare Acidic Seepage Swamp (CP); woodland seeps along Taylor Run (CP, FBC); stream bank of Chambliss tributary (DK); small seepage on northwest side of Rynex Run (R). *RHS 3305* A1 (*W. Palmer 211a*, 30 Apr 1899, "Lincolnia, streambank in partly open ravine"; *W. Palmer 312*, 9 Jul 1899, "Lincolnia, rather open ravine")

Dryopteris marginalis (L.) Gray Marginal Wood Fern CSF Local Forested stream bank. *RHS 1172* A1

Dryopteris x *triploidea* Wherry CP, FBC Rare Acidic Seepage Swamp (CP); woodland seeps along Taylor Run (CP, FBC). *RHS 3311* A1

Polystichum acrostichoides (Michx.) Schott Christmas Fern Frequent Mesic wooded slopes; forested stream banks. *RHS 1893* A4

Equisetaceae (Horsetail Family)

Equisetum arvense L. Field Horsetail DK, EV, FMR, WBP Rare, occasionally locally abundant. Mesic woodland (DK); woodland seep (WBP); wet open areas (EV, FMR). *RHS 2003* A1

Onocleaceae (Sensitive Fern Family)

Onoclea sensibilis L. Sensitive Fern Frequent Forested stream banks; woodland seeps; low mesic woodland; swamps. *RHS 1766* A4
(*L.F. Ward s.n.*, 3 Oct 1876, "Hunting Creek"; *L.F. Ward s.n.*, 5 May 1878, "Hunting Creek"; *W. Palmer s.n.*, 30 Apr 1899, "Lincolnia, moist wood")

Ophioglossaceae (Adder's -tongue Family)

Botrypus virginianus (L.) Holub Rattlesnake Fern DK, SP, W Rare Mesic woodland. *RHS 2539* A1

Ophioglossum pycnostichum (Fernald) A. & D. Love Adder's Tongue AH
(*L.F. Ward s.n.*, 5 May 1879, "Hunting Creek")
Sceptridium dissectum (Sprengel) Lyon Cut-leaf Grape Fern Infrequent Mesic woodland. *RHS 2383* A3

Osmundaceae (Royal Fern Family)

Osmunda spectabilis Willd. Royal Fern CP, DK, FBC, R, SSE, WBP Rare Woodland seeps; Acidic Seepage Swamp (CP). *RHS 2327* A2
(*G.H. Shull 235*, 19 Aug 1902, "in reclaimed (naturally) part of Hunting Creek Marsh, Alexandria")
Osmundastrum cinnamomeum (L.) C. Presl var. *cinnamomeum* Cinnamon Fern BB, BW, BHC, CH, CP, DK, FBC, R, SSE, WBP Rare, occasionally locally abundant. Woodland seeps; Fall Line Magnolia Bog (BB, WBP); Acidic Seepage Swamp (CP). *RHS 3449* A2
Osmundastrum cinnamomeum (L.) C. Presl var. *glandulosum* (Waters) McAvoy Glandular Cinnamon Fern R Local Woodland seep. *RHS 2329* G5TNR/S1/A1

Pteridaceae (Maidenhair Fern Family)

Pellaea atropurpurea (L.) Link Purple Cliff-brake WH, WST Rare Masonry of Wilkes Street Tunnel and Windmill Hill Park. *RHS 1365* A1
(*Collector unknown s.n.*, 4 Jul 1884, "on old lime kiln, Alexandria"; *L.F. Ward s.n.*, 4 Jul 1884, "old lime kiln, Alexandria"; *C.L. Pollard s.n.*, 15 Jun 1896, "Alexandria"; *W.L. McAtee 2773*, 23 Sep 1917, "Alexandria")

Thelypteridaceae (Marsh Fern Family)

Parathelypteris noveboracensis (L.) Ching New York Fern Infrequent, occasionally locally abundant. Woodland seeps; mesic woodland; forested stream banks. *RHS 1651* A3
Phegopteris hexagonoptera (Michx.) Fée Broad Beech Fern DK, R, W Rare Mesic woodland; forested stream banks. *RHS 2328* A1
Thelypteris palustris Schott var. *pubescens* (Lawson) Fern. Marsh Fern AH
(*W. Palmer s.n.*, 30 Apr 1899, "Lincolnia, open marshy place in ravine"; *W. Palmer s.n.*, 9 Jul 1899, "Lincolnia, bog in wood")

Woodsiaceae (Lady Fern Family)

Athyrium asplenioides (Michx.) A.A. Eaton Southern Lady Fern Frequent Forested stream banks; woodland seeps; low mesic woodland. *RHS 1652* A4
(*W. Palmer s.n.*, 9 Jul 1899, "Lincolnia, bushy ravine")
Deparia acrostichoides (Sw.) M. Kato Silvery Spleenwort DK Local Rich alluvial levee and floodplain forest along Holmes Run. *RHS 1373* A1
Woodsia obtusa (Spreng.) Torr. ssp. *obtusa* Blunt-lobed Woodsia AAHP Local Masonry of historic Hooff's Run Bridge of the old Orange and Alexandria Railroad. *RHS 4105* A1

GYMNOSPERMS

Cupressaceae (Cypress Family)

Juniperus virginiana L. var. *virginiana* Eastern Redcedar Frequent, occasionally locally abundant. Edges and openings of dry to mesic upland forest; open areas. *RHS 1882* A4

Pinaceae (Pine Family)

Pinus echinata Miller Shortleaf Pine Infrequent Dry to mesic upland forest. *RHS 1130* A3

Pinus rigida Miller Pitch Pine DK, IHC, W Rare Dry to mesic upland forest. *RHS 1908* A1

Pinus virginiana Miller Virginia Pine Frequent; locally abundant in successional areas. Mature stands in past-cleared forest; edges and openings of dry to mesic upland forest; open areas. *RHS 1909* A4
(*C.O. Erlanson 17*, 7 Oct 1934, "near Alexandria")

ANGIOSPERMAE – MONOCOTS

Alismataceae (Water-plantain Family)

Alisma subcordatum Raf. Southern Water-plantain DI, DK, FMR, HC Rare Open swamps; wet open areas. *RHS 2245* A1
(*G.H. Shull 212*, 12 Aug 1902, "in older portion of bog of Hunting Creek, 1/3 mi. SSW of Alexandria")

Sagittaria latifolia Willd. Broad-leaved Arrowhead C, DI, DK, FMR, GWMP, HC Infrequent, occasionally locally abundant. Tidal Freshwater Marsh and shores; low wet areas of historic Tidal Freshwater Marsh community (DI); shallow water of old tidal channel along the parkway opposite Daingerfield Island (GWMP); impoundment wetland (DK); gravel bars and mudflats (C). *RHS 1539* A2

Sagittaria latifolia Willd. var. *pubescens* (Muhl. ex Nutt.) J.G. Smith Downy Arrowhead CP, DK, DM Rare Acidic Seepage Swamp (CP); woodland seep above impoundment wetland (DK); wet ditch (DM). *RHS 1580* A1
(*G.H. Shull 203*, 12 Aug 1902, "valley of Hunting Creek above *Zizania* formation, associated with *Scirpus cyperinus*")

Amaryllidaceae (Amaryllis Family)

Allium canadense L. var. *canadense* Meadow Garlic CR, DI, DK, EW, OCC, TBP Rare Rich bottomland forest along old Cameron Run channel (CR); floodplain forest (DI, OCC); forested stream banks (EW, TBP); rich alluvial levee (DK). *RHS 2034* A2
(*G.S. Miller, Jr. s.n.*, 25 May 1902, "near Alexandria")

Araceae (Arum Family)

Arisaema dracontium (L.) Schott Green Dragon Local CR Rich bottomland forest along old Cameron Run channel. *RHS pv* A1

Arisaema triphyllum (L.) Schott ssp. *triphyllum* Common Jack-in-the-pulpit Infrequent Woodland seeps; mesic woodland; Acidic Seepage Swamp (CP). *RHS 2566* A3

Lemna valdiviana Phil. Pale Duckweed DI, FMR, GWMP, HC, OB, WH Infrequent, often locally abundant. Tidal Freshwater Aquatic Bed (HC, OB, WH); shallow water of old tidal channel along the parkway opposite Daingerfield Island (GWMP); swamps (FMR). *RHS 2828* A2

Orontium aquaticum L. Golden Club AH
(*L.F. Ward s.n.*, 23 May 1876, "Hunting Creek"; *E.C. Leonard 387*, 13 May 1918, "in shallow water, bridge across Hunting Creek")

Peltandra virginica (L.) Schott Arrow-arum DI, FMR, GWMP, HC, OB Infrequent, often locally abundant. Tidal Freshwater Marsh and shores; swamps; shallow water of old tidal channel along the parkway opposite Daingerfield Island (GWMP). *RHS 2391* A1

Spirodela polyrrhiza (L.) Schleid. Greater Duckweed DI, HC, JP, OB, TLP, WH Infrequent, often locally abundant. Tidal Freshwater Aquatic Bed. *RHS 3327* A2

Symplocarpus foetidus (L.) Salisb. ex W.P.C. Barton Skunk Cabbage Infrequent, often locally abundant. Woodland seeps; seepage swamps; forested stream banks. *RHS 2466* A3

Wolffia brasiliensis Weddell Brazilian Watermeal WH Locally abundant. Tidal Freshwater Aquatic Bed. *RHS 4056* A1

Colchicaceae (Meadow Saffron Family)

Uvularia perfoliata L. Perfoliate Bellwort DK, SP, W, WBP Rare Basic Mesic Forest (DK); Acidic Oak-Hickory Forest (SP, W, WBP). *RHS 1779* A1

Uvularia sessilifolia L. Sessile Bellwort CP, CR, DK, EW, KD, M, OCC, R, SSE, W Infrequent, occasionally forming large colonies. Woodland seeps; forested stream banks; rich bottomland forest along old Cameron Run channel (CR); floodplain forest (OCC). *RHS 1545* A3

Commelinaceae (Spiderwort Family)

Commelina virginica L. Virginia Dayflower DI, FMR, JP, OCC Rare, occasionally locally abundant. Forested swamps near the Potomac River; floodplain forest (OCC). *RHS 1578* A1
(*G.H. Shull 249*, 21 Aug 1902, "in wet shaded places, Hunting Creek, Alexandria"; *F.R. Fosberg 16684*, 27 Aug 1939, "Hunting Creek, Alexandria; edge of marshy creek")

Cyperaceae (Sedge Family)

Bolboschoenus fluviatilis (Torrey) Sojak River Bulrush AAHP, DI, FMR, HC Rare, often locally abundant. Tidal Freshwater Marsh and shores; successional Black Willow shrub swamp (AAHP). *RHS 1726* G5/S2/A1

Carex abscondita Mackenzie Thicket Sedge DK, WBP Rare Low mesic woodland. *RHS 1202* A1

Carex aggregata Mackenzie Glomerate Sedge Infrequent Dry to mesic upland forest; dry to moist open areas. *RHS 2770* A2

Carex alata Torr. Broad-winged Sedge TBP, WBP Rare Forested stream banks. *RHS 1117* A1

Carex albicans Willd. ex Spreng. var. *albicans* White-tinged Sedge Frequent Dry to mesic upland forest, often on slopes. *RHS 1089* A4

Carex albicans Willd. ex Spreng. var. *emmonsii* (Dewey ex Torr.) J. Rettig Emmons' Sedge Infrequent Dry to mesic upland forest, often on slopes. *RHS 1125* A3

Carex albolutescens Schwein. Greenish-white Sedge BB, TBP, W Rare Acidic Seepage Swamp along Winkler Run (W); edge of Fall Line Magnolia Bog remnant (BB); forested stream banks (TBP). *RHS 2258* A1

Carex amphibola Steud. Eastern Narrow-leaved Sedge Frequent Mesic woodland; floodplain forest; moist, open grassy areas. *RHS 1094* A4

Carex annectens (Bickn.) Bickn. Yellow-fruited Sedge Frequent Dry to moist open areas. *RHS 1308* A4
(*P.C. Standley 11511*, 19 May 1915, "damp meadow near Seminary Station"; *P.C. Standley 11525*, 19 May 1915, "roadside east of Alexandria")

Carex atlantica Bailey ssp. *atlantica* Prickly Bog Sedge BB, CP, DK, R, W Rare Woodland seeps; Fall Line Magnolia Bog remnant (BB); Acidic Seepage Swamp (CP). *RHS 1132a* A1

Carex blanda Dewey Eastern Woodland Sedge Frequent Mesic woodland; bottomland forest; moist, open grassy areas. *RHS 1143* A4
(*P.C. Standley 11518*, 19 May 1915, "along Hunting Creek [Cameron Run] near Seminary Station"; *E.C. Leonard 398*, 13 May 1918, "Alexandria")

Carex brevior (Dewey) Mackenzie ex Lunell Short-beaked Sedge ANC, FBC, SS (hist.) Rare Damp meadow along Hooff's Run (ANC); mesic forest edge (FBC); seasonally wet meadow east of old Seminary Station (destroyed in 2010 for construction of DASH buildings). *RHS 2104* A1

Carex bromoides Schk. ex Willd. ssp. *bromoides* Brome-like Sedge AH
(*J.W. Chickering, Jr. s.n.*, 6 Sep 1873, "Alexandria")

Carex bushii Mackenzie Bush's Sedge SS (hist.) Local Seasonally wet meadow east of old Seminary Station (destroyed in 2010 for construction of DASH buildings). *RHS 2108* AH?

Carex caroliniana Schwein. Carolina Sedge CR, DK, GWMP, OCC, W Rare, occasionally locally abundant (CR, OCC). Mesic woodland; forested stream banks; floodplain forest; low, damp meadow (CR); edge of old tidal channel between the GWMP and Potomac Greens Park (GWMP). *RHS 1270* A1
(*P.C. Standley 11516*, 19 May 1915, "along Hunting Creek [Cameron Run] near Seminary Station")

Carex cephalophora Muhl. ex Willd. Oval-leaved Sedge Infrequent Dry to mesic upland forest. *RHS 1113* A3

Carex comosa Boott Bottlebrush Sedge DI, FMR Rare Tidal Freshwater Marsh remnants. *RHS 1180* A1

Carex complanata Torr. & Hook. Hirsute Sedge BB, BG (4875 Maury Lane), DK, WBP Rare Damp, meadowy glade (BB); forested stream banks along Holmes Run (DK); dry to mesic upland forest (BG, WBP). *RHS 1226* A1

Carex conjuncta Boott Soft Fox Sedge JP Local Floodplain forest. *RHS 1164* G4G5/S3/A1

Carex crinita Lam. var. *brevicrinis* Fern. Short-fringed Sedge CH, KD, OCC Rare Open seeps (CH, KD); wet swales in floodplain forest (OCC). *RHS 2283* A1

Carex crinita Lam. var. *crinita* Long-fringed Sedge Infrequent Woodland seeps; swamps; wet open areas. *RHS 1174* A3
(*P.C. Standley 11523*, 19 May 1915, "edge of Hunting Creek [Cameron Run] near Seminary Station")

Carex cristatella Britt. Crested Sedge KSP, OB Rare Growing along boardwalk (OB) and seawall (KSP) along the Potomac River. *RHS 1290* G5/S1/A1

Carex debilis Michx. White-edged Sedge Infrequent Woodland seeps; Acidic Seepage Swamp (CP). *RHS 1163* A3

Carex digitalis Willd. var. *digitalis* Slender Woodland Sedge Frequent Dry to mesic woodland. *RHS 1131* A4

Carex emoryi Dewey Emory's Sedge AH
(*G. Vasey s.n.*, 1873, "Alexandria"; *E.C. Leonard 388*, 13 May 1918, "bridge across Hunting Creek")

Carex frankii Kunth Frank's Sedge Infrequent Moist to wet, often disturbed, open areas. *RHS 1711* A3
(*G.H. Shull 238*, 19 Aug 1902, "in shade in a bit of wet woodland adjoining Hunting Creek Marsh"; *P. Dowell 6457*, 13 Aug 1910, "Hunting Creek, Alexandria")

Carex glaucodea Tuckerman ex Olney Blue Sedge Infrequent Mesic woodland, often along trails and disturbed areas; bottomland forest; open grassy areas. *RHS 1112* A4

Carex gracilescens Steud. Slender Loose-flowered Sedge AH
(*L.F. Ward s.n.*, 23 May 1876, "Hunting Creek"; *G. Vasey s.n.*, 1877, "Alexandria")

Carex gracillima Schwein. Graceful Sedge AH
(*L.F. Ward s.n.*, 1878, "Hunting Creek, Alexandria"; *L.F. Ward s.n.*, 5 May 1878, "Hunting Creek near Alexandria")

Carex granularis Muhl. ex Willd. Limestone Meadow Sedge HC, JP Rare Moist, open grassy area (HC); shoreline of Potomac River (JP). *RHS 3045* A1
(*G. Vasey s.n.*, 1874, "Alexandria"; *L.F. Ward s.n.*, 29 May 1879, "Hunting Creek"; *L.F. Ward s.n.*, 15 Jun 1879, "Hunting Creek")

Carex grayi Carey Gray's Sedge DI, FMR, JP Rare, occasionally locally abundant. Freshwater Tidal Hardwood Swamp. *RHS 1166* A1

Carex grisea Wahlenb. Inflated Narrow-leaved Sedge GWMP, JP Rare, occasionally locally abundant. Freshwater Tidal Hardwood Swamp (GWMP); floodplain forest (JP). *RHS 2221* A1
(*P.C. Standley 11515*, 19 May 1915, "along Hunting Creek [Cameron Run] near Seminary Station")

Carex gynandra Schwein. Nodding Sedge R Local Woodland seep. *RHS 2075* A1

Carex hirsutella Mackenzie Hairy-leaved Sedge BW, SP, W, WBP Rare Acidic Oak-Hickory Forest. *RHS 1145* A1

Carex hirtifolia Mackenzie Pubescent Sedge DK Local Rich floodplain forest along the south side of Holmes Run. *RHS 1142* A1

Carex intumescens Rudge var. *intumescens* Bladder Sedge CP, DK, R, W, WBP Rare Woodland seeps; Acidic Seepage Swamp (CP). *RHS 2483* A1

Carex laevivaginata (Kükenth.) Mackenzie Smooth-sheathed Sedge Infrequent Woodland seeps; swamps; wet open areas. *RHS 1160* A2
(*L.F. Ward s.n.*, 21 May 1876, "Hunting Creek"; *P.C. Standley 11513*, 19 May 1915, "along Hunting Creek [Cameron Run] near Seminary Station"; *E.C. Leonard 362*, 13 May 1918, "Alexandria")

Carex laxiculmis Schwein. var. *laxiculmis* Spreading Sedge Infrequent Mesic woodland; bottomland forest. *RHS 1141* A3

Carex laxiflora Lam. Broad Loose-flowered Sedge DK, WBP Rare Acidic Oak-Hickory Forest. *RHS 1119* A1

Carex leavenworthii Dewey Leavenworth's Sedge FMR, GWMP, HW, JP, RW, T&D Infrequent Dry upland forest edge (HW); dry to moist open areas (FMR, GWMP, JP, RW, T&D). *RHS 1127* A2
(*E.C. Leonard 409*, 13 May 1918, "Alexandria")

Carex longii Mackenzie Long's Sedge BH, ES Rare Small woodland seep (ES); open sandy seep along railroad tracks (BH). *RHS 1872* A1

Carex lupulina Willd. Hop Sedge DI Local Freshwater Tidal Hardwood Swamp. *RHS 3084* A1

Carex lupulina Willd. x *Carex lurida* Wahlenb. DI, DM Rare Remnant tidal channel (DI); wet ditch along railroad tracks (DM). *RHS 2171* A1

Carex lurida Wahlenb. Sallow Sedge Infrequent Woodland seeps; swamps; wet open areas. *RHS 1175* A3
(*L.F. Ward s.n.*, 20 Jun 1880, "Hunting Creek"; *S.F. Blake 9482*, 20 Jun 1926, "clayey ditch, near Alexandria")

Carex mesochorea Mackenzie Midland Sedge Rare BG (4875 Maury Lane), T&D Semi-open, mossy glade in *Quercus montana* grove atop terrace (BG); seasonally wet meadow (T&D). *RHS 3383* A1

Carex molesta Mackenzie Troublesome Sedge SS (hist.) Local Seasonally wet meadow east of old Seminary Station (destroyed in 2010 for construction of DASH buildings). *RHS 2530* AH?

Carex muehlenbergii Schkuhr ex Willd. var. *enervis* Boott Small-fruited Muehlenberg's Sedge Infrequent Dry, gravelly upland forest. *RHS 1118* A3

Carex muehlenbergii Schkuhr ex Willd. var. *muehlenbergii* Muehlenberg's Sedge EV (edge of thicket along Wheeler Avenue), HWS, W, WBP Rare Acidic Oak-Hickory Forest. *RHS 1271* A1

Carex nigromarginata Schwein. Black-edged Sedge Frequent Dry to mesic upland forest, often on slopes. *RHS 1090* A4

Carex normalis Mackenzie Greater Straw Sedge SS (hist.) Local Seasonally wet meadow east of old Seminary Station (destroyed in 2010 for construction of DASH buildings). *RHS 2109* AH?

Carex planispicata Naczi Flat-spiked Sedge CR, DK, OCC Rare Rich bottomland forest along old Cameron Run channel (CR); floodplain forest (OCC); rich alluvial levee (DK). *RHS 1295* A1

Carex prasina Wahlenb. Drooping Sedge DK, M, R Rare Banks of small seepage stream (DK); small woodland seeps (M, R). *RHS 1228* A1

Carex radiata (Wahlenb.) Small Eastern Star Sedge Infrequent Mesic woodland; forested stream banks; floodplain forest. *RHS 2068* A3
(*J.W. Chickering, Jr. s.n.*, 23 May 1873, "Alexandria")

Carex retroflexa Muhl. ex Willd. var. *retroflexa* Reflexed Sedge BG (4875 Maury Lane), BP Rare Semi-open, mossy glade in *Quercus montana* grove atop terrace (BG); dry, gravelly soil at edge

of old gravel pit (BP). *RHS 2900* A1
(*E.C. Leonard 411*, 13 May 1918, "Alexandria")

Carex rosea Schkuhr ex Willd. Rosy Sedge Infrequent Mesic woodland; forested stream banks; floodplain forest. *RHS 1157* A3
(*P.C. Standley 11514*, 19 May 1915, "along Hunting Creek [Cameron Run] near Seminary Station")

Carex rugosperma Mackenzie Parachute Sedge HW Local Oak-Heath Forest. *RHS 2704* A1

Carex scoparia Schkuhr ex Willd. var. *scoparia* Pointed Broom Sedge EV, PY Rare, occasionally locally abundant. Seasonally wet open areas east of old Seminary Station and near Rt. 1 at Potomac Yard (both sites destroyed in the 2000s). *RHS 1422* AH?
(*P.C. Standley 11520*, 19 May 1915, "railway embankment near Seminary Station"; *S.F. Blake 9481*, 20 Jun 1926, "clayey ditch near Alexandria")

Carex seorsa Howe in Gordinier & Howe Weak Stellate Sedge DK, R Rare Woodland seeps. *RHS 1132* A1

Carex squarrosa L. Squarrose Sedge OCC Local Low stream banks and swamp forest along the lower, undeveloped reaches of Strawberry Run. *RHS 3222* A1
(*G.H. Shull 239*, 19 Aug 1902, "in shade near #238 in a bit of wet woodland adjoining Hunting Creek Marsh")

Carex stipata Muhl. ex Willd. var. *maxima* Chapman ex Boott Large Stalk-grain Sedge DI, FMR, JP Rare Freshwater Tidal Hardwood Swamp (DI, FMR); wet ditch (JP). *RHS 1177* A1
(*G. Vasey s.n.*, 1878, "Alexandria")

Carex stipata Muhl. ex Willd. var. *stipata* Stalk-grain Sedge Infrequent Swamps; wet open areas. *RHS 2099* A2
(*L.F. Ward s.n.*, 21 May 1876, "Hunting Creek"; *E.C. Leonard 343*, 15 May 1918, "Alexandria")

Carex striatula Michx. Lined Sedge DK, W, WBP Rare Acidic Oak-Hickory Forest. *RHS 1097* A1

Carex stricta Lam. Tussock Sedge CP, DK, R Rare Woodland seeps; Acidic Seepage Swamp (CP); impoundment wetland (DK). *RHS 1091* A1
(*G. Vasey s.n.*, 1887, "Alexandria"; *G. Vasey s.n.*, 1893, "Alexandria"; *W. Hunter s.n.*, 3 May 1895, "Hunting Creek"; *T. Bradley 5675*, 16 Jun 1973, "old field, marsh, and streambank; Clermont Dr. and Cameron Run")

Carex styloflexa Buckl. Bent Sedge DK Local Banks of small seepage stream. *RHS 1129* A1

Carex swanii (Fern.) Mackenzie Swan's Sedge Frequent Dry to mesic upland forest. *RHS 1260* A4

Carex tonsa (Fern.) Bickn. Shaved Sedge Local Low woodland glade at intersection of Polk Avenue and N. Pegram Street. *RHS 2888* A1

Carex tribuloides Wahlenb. var. *tribuloides* Blunt Broom Sedge Frequent Swamps; wet open areas. *RHS 1176* A4

Carex umbellata Schkuhr ex Willd. Parasol Sedge Frequent Dry to mesic upland forest. *RHS 1096* A3

Carex virescens Muhl. ex Willd. Ribbed Sedge M, W Rare Oak-Heath Forest. *RHS 2606* A1

Carex vulpinoidea Michx. Fox Sedge Frequent Swamps; moist to wet open areas. *RHS 1178* A4

Carex willdenowii Schkuhr ex Willd. Willdenow's Sedge Infrequent Dry upland forest. *RHS 1121* A3

Cyperus bipartitus Torr. Shining Flatsedge Infrequent Tidal shores; gravel bars and mudflats. *RHS*

1625 A3
(*G.H. Shull 215½*, 13 Aug 1902, "associated with *Eleocharis* on wide, low shore of Potomac near Alexandria Light")

Cyperus echinatus (L.) Wood Globe Flatsedge Infrequent Dry to moist open areas. *RHS 1309* A3

Cyperus erythrorhizos Muhl. Red-root Flatsedge AR, C, HC Rare Tidal shores; gravel bars and mudflats; shallow impounded water at floor of abandoned reservoir (AR). *RHS 1695* A1

Cyperus flavescens L. Yellow Flatsedge Infrequent Tidal shores; gravel bars and mudflats. *RHS 2369* A3
(*G.H. Shull 215*, 13 Aug 1902, "associated with *Eleocharis* on wide, low shore of Potomac near Alexandria Light"; *P.C. Standley 5891*, 17 Sep 1910, "moist bank near St. Elmo")

Cyperus hortensis (Salzmann ex Steudel) Dorr. Low Spikesedge Infrequent, often locally abundant. Moist, open grassy areas near the Potomac River. *RHS 2348* A2
[= *Kyllinga pumila* Michx. Recent molecular work (Larridon et al. 2013) over a rather limited geographic range has shown *Kyllinga* to be nested within *Cyperus*. Despite the lack of sampling of New World *Kyllinga* material in studies, it is highly unlikely that *Kyllinga* will be maintained.]

Cyperus lancastriensis Porter ex Gray Many-flowered Flatsedge GWMP, HC Rare Dry to moist open areas. *RHS 1696* A1
(*N. Hotchkiss 6105*, 13 Oct 1938, "Hunting Creek, Alexandria")

Cyperus lupulinus (Spreng.) Marcks ssp. *lupulinus* Upland Flatsedge Frequent Dry open areas, often on bare soil. *RHS 1646* A3
(*G. Vasey & F.V. Coville s.n.*, 22 Jul 1888, "field between Alexandria and Hunting Creek")

Cyperus odoratus L. var. *odoratus* Fragrant Flatsedge AR, C, HC, OB, WH Infrequent, occasionally locally abundant. Gravel bars and mudflats (C); Tidal Freshwater Marsh and shores (HC, OB, WH); shallow impounded water at floor of abandoned reservoir (AR). *RHS 4038* A1

Cyperus polystachyos Rottboell Coast Flatsedge AR, C Rare Gravel bars and mudflats (C); shallow impounded water at floor of abandoned reservoir (AR). *RHS 2404* A1

Cyperus pseudovegetus Steud. Green Flatsedge FW Local Seasonally wet depression behind tennis courts. *RHS 2447* A1

Cyperus squarrosus L. Awned Flatsedge AR, C, FMR, PY (hist.) Rare Gravel bars and mudflats (C); wet open areas (FMR, PY); shallow impounded water at floor of abandoned reservoir (AR). *RHS 2275* A1

Cyperus strigosus L. Straw-colored Flatsedge Frequent, occasionally locally abundant. Moist to wet open areas; tidal shores; railroad tracks. *RHS 2345* A4
(*G.H. Shull 219*, 13 Aug 1902, "on sandy beach, Hunting Creek, side of point running out to Alexandria Light"; *T. Bradley 6063*, 9 Sep 1973, "Eisenhower Blvd. near RR")

Dulichium arundinaceum (L.) Britton var. *arundinaceum* Three-way Sedge WBP (hist.) Local Seepage swamp along Winkler Run floodplain. AH

Eleocharis acicularis (L.) Roemer & J.A. Schultes Needle Spikerush HC Local Muddy tidal shore. *RHS 1839* A1

Eleocharis engelmannii Steud. Engelmann's Spikerush AR, DI, PY (hist.) Rare, often locally abundant. North edge of remnant tidal channel along historic Tidal Freshwater Marsh community (DI); wet open area near Rt. 1 overpass now extirpated as a result of roadway realignment (PY); shallow impounded water at floor of abandoned reservoir (AR). *RHS 2276* A1

(*S.F. Blake 11677*, 15 Aug 1933, "moist grassy side road, Alexandria")

Eleocharis erythropoda Steud. Bald Spikerush AH
(*L.F. Ward s.n.*, 29 May 1879, "Hunting Creek"; *E.C. Leonard 341*, 13 May 1918, "wet grassy soil, Alexandria"; *E.C. Leonard 369*, 13 May 1918, "wet soil near Potomac, Alexandria")

Eleocharis flavescens (Poiret) Urban var. *olivacea* (Torr.) Gleason Bright Green Spikerush AH
(*P. Dowell 6454*, 13 Aug 1910, "Hunting Creek, in water")
[= *Eleocharis olivacea* Torr.]

Eleocharis obtusa (Willd.) J.A. Schultes Blunt Spikerush Infrequent Gravel bars and mudflats; tidal shores; wet open areas. *RHS 1207* A3
(*P.C. Standley 5892*, 17 Sep 1910, "moist bank near St. Elmo")

Eleocharis tenuis (Willd.) Schultes var. *tenuis* Slender Spikerush FW Local Seasonally wet depression behind tennis courts. *RHS 2179* A1
(*S.F. Blake 9483*, 20 Jun 1926, "in slough, near Alexandria")

Fimbristylis autumnalis (L.) R. & S. Slender Fimbry BB, C, FW Rare Damp, meadowy glade (BB); gravel bars and mudflats (C); seasonally wet depression behind tennis courts (FW). *RHS 2357* A1

Rhynchospora capitellata (Michx.) Vahl Brownish Beaksedge AH
(*P.C. Standley 5890*, 17 Sep 1910, "moist bank near St. Elmo"; *E.C. Leonard 750*, 10 Aug 1919, "ditch by roadside, Alexandria")

Rhynchospora gracilenta Gray Slender Beaksedge BB Local Sphagnous edges of Fall Line Magnolia Bog remnant. *RHS 3407* A1

Rhynchospora recognita (Gale) Kral Round-headed Beaksedge AH
(*S.F. Blake 8757*, 20 Jul 1924, "in meadowy spot, near Alexandria")
[= *R. globularis* (Chapman) Small var. *recognita* Gale]

Schoenoplectus pungens (Vahl) Palla var. *pungens* Common Threesquare CC, FMR, HC, JP Rare, often locally abundant. Tidal Freshwater Marsh and shores. *RHS 1165* A1
(*L.F. Ward s.n.*, 2 Jul 1876, "Hunting Creek"; *L.F. Ward s.n.*, 15 Jun 1879; *W.L. McAtee 2271*, 20 Jul 1915, "Hunting Creek"; *E.C. Leonard 370*, 13 May 1918, "Alexandria"; *F.M. Uhler s.n.*, 23 Jun 1935, "mouth of Four Mile Run")

Schoenoplectus purshianus (Fernald) Strong var. *purshianus* Blunt-scale Bulrush C, H Rare, often locally abundant. Gravel bars and mudflats. *RHS 2361* A1

Schoenoplectus smithii (Gray) J. Sojak var. *levisetus* (Fern.) S.G. Smith Smith's Bulrush G5?/SH/AH
(*G.H. Shull 214*, 12 Aug 1902, "along gravelly beach between tides, Hunting Creek, 3/4 mi. SSW of Alexandria; associated with *Isoetes* and *Eriocaulon septangulare*")

Schoenoplectus tabernaemontani (Gmelin) Palla Soft-stem Bulrush Infrequent, occasionally locally abundant. Tidal Freshwater Marsh and shores; open edges of large streams. *RHS 2549* A3

Scirpus cyperinus (L.) Kunth Woolgrass Frequent Wet open areas; open edges of large streams. *RHS 1827* A4

Scirpus georgianus Harper Georgia Bulrush Frequent Wet open areas. *RHS 1293* A4

Scirpus polyphyllus Vahl Leafy Bulrush Infrequent Woodland seeps; wet open areas. *RHS 1905* A3

Scleria pauciflora Muhl. ex Willd. var. *pauciflora* Papillose Nutrush NOVA Local Edges and openings of Acidic Oak-Hickory Forest. *RHS 2377* A1
(*E.S. Steele s.n.*, 30 Jun 1907, "West End")

Trichophorum planifolium (Spreng.) Palla Bashful Bulrush WBP Local Dry to mesic upland forest.

RHS 1123 A1
[= *Scirpus verecundus* Fern.]

Dioscoreaceae (Yam Family)

Dioscorea quaternata J.F. Gmel. Four-leaved Wild Yam Frequent Dry to mesic upland forest. *RHS s.n.* A4

Dioscorea villosa L. Wild Yam BB, CP, DK, FBC, R, WBP, WBTR Rare Woodland seeps. *RHS 2568* A2

Eriocaulaceae (Pipewort Family)

Eriocaulon parkeri B.L. Robinson Parker's Pipewort G3/S2/AH
(*E.S. Steele s.n.*, 28 Aug 1896, "tide mud, mouth of Four Mile Run"; *P. Dowell 6451*, 13 Aug 1910, "Hunting Creek, Alexandria")

Heloniadaceae (Swamp-pink Family)

Chamaelirium luteum (L.) Gray Devil's Bit W (hist.) Local Acidic Oak-Hickory Forest that once occupied land cleared for the mid-1990s Millbrook development near the intersection of Rayburn Avenue and N. Highview Lane. *WBP pv* AH

Hydrocharitaceae (Frog's-bit Family)

Elodea canadensis Michx. Common Waterweed AU
(*W.L. McAtee 2281*, 20 Jul 1915, "Hunting Creek"; *E.C. Leonard 385*, 13 May 1918, "in water, bridge across Hunting Creek")

Elodea nuttallii (Planch.) St. John Nuttall's Waterweed AH
(*W.L. McAtee 2339*, 4 Sep 1915, "Hunting Creek")

Najas flexilis (Willd.) Rostk. & Schmidt Northern Naiad AU
(*W.L. McAtee 2275*, 20 Jul 1915, "Hunting Creek")

Najas guadalupensis (Spreng.) Magnus var. *guadalupensis* Southern Naiad AH
(*L.F. Ward s.n.*, 3 Oct 1876, "Hunting Creek")

Vallisneria americana Michx. Tapegrass CC, HC, JP, OB, TLP, WH Infrequent Shallow water at the mouth of Hunting Creek and along the Potomac River shore. *RHS 2341* A2
(*W.L. McAtee 2276*, 30 Jul 1915, "Hunting Creek"; *W.L. McAtee 2338*, 4 Sep 1915, Hunting Creek")

Hypoxidaceae (Stargrass Family)

Hypoxis hirsuta (L.) Coville Eastern Yellow Stargrass Infrequent Dry to mesic upland forest; edges of woodland seeps. *RHS 2130* A3
(Reported for "back of Hume Springs, immense numbers in bloom" on 3 Aug 1922 by Nellie C. Knappen)

Iridaceae (Iris Family)

Sisyrinchium angustifolium P. Mill. Narrow-leaved Blue-eyed-grass Infrequent Mesic woodland, usually in disturbed areas; bottomland forest; moist open areas. *RHS 2063* A3
(*C.L. Pollard s.n.*, 15 May 1897, "Alexandria"; *P.C. Standley 11521*, 19 May 1915, "wet meadow near Seminary Station")

Juncaceae (Rush Family)

Juncus acuminatus Michx. Sharp-fruited Rush Frequent Gravel bars and mudflats; tidal shores; wet open areas. *RHS 1274* A4
Juncus bufonius L. Toad Rush AH
(*F.V. Coville s.n.*, 24 May 1890, "Alexandria")
Juncus canadensis J. Gay ex Laharpe Canadian Rush HC Local Low, wet swale inland from Freshwater Tidal Shrub Swamp. *RHS 1697* A1
Juncus debilis Gray Weak Rush C Local Gravel bars and mudflats. *RHS 2402* A1
Juncus diffusissimus Buckl. Diffuse Rush Infrequent, occasionally locally abundant. Gravel bars and mudflats; wet open areas. *RHS 1835* A3
Juncus effusus L. Soft Rush Frequent Wet open areas; gravel bars and mudflats; Tidal Freshwater Marsh and shores. *RHS 4103* A4
(*E.C. Leonard 377*, 13 May 1918, "wet soil along RR (old) SW of Alexandria")
Juncus gerardii Loisel. Saltmarsh Rush AH
(*G. Vasey s.n.*, 1879, "Alexandria"; *G. Vasey & F.V. Coville s.n.*, 22 Jul 1888, "streets of Alexandria"; *E.S. Steele s.n.*, 25 Sep 1897, "Alexandria")
Juncus marginatus Rostk. Grass-leaved Rush HC, PH Rare Moist to wet open areas. *RHS 1391* A1
Juncus secundus Beauv. ex Poir. Lopsided Rush Infrequent Dry to moist open areas. *RHS 1304* A2
Juncus tenuis Willd. Path Rush Common, often locally abundant. Dry to wet soils along woodland paths; dry to wet open areas. *RHS 1273* A4
(*E.C. Leonard 376*, 13 May 1918, "Alexandria"; *T. Bradley 5678*, 16 Jun 1973, "old field, marsh, and streambank; Clermont Dr. and Cameron Run")
Luzula bulbosa (Wood) Smyth & Smyth Bulbous Woodrush Frequent Upland forest edges; dry to mesic upland forest, usually on banks and slopes. *RHS 2012* A4
Luzula echinata (Small) F.J. Hermann Spreading Woodrush Frequent Upland forest edges; dry to mesic upland forest, usually on banks and slopes. *RHS 1101* A4

Liliaceae (Lily Family)

Erythronium americanum Ker-Gawl. ssp. *americanum* Yellow Trout Lily Frequent, often forming large colonies. Forested floodplains and streamsides; bottomland forest. *RHS 1949* A3
Lilium superbum L. Turk's-cap Lily CP, CSF, KD, M, R Rare Woodland seeps (KD, R); forested stream bank (M); alluvial swamp (CSF); Acidic Seepage Swamp (CP). *RHS 2868* A1
Medeola virginiana L. Indian Cucumber-root CP, DK, KD, R, W, WBP Rare, occasionally locally abundant. Woodland seeps; forested stream banks. *RHS 1743* A2

Melanthiaceae (Bunchflower Family)

Veratrum virginicum (L.) Aiton Bog Bunchflower AH
(*G.S. Miller, Jr. s.n.*, 24 Aug 1902, "small open swamp 3 ms. W of Alexandria"; reported for "Lincolnia" on 31 Jul 1921 by Nellie C. Knappen)
[= *Melanthium virginicum* L.]

Veratrum viride Aiton var. *viride* American False-hellebore R Local Small colony in woodland seep along the northwest side of Rynex Run; relocated in 2012 to wetter seepages on the southeast side of the stream. *RHS 1108* A1
(*W. Palmer s.n.*, 30 Jun 1899, "Lincolnia")

Orchidaceae (Orchid Family)

Aplectrum hyemale (Muhl. ex Willd.) Torr. Puttyroot DK Local Rich alluvial levee; Mesic Mixed Hardwood Forest along the Chambliss tributary. *RHS 2456* A1

Cypripedium acaule Ait. Pink Lady's-slipper BG (4875 Maury Lane; also formerly the upper slope at Finley Lane cleared in 2004 for residential lots), FP, HW, PH, R, SA, W, WBP Rare Oak-Heath Forest; woodland seeps; old successional *Pinus virginiana* forest atop terrace (FP). *WBP pv* A1

Goodyera pubescens (Willd.) R. Br. ex Ait. f. Downy Rattlesnake-plantain WBP Local Toe slope of high, steep ridge and Oak-Heath Forest near small seepage stream. *WBP pv* AH

Isotria verticillata (Muhl. ex Willd.) Raf. Large Whorled Pogonia DK, PC, R, WBP Rare, occasionally forming large colonies. Woodland seeps (R, WBP); Oak-Heath Forest (DK, PC). *RHS 1742* A1

Liparis liliifolia (L.) L.C. Rich. ex Ker-Gawl. Lily-leaved Twayblade W Local Acidic Oak-Hickory Forest that once occupied land cleared for the mid-1990s Millbrook development along S. Highview Lane. AH

Platanthera blephariglottis (Willd.) Lindl. Small White Fringed Orchid G4G5/S2/AH
(Reported for "spring near Alexandria" on 7 Aug 1922 by Nellie C. Knappen)

Platanthera flava (L.) Lindl. var. *flava* Southern Gypsy-spike G4?T4?Q/S3?/AH
(*L.F. Ward s.n.*, 15 Jun 1879, "Hunting Creek"; *L.F. Ward s.n.*, 15 Jun 1879, "Hunting Creek"; *L.F. Ward s.n.*, 1880, "Hunting Creek"; *L.F. Ward s.n.*, 20 Jun 1880, "Hunting Creek, Alexandria"; *P. Dowell 3317*, 28 Aug 1904, "Hunting Creek and Mt. Vernon Road, Alexandria"; *H.D. House 400*, 28 Aug 1904, "near Alexandria"; *P. Dowell 6449*, 13 Aug 1910, "Hunting Creek, Alexandria")

Spiranthes cernua (L.) L.C. Rich. Nodding Ladies'-tresses AH
(*J.H. Painter 1413*, Sep 1905, "in swamp, Hunting Creek"; *P.C. Standley 5873*, 17 Sep 1918, "bog near St. Elmo"; reported for "Lincolnia" on 24 Sep 1921 and "Alexandria Reservoir" on 25 Sep 1921 by Nellie C. Knappen; *J.E. Benedict, Jr. s.n.*, 15 Sep 1923, "swamp near Alexandria, Virginia")

Spiranthes lacera (Raf.) Raf. var. *gracilis* (Bigelow) Luer Southern Slender Ladies'-tresses HS Local Dry, sandy-gravelly, hillside meadow. *RHS pv* A1

Tipularia discolor (Pursh) Nutt. Cranefly Orchid Frequent Dry to mesic woodland. *RHS 1801* A4

Poaceae (Grass Family)

Agrostis perennans (Walt.) Tuckerman Autumn Bentgrass Frequent, occasionally locally abundant. Edges and openings of dry to mesic upland forest; dry to moist open areas. *RHS 1445* A4

Alopecurus carolinianus Walt. Carolina Foxtail Grass DI Local Moist to wet, open grassy areas. *RHS 2175* A1

Andropogon ternarius Michx. var. *ternarius* Splitbeard Bluestem BH Local, often forming large stands. Sandy banks along railroad tracks. *RHS 1590* A1

Andropogon virginicus L. var. *virginicus* Broomsedge Frequent, often forming large stands. Dry to moist open areas; railroad tracks. *RHS 1606* A4

Aristida dichotoma Michx. var. *dichotoma* Fork-tip Three-awn Grass Frequent Dry, gravelly, often exposed soil. *RHS 1734* A4

Aristida longespica Poir. var. *longespica* Eastern Slim-spike Frequent Dry, gravelly, often exposed soil. *RHS 1787* A3
(*T. Bradley 6071*, 9 Sep 1973, "Eisenhower Blvd. near RR")

Aristida oligantha Michx. Prairie Three-awn Grass Frequent, often forming large stands. Dry, gravelly open areas; railroad tracks. *RHS 1483* A4
(*G.H. Shull 222*, 13 Aug 1902, "along dry bank south of Catholic Cemetery, Alexandria"; *C.O. Erlanson 24*, 7 Oct 1934, "fallow field near Alexandria"; *T. Bradley 6040*, 9 Sep 1973, "Las Vegas St. and Cameron Run"; *T. Bradley 6057*, 9 Sep 1973, "Eisenhower Blvd. near RR")

Avenella flexuosa (L.) Drejer Wavy Hairgrass W Local Edges and openings of dry upland forest. AH
(*G. Vasey s.n.*, 1874, "near Alexandria")
[= *Deschampsia flexuosa* (L.) Trin.]

Brachyelytrum erectum (Schreb. ex Spreng.) Beauv. Bearded Shorthusk DK, IHC, MP, R Rare Mesic, rocky or gravelly forest slopes. *RHS 1364* A1

Bromus pubescens Sprengel Hairy Woodland Brome DK Local Basic Mesic Forest. *RHS 1263* A1

Chasmanthium latifolium (Michx.) Yates River Oats HC Local Freshwater Tidal Hardwood Swamp. *RHS 1540* A1

Chasmanthium laxum (L.) Yates Slender Spikegrass BB, DK, R, SSE, W, WBP, YP Rare Woodland seeps; mesic forest edge (YP). *RHS 1414* A2

Cinna arundinacea L. Common Wood Reedgrass Frequent Floodplain forest; bottomland forest; swamps. *RHS 1500* A4

Coleataenia anceps (Michx.) Soreng ssp. *anceps* Beaked Panic Grass Frequent Dry to moist, sandy-gravelly open areas; upland forest edges; railroad tracks. *RHS 1530* A3

Coleataenia rigidula (Bosc ex Nees) LeBlond ssp. *rigidula* Tall Flat Panic Grass C, T&D Rare Sand and gravel bars (C), seasonally wet meadow (T&D). *RHS 1523* A1
(*L.F. Ward s.n.*, 3 Oct 1876, "Hunting Creek"; *A. Chase 2673*, 21 Sep 1904, "muddy edge of slough, Four Mile Run"; *A. Chase 2679*, 21 Sep 1904, "open swamp, Four Mile Run"; *F.R. Fosberg 16789*, 17 Sep 1939, "Hunting Creek, Alexandria; edge of estuarine marsh; mud"; *T. Bradley 6046*, 9 Sep 1973, "Las Vegas St. and Cameron Run")

Danthonia spicata (L.) Beauv. ex Roemer & J.A. Schultes Poverty Oatgrass Common, often locally abundant. Typically forms a turf under oaks in savannah-like settings; edges and openings of dry

upland forest; dry, sandy-gravelly open areas. *RHS 2093* A4

Dichanthelium acuminatum (Sw.) Gould & C.A. Clark var. *acuminatum* Woolly Panic Grass Infrequent Dry to moist open areas; railroad tracks. *RHS 2205* AU

Dichanthelium acuminatum (Sw.) Gould & C.A. Clark var. *fasciculatum* (Torr.) Freckmann Slender-stemmed Panic Grass Frequent, occasionally locally abundant. Dry to moist open areas, often on exposed soil. *RHS 2210* A4

Dichanthelium acuminatum (Sw.) Gould & C.A. Clark var. *lindheimeri* (Nash) Gould & C.A. Clark Lindheimer's Panic Grass Infrequent Dry to moist open areas, often on exposed soil. *RHS 2176* A3

Dichanthelium boscii (Poir.) Gould & C.A. Clark Bosc's Panic Grass Infrequent Acidic Oak-Hickory Forest. *RHS 2234* A3

Dichanthelium clandestinum (L.) Gould Deer-Tongue Grass Frequent Moist to wet open areas; bottomland forest; railroad tracks. *RHS 1655* A4

Dichanthelium commutatum (J.A. Schultes) Gould var. *ashei* (Pearson ex Ashe) Mohlenbr. Ashe's Panic Grass FW, HW, R, SA, SS&SA-UC; W, WBP Infrequent Dry to mesic, gravelly upland forest. *RHS 1662* A2

Dichanthelium commutatum (J.A. Schultes) Gould var. *commutatum* Variable Panic Grass HW, W, WBP Rare Dry to mesic, gravelly upland forest. *RHS 2246* A1

Dichanthelium depauperatum (Muhl.) Gould Starved Panic Grass Infrequent Edges and openings of dry, gravelly upland forest; sandy banks along railroad tracks. *RHS 1124* A3

Dichanthelium dichotomum (L.) Gould var. *dichotomum* Small-fruited Panic Grass Frequent Dry to mesic upland forest; woodland seeps; bottomland forest; open grassy areas. *RHS 1478* A3 [Some specimens fit the concept of *Dichanthelium dichotomum* (L.) Gould var. *barbulatum* (Michx.) Mohlenbr., once considered a distinct taxon.]

Dichanthelium dichotomum (L.) Gould var. *ramulosum* (Torr.) LeBlond Branched Panic Grass BB, BW, CR, FP, R, TBP Infrequent Mesic woodland and damp glades; woodland seeps. *RHS 1612* A2

Dichanthelium mattamuskeetense (Ashe) Mohlenbr. Mattamuskeet Panic Grass NOVA Local Acidic Oak-Hickory Forest above the Lucky Run stream valley and numerous boggy seeps along the stream. *RHS 2235* A1

Dichanthelium oligosanthes (J.A. Schultes) Gould var. *oligosanthes* Few-flowered Panic Grass PH Local Dry, sandy bank. *RHS 1307* A1

Dichanthelium oligosanthes (J.A. Schultes) Gould var. *scribnerianum* (Nash) Gould Scribner's Panic Grass SS Local Dry, sandy grassy area along the railroad tracks east of old Seminary Station. *RHS 2204* A1

Dichanthelium polyanthes (J.A. Schultes) Mohlenbr. Round-seed Panic Grass BB, DK, FP, W Rare Damp, meadowy glade (BB); floodplain forest along Holmes Run (DK); old successional *Pinus virginiana* forest atop terrace (FP); Oak-Heath Forest opening (W). *RHS 1301a* A1

Dichanthelium scoparium (Lam.) Gould Velvet Panic Grass BB, BH, CR, EV, EWW, PEP, PH Rare Damp, sandy-gravelly open areas; railroad tracks. *RHS 1303* A2

Dichanthelium sphaerocarpon (Ell.) Gould Round-fruited Panic Grass BH, FP, HS, KD, SF, W Rare Dry to moist open areas; edges and openings of dry to mesic upland forest. *RHS 1301* A2

Dichanthelium yadkinense (Ashe) Mohlenbr. Spotted-sheath Panic Grass CP, DK, PF Rare

Edge of Small Stream Forest and Acidic Seepage Swamp (CP); floodplain forest along Holmes Run (DK); forested slope above ancestral stream underlying present-day Valley Drive (PF). *RHS 1262* A1

Diplachne fusca (L.) P. Beauv. ex Roem. & Schult. var. *fascicularis* (Lam.) P.M. Peterson & N. Snow Bearded Sprangletop DI Local Seasonally wet open areas. *BWS 070829.1* G5/S3/A1
(*E.S. Steele s.n.*, 4 Sep 1899, "along gutter; foot of Duke St., Alexandria"; *E.S. Steele s.n.*, 4 Sep 1899, "streets, Alexandria")
[= *Leptochloa fascicularis* (Lam.) A. Gray var. *maritima* (Bickn.) Gleason]

Echinochloa muricata (Beauv.) Fern. var. *microstachya* Wieg. Rough Barnyard Grass C, HC Rare Wet open areas; gravel bars and mudflats. *RHS 1542* AU

Echinochloa muricata (Beauv.) Fern. var. *muricata* Rough Barnyard Grass DI Local Abundant in wet meadows at edge of historic Tidal Freshwater Marsh community. *RHS 3303* AU

Echinochloa walteri (Pursh) Heller Swamp Barnyard Grass HC, JP Rare Tidal Freshwater Marsh and shores. *RHS 2580* A1
(*E.C. Leonard 6279*, 5 Sep 1927, "muddy bank of Hunting Creek near Alexandria"; *F.R. Fosberg 23962*, *23963*, 12 Sep 1945, "Hunting Creek, just S of Alexandria; in edge of estuarine marsh")

Elymus glabriflorus (Vasey ex L.H. Dewey) Scribn. & C.R. Ball var. *glabriflorus* Southeastern Wild Rye EV Local, occasionally forming large stands. Dry, gravelly open areas along railroad tracks. *RHS 1449* AU

Elymus hystrix L. var. *hystrix* Bottlebrush Grass CR, DK, IHC Rare Rich bottomland forest and low, damp meadow (CR); rich alluvial levee (DK); Mesic Mixed Hardwood Forest (IHC). *RHS 1372* A1

Elymus macgregorii R. Brooks & J.J.N. Campbell Early Wild Rye AAHP, DI, GWMP, JP Infrequent, often locally abundant. Rich floodplain forest along the Potomac River; low, damp thickets along Hooff's Run (AAHP). *RHS 1275* A3

Elymus riparius Wieg. Riverbank Wild Rye H Local Open stream banks. *RHS s.n.* A1

Elymus villosus Muhl. ex Willd. var. *villosus* Hairy Wild Rye CR, SP Rare Rich bottomland forest along old Cameron Run channel (CR); Acidic Oak-Hickory Forest (SP). *RHS 2865* A1

Elymus virginicus L. var. *virginicus* Virginia Wild Rye Frequent Floodplain forest; bottomland forest; swamps; stream banks. *RHS 1402* A3

Eragrostis hypnoides (Lam.) B.S.P. Creeping Lovegrass C, EV, FMR, H Rare Sand and gravel bars (C, H); drawdown depressions (FMR); low wet areas along railroad tracks (EV). *RHS 2958* A1

Eragrostis pectinacea (Michx.) Nees var. *pectinacea* Tufted Lovegrass C, H Rare Sand and gravel bars. *RHS 2353* A1

Eragrostis spectabilis (Pursh) Steud. Purple Lovegrass Frequent Dry, sandy-gravelly open areas; railroad tracks. *RHS 1419* A4
(*G.H. Shull 223*, 13 Aug 1902, "along dry bank, south of Catholic Cemetery, Alexandria"; *T. Bradley 6058*, 9 Sep 1973, "Eisenhower Blvd. near RR")

Festuca subverticillata (Pers.) Alexeev Nodding Fescue DK Local Rich alluvial levee; mesic woodland. *RHS 1204* A1
(*L.F. Ward s.n.*, 23 May 1876, "Hunting Creek")

Glyceria striata (Lam.) A.S. Hitchc. Fowl Mannagrass Infrequent Woodland seeps; swamps. *RHS 1179* A3
(*S.F. Blake s.n.*, 27 May 1928, "ditch, near Alexandria")

Hordeum pusillum Nutt. Little Barley Frequent Dry to moist open areas; railroad tracks. *RHS 2533* A4
(*E.C. Leonard 400*, 13 May 1918, "dry RR bed just west of Alexandria; common")

Leersia oryzoides (L.) Sw. Rice Cutgrass Frequent, often forming large stands. Tidal Freshwater Marsh and shores; swamps; wet open areas. *RHS 1596* A3

Leersia virginica Willd. White Grass Frequent Woodland seeps; mesic woodland. *RHS 1462* A4
(*G.H. Shull 218*, 13 Aug 1902, "in moist shaded place, on Hunting Creek side of bar running out to Alexandria Light")

Melica mutica Walt. Two-flower Melic DK, HWS, R, WBP Rare Dry to mesic, rocky or gravelly forest slopes (DK, R); Acidic Oak-Hickory Forest (HWS, WBP). *RHS 1140* A1

Muhlenbergia schreberi J.F. Gmel. Nimblewill Common, often locally abundant. Open grassy areas; edges and openings of dry to mesic forest. *RHS 1700* A4

Panicum capillare L. ssp. *capillare* Witch Grass EV, FW, PY Rare Dry open areas; railroad tracks. *RHS 1631* A1

Panicum dichotomiflorum Michx. var. *dichotomiflorum* Spreading Panic Grass Common, often abundant. Moist to wet open areas; railroad tracks. *RHS 1550* A4
(*C.O. Erlanson 23*, 7 Oct 1934, "fallow field near Alexandria")

Panicum verrucosum Muhl. Warty Panic Grass BH Local Open, sandy seep along railroad tracks. *RHS 1591* A1

Panicum virgatum L. Switchgrass EV Local Dry to moist, sandy-gravelly open areas; railroad tracks. *RHS 1453* A1
(*T. Bradley 18568*, 12 Sep 1982, "near the Wilkes St. Tunnel and Union St. in Alexandria")

Paspalum floridanum Michx. Florida Paspalum EV, JP Local, occasionally abundant. Dry to moist, sandy open areas. *RHS 1553* A1

Paspalum laeve Michx. Field Paspalum Common, often abundant. Dry to moist open areas. *RHS 1392* A4
(*W.L. McAtee 2782*, 23 Sep 1917, "Hunting Creek")

Paspalum pubiflorum Rupr. ex Fourn. Hairy-seed Paspalum DI, HR Rare, often locally abundant. Moist to wet, open grassy areas. *RHS 1504* AU

Paspalum setaceum Michx. Thin Paspalum DI Local Seasonally wet open areas. *BWS 070829.28* A1

Phalaris arundinacea L. Reed Canary Grass AAHP, H, JP, OCC Rare, often locally abundant (AAHP). Open stream banks; swamps; wet open areas. *RHS 2953* A1

Piptochaetium avenaceum (L.) Parodi Eastern Needlegrass DK, WBP Rare Semi-open glades in Oak-Heath Forest. *RHS 2526* A1

Poa autumnalis Muhl. ex Ell. Autumn Bluegrass CR, DK, TBP Rare Rich bottomland forest along old Cameron Run channel (CR); rich alluvial levee and floodplain forest along Holmes Run (DK); forested stream banks (TBP). *RHS 2070* A1
(*L.F. Ward s.n.*, 5 May 1878, "Hunting Creek"; *L.F. Ward s.n.*, 9 May 1879, "Hunting Creek")

Poa cuspidata Nutt. Early Bluegrass CR, DK Rare Rich bottomland forest along old Cameron Run channel (CR); rich alluvial levee and north bank of old oxbow channel (DK). *RHS 2028* A1

Poa sylvestris Gray Woodland Bluegrass MP, W Rare Dry to mesic upland forest. *RHS 3684* A1

Schizachyrium scoparium (Michx.) Nash var. *scoparium* Little Bluestem Frequent, often locally abundant. Sandy-gravelly open areas; railroad tracks. *RHS 1670* A3

Setaria parviflora (Poir.) Kerguelen Knotroot Bristlegrass JP, LC Rare Common in low, damp meadowy area (JP); open grassy area (LC). *RHS 3783* AU
[The native range of *Setaria parviflora* in Alexandria is obscured and likely much diminished by vast numbers of weedy, non-native *Setaria* spp.]

Sorghastrum nutans (L.) Nash Indian Grass Frequent, often locally abundant. Open grassy areas; railroad tracks. *RHS 1506* A3
(*T. Bradley 6054*, 9 Sep 1973, "Las Vegas St. and Cameron Run")

Sphenopholis obtusata (Michx.) Scribn. var. *major* (Torr.) K.S. Erdman Slender Wedgegrass CNP, CR, MP Rare Forested backswamp (CNP); low, damp meadow (CR); dry to mesic upland forest (MP). *RHS 3400* A1
(*G. Vasey s.n.*, 1884, "growing with *Trisetum palustre* and the hybrid; Hunting Creek near Alexandria")
[= *Sphenopholis intermedia* (Rydb.) Rydb.]

Sphenopholis nitida (Biehler) Scribn. Shiny Wedgegrass HWS Local Acidic Oak-Hickory Forest. *RHS 2919* A1

Sphenopholis x *pallens* (Biehler) Scribn. (pro sp.) [*S. obtusata* x *S. pensylvanica*] AH
(*G. Vasey s.n.*, 6 Jun 1884, "Hunting Creek, Alexandria")

Sphenopholis pensylvanica (L.) A.S. Hitchc. Swamp Wedgegrass AH
(*G. Vasey s.n.*, 6 Jun 1884, "Hunting Creek, Alexandria")

Sporobolus vaginiflorus (Torr. ex Gray) Wood var. *vaginiflorus* Poverty Grass Frequent Dry, gravelly open areas; railroad tracks. *RHS 1632* A4

Torreyochloa pallida (Torr.) Church Pale Mannagrass AH
(*G. Vasey s.n.*, 1874, "Alexandria")

Tridens flavus (L.) A.S. Hitchc. var. *flavus* Purpletop Grass Common, often locally abundant. Dry to moist, open grassy areas. *RHS 1484* A4
(*G.H. Shull 224*, 13 Aug 1902, "along dry bank south of Catholic Cemetery, Alexandria")

Tripsacum dactyloides (L.) L. var. *dactyloides* Eastern Gamagrass Frequent Moist open areas; open stream banks. *RHS 1577* A4
(*J.W. Chickering, Jr. s.n.*, 5 Oct 1878, "Hunting Creek")

Vulpia octoflora (Walt.) Rydb. Six-weeks Fescue Frequent, often locally abundant. Dry, sandy-gravelly open areas; railroad tracks. *RHS 1306* A4

Zizania aquatica L. var. *aquatica* Wild Rice FMR Local Tidal Freshwater Marsh remnant. *RHS 2388* A1
(*A. Chase 2510*, 19 Jul 1904, "open swamp, Four Mile Run"; *P. Dowell 6458*, 13 Aug 1910, "Hunting Creek, Alexandria"; *W.L. McAtee 2377*, 20 Jul 1915, "Hunting Creek"; *C.E. Chambliss 236*, 10 Jul 1932, "Four Mile Run-Mt. Vernon Highway; among the many thousand plants examined today along this highway from railroad bridge [at Four Mile Run] to Mt. Vernon, only this panicle found in flower")

Pontederiaceae (Pickerelweed Family)

Heteranthera dubia (Jacq.) MacM. Water Stargrass DI, HC, JP, OB, TLP, WH Tidal Freshwater Aquatic Bed. *RHS 3998* A2
(*E.S. Steele s.n.*, 4 Sep 1899, "tide deposit, lighthouse below Alexandria"; *W.L. McAtee 2334*,

4 Sep 1915, “Hunting Creek”)

Heteranthera reniformis Ruiz & Pavòn Mud Plantain C, H Rare, occasionally forming large colonies. Shallow, slow-moving water of large streams; gravel bars and mudflats. *RHS 2355* A1
(*L.F. Ward s.n.*, 3 Oct 1876, “Hunting Creek”; *I. Tidestrom 241*, 19 Aug 1904, “in mud above low tide line, Hunting Creek”; *I. Tidestrom 334*, 2 Sep 1904, “between tides, Hunting Creek”; *P. Dowell 6450*, 13 Aug 1910, “Hunting Creek, Alexandria”; *E.C. Leonard 6276*, 4 Sep 1927, “mud flat along Hunting Creek near Alexandria”)

Pontederia cordata L. var. *cordata* Pickerelweed DI, DK, FMR, HC, JP, OB Infrequent, occasionally locally abundant. Tidal Freshwater Marsh and shores; impoundment wetland (DK). *RHS 1627* A3
(*I. Tidestrom 239, 243*, 19 Aug 1907, “young plant in shallow water, Hunting Creek”; reported for “Hunting Creek” on Aug 1921 by Nellie C. Knappen; *F.R. Fosberg 16783*, 17 Sep 1939, “Hunting Creek, Alexandria; edge of estuarine marsh; mud”)

Potamogetonaceae (Pondweed Family)

Potamogeton amplifolius Tuckerman Bigleaf Pondweed G5/S1/AH
(*W.L. McAtee 2279*, 30 Jul 1915, “Hunting Creek”; *W.L. McAtee 2337*, 4 Sep 1915, “Hunting Creek”)

Potamogeton epihydrus Raf. Ribbonleaf Pondweed AH
(*E.P. Killip 6530*, 9 Aug 1919, “Four Mile Run, near Alexandria”; *E.C. Leonard 744*, 10 Aug 1919, “Alexandria; slow flowing stream”)

Potamogeton friesii Rupr. Fries’ Pondweed G5/SH/AH
(*G.H. Shull 255*, 23 Aug 1902, “in Hunting Creek, Alexandria”)

Potamogeton nodosus L. Longleaf Pondweed AH
(*J.W. Chickering, Jr. s.n.*, 24 Jun 1873, “Alexandria”; *G.H. Shull 198*, 11 Aug 1902, “in shallow water in Hunting Creek just above the brick yard, Alexandria”; *W.L. McAtee 2374*, 20 Jul 1915, “Hunting Creek”; *F.M. Uhler s.n.*, 4 Jul 1933, “Potomac River below Four Mile Run, Alexandria”)

Potamogeton perfoliatus L. Clasping-leaf Pondweed G5/S3/AH
(*J.W. Chickering, Jr. s.n.*, 9 Jun 1874, “Alexandria”; *J.W. Chickering, Jr. s.n.*, 9 Jun 1875, “Alexandria”)

Potamogeton pusillus L. ssp. *pusillus* Small Pondweed AH
(*W.L. McAtee 2285*, 20 Jul 1915, “Hunting Creek”)

Potamogeton robbinsii Oakes Fern Pondweed G5/SH/AH
(*G. Vasey & F.V. Coville s.n.*, 22 Jul 1888, “near bridge at mouth of Hunting Creek”; *I. Tidestrom 237*, 19 Aug 1904, “Hunting Creek, near pier at brick yard”; *W.L. McAtee 2331, 2335, 2336*, 4 Sep 1915, “Hunting Creek”)

Potamogeton zosteriformis Fern. Flatstem Pondweed G5/S1/AH
(*G.H. Shull 256*, 23 Aug 1902, “in Hunting Creek, Alexandria”; *W.L. McAtee 2278*, 20 Jul 1915, “Hunting Creek”; *W.L. McAtee 2332, 2333*, 4 Sep 1915, “Hunting Creek”)

Stuckenia pectinata (L.) Borner Sago Pondweed AH
(*W.L. McAtee 2282*, 20 Jul 1915, “Hunting Creek”)
[= *Potamogeton pectinatus* L.]

Zannichellia palustris L. Horned Pondweed AH
(*E.S. Steele s.n.*, 28 Sep 1897, "river, Alexandria")

Ruppiaceae (Wigeon-grass Family)

Ruppia maritima L. Wigeon-grass PL, WH Rare Potomac River shoreline (PL); Tidal Freshwater Aquatic Bed (WH). *RHS 4055* A1

Ruscaceae (Ruscus Family)

Maianthemum canadense Desf. Canada Mayflower AH
(*W. Palmer s.n.*, 30 Apr 1899, "Lincolnia")
Maianthemum racemosum (L.) Link ssp. *racemosum* Eastern Solomon's-plume Frequent Dry to mesic upland forest. *RHS 1782* A4
[= *Smilacina racemosa* (L.) Desf.]
Polygonatum biflorum (Walt.) Ell. var. *biflorum* Solomon's-seal Frequent Dry to mesic upland forest. *RHS 4012* A4

Smilacaceae (Greenbrier Family)

Smilax glauca Walt. White-leaf Greenbrier Common, occasionally locally abundant. Dry to mesic woodland; woodland seeps. *RHS 2132* A4
Smilax herbacea L. Carrion-flower CP, DK, EW, KD, M, NOVA, R, WBP Rare Woodland seeps; low mesic woodland. *RHS 1105* A2
Smilax hispida Raf. Bristly Greenbrier HRS Local Edge of Basic Mesic Forest along the stream bank of Holmes Run. *RHS 3371* A1
Smilax pulverulenta Michx. Downy Carrion-flower CR, DK, HRS, PF Rare Rich bottomland forest along old Cameron Run channel (CR); Basic Mesic Forest (HRS) and rich stream bank (DK) along Holmes Run; Acidic Oak-Hickory Forest (PF). *RHS 1168* A1
(*L.F. Ward s.n.*, 5 May 1878, "Hunting Creek")
Smilax rotundifolia L. Common Greenbrier Common, often locally abundant. Dry to mesic woodland; woodland seeps. *RHS 2562* A4

Trilliaceae (Trillium Family)

Trillium sessile L. Toadshade DK Local Basic Mesic Forest. *RHS 2459* A1

Typhaceae (Cattail Family)

Sparganium americanum Nutt. American Bur-reed DK Local Impoundment wetland. *RHS 2542* A1
(Reported for "Alexandria" on 31 Jul 1921 by Nellie C. Knappen)
Sparganium eurycarpum Engelm. ex Gray Giant Bur-reed HC Local Tidal Freshwater Marsh remnant. G5/S3/A1

(*F.R. Fosberg 17082*, 30 Jun 1940, "Hunting Creek, Alexandria; wet ground at high tide level, scattered plants")

Typha angustifolia L. Narrowleaf Cattail FMR, OB Rare, often locally abundant. Tidal Freshwater Marsh and shores; mudflats. *RHS 2639* A1

Typha x *glauca* Godr. (pro sp.) [*T. angustifolia* L. x *T. latifolia* L.] Hybrid Cattail AU
(*N. Hotchkiss & F.M. Uhler 7138*, 29 Jul 1947, "on the south side of the mouth of Four Mile Run, Alexandria")

Typha latifolia L. Common Cattail Frequent, often locally abundant. Tidal Freshwater Marsh and shores; mudflats; wet open areas. *RHS 2663* A4

Xyridaceae (Yellow-eyed Grass Family)

Xyris difformis Chapman var. *difformis* Bog Yellow-eyed Grass AH
(*G.H. Shull 208*, 12 Aug 1902, "Hunting Creek, 1/2 mile SW of Alexandria; on gravelly beach near high tide line")

ANGIOSPERMAE – DICOTS

Acanthaceae (Acanthus Family)

Justicia americana (L.) Vahl Common Water-willow DI, JP, OB Infrequent, often forming large colonies. High-Energy Tidal River Shore. *RHS 1276* A2

Adoxaceae (Moschatel Family)

Sambucus canadensis L. var. *canadensis* Common Elderberry Frequent Swamps; stream banks; woodland seeps; bottomland forest; moist to wet open areas. *RHS 2553* A3

Viburnum acerifolium L. Maple-leaf Viburnum Frequent, occasionally locally abundant. Dry to mesic upland forest. *RHS 1744* A4

Viburnum dentatum L. var. *lucidum* Ait. Smooth Arrow-wood Frequent, occasionally locally abundant. Mesic woodland; bottomland forest; swamps. *RHS 1664* A4
[Herbarium specimens and material examined in the field from the City of Alexandria and Arlington and Fairfax counties all appear to be var. *lucidum.*]

Viburnum nudum L. Southern Wild Raisin BW, DK, KD, R, WBP Rare, occasionally locally abundant. Woodland seeps. *RHS 1659* A1
[The somewhat similar but smaller-leaved *Viburnum cassinoides* L. was reported for "bog, Alexandria Reservoir" on 23 Sep c. 1921 by Nellie C. Knappen, as well as a collection by Agnes Chase from "*Magnolia* bog with *Panicum lucidum, Alnus*, and Cinnamon Fern" near the old Vinson Station in Arlington County on June 15, 1919 *(#7587*; whereabouts of specimen unknown). It is possible and perhaps likely that both reportings were confused for *V. nudum*, as *V. cassinoides* has never been documented outside of the mountains in Virginia. *V. cassinoides*, however, was a frequent and documented component of the Fall Line Magnolia Bog community in Washington, D.C. and adjoining Prince George's County, Maryland a hundred or so years ago, and is extant today in a coastal pine barrens community in Anne Arundel County, Maryland.]

Viburnum prunifolium L. Black Haw Frequent, occasionally locally abundant. Dry to mesic upland forest; bottomland forest; swamps; dry to moist open areas. *RHS 1807* A4 (*P.C. Standley 5896*, 17 Sep 1910, "dry woods near St. Elmo")

Altingiaceae (Sweetgum Family)

Liquidambar styraciflua L. Sweetgum Common Mesic woodland; floodplain forest; bottomland forest; seasonally wet upland depressions and poorly drained silt-capped terraces; dry to moist open areas. *RHS 1857* A4

Amaranthaceae (Amaranth Family)

Amaranthus cannabinus (L.) Sauer Water-hemp CC, FMR, HC, JP, OB, WH Infrequent, occasionally abundant. Tidal Freshwater Marsh and shores. *RHS 1386* A2 (*G.H. Shull 191*, *192*, 11 Aug 1902, "along road across Hunting Creek, SW of Alexandria; between tides"; *E.C. Leonard 6278*, 5 Sep 1927, "muddy bank of Hunting Creek near Alexandria"; *T. Bradley 18539*, 12 Sep 1982, "near RR and Potomac River at Pendleton St. in Alexandria")

Amaranthus hybridus L. Smooth Pigweed C, EV, FMR, H, OB Infrequent Dry to moist open areas; gravel bars and mudflats; tidal shores. *RHS 2638* A3

Atriplex dioica Raf. Thick-leaf Orach DI Local Moist to wet open areas. *BWS 081002.1* A1

Anacardiaceae (Cashew Family)

Rhus aromatica Aiton var. *aromatica* Fragrant Sumac PC, SP, SH, ST Rare Dry, gravelly upland forest, often on slopes. *RHS 1146* A1

Rhus copallinum L. Winged Sumac Frequent Dry open areas; woodland edges; railroad tracks. *RHS 1776* A3

Rhus glabra L. Smooth Sumac Frequent Dry open areas; woodland edges; railroad tracks. *RHS 1842* A3

Rhus typhina L. Staghorn Sumac Frequent Dry to moist open areas; woodland edges; railroad tracks. *RHS 1772* A3

Toxicodendron pubescens P. Miller Poison Oak W Local Dry, gravelly upland forest. AH

Toxicodendron radicans (L.) Kuntze var. *radicans* Poison Ivy Common, often locally abundant, especially in past-disturbed areas. Dry to mesic upland forest; floodplain forest; bottomland forest; open thickets and hedgerows. *RHS 2661* A5

Toxicodendron vernix (L.) Kuntze Poison Sumac DK, R, WBP Rare Woodland seeps; formerly in Fall Line Magnolia Bog communities cleared in the mid-1990s and 2012 (WBP). *RHS 1790* A1

Annonaceae (Custard-apple Family)

Asimina triloba (L.) Dunal Pawpaw CR, DK, EP, FWP, HRS, IHC, JP, OCC, R, SS&SA-LC Infrequent, occasionally locally abundant (DK). Rich bottomland forest along old Cameron Run

channel (CR); floodplain forest (OCC); rich alluvial levee (DK); stream banks (EP, FWP, IHC, R, SS&SA-LC); Basic Mesic Forest (HRS). *RHS 2457* A3
(*G.B. Sudworth s.n.*, 12 Oct 1888, "Alexandria Canal")

Apiaceae (Parsley Family)

Angelica venenosa (Greenway) Fern. Hairy Angelica NOVA, WBP Rare Acidic Oak-Hickory Forest. *RHS 2397* A1

Chaerophyllum procumbens (L.) Crantz var. *procumbens* Spreading Chervil EV, JP Rare, occasionally locally abundant. Edge of Freshwater Tidal Hardwood Swamp; floodplain forest; low, wet areas along railroad tracks (EV). *RHS 1964* A1
(*J.N. Rose s.n.*, 24 May 1890, "Alexandria; a single plant found, on the river front"; *P.C. Standley 11536*, 19 May 1915, "edge of marsh near Alexandria Light"; *E.C. Leonard 360*, 13 May 1918, "Alexandria")

Chaerophyllum tainturieri Hook. var. *tainturieri* Hairy-fruit Chervil EV, PY Rare Sandy-gravelly open areas along railroad tracks. *RHS 2470* A1

Cicuta maculata L. var. *maculata* Water-hemlock DI, EV, FMR, JP Rare Swamps; tidal shores; wet open areas. *RHS 1406* A1
(*G.H. Shull 190*, 11 Aug 1902, "along margin of Hunting Creek ¼ mi. S of Alexandria"; *E.C. Leonard 6277*, 5 Sep 1927, "muddy bank of Hunting Creek near Alexandria")

Cryptotaenia canadensis (L.) DC. Honewort Frequent Floodplain forest; bottomland forest. *RHS 2545* A4

Eryngium aquaticum L. var. *aquaticum* Rattlesnake-master AH
(*G. Vasey s.n.*, 1874, 1875, "Alexandria"; *G.H. Shull 233*, 19 Aug 1902, "in wet meadow adjoining Hunting Creek marsh, Alexandria"; *P. Dowell 6448*, 13 Aug 1910, "Hunting Creek, Alexandria")

Osmorhiza claytonii (Michx.) C.B. Clarke Sweet Cicely DK Local Rich floodplain forest along Holmes Run. *RHS 2067* A1

Osmorhiza longistylis (Torr.) DC. Aniseroot DK, M Infrequent, often locally abundant. Mesic woodland along small stream (M); floodplain forest (DK). *RHS 1098* A3

Oxypolis rigidior (L.) Raf. Cowbane CP, DK, R, WBP (hist.) Rare Woodland seeps; Acidic Seepage Swamp (CP). *RHS 1816* A1

Sanicula canadensis L. var. *canadensis* Black Snakeroot Common Mesic woodland; bottomland forest. *RHS 1203* A4

Sanicula odorata (Raf.) K.M. Pryer & L.R. Phillippe Clustered Snakeroot DK, M, TBP Rare Mesic woodland along small streams. *RHS 1106* A1

Sium suave Walt. Water Parsnip FMR Local Tidal Freshwater Marsh remnant; Freshwater Tidal Hardwood Swamp. *RHS 1750* A1
(*G.H. Shull 232*, 19 Aug 1902, "near high tide line, Hunting Creek, Alexandria")

Taenidia integerrima (L.) Drude Yellow Pimpernel DK, HWS Rare Acidic Oak-Hickory Forest. *RHS 2517* A1

Thaspium barbinode (Michx.) Nutt. Hairy-jointed Meadow Parsnip WBP Local Acidic Oak-Hickory Forest. *RHS 1126* A1

Zizia aurea (L.) W.D.J. Koch Golden-alexanders AH

(*L.F. Ward s.n.*, 5 May 1878, "Alexandria")

Apocynaceae (Dogbane Family)

Apocynum cannabinum L. Indian Hemp Common, often abundant. Dry to moist open areas; railroad tracks. *RHS 1898* A5
(*P.C. Standley 11510*, 19 May 1915, "damp meadow near Seminary Station")

Apocynum sibiricum Jacq. Clasping-leaved Dogbane Locally abundant where found. Dry to moist open areas; railroad tracks. *RHS 2218* AU

Asclepias amplexicaulis J.E. Smith Clasping Milkweed Local Dry, gravelly bank along Stevenson Avenue and Shirley Highway (395) near Stevenson Park. *RHS 2335* AH? (site destroyed in 2014 for highway widening to accommodate BRAC traffic).
(*T. Bradley 5682*, 17 Jun 1973, "forest and field just E of junction of Van Dorn and Eisenhower Blvd.")

Asclepias incarnata L. var. *pulchra* (Ehrh. ex Willd.) Pers. Swamp Milkweed Infrequent Open stream banks; tidal shores; wet open areas. *RHS 2546* A2
(*G.H. Shull 196*, 11 Aug 1902, "near Hunting Creek, ¼ mi. SSW of Alexandria"; *G.H. Shull 250*, 21 Aug 1902, "wet shady places just above high tide, Hunting Creek, Alexandria (not common)"; *G.M. Leonard 6285*, 5 Sep 1927, "grassy bank of Hunting Creek between Alexandria and road")

Asclepias purpurascens L. Purple Milkweed G5?/S2/AH
(*E.S. Steele s.n.*, 30 Jun 1907, "West End")

Asclepias rubra L. Red Milkweed G4G5/S2/AH
(*G.S. Miller, Jr. s.n.*, 24 Aug 1902, "small open swamp, 3 ms. W of Alexandria")

Asclepias syriaca L. Common Milkweed Frequent Dry to moist open areas; railroad tracks. *RHS 2934* A4

Asclepias tuberosa L. var. *tuberosa* Butterfly-weed AH
(*T. Bradley 5683*, 17 Jun 1973, "forest and field just E of junction of Van Dorn and Eisenhower Blvd.")

Asclepias viridiflora Raf. Green Milkweed HS Local Dry, sandy-gravelly, hillside meadow. *RHS pv* A1

Cynanchum laeve (Michx.) Pers. Honeyvine Frequent, often locally abundant. Open areas and thickets, mainly near the Potomac River. *RHS 1476* A5
(*P. Dowell 6443*, 13 Aug 1910, "Hunting Creek, Alexandria")

Matelea carolinensis (Jacq.) Woods. Anglepod AH
(*J.W. Chickering, Jr. s.n.*, 1876, "near Alexandria"; *J.W. Chickering, Jr. s.n.*, 1877, "Alexandria"; *J.W. Chickering, Jr. s.n.*, 26 Jun 1877, "Hunting Creek")

Aquifoliaceae (Holly Family)

Ilex decidua Walt. Deciduous Holly AH
(*C.L. Pollard s.n.*, 15 May 1897, "Alexandria")

Ilex opaca Aiton var. *opaca* American Holly Frequent, but not abundant anywhere. Dry to mesic upland forest. *RHS 1910* A3

Ilex verticillata (L.) Gray Winterberry BHC, CP, CSF, DK, FBC, FMR, KD, R, SSE, WBP Rare

Woodland seeps, seepage swamps; alluvial swamp (CSF). *RHS 1658* A3

Araliaceae (Ginseng Family)

Aralia nudicaulis L. Wild Sarsaparilla DK, FBC, R, SSE, WBP Rare, occasionally locally abundant. Woodland seeps. *RHS 2506* A1

Aralia spinosa L. Devil's Walking-stick Rare EV, W, WBP, YP Woodland edges; open areas; railroad tracks. *RHS 4072* A1

Hydrocotyle ranunculoides L. f. Swamp Water-pennywort AH
(*J.N. Rose & F.V. Coville s.n.*, 24 May 1890, "swamp at mouth of Hunting Creek, near Alexandria")

Panax trifolius L. Dwarf Ginseng DK, R Rare Mesic woodland along small streams (DK, R); silty floodplain along the south side of Holmes Run (DK). *RHS 1966* A1
(*W. Palmer s.n.*, 30 Apr 1899, "Lincolnia")

Aristolochiaceae (Birthwort Family)

Asarum canadense L. Common Wild Ginger DK, SS&SA-LC Rare, occasionally forming large colonies (DK). Basic Mesic Forest (DK); shallow bed of ancient seepage stream of forested, cove-like ravine (SS&SA-LC). *RHS 1585* A1

Endodeca serpentaria (L.) Raf. Virginia Snakeroot DK, HWS, SA Rare Acidic Oak-Hickory Forest. *RHS 2665* A1

Asteraceae (Aster Family)

Achillea millefolium L. Common Yarrow Frequent Dry to moist open areas. *RHS 2055* A4

Ageratina altissima (L.) King & H.E. Robins. var. *altissima* White Snakeroot Frequent Mesic woodland; floodplain forest; swamp forest. *RHS 1624* A4
(*P.C. Standley 5910*, 17 Sep 1910, "moist woods near St. Elmo")

Ageratina aromatica (L.) Spach Small White Snakeroot WBP Local Acidic Oak-Hickory Forest. *WBP pv* AH?

Ambrosia artemisiifolia L. Common Ragweed Common, often abundant. Dry to moist open areas; railroad tracks. *RHS 2581* A5

Ambrosia trifida L. Giant Ragweed Frequent Dry to moist open areas; railroad tracks. A4
(*F.R. Fosberg 16796*, 17 Sep 1939, "Hunting Creek, Alexandria; edge of estuarine marsh; low ground")

Antennaria howellii Greene ssp. *neodioica* (Greene) Bayer Howell's Pussytoes LC Local Dry, semi-open grassy area under remnant Acidic Oak-Hickory Forest grove. *RHS 2011* A1
(*G.S. Miller s.n.*, 12 May 1901, "near Alexandria, Va.")

Antennaria neglecta Greene Field Pussytoes Infrequent Edges and openings of dry to mesic upland forest; dry, open grassy areas. *RHS 1960* A2
(*G.S. Miller, Jr. s.n.*, 28 Apr 1901, "near Alexandria"; *G.S. Miller, Jr. s.n.*, 28 Apr 1901, "near Alexandria")

Antennaria parlinii Fern. ssp. *parlinii* Parlin's Pussytoes BG (4875 Maury Lane), 3800 Seminary Road

Usually locally abundant where found. Semi-open, mossy glade in *Quercus montana* grove atop terrace (BG); dry oak savannah in front of the residence at 3800 Seminary Road. *RHS 4084* AU
(*P.C. Standley 11524*, 19 May 1915, "dry clay bank east of Alexandria")

Arnoglossum atriplicifolium (L.) H.E. Robins. Pale Indian-plantain AH
(Reported for "Cameron Run" on 31 Jul 1921 by Nellie C. Knappen)

Baccharis halimifolia L. High-tide Bush C, DI, H, JP Rare Sand and gravel bars; disturbed ground along edge of Tidal Freshwater Marsh (DI, JP). *RHS 2399* A1

Bidens aristosa (Michx.) Britt. Tickseed Sunflower Common, often abundant. Dry to moist, often disturbed, open areas; railroad tracks. *RHS 1645* A4
(*T. Bradley 6043*, 9 Sep 1973, "Las Vegas St. and Cameron Run"; *T. Bradley 6056, 6068*, 9 Sep 1973, "Eisenhower Blvd. near RR")

Bidens bipinnata L. Spanish Needles Infrequent Edges and openings of dry, gravelly upland forest; railroad tracks; tidal shores. *RHS 1559* A3

Bidens cernua L. Nodding Beggar-ticks FMR, HC, OB Rare, often locally abundant. Tidal Freshwater Marsh and shores. *RHS 1721* A1

Bidens comosa (Gray) Wieg. Three-lobe Beggar-ticks C, FMR Rare Gravel bars and mudflats; wet open areas. *RHS 2358* A1

Bidens frondosa L. Devil's Beggar-ticks Common Dry to moist open areas; swamps. *RHS 1753* A5
(*P.C. Standley 5897*, 17 Sep 1910, "open field near St. Elmo")

Bidens laevis (L.) B.S.P. Smooth Bur-marigold FMR, HC Rare, often locally abundant. Tidal Freshwater Marsh and shores. *RHS 2378* A1

Chrysopsis mariana (L.) Ell. Maryland Golden-aster HRP Local Sandy woods edge on slope just west of the "Bicentennial Tree" (*Quercus phellos*). *RHS pv* A1
(*P.C. Standley 5906*, 17 Sep 1910, "dry field near St. Elmo")

Cirsium discolor (Muhl. ex Willd.) Spreng. Field Thistle CR, EV, GWMP Rare Low, damp meadow (CR), dry to moist open areas along railroad tracks (EV); edge of old tidal channel opposite Daingerfield Island (GWMP). *RHS 1600* A1
(*T. Bradley 6045*, 9 Sep 1973, "Las Vegas St. and Cameron Run")

Conoclinium coelestinum (L.) DC. Mistflower Frequent Open stream banks; gravel bars and mudflats; swamps; wet open areas. *RHS 1520* A3
(*G.H. Shull 240*, 19 Aug 1902, "in wet meadowland reclaimed from Hunting Creek marsh, Alexandria")

Conyza canadensis (L.) Cronq. var. *canadensis* Horseweed Common, often locally abundant. Dry to moist, often disturbed, open areas; railroad tracks. *RHS 2547* A5

Coreopsis verticillata L. Whorled Tickseed EW, HWE, PC, WBP Rare Edges and openings of Oak-Heath Forest. *RHS 1547* A1

Doellingeria infirma (Michx.) Greene Cornel-leaved Aster BW, DK, HWS, NOVA, WBP Rare, occasionally locally abundant (HWS). Acidic Oak-Hickory Forest. *RHS 1370* A1
(*P. Dowell 6354*, 23 Jul 1910, "between St. Asaph and Four Mile Run")

Doellingeria umbellata (P. Mill) Nees Tall Flat-topped White Aster FBC Local Woodland seep along the south bank of Taylor Run. *RHS 4040* A1

Eclipta prostrata (L.) L. Yerba-de-tajo Frequent Dry to moist open areas; swamps. *RHS 2579* A4
(*T. Bradley 18564*, 12 Sep 1982, "near the Wilkes St. Tunnel and Union St. in Alexandria")

Elephantopus carolinianus Raeusch. Carolina Elephant's-foot Frequent Edges and openings of dry to mesic upland forest. *RHS 1507* A3

Erechtites hieraciifolia (L.) Raf. ex DC. Pilewort Common Woodland openings; open disturbed ground. *RHS 2322* A5

Erigeron annuus (L.) Pers. Annual Fleabane Common, often locally abundant. Dry to moist open areas; railroad tracks. *RHS 1845* A5

Erigeron philadelphicus L. var. *philadelphicus* Philadelphia Fleabane Frequent Dry to moist open areas; railroad tracks. *RHS 2071* A4

Erigeron strigosus Muhl. ex Willd. var. *strigosus* Daisy Fleabane Infrequent Dry open areas; railroad tracks. *RHS 2057* A3

Eupatorium altissimum L. Tall Thoroughwort EV Local Dry to moist open areas along railroad tracks. *RHS 1446* A1

Eupatorium capillifolium (Lam.) Small Dog-fennel FWP, HC Rare Open grassy area at edge of Tidal Freshwater Marsh (HC); low thickets along Strawberry Run (FWP). *RHS 2993* A1

Eupatorium godfreyanum Cronq. Godfrey's Thoroughwort PF Local Acidic Oak-Hickory Forest. *RHS 2612* A1
(*P.C. Standley 5909*, 17 Sep 1910, "dry field near St. Elmo")

Eupatorium hyssopifolium L. Hyssop-leaf Thoroughwort Infrequent Dry to moist open areas; railroad tracks. *RHS 1416* A3

Eupatorium perfoliatum L. Boneset Infrequent Open stream banks; swamps; wet open areas. *RHS 1521* A3

Eupatorium pilosum Walt. Vervain Thoroughwort BB, BH, BW, FP, W Rare Damp edges of remnant Fall Line Magnolia Bog community (BB); open seeps; seasonally wet soil of old successional *Pinus virginiana* forest atop terrace (FP). *RHS 2287* A1

Eupatorium pubescens Muhl. ex Willd. Hairy Thoroughwort CR, FP, FW, NOVA, PF, ST, WBP Infrequent Edges and openings of dry to mesic upland forest; low, damp meadow (CR). *RHS 1488* A2
(*T. Bradley 6061*, 9 Sep 1973, "Eisenhower Blvd. near RR")

Eupatorium rotundifolium L. Roundleaf Thoroughwort EWW, FP, SH, W Rare Edges and openings of dry to mesic upland forest. *RHS 3329* A1

Eupatorium serotinum Michx. Late Thoroughwort Common, often locally abundant. Dry to moist, often disturbed, open areas; railroad tracks. *RHS 1533* A5
(*T. Bradley 18544*, 12 Sep 1982, "near junction of S. Union St. and Franklin St. in Alexandria")

Eupatorium sessilifolium L. Upland Boneset BW, DK, NOVA, PC, PF Rare Acidic Oak-Hickory Forest; open gravel bank (PC). *RHS 1415* A1

Eupatorium torreyanum Short and Peter Torrey's Thoroughwort Common, often locally abundant. Dry to moist open areas; railroad tracks. *RHS 2396* A5
(*T. Bradley 6050*, *6053*, 9 Sep 1973, "Las Vegas St. and Cameron Run"; *T. Bradley 6073*, 9 Sep 1973, "Eisenhower Blvd. near RR")
[= *Eupatorium hyssopifolium* L. var. *laciniatum* Gray]

Eupatorium x *polyneuron* (F.J. Herm.) Wunderlin Hybrid Eupatorium C Local Gravel bar. *RHS 2360* A1
[A natural hybrid between *E. perfoliatum* and *E. serotinum*]

Eurybia divaricata (L.) Nesom White Wood Aster Common, often abundant. Dry to mesic upland

forest, usually on slopes and stream banks. *RHS 1508* A5
(*P.C. Standley 5875*, 17 Sep 1910, "moist woods near St. Elmo")

Euthamia graminifolia (L.) Nutt. var. *graminifolia* Grass-leaved Goldenrod Common, often locally abundant. Open, often disturbed areas; railroad tracks. *RHS 1601* A5
(*P.C. Standley 5899*, 17 Sep 1910, "open field near St. Elmo"; *T. Bradley 6047*, 9 Sep 1973, "Las Vegas St. and Cameron Run")
[Incl. *Euthamia graminifolia* (L.) Nutt. var. *nuttallii* (Greene) W. Stone]

Gamochaeta purpurea (L.) Cabrera Purple Cudweed Frequent Dry to moist open areas. *RHS 2117* A3

Eutrochium fistulosum (Barratt) E.E. Lamont Hollow Joe-pye-weed Frequent Open stream banks; swamps; moist to wet open areas. *RHS 1447* A4
(*P.C. Standley 5908*, 17 Sep 1910, "dry field near St. Elmo"; *T. Bradley 6041*, 9 Sep 1973, "Las Vegas St. and Cameron Run"; *T. Bradley 6065*, 9 Sep 1973, "Eisenhower Blvd. near RR")
[= *Eupatorium fistulosum* Barratt]

Eutrochium purpureum (L.) E.E. Lamont var. *purpureum* Sweet-scented Joe-pye-weed IHC Local Gravelly slopes of dry to mesic upland forest. *RHS 1486* A1
[= *Eupatorium purpureum* L.]

Helenium autumnale L. Common Sneezeweed DI, HC, JP, OB, WH Infrequent Tidal shores. *RHS 1499* A2
(*G.H. Shull 188*, 19 Aug 1902, "along road across Hunting Creek [Rt. 1] ¼ mi. SW of Alexandria"; *F.R. Fosberg 16697*, 27 Aug 1939, "Hunting Creek, Alexandria; edge of marshy creek")

Helenium flexuosum Raf. Southern Sneezeweed HS Local Meadow on gravelly, southwest-facing slope. *RHS 2254* A1

Helianthus angustifolius L. Narrow-leaved Sunflower DK Local Damp edge of semi-open, high energy sand and gravel point bar along the north side of Holmes Run. *RHS 4222* A1
(W.L. McAtee [1930] "collected it in the bog adjoining cemetery in Alexandria")

Helianthus decapetalus L. Thin-leaved Sunflower Common, often locally abundant, especially along sections of Holmes Run. Wooded and open stream banks; moist open areas, often along railroad tracks. *RHS 1367* A4
(*T. Bradley 6074*, 9 Sep 1973, "Eisenhower Blvd. near RR")

Helianthus divaricatus L. Woodland Sunflower HWS, WBP Rare Acidic Oak-Hickory Forest. *RHS 1369* A1

Helianthus giganteus L. Tall Sunflower WBP (hist.) Local Floodplain forest along Winkler Run. AH
(*T. Bradley 6055*, 9 Sep 1973, "Eisenhower Blvd. near RR")

Helianthus strumosus L. Pale-leaved Sunflower DK, NOVA, PF, WBP Rare Acidic Oak-Hickory Forest. *RHS 1583* A1

Heliopsis helianthoides (L.) Sweet var. *helianthoides* Oxeye FMR Local Muddy tidal shore. *RHS 1403* A1

Heterotheca subaxillaris (Lam.) Britt. & Rusby Camphorweed EV Local Dry to moist open areas along railroad tracks. *RHS 1679* A1

Hieracium gronovii L. Hairy Hawkweed Infrequent Edges and openings of dry, gravelly upland forest; open grassy areas. A3

Hieracium paniculatum L. Panicled Hawkweed DK, WBP Rare Dry to mesic upland forest slopes. *RHS 1413* A1

Hieracium scabrum Michx. Rough Hawkweed Infrequent Dry to mesic upland forest. *RHS 1775* A3

Hieracium venosum L. Rattlesnake Weed Infrequent Dry to mesic upland forest. *RHS 2496* A2

Krigia dandelion (L.) Nutt. Potato Dwarf-dandelion CR, W, WBP Rare, often forming large colonies. Rich bottomland forest along old Cameron Run channel (CR); silty floodplain along Winkler Run (WBP); Acidic Oak-Hickory Forest along the west side of Shirley Highway (395) that was cleared in the late 2000s for construction of the BRAC Building (W). *RHS 2025* A1
(*L.F. Ward s.n.*, 1878, "Hunting Creek, Alexandria"; *L.F. Ward s.n.*, June 1878, "Hunting Creek, Alexandria")

Krigia virginica (L.) Willd. Dwarf-dandelion Frequent Dry, open sandy or gravelly areas. *RHS 1973* A3

Lactuca biennis (Moench) Fern. Tall Blue Lettuce DI, EV, FP Rare Mesic woodland (FP); railroad tracks (EV); moist to wet, semi-open edges of old tidal channel (DI). *RHS 1620* A1
(*P.C. Standley 5901*, 17 Sep 1910, "open field near St. Elmo")

Lactuca canadensis L. Wild Lettuce Common Dry to moist open areas; railroad tracks. *RHS 1291* A4
(Reported for "Alexandria" on 31 Jul 1921 by Nellie C. Knappen; *E.C. Leonard 6287*, 5 Sep 1927, "bank of Hunting Creek between Alexandria and road")

Lactuca floridana (L.) Gaertn. Woodland Lettuce Frequent Mesic woodland; moist open areas. *RHS 1546* A3
(*P.C. Standley 5902*, 17 Sep 1910, "open field near St. Elmo"; reported for "Cameron Run" on 31 Jul 1921 by Nellie C. Knappen)

Liatris pilosa (Aiton) Willd. Grass-leaf Blazing Star FP, WBP Rare Edges and openings of dry to mesic upland forest. *WBP pv* A1
(*P.C. Standley 5903*, 17 Sep 1910, "dry field near St. Elmo")

Mikania scandens (L.) Willd. Climbing Hempweed Infrequent, occasionally locally abundant. Open stream banks; Tidal Freshwater Marsh and shores; swamps; wet open ares. *RHS 1522* A3
(*P.C. Standley 5872*, 17 Sep 1910, "wet thicket near St. Elmo"; *W.H. Seaman s.n.*, 1915, "Alexandria"; reported for "Lincolnia" on 31 Jul 1921 by Nellie C. Knappen)

Packera anonyma (Wood) W.A. Weber & A. Löve Small's Ragwort SF, W Rare Dry to mesic, gravelly upland forest. *RHS 2498* A1
(*W. Palmer s.n.*, 2 Jun 1901, "Lincolnia, low woods"; *E.S. Steele s.n.*, 30 Jun 1907, "West End")

Packera aurea (L.) A. & D. Löve Golden Ragwort DK Local, occasionally forming large colonies. Rich alluvial levee and floodplain along Holmes Run. *RHS 2004* A1
[= *Senecio aureus* L.]

Pluchea odorata (L.) Cass. Salt Marsh Fleabane HC, JP, OB Rare Tidal Freshwater Marsh (HC, OB); open wet depression (JP). *RHS 1897* A1
[= *Pluchea purpurascens* (Sw.) DC.]

Prenanthes serpentaria Pursh Lion's Foot Common Dry to mesic, gravelly upland forest. *RHS 1767* A4
(*P.C. Standley 5907*, 17 Sep 1910, "dry field near St. Elmo"; *T. Bradley 6069*, 9 Sep 1973, "Eisenhower Ave. near RR")

Pseudognaphalium obtusifolium (L.) Hilliard & Burtt Sweet Everlasting Frequent Open, often disturbed areas; railroad tracks. *RHS 1633* A4
(*P.C. Standley 5886*, 17 Sep 1910, "dry field near St. Elmo"; *T. Bradley 6075*, 9 Sep 1973, "Eisenhower Blvd. near RR")

Rudbeckia hirta L. Black-eyed Susan FMR, PY, T&D, W Rare Dry open areas; upland forest edges. *RHS 1417* A1

Rudbeckia laciniata L. var. *laciniata* Cut-leaf Coneflower Infrequent Stream banks; swamps. *RHS 1495* A3
(Reported for "Cameron Run" on 31 Jul 1921 by Nellie C. Knappen; *F.R. Fosberg 16695*, 27 Aug 1939, "Hunting Creek, Alexandria; edge of marshy creek")

Rudbeckia triloba L. var. *triloba* Brown-eyed Susan IHC Local Small open floodplain of Timber Branch. A1

Sericocarpus asteroides (L.) B.S.P. Toothed White-topped Aster EW, FBC, SS&SA-LC, W Rare Edges and openings of dry to mesic upland forest. *RHS 3141* A1
(*P.C. Standley 5904*, 17 Sep 1910, "dry field near St. Elmo")

Sericocarpus linifolius (L.) B.S.P. Narrow-leaf White-top Aster FP, HWE Rare Edges and openings of dry to mesic upland forest. *RHS 2249* A1

Silphium asteriscus L. var. *trifoliatum* (L.) Clevinger Whorled Rosinweed WBP Local Acidic Oak-Hickory Forest. *WBP pv* A1
[= *Silphium trifoliatum* L. var. *trifoliatum*]

Smallanthus uvedalius (L.) Mackenzie ex Small Hairy Leafcup DI, JP, WH Rare Moist open areas (DI, JP); tidal shore (WH). *RHS 1469* A1
[= *Polymnia uvedalia* (L.) L.]

Solidago altissima L. var. *altissima* Tall Goldenrod Common, often forming large colonies. Open stream banks; dry to moist open areas; railroad tracks. *RHS 1595* A5
(*P.C. Standley 5879*, 17 Sep 1910, "dry field near St. Elmo"; *T. Bradley 6051*, 9 Sep 1973, "Las Vegas St. and Cameron Run")

Solidago bicolor L. Silverrod Infrequent Edges and openings of dry, gravelly upland forest. *RHS 1586* A3

Solidago caesia L. var. *caesia* Blue-stemmed Goldenrod Frequent Dry to mesic upland forest. *RHS 1748* A4

Solidago erecta Pursh Erect Goldenrod Common Edges and openings of dry, gravelly upland forest. *RHS 1699* A4
(*P.C. Standley 5887*, 17 Sep 1910, "dry field near St. Elmo")

Solidago gigantea Ait. Late Goldenrod JP, W Rare Low, damp open areas. *RHS 1896* A1

Solidago juncea Ait. Early Goldenrod Common Edges and openings of dry to mesic upland forest; dry to moist open areas; railroad tracks. *RHS 1454* A5
(*P.C. Standley 5880*, 17 Sep 1910, "dry field near St. Elmo"; *E.C. Leonard 739*, 10 Aug 1919, "field, Alexandria"; reported for "Alexandria" on 31 Jul 1921 by Nellie C. Knappen; *T. Bradley 6052*, 9 Sep 1973, "Las Vegas St. and Cameron Run"; *T. Bradley 6064*, *6066*, 9 Sep 1973, "Eisenhower Blvd. near RR")

Solidago nemoralis Ait. var. *nemoralis* Gray Goldenrod Infrequent Edges and openings of dry, gravelly upland forest; dry open areas; railroad tracks. *RHS 1592* A3

Solidago odora Ait. Sweet Goldenrod ST (hist.) Local Small open glade in Oak-Heath Forest. AH

Solidago rugosa P. Mill. var. *aspera* (Ait.) Fern. Rough-stemmed Goldenrod Local EWW
Seasonally wet, open successional area along N. Howard Street. *RHS 3001* A1

Solidago rugosa P. Mill. var. *rugosa* Wrinkle-leaf Goldenrod Frequent Floodplain forest; bottomland forest; stream banks; swamps; moist to wet open areas. *RHS 1886* A4
(*P.C. Standley 5882*, 17 Sep 1910, "dry field near St. Elmo")

Solidago ulmifolia Muhl. ex Willd. var. *ulmifolia* Elm-leaf Goldenrod DK, EV, HWS, M, WBP Rare Acidic Oak-Hickory Forest (DK, EV, HWS, WBP); Mesic Mixed Hardwod Forest (M). *RHS 1584* A1
(*P.C. Standley 5881*, 17 Sep 1910, "dry field near St. Elmo")

Symphyotrichum dumosum (L.) Nesom var. *dumosum* Bushy Aster Common, often abundant. Dry to moist open areas; railroad tracks. *RHS 1858* A5
(*P.C. Standley 5876*, 17 Sep 1910, "dry field near St. Elmo")

Symphyotrichum lanceolatum (Willd.) Nesom Panicled Aster Frequent, often locally abundant. Stream banks; bottomland forest; swamps; tidal shores. *RHS 1731* A4
(*P. Dowell 6444*, 13 Aug 1910, "Hunting Creek, Alexandria"; *E.S. Steele s.n.*, 16 Sep 1916, "Hunting Creek; rays white"; *F.R. Fosberg 16791*, 17 Sep 1939, "Hunting Creek, Alexandria; edge of estuarine marsh; mud")
[= *Aster simplex* Willd.]

Symphyotrichum lateriflorum (L.) A. & D. Löve Calico Aster Frequent Mesic woodland; floodplain forest; bottomland forest; dry to moist open areas. *RHS 1738* A4

Symphyotrichum novae-angliae (L.) Nesom New England Aster C, EV (hist.), H Rare Open stream banks (C,H); moist, open grassy areas (EV). *RHS 1760* A1

Symphyotrichum patens (Ait.) Nesom var. *patens* Late Purple Aster SA Local Acidic Oak-Hickory Forest remnant. *RHS 2986* A1
(*P.C. Standley 5877*, 17 Sep 1910, "dry field near St. Elmo"; *P.C. Standley 5878*, 17 Sep 1910, "dry fields near St. Elmo")

Symphyotrichum pilosum (Willd.) Nesom var. *pilosum* Frost Aster Common, often abundant. Dry to moist, often disturbed, open areas; railroad tracks. *RHS 1869* A5
(*P. Dowell 6445*, 13 Aug 1910, "Hunting Creek, Alexandria")

Symphyotrichum prenanthoides (Muhl. ex Willd.) Nesom Crooked-stem Aster AH
(*L.F. Ward s.n.*, 1879, "Hunting Creek"; *H.W. Henshaw s.n.*, 19 Sep 1886, "Cameron Run")

Symphyotrichum puniceum (L.) A. & D. Löve var. *puniceum* Purple-stem Aster C, DI, DK, H Rare Sand and gravel bars; stream banks; old tidal channel (DI). *RHS 1672* A1
(*P.C. Standley 5874*, 17 Sep 1910, "dry thicket near St. Elmo"; *W.L. McAtee 2778*, 23 Sep 1917, "Hunting Creek"; reported for "Alexandria" on 2 Sep c. 1922 by Nellie C. Knappen)

Symphyotrichum racemosum (Ell.) Nesom var. *racemosum* Small White Aster Frequent Mesic woodland; forested stream banks; bottomland forest; swamps. *RHS 2674* A3
[= *Aster vimineus* Lam.]

Symphyotrichum subulatum (Michx.) Nesom Annual Salt-marsh Aster C, H Rare Gravel bars and mudflats. *RHS 2370* A1

Symphyotrichum undulatum (L.) Nesom Wavy-leaved Aster DK, YP Rare Acidic Oak-Hickory Forest. *RHS 2676* A1

Verbesina alternifolia (L.) Britt. ex Kearney Wingstem Infrequent, occasionally locally abundant. Moist open areas near the Potomac River; bottomland forest. *RHS 1470* A3

(*L.F. Ward s.n.*, 27 Oct 1877, "Hunting Creek")

Vernonia glauca (L.) Willd. Upland Ironweed NOVA, WBP Rare Acidic Oak-Hickory Forest. *RHS 2395* A1
(*P. Dowell 6355*, 23 Jul 1910, "St. Asaph"; *P.C. Standley 5900*, 17 Sep 1910, "open field near St. Elmo")

Vernonia noveboracensis (L.) Michx. New York Ironweed Infrequent Tidal Freshwater Marsh and shores; open stream banks; wet open areas. *RHS 1440* A3
(*E.S. Steele s.n.*, 4 Sep 1899, "near mouth of Hunting Creek"; *G.H. Shull 209*, 12 Aug 1902, "in wet ground along Hunting Creek, Alexandria")

Xanthium strumarium L. Common Cocklebur Frequent, occasionally abundant. Dry to moist open areas; gravel bars and mudflats; tidal shores. *RHS 2596* A4
(*P.C. Standley 5893*, 17 Sep 1910, "dry field near St. Elmo"; *W.L. McAtee 3167, 3170*, 28 Dec 1919, "Alexandria"; *F.R. Fosberg 16786*, 17 Sep 1939, "Hunting Creek, Alexandria; edge of estuarine marsh; low ground")

Balsaminaceae (Touch-me-not Family)

Impatiens capensis Meerb. Orange Jewelweed Common, often abundant. Bottomland forest; stream banks; swamps; Tidal Freshwater Marsh and shores; moist to wet open areas. *RHS 2564* A5
(*G.H. Shull 211*, 12 Aug 1902, "in wet ground along marsh in Hunting Creek, 1/3 mi. S of Alexandria")

Berberidaceae (Barberry Family)

Podophyllum peltatum L. Mayapple Frequent, often locally abundant. Mesic woodland. *RHS 1996* A3

Betulaceae (Birch Family)

Alnus serrulata (Ait.) Willd. Smooth Alder Infrequent Woodland seeps; stream banks; swamps. *RHS 1729* A3
(*G.B. Sudworth s.n.*, 12 Oct 1888, "Alexandria Canal"; *F.R. Fosberg 16693*, 27 Aug 1939, "Hunting Creek, Alexandria; edge of marshy creek")

Betula nigra L. River Birch Frequent, often reaching very large size along Holmes Run. Floodplain forest; stream banks. *RHS 2461* A4

Carpinus caroliniana Walt. Ironwood Frequent Mesic woodland; floodplain forest; forested stream banks. *RHS 4045* A4
(*E.C. Leonard 1897*, 9 Apr 1922, "common and abundant along stream, Cameron Run")

Corylus americana Walt. American Hazelnut Infrequent Mesic woodland; floodplain forest; forested stream banks. *RHS 2633* A3

Bignoniaceae (Bignonia Family)

Campsis radicans (L.) Seem. ex Bureau Trumpet-creeper Common, occasionally locally abundant. Railroad tracks; hedgerows; dry to moist open areas; bottomland forest. *RHS 1552* A5

Boraginaceae (Borage Family)

Hydrophyllum virginianum L. Virginia Waterleaf DK Local Rich alluvial levee. *RHS 2080* A1

Myosotis laxa Lehm. Smaller Forget-me-not AH
(*J.W. Chickering, Jr. s.n.*, 22 May 1870, "Hunting Creek")

Myosotis macrosperma Englem. Large-seed Forget-me-not OCC Local Floodplain forest. *RHS 3216* A1

Myosotis verna Nutt. Early Forget-me-not HW Local Dry, gravelly upland forest edge. *RHS 1092* A1

Brassicaceae (Mustard Family)

Boechera canadensis (L.) Al-Shehbaz Sicklepod DK Local Rich, mesic forest slope along N. Morgan Street. A1
[= *Arabis canadensis* L.]

Cardamine angustata O.E. Schulz Slender Toothwort CR, DK Rare Rich bottomland forest along old Cameron Run channel (CR); Mesic Mixed Hardwood Forest and rich alluvial levee (DK). *RHS 1957* A1
[= *Dentaria heterophylla* Nutt.]

Cardamine bulbosa (Schreb. ex Muhl.) B.S.P. Spring Cress DK Local Seepage swamp at east edge of impoundment wetland. *RHS 2029* A1

Cardamine concatenata (Michx.) Sw. Cut-leaf Toothwort Common Mesic woodland; floodplain forest; bottomland forest. *RHS 1934* A4
[= *Dentaria laciniata* Muhl. ex Willd.]

Cardamine parviflora L. var. *arenicola* (Britt.) O.E. Schulz Small-flowered Bittercress Infrequent Dry to mesic, gravelly upland forest. *RHS 1985* A2

Cardamine pensylvanica Muhl. ex Willd. Pennsylvania Bittercress Infrequent Forested stream banks near water's edge; swamps. *RHS 1970* A2
(*E.C. Leonard 372*, 13 May 1918, "Alexandria")

Lepidium virginicum L. Virginia Pepperweed Common, often abundant. Dry to moist open areas; railroad tracks. *RHS 1868* A5

Rorippa palustris (L.) Besser ssp. *fernaldiana* (Butters & Abbe) Jonsell Marsh Yellow Cress FMR, JP Rare Tidal shores. *RHS 1298* A1
(Reported for "Cameron Run" on 31 Jul 1921 by Nellie C. Knappen)

Cactaceae (Cactus Family)

Opuntia humifusa (Raf.) Raf. var. *humifusa* Eastern Prickly-pear EV Local Dry, sandy-gravelly bank along railroad tracks. *RHS 4124* A1

Campanulaceae (Bellflower Family)

Lobelia cardinalis L. Cardinal Flower FMR, GWMP, HC, JP Rare Freshwater Tidal Hardwood Swamp; Tidal Freshwater Marsh and shores. *RHS 1537* A1
(Reported for "Cameron Run" on 31 Jul 1921 by Nellie C. Knappen)

Lobelia inflata L. Indian Tobacco Frequent Dry to moist open areas. *RHS 1852* A4

Lobelia puberula Michx. Downy Lobelia W (hist.) Local Open seep. AH
(*G.S. Miller, Jr. s.n.*, 24 Aug 1902, "small open swamp 3 miles W of Alexandria")

Lobelia spicata Lam. var. *scaposa* McVaugh Pale-spike Lobelia W (hist.) Local Acidic Oak-Hickory Forest. *WBP pv* AH

Triodanis perfoliata (L.) Nieuwl. var. *biflora* (Ruiz & Pavon) Bradley Small Venus' Looking-glass Infrequent Dry open areas. *RHS 4122* A3

Triodanis perfoliata (L.) Nieuwl. var. *perfoliata* Venus' Looking-glass Infrequent Dry, gravelly open areas; railroad tracks. A3

Cannabaceae (Hops Family)

Celtis occidentalis L. Common Hackberry Infrequent Low mesic woodland; stream banks; floodplain forest. *RHS 1575* A3

Celtis tenuifolia Nutt. Dwarf Hackberry FW, PH, SRS, W, WBP, WSCC Rare Acidic Oak-Hickory Forest (SRS, W, WBP); edges and openings of dry, often gravelly, upland forest (FW); open areas (WSCC). *RHS 1603* A2

Caprifoliaceae (Honeysuckle Family)

Lonicera sempervirens L. Trumpet Honeysuckle DK, EW, FWP, WBP Rare, occasionally locally abundant. Mesic Mixed Hardwood Forest along Holmes Run (DK); dry to mesic upland forest (EW, FWP, WBP). *RHS 2131* A1
(*T. Bradley 5681*, 17 Jun 1973, "forest and field just E of junction of Van Dorn and Eisenhower Blvd.")

Valerianella radiata (L.) Dufr. Beaked Corn-salad CR, PY Rare, often locally abundant. Low, damp, open grassy roadside along Eisenhower Avenue adjoining the Vola Lawson Animal Shelter (CR); moist, shaded ditch along railroad tracks
(PY). *RHS 2902* A1

Caryophyllaceae (Pink Family)

Paronychia canadensis (L.) Wood Smooth Forked Nailwort PF Local Dry, gravelly Acidic Oak-Hickory Forest slope. *RHS 1492* A1

Paronychia fastigiata (Raf.) Fern. Hairy Forked Nailwort VTS Locally abundant. Dry, gravelly bank and terrace along Seminary Road. *RHS 1831* A1

Sagina decumbens (Ell.) Torrey & A. Gray ssp. *decumbens* Trailing Pearlwort Common Cracks of brick sidewalks, pavement, and cobblestone streets, mainly throughout Old Town. *RHS 2789* A4

Silene antirrhina L. Sleepy Catchfly EV, PY Rare, occasionally locally abundant. Dry, sandy-gravelly open areas along railroad tracks. *RHS 2122* A1
(*P.C. Standley 11505*, 19 May 1915, "roadside one mile east of Alexandria")

Silene caroliniana Walt. var. *pensylvanica* (Michx.) Fernald Wild Pink PF, WBP Rare Dry, gravelly upland forest. *RHS 1984* A1

Silene stellata (L.) Ait. f. Starry Campion BW, IHC, PF, SF, WBP Rare Acidic Oak-Hickory Forest (BW, PF, SF, WBP); dry to mesic, gravelly upland forest slope (IHC). *RHS 1384* A1

Stellaria pubera Michx. Star Chickweed Infrequent Dry to mesic upland forest; bottomland forest. *RHS 1940* A3

Celastraceae (Bittersweet Family)

Euonymus americanus L. Strawberry-bush Frequent, occasionally locally abundant. Mesic upland forest; woodland seeps; forested stream banks; bottomland forest. *RHS 1771* A4
(Reported for "Alexandria Reservoir" on 24 Sep c. 1921 by Nellie C. Knappen)

Ceratophyllaceae (Hornwort Family)

Ceratophyllum demersum L. Coontail HC, JP Rare Shallow water at mouth of Hunting Creek. *RHS 2672* A1
(*W.L. McAtee 2284*, 20 Jul 1915, "Hunting Creek"; *W.L. McAtee 2341*, 4 Sep 1915, "Hunting Creek"; *E.C. Leonard 386*, 13 May 1918, "along bridge, Hunting Creek")

Cistaceae (Rockrose Family)

Lechea pulchella Raf. var. *pulchella* Leggett's Pinweed SA, WBP Rare Edges and openings of dry, gravelly upland forest; dry, sandy-gravelly open areas. *RHS 1120* A1

Lechea racemulosa Michx. Common Pinweed AU
(*L.F. Ward 756*, 14 Dec 1874, "Fairfax Seminary")

Lechea tenuifolia Michx. Narrow-leaf Pinweed FW Local Dry, open edge of oak groves and old successional *Pinus virginiana* forest. *RHS 4049* A1

Convolvulaceae (Morning Glory Family)

Calystegia sepium (L.) R. Br. Hedge Bindweed Frequent, often locally abundant. Dry to moist open areas; hedgerows; railroad tracks. *RHS 1464* A4

Cuscuta compacta Juss. ex Choisy Compact Dodder AH
(*G.H. Shull 204*, 12 Aug 1902, "on *Alnus* along edge of Hunting Creek, 1 mi. SW of Alexandria"; *P.C. Standley 5884*, 17 Sep 1910, "near St. Elmo")

Cuscuta gronovii Willd. ex Roem. & Schult. Common Dodder FMR, HC Infrequent, occasionally locally abundant. Tidal Freshwater Marsh and shores; swamps. *RHS 1719* A1
(*G.H. Shull 189*, 11 Aug 1902, "on *Vernonia noveboracensis* along road across Hunting Cr., SW of Alexandria"; *F.R. Fosberg 16689*, 27 Aug 1939, "Hunting Creek, Alexandria; edge of marshy creek; parasitic on *Impatiens*, stems orange, flowers white; *F.R. Fosberg 23965*, 12 Sep 1945,

"Hunting Creek, just S of Alexandria; edge of estuarine marsh; parasite on *Polygonum*, *Impatiens*, and other plants")

Cuscuta pentagona Engelm. Five-angled Dodder Frequent, often locally abundant. Dry to moist open areas; open stream banks; railroad tracks. *RHS 1389* A4
(*C. pentagona* entwined on *P.C. Standley 5885*, 17 Sep 1910, *Aconitum uncinatum* specimen from "moist woods near St. Elmo")

Ipomoea lacunosa L. Small White Morning Glory Infrequent Open stream banks; gravel bars and mudflats; moist open areas. *RHS 1594* A1
(*G.H. Shull 246*, 21 Aug 1902, "along shore of Hunting Creek, Alexandria (not common); fls. nearly white"; *G.H. Shull 247*, 21 Aug 1902, "along shore of Hunting Creek, Alexandria (rather common); fls. a little larger than #246, purple")

Ipomoea pandurata (L.) G.F.W. Mey. Wild Potato-vine Infrequent, occasionally locally abundant. Dry to mesic upland forest; dry to moist open areas; railroad tracks. *RHS 2569* A3

Cornaceae (Dogwood Family)

Cornus amomum P. Mill. Silky Dogwood Infrequent, occasionally locally abundant. Stream banks; swamps; floodplain forest; Freshwater Tidal Hardwood Swamp and tidal shores. *RHS 1883* A3
(*F.R. Fosberg 16690*, 27 Aug 1939, "Alexandria, Hunting Creek; edge of marshy creek")

Cornus florida L. Flowering Dogwood Frequent Dry to mesic upland forest. *RHS 1986* A4
(*G.B. Sudworth s.n.*, 12 Oct 1888, "Alexandria Canal")

Cucurbitaceae (Gourd Family)

Echinocystis lobata (Michx.) Torr. & Gray Wild Cucumber G5/SH/AH
(*G.H. Shull 244*, 21 Aug 1902, "in wet ground just above high tide, Hunting Creek, just below W.V.M.V. RR")

Melothria pendula L. Melonette BC, DI, HRS Rare Open seep and thicket (BC); Basic Mesic Forest along Holmes Run (HRS); low, damp thicket along old tidal channel (DI). *RHS 3421* A1

Sicyos angulatus L. Bur Cucumber Infrequent, often abundant. Open banks along large streams; swamps and open wet areas near the Potomac River. *RHS 1732* A4
(*G.H. Shull 245*, 21 Aug 1902, "in wet ground just above high tide, Hunting Creek, just below W.V.M.V. RR"; *E.C. Leonard 6280*, 5 Sep 1927, "vining on weeds in thicket on bank of Hunting Creek near Alexandria"; *T. Bradley 18570*, 12 Sep 1982, "near the Wilkes St. Tunnel and Union St. in Alexandria")

Ebenaceae (Ebony Family)

Diospyros virginiana L. Common Persimmon Frequent Dry to mesic upland forest; bottomland forest; swamps; dry to wet open areas. *RHS 2607* A4

Elatinaceae (Waterwort Family)

Elatine minima (Nutt.) Fisch. & C.A. Mey. Small Waterwort G5/S1/AH

(*A.H. Curtiss s.n.*, [unknown date], "Alexandria")

Ericaceae (Heath Family)

Chimaphila maculata (L.) Pursh Spotted Wintergreen Frequent Oak-Heath Forest. *RHS 2248* A4

Chimaphila umbellata (L.) W. Barton ssp. *cisatlantica* (Blake) Hulten Pipsissewa W (hist.) Local Oak-Heath Forest along the west side of Shirley Highway (395) that was cleared in the mid-1990s for construction of an office building at 4825 Mark Center Drive. *WBP pv* AH

Epigaea repens L. Trailing Arbutus DK, HW, IHC, R, SF, W, WBP Rare Oak-Heath Forest, usually steep, gravelly, mossy banks and north-facing slopes. *RHS pv* A1

Eubotrys racemosus (L.) Nutt. Fetterbush BB, DK, R, WBP Rare, occasionally locally abundant. Woodland seeps; edges of Fall Line Magnolia Bog remnant (BB). *RHS 1849* A1
[= *Leucothoe racemosa* (L.) Gray; "Article 62.2 of the 2011 International Code of Nomenclature (Melbourne Code) stipulates that compound generic names ending in -botrys are masculine, thus requiring a corresponding masculine specific epithet" (VBA 2015)]

Gaylussacia baccata (Wangenh.) K. Koch Black Huckleberry Frequent, often locally abundant. Oak-Heath Forest. *RHS 2001* A3

Gaylussacia frondosa (L.) Torr. & Gray ex Torr. Dangleberry DK, R, WBP Rare, occasionally locally abundant (WBP). Woodland seeps. *RHS 1850* A1

Hypopitys monotropa Crantz Pinesap WBP Local Woodland seep. *WBP pv* AH?
[= *Monotropa hypopithys* L.]

Kalmia latifolia L. Mountain Laurel Frequent, often locally abundant. Oak-Heath Forest, often dominant on north-facing, upland slopes. *RHS 1791* A3

Lyonia ligustrina (L.) DC. var. *ligustrina* Maleberry BB, DK, R, WBP Rare Woodland seeps; edges of Fall Line Magnolia Bog remnant (BB). A1
(*Mrs. E.S. Steele s.n.*, 30 Jun 1907, "West End")

Lyonia mariana (L.) D. Don Staggerbush EW, FP, WBP Rare Oak-Heath Forest (EW, WBP); seasonally wet soil of old successional *Pinus virginiana* forest atop terrace (FP). *RHS 1109* A1

Monotropa uniflora L. Indian Pipe DK, W, WBP Rare Dry to mesic upland forest. *RHS 2540* A1

Rhododendron periclymenoides (Michx.) Shinners Pinxterflower Frequent Oak-Heath Forest. *RHS 2038* A3

Rhododendron viscosum (L.) Torr. Swamp Azalea DK, R, WBP Rare Woodland seeps. *RHS 1650* A1
[Virtually all *R. viscosum* in the greater D.C. region under 2 m or so in height have been perennially grazed to the forest floor since the early 1990s by over-populations of White-tailed Deer.]

Rhododendron viscosum var. *glaucum* (Michx.) Torrey Swamp Azalea WBP Local Large woodland seep adjoining mostly destroyed Fall Line Magnolia Bog. *RHS 1122* A1
[The infrequent var. *glaucum* is nomenclaturally "blocked" and regarded as "nom. illeg." Moreover, Kron (1993) considers the highly variable morphological characters within typical *R. viscosum* to have no discernible correlation with geographical or ecological subdivisions throughout its range, and therefore does not recognize infraspecic taxa in *R. viscosum*. However, Wilson and Rehder (1921) and a great many botanists over the years believe var. *glaucum* to be a valid entity, as does this treatment.]

Rhododendron viscosum var. *nitidum* (Pursh) A. Gray AH
(*G.B. Sudworth 510*, 3 Jun 1889, "near Alexandria; damp thicket; not abundant, 18 in. high")
[Kron (1993) and Judd and Kron (2009) do not recognize infraspecific taxa in *R. viscosum* (see above note). However, Wilson and Rehder (1921) and a great many botanists over the years believe var. *nitidum* to be a valid entity, as does this treatment.]

Vaccinium corymbosum L. Highbush Blueberry BB, BHC, RLP, WBP Rare Woodland seeps (BHC, WBP); Fall Line Magnolia Bog remnant (BB); Oak-Heath Forest (RLP). *RHS 2930* A1

Vaccinium formosum Andr. Southern Highbush Blueberry SSE Local Woodland seep. *RHS 3428* A1

Vaccinium fuscatum Ait. Black Highbush Blueberry Frequent Dry to mesic upland forest; woodland seeps; Upland Depression Swamp. *RHS 1851* A3
[= *V. atrococcum* (Gray) Heller]

Vaccinium x *margarettiae* Ashe (pro sp.) FP, MP Rare A colony of several shrubs in seasonally wet soil of old successional *Pinus virginiana* forest atop terrace (FP); Oak-Heath Forest (MP). *RHS 4041* A1
[A natural hybrid between *V. fuscatum* and *V. pallidum*]

Vaccinium pallidum Ait. Early Lowbush Blueberry Frequent, often locally abundant. Oak-Heath Forest. *RHS 1111* A3

Vaccinium stamineum L. Deerberry Frequent, occasionally locally abundant. Oak-Heath Forest; Acidic Oak-Hickory Forest. *RHS 1110* A3

Euphorbiaceae (Spurge Family)

Acalypha gracilens Gray Slender Three-seeded Mercury Frequent Dry, gravelly open areas; railroad tracks. *RHS 1452* A4

Acalypha rhomboidea Raf. Common Three-seeded Mercury Frequent Dry to wet open areas; bottomland forest. *RHS 1702* A4
(*F.R. Fosberg 16794*, 17 Sep 1939, "Hunting Creek, Alexandria; edge of estuarine marsh; mud")

Acalypha virginica L. Virginia Three-seeded Mercury Frequent Dry to moist open areas. *RHS 1444* A4

Euphorbia corollata L. Flowering Spurge BH, SA, W (hist.?) Rare Dry, sandy or gravelly open areas. *RHS 1448* A1

Euphorbia maculata L. Spotted Spurge Frequent, occasionally locally abundant. Dry to moist open areas; railroad tracks. *RHS 2656* A4
(Reported for "Lincolnia" on 31 Jul 1921 by Nellie C. Knappen)

Euphorbia nutans Lagasca y Segura Nodding Spurge Common, often abundant. Dry to moist open areas; railroad tracks. *RHS 1505* A4

Fabaceae (Legume Family)

Amorpha fruticosa L. False Indigo-bush H, JP, OB Infrequent, occasionally locally abundant. Gravelly tidal shores (JP, OB); open stream banks (H). *RHS 1167* A1

Amphicarpaea bracteata (L.) Fern. Hog-peanut Frequent, often locally abundant. Mesic woodland; stream banks; floodplain forest; bottomland forest. *RHS 2630* A4

Apios americana Medik. Groundnut Frequent Stream banks; swamps; Tidal Freshwater Marsh and shores. *RHS 2352* A3
(*F.R. Fosberg 16691*, 27 Aug 1939, "Hunting Creek, Alexandria; edge of marshy creek")

Baptisia tinctoria (L.) R. Br. ex Ait. f. Yellow Wild Indigo EW, SA, SH, WBP Rare Dry, gravelly upland forest; dry, gravelly road bank between N. Van Dorn Street and Shirley Highway north of Seminary Road (SH). *RHS 1528* A1

Cercis canadensis L. var. *canadensis* Eastern Redbud Infrequent, occasionally locally abundant (CR). Rich, mesic woodland; rich bottomland forest along old Cameron Run channel (CR). *RHS 1982* A3
(*E.C. Leonard 1898*, 9 Apr 1922, "Cameron Run")

Chamaecrista fasciculata (Michx.) Greene var. *fasciculata* Common Partridge-pea Infrequent, occasionally locally abundant. Dry to moist, sandy-gravelly open areas; railroad tracks. *RHS 1510* A3

Chamaecrista nictitans (L.) Moench var. *nictitans* Wild Sensitive Plant Infrequent, occasionally locally abundant. Dry to moist, sandy-gravelly open areas; railroad tracks. *RHS 1555* A3

Clitoria mariana L. var. *mariana* Butterfly Pea DK, SA, WBP Rare Acidic Oak-Hickory Forest. *MTS 3232* A1

Desmodium canadense (L.) DC. Showy Tick-trefoil G5/S1/AH
(*G.H. Shull 216*, 13 Aug 1902, "along higher part of sandy beach on point near Alexandria Light")

Desmodium canescens (L.) DC. Hoary Tick-trefoil AH
(*E.C. Leonard 6284*, 5 Sep 1927, "grassy bank of Hunting Creek between Alexandria and road")

Desmodium ciliare (Muhl. ex Willd.) DC. Hairy Small-leaf Tick-trefoil W (hist.) Local Edges and openings of dry, gravelly upland forest. AH
(*P.C. Standley 5913*, 17 Sep 1910, "dry field near St. Elmo")

Desmodium glabellum (Michx.) DC. Dillenius' Tick-trefoil Frequent, occasionally locally abundant. Dry, gravelly open areas; railroad tracks. *RHS 1635* A4
(*P.C. Standley 5915*, 17 Sep 1910, "dry field near St. Elmo")

Desmodium laevigatum (Nutt.) DC. Smooth Tick-trefoil WBP Local Acidic Oak-Hickory Forest. *MTS 3234* A1

Desmodium marilandicum (L.) DC. Smooth Small-leaf Tick-trefoil BH Local Dry, sandy soil along railroad tracks. *RHS 1593* A1
(*J.W. Chickering, Jr. s.n.*, 26 Oct 1874, "Alexandria"; *P.C. Standley 5914*, 17 Sep 1910, "dry field near St. Elmo"; *T. Bradley 6062*, 9 Sep 1973, "Eisenhower Blvd. near RR")

Desmodium nuttallii (Schindl.) Schub. Nuttall's Tick-trefoil AH
(*T. Bradley 6048*, 9 Sep 1973, "Las Vegas St. and Cameron Run")

Desmodium paniculatum (L.) DC. var. *paniculatum* Narrow-leaf Tick-trefoil Frequent Dry to moist open areas; mesic woodland; railroad tracks. *RHS 1810* A3
(*P.C. Standley 5912*, 17 Sep 1910, "dry field near St. Elmo"; *T. Bradley 6049*, 9 Sep 1973, "Las Vegas St. and Cameron Run"; *T. Bradley 6060*, 9 Sep 1973, "Eisenhower Blvd. near RR")

Desmodium perplexum Schub. Perplexing Tick-trefoil Frequent Dry to moist open areas; mesic woodland; railroad tracks. *RHS 1558* A4

Desmodium rotundifolium DC. Round-leaf Tick-trefoil WBP Local Acidic Oak-Hickory Forest. *MTS 3235* A1

Desmodium sessilifolium (Torr.) Torr. & Gray Sessile-leaf Tick-trefoil G5/S2/AH
(*Mr. & Mrs. O.M. Freeman s.n.*, 18 Aug 1921, "north of Alexandria, near the station St. Elmo")

Galactia volubilis (L.) Britt. var. *volubilis* Downy Milkpea AH
(*P. Dowell 6356*, 23 Jul 1910, "St. Asaph")

Gleditsia triacanthos L. Honey Locust Infrequent Dry to moist open areas, especially near the Potomac River. A3
(*P.C. Standley 11529*, 19 May 1915, "near the Alexandria Light")

Hylodesmum glutinosum (Muhl. ex Willld.) H. Ohashi & R.R. Mill Pointed-leaf Tick-trefoil MP Local Mesic woodland along small stream. *RHS 1362* A1
[= *Desmodium glutinosum* (Muhl. ex Willd.) Wood]

Hylodesmum nudiflorum (L.) H. Ohashi & R.R. Mill Naked-flowered Tick-trefoil Frequent Dry to mesic upland forest. *RHS 2380* A3
(*P.C. Standley 5911*, 17 Sep 1910, "dry woods near St. Elmo")
[= *Desmodium nudiflorum* (L.) DC.]

Lespedeza frutescens (L.) Ell. Violet Bush-clover YP Local Acidic Oak-Hickory Forest. *RHS 1703* A1
[= *Lespedeza violacea* (L.) Pers. (misapplied); "Due to a problem with the type specimen of *Lespedeza intermedia*, the name *Lespedeza violacea*, by which this species has long been known, applies to *L. intermedia*, and the name *L. frutescens* now applies to this species" (VBA 2015)]

Lespedeza hirta (L.) Hornemann var. *hirta* Hairy Bush-clover FW, SA, WBP Rare Acidic Oak-Hickory Forest. *RHS 1529* A1

Lespedeza procumbens Michx. Trailing Bush-clover Infrequent Edges and openings of dry, gravelly upland forest; dry, sandy-gravelly open areas. *RHS 1683* A3

Lespedeza repens (L.) W. Bart. Creeping Bush-clover Frequent Edges and openings of dry, gravelly upland forest; dry sandy-gravelly open areas; railroad tracks. *RHS 1482* A3
(*P.C. Standley 11519*, 19 May 1915, "railway embankment near Seminary Station")

Lespedeza virginica (L.) Britt. Slender Bush-clover Infrequent Dry, sandy-gravelly open areas; railroad tracks. *RHS 1524* A3
(*P.C. Standley 5888*, 17 Sep 1910, "dry field near St. Elmo"; *T. Bradley 6042*, 9 Sep 1973, "Las Vegas St. and Cameron Run"; *T. Bradley 6059*, 9 Sep 1973, "Eisenhower Blvd. near RR")

Lespedeza violacea (L.) Pers. Wand Bush Clover LA, NOVA, PH, ST (hist.), WBP Infrequent Acidic Oak-Hickory Forest; dry, sandy-gravelly open areas (LA, PH, ST). *RHS 1784* A2
[= *Lespedeza intermedia* (S. Wats.) Britt.; "Due to a problem with the type specimen, the name *Lespedeza violacea* now applies to this species, which has long been known as *L. intermedia*, and the name *L. frutescens* now applies to the species long known as *L. violacea*" (VBA 2015)]

Phaseolus polystachios (L.) B.S.P. Wild Bean AH
(*G.S. Miller, Jr. s.n.*, 9 Aug 1903, "near Alexandria")

Robinia pseudoacacia L. Black Locust Frequent, occasionally locally abundant. Woodland edges; dry to moist open areas. *RHS 2042* A4

Strophostyles helvola (L.) Ell. Trailing Wild Bean Common, often abundant. Open stream banks of large streams. *RHS 1405* A4
(*F.R. Fosberg 16683*, 27 Aug 1939, "Hunting Creek, Alexandria; edge of marshy creek"; *T. Bradley 18572*, 12 Sep 1982, "near the Wilkes St. Tunnel and Union St. in Alexandria")

Strophostyles umbellata (Muhl. ex Willd.) Britt. Pink Wild Bean EV, PY Frequent Dry, sandy-

gravelly open areas; railroad tracks. *RHS 1451* A3

Vicia caroliniana Walt. Wood Vetch AH
(*L.F. Ward s.n.*, 5 May 1878, "Hunting Creek")

Fagaceae (Beech Family)

Castanea dentata (Marsh.) Borkh. American Chestnut DK, R, SS&SA-LC, WBP Rare Dry to mesic upland forest. *RHS 1746* A1
[The Chestnut Blight Fungus (*Chryphonectria parasitica*), an exotic fungal pathogen introduced in New York in 1904 that migrated to Virginia shortly thereafter, decimated the American Chestnut as a dominant canopy tree throughout its range. The blight girdles mature trunks but does not kill the roots. Today, American Chestnut persists in greatly reduced numbers throughout its range, mostly as stump re-sprouts and small understory trees.]

Castanea pumila (L.) P. Mill. Allegheny Chinquapin Infrequent Dry to mesic upland forest; not known east of N. Quaker Lane in Alexandria. *RHS 1792* A2

Fagus grandifolia Ehrh. American Beech Frequent, occasionally locally abundant. Mesic Mixed Hardwood Forest, usually on slopes and stream banks; Basic Mesic Forest. *RHS 2467* A4
[In the mid-20th century throughout the greater D.C. area, America Beech greatly expanded its range from lower slopes and stream banks of mesic forest into upland Oak-Heath Forest, probably resulting from widespread and repeated selective logging and clearing of upland forests during the 1930s and 40s.]

Quercus alba L. White Oak Common, often locally abundant. Dry to mesic upland forest; bottomland forest. *RHS 1794* A4

Quercus x *beadlei* Trel. ex Palmer Beadle's Oak CR Local Bottomland forest remnant. *RHS 2439* A1
[A rare natural hybrid between *Q. alba* and *Q. michauxii*]

Quercus x *benderi* Baenitz Bender's Oak LA Local Two old trees in dry to mesic upland forest remnant along the lower end of Cameron Mills Road. *RHS 2931* A1
[A rare natural hybrid between *Q. coccinea* and *Q. rubra*]

Quercus bicolor Willd. Swamp White Oak AV, CNP, CSF, STE, TP, W Infrequent, occasionally locally abundant. Bottomland swamp forest remnants near large streams. *RHS 1661* A1
(*L.F. Ward s.n.*, 5 Jul 1879, "Hunting Creek")

Quercus x *bushii* Sarg. Bush's Oak Infrequent Edges and openings of dry, gravelly upland forest. *RHS 1778* A3
[A fairly common natural hybrid between *Q. marilandica* and *Q. velutina*]

Quercus coccinea Muenchh. Scarlet Oak Common Dry to mesic upland forest. *RHS 1907* A4

Quercus x *columnaris* Laughlin Columnar Oak AV Local *RHS 3487* A1
[A rare natural hybrid between *Q. palustris* and *Q. rubra*. Large, old trees along the western end of Ashby Street, together with large, old *Quercus bicolor*, hybrid oaks, and *Nyssa sylvatica* nearby, appear in a 1921 U.S. Navy aerial photograph of the area and are apparently surviving flora of ancient floodplain backswamps that once occurred along lower Four Mile Run. The occurrence of several old *Quercus* x *columnaris* at this site suggests a hybrid swarm.]

Quercus falcata Michx. Southern Red Oak Common Dry to mesic upland forest. *RHS 1780* A4
(*P.C. Standley 5898*, 17 Sep 1910, "near St. Elmo"; *I. Tidestrom & H.H. Bartlett 5656*, 31 Oct

1911, “in dry ground, region about Cameron Run”)

Quercus x *fernowii* Trel. Fernow’s Oak Infrequent Dry to mesic upland forest. *RHS 1878* A2
[A fairly common natural hybrid between *Q. alba* and *Q. stellata*]

Quercus x *fontana* Laughlin Fontana’s Oak Rare A large, old tree on the gravelly terrace behind the residence at 3474 Gunston Road in the Parkfairfax Community; a remnant forest tree atop the Seminary terrace in front of the residence at 1211 Saint Stephens Road. *RHS 3497* A1
[A rare natural hybrid between *Q. coccinea* and *Q. velutina*]

Quercus x *hawkinsiae* Sudworth Hawkins’ Oak SP Local A single tree at the edge of dry to mesic upland forest. *RHS 2982* A1
[A rare natural hybrid between *Q. rubra* and *Q. velutina*]

Quercus x *heterophylla* Michx. f. (pro sp.) Bartram’s Oak CR, PA Rare Bottomland forest remnant (CR); Mesic Mixed Hardwood Forest (PA). *RHS 1838* A1
(*H.W. Henshaw s.n.*, 29 Jun 1884, “near Fairfax Seminary (convalescent camp)”; *H.W. Henshaw s.n.*, 21 Aug 1887, “Fairfax Seminary (convalescent camp); from shoots of old tree”)
[An infrequent natural hybrid between *Q. phellos* and *Q. rubra*]

Quercus x *incomita* Palmer BP Local Dry, gravelly soil at edge of old gravel pit. *RHS 2933* A1
[A rare natural hybrid between *Q. falcata* and *Q. marilandica*]

Quercus marilandica Muenchh. var. *marilandica* Blackjack Oak Infrequent Edges and openings of dry, gravelly upland forest. *RHS 1050* A3

Quercus michauxii Nutt. Swamp Chestnut Oak CR Local Rich bottomland forest along old Cameron Run channel; bottomland forest remnant. *RHS 2306* A1

Quercus montana Willd. Chestnut Oak Common, often locally abundant. Oak-Heath Forest. *RHS 1916* A4
[= *Q. prinus* L. (misapplied)]

Quercus palustris Muenchh. Pin Oak Frequent Forested swamps; old floodplain backswamp remnants; seasonally wet depressions on hardpan clays of upland forest. *RHS 1660* A3
(*I. Tidestrom 5650*, 31 Oct 1911, “region about Cameron Run”)

Quercus phellos L. Willow Oak Frequent Bottomland swamp forest remnants near large streams; floodplain forest; seasonally wet depressions on hardpan clays of upland forest. *RHS 1900* A4

Quercus rubra L. Northern Red Oak Common, often locally abundant. Mesic Mixed Hardwood Forest, usually on slopes and stream banks; forested floodplains; bottomland forest; Basic Mesic Forest. *RHS 3005* A4

Quercus x *rudkinii* Britt. (pro sp.) Rudkin’s Oak EW, FW, a large, old tree in front of the residence at 1726 Crestwood Drive. Rare Edges and openings of dry, gravelly upland forest. *RHS 2856* A1
[A rare natural hybrid between *Q. marilandica* and *Q. phellos*]

Quercus x *saulii* Schneid. Saul’s Oak Infrequent Dry to mesic upland forest. *RHS 2445* A2
[A fairly common natural hybrid between *Q. alba* and *Q. montana*]

Quercus stellata Wangenh. Post Oak Infrequent Edges and openings of dry, gravelly upland forest and hardpan clays; rarely in bottomlands overlying heavy clay (CNP). *RHS 1798* A3
(*I. Tidestrom 5653*, 31 Oct 1911, “region about Cameron Run, near Alexandria”)

Quercus x *subfalcata* Trel. EWW, FP Rare Small trees and saplings in old successional *Pinus virginiana* forest. *RHS 3477* A1
[An infrequent natural hybrid between *Q. falcata* and *Q. phellos*]

Quercus x *substellata* Trel. AV Local A single, old tree behind the residence at 6 D Auburn Court; old floodplain backswamp remnant. *RHS 3342* A1
[A rare natural hybrid between *Q. bicolor* and *Q. stellata*]

Quercus velutina Lam. Black Oak Common Dry to mesic upland forest. *RHS 1913* A4
(*G.B. Sudworth s.n.*, 12 Oct 1888, "Alexandria Canal"; *I. Tidestrom & H.H. Bartlett 5657*, 31 Oct 1911, "in dry ground: inner bark yellow; region about Cameron Run")

Quercus x *willdenowiana* (Dippel) Beissner, Schelle & Zabel (pro sp.) Willdenow's Oak Infrequent Dry to mesic upland forest; remnant open groves. *RHS 2975* A2
[A fairly common natural hybrid between *Q. falcata* and *Q. velutina*]

Fumariaceae (Fumitory Family)

Corydalis flavula (Raf.) DC. Yellow Corydalis CR, DK, OCC Rare Rich bottomland forest along old Cameron Run channel (CR); floodplain forest (OCC); rich alluvial levee (DK). *RHS 1935* A1

Dicentra cucullaria (L.) Bernh. Dutchman's Breeches CR, DK Rare Rich bottomland forest along old Cameron Run channel (CR); floodplain forest (DK). *RHS 2454* A1

Gentianaceae (Gentian Family)

Gentiana saponaria L. Soapwort Gentian AH
(*L.F. Ward s.n.*, 3 Oct 1876, "Hunting Creek")
[*Gentiana andrewsii*, a northern species apparently not known from Virginia, was reported for "Lincolnia" on 24 Sep 1921 by Nellie C. Knappen. *G. andrewsii*, *G. clausa*, and *G. saponaria* are often very difficult to distinguish from another, especially without herbarium specimens. It is likely that the reported Lincolnia gentian is *G. saponaria* and not the out-of-range *G. andrewsii* or *G. clausa*, which does occur in Fairfax County, but typically on base-rich soils of the Piedmont.]

Gentiana villosa L. Striped Gentian W (hist.) Local Acidic Oak-Hickory Forest that once occupied land cleared for the mid-1990s Millbrook development near the intersection of Rayburn Avenue and N. Highview Lane. *WBP pv* AH

Geraniaceae (Geranium Family)

Geranium carolinianum L. Carolina Cranesbill Frequent Dry to moist open areas; railroad tracks. *RHS 1875* A4
(*P.C. Standley 11535*, 19 May 1915, "field near Alexandria Light")

Geranium maculatum L. Wild Geranium DK, IHC, M, R, W Infrequent Mesic Mixed Hardwood Forest, usually near streams. *RHS 2037* A1
(*L.F. Ward s.n.*, 12 Jun 1877, "Hunting Creek")

Haloragaceae (Water-milfoil Family)

Proserpinaca palustris L. Common Mermaid-weed AH
(*L.F. Ward s.n.*, 6 Jul 1879, "Hunting Creek")

Hamamelidaceae (Witch Hazel Family)

Hamamelis virginiana L. Witch Hazel Frequent, occasionally locally abundant. Steep, often north-facing Oak-Heath Forest slopes; forested stream banks. *RHS 2434* A3

Hydrangeaceae (Hydrangea Family)

Hydrangea arborescens L. Wild Hydrangea DK, R, WBP Rare, occasionally locally abundant. Steep, often north-facing, forested stream banks (WBP); especially common on silty loam and outcrops of the Indian Run Formation in the Holmes Run Gorge and vicinity (DK, R). *RHS 1442* A1

Hypericaceae (St. John's-wort Family)

Hypericum gentianoides (L.) B.S.P. Pineweed BH, EW, EWW, FP, FW, SF, UP, W Rare, occasionally locally abundant. Dry to mesic, sandy or gravelly open areas; railroad tracks. *RHS 1461* A1

Hypericum hypericoides (L.) Crantz ssp. *hypericoides* St. Andrew's Cross DK, WBP Rare Edges and openings of Oak-Heath Forest (DK); Acidic Oak-Hickory Forest (WBP). *RHS 1749* A1
[Of the two subspecies, ssp. *hypericoides* is much less common in the greater D.C. region, at least according to past collections in herbaria.]

Hypericum hypericoides (L.) Crantz ssp. *multicaule* (Michx. ex Willd.) Low St. Andrew's Cross Infrequent Edges and openings of dry upland forest. *RHS 4047* A3?
[= *Hypericum stragulum* P. Adams & Robson]

Hypericum mutilum L. Dwarf St. John's-wort Infrequent Moist to wet open areas; open seeps. *RHS 1733* A3?
(Reported for "Alexandria Reservoir" on 24 Sep c. 1921 by Nellie C. Knappen)

Hypericum punctatum Lam. Spotted St. John's-wort Infrequent Dry to moist open areas; railroad tracks. *RHS 2943* A3

Hypericum walteri Gmelin Greater Marsh St. John's-wort HC Local Muddy tidal shore. *RHS 2411* A1
[= *Triadenum walteri* (J.G. Gmel.) Gleason]

Iteaceae (Sweetspire Family)

Itea virginica L. Virginia Sweetspire AH
(*G. Vasey s.n.*, 1872, "Hunting Creek"; *W.H. Seaman s.n.*, 1915, "Hunting Creek")

Juglandaceae (Walnut Family)

Carya cordiformis (Wangenh.) K. Koch Bitternut Hickory Frequent, occasionally locally abundant. Basic Mesic Forest; floodplain forest; bottomland forest. *RHS 2305* A4

Carya glabra (P. Mill.) Sweet Pignut Hickory Frequent Acidic Oak-Hickory Forest; dry to mesic upland forest. *RHS 2614* A4

Carya ovalis (Wangenh.) Sarg. Sweet Pignut Hickory Frequent Acidic Oak-Hickory Forest; dry to mesic upland forest. *RHS 1880* A3
(*T. Bradley 5685*, 17 Jun 1973, "forest and field just E of junction of Van Dorn and Eisenhower Blvd.")

Carya tomentosa (Lam. ex Poir.) Nutt. Mockernut Hickory Frequent Acidic Oak-Hickory Forest; dry to mesic upland forest. *RHS 2608* A4

Juglans nigra L. Black Walnut Frequent Mesic Mixed Hardwood Forest, often in past-disturbed areas; Basic Mesic Forest; floodplain forest; bottomland forest. *RHS 2632* A4

Lamiaceae (Mint Family)

Clinopodium vulgare L. Wild Basil BG (4875 Maury Lane), W Rare Dry, gravelly upland forest. *RHS 1789* A1
[= *Satureja vulgaris* (L.) Fritsch]

Collinsonia canadensis L. Richweed Frequent Mesic Mixed Hardwood Forest; floodplain forest; bottomland forest. *RHS 1487* A3

Cunila origanoides (L.) Britt. Wild Dittany SA, WBP Rare Acidic Oak-Hickory Forest. *RHS 1531* A1

Hedeoma pulegioides (L.) Pers. American Pennyroyal Infrequent, occasionally locally abundant. Edges and openings of dry, often gravelly, upland forest. *RHS 1485* A3

Lycopus americanus Muhl. ex W. Bart. American Bugleweed Frequent Tidal shores; gravel bars and mudflats; swamps. *RHS 1474* A3

Lycopus rubellus Moench Taper-leaf Water Horehound DI, JP Rare Tidal shores. *RHS 1437* A1
(*E.S. Steele s.n.*, 4 Sep 1899, "Hunting Creek")

Lycopus virginicus L. Virginia Bugleweed Frequent Woodland seeps; stream banks; swamps. *RHS 1803* A4

Mentha canadensis L. Wild Mint Infrequent Moist to wet open areas; gravel bars and mudflats; Tidal Freshwater Marsh. *RHS 1511* A3
(*G.H. Shull 197*, 11 Aug 1902, "in edge of marsh bordering Hunting Creek, ¼ mi. SSW of Alexandria"; *E.C. Leonard 6289*, 5 Sep 1927, "grassy bank of Hunting Creek between Alexandria and road")
[= *Mentha arvensis* L.]

Monarda fistulosa L. Wild Bergamot WBP Local Edges and openings of Acidic Oak-Hickory Forest. *WBP pv* A1
[= *Monarda fistulosa* L. var. *fistulosa*]

Physostegia virginiana (L.) Benth. Obedient-plant C, H, JP Rare Gravel bars and mudflats; wet open areas (JP). *RHS 1574* A1

Pycnanthemum tenuifolium Schrad. Narrow-leaf Mountain-mint PY (hist.), W, WBP Rare, occasionally locally abundant. Dry open areas along railroad tracks (PY); Acidic Oak-Hickory Forest (W, WBP). *RHS 1516* A1

Salvia lyrata L. Lyre-leaf Sage Infrequent, occasionally locally abundant. Edges and openings of dry to mesic upland forest; floodplain forest. *RHS 2009* A3

Scutellaria elliptica Muhl. ex Spreng. var. *elliptica* Hairy Skullcap BG (hist.), WBP Local Acidic Oak-Hickory Forest. *RHS 1846* A1

Scutellaria integrifolia L. Hyssop Skullcap BB, EW, HC Rare Edges and openings of dry to mesic upland forest (EW); damp, open edge of Fall Line Magnolia Bog remnant (BB); low, damp open meadow (HC). *RHS 1544* A1
(*D. LeRoy Topping s.n.*, 20 Jun 1897, "near Alexandria")

Scutellaria lateriflora L. var. *lateriflora* Mad-dog Skullcap DI, JP, KSP, OB, WH Rare Swamps; tidal shores. *RHS 1473* A2
(Reported for "Lincolnia" on 31 Jul 1921 by Nellie C. Knappen)

Stachys hispida Pursh Hispid Hedge-nettle AH
(*T. Bradley 5676*, 16 Jun 1973, "old field, marsh, and streambank; Clermont Dr. and Cameron Run")

Teucrium canadense L. American Germander AAHP, CR, DI, FMR, JP, OCC Infrequent, occasionally locally abundant. Moist to wet open areas and thickets. *RHS 1297* A3

Trichostema dichotomum L. Common Blue Curls EV, PH, W Rare, occasionally locally abundant. Dry, sandy-gravelly open areas; railroad tracks. *RHS 1525* A1

Lauraceae (Laurel Family)

Lindera benzoin (L.) Blume Spicebush Common Mesic Mixed Hardwood Forest; Basic Mesic Forest; floodplain forest; bottomland forest. *RHS 1939* A4

Sassafras albidum (Nutt.) Nees Sassafras Common Dry to mesic upland forest. *RHS 1888* A4

Lentibulariaceae (Bladderwort Family)

Utricularia macrorhiza Le Conte Greater Bladderwort G5/S3/AH
(*G.H. Shull 231*, 19 Aug 1902, "in channel in upper part of Hunting Creek marsh, Alexandria")

Linaceae (Flax Family)

Linum medium (Planch.) Britt. var. *texanum* (Planch.) Fern. Stiff Yellow Flax BH, W (hist.) Local Sandy banks along railroad tracks (BH); Acidic Oak-Hickory Forest along the west side of Shirley Highway (395) that was cleared in the late 2000s for construction of the BRAC Building (W). *RHS 1684* A1
(*J.B.S. Norton s.n.*, 8 Aug 1915, "southern RR yard near Alexandria"; *O.M. Freeman s.n.*, 19 Jun 1920, "Hunting Creek")

Linum striatum Walt. Rigid Yellow Flax BB Local Damp, sphagnous edges of remnant Fall Line Magnolia Bog. *RHS 3410b* A1
(*S.F. Blake 8747*, 20 Jul 1924, "near Alexandria, in pasture; cor. pale yellow")

Linderniaceae (False Pimpernel Family)

Lindernia dubia (L.) Pennell var. *anagallidea* (Michx.) Cooperrider Long-stalked False Pimpernel C, DI, HC Rare, occasionally locally abundant. Gravel bars and mudflats (C); tidal mudflats (HC); low wet areas adjoining historic Tidal Freshwater Marsh (DI). *RHS 1501* A1

Lindernia dubia (L.) Pennell var. *dubia* False Pimpernel Frequent, often locally abundant. Gravel bars

and mudflats; moist to wet open areas. *RHS 3779* A4
(*G.H. Shull 243*, 21 Aug 1902, "along gravelly shore between tides in Hunting Creek, Alexandria")

Micranthemum micranthemoides (Nutt.) Wettst. Nuttall's Micranthemum GH/SH/AH
(*J.W. Chickering, Jr. s.n.*, 22 Oct 1876, "Hunting Creek"; *E.S. Steele s.n.*, 4 Sep 1899, "Hunting Creek")
[Two additional *Micranthemum micranthemoides* specimens listed in the DC Herbarium (US) database from Hunting Creek and the Potomac River shore in the City of Alexandria in the 1870s are evidently missing from the collection.]

Lythraceae (Loosestrife Family)

Ammannia coccinea Rottb. Scarlet Ammannia AR, C, FMR, HC Rare, often locally abundant. Gravel bars and mudflats (C, FMR); tidal shores (HC); shallow impounded water at floor of abandoned reservoir (AR). *RHS 1704* A2

Cuphea viscosissima Jacq. Blue Waxweed PY (hist.) Local Dry, open field that was largely destroyed for the Potomac Greens development in the mid-2000s. *RHS 1811* AH?

Rotala ramosior (L.) Koehne Toothcup AR, C Rare Gravel bars (C); shallow impounded water at floor of abandoned reservoir (AR). *RHS 2367* A1
(Reported for "Alexandria Reservoir" on 9 Apr 1922 by Nellie C. Knappen)

Magnoliaceae (Magnolia Family)

Liriodendron tulipifera L. Tuliptree Common Mesic Mixed Hardwood Forest; mesic woodland; damp edges of springs and woodland seeps; floodplain forest; bottomland forest. *RHS 2503* A4

Magnolia virginiana L. Sweetbay Magnolia BB, BW, DK, R, SSE, WBP Rare Fall Line Magnolia Bog remnant (BB); woodland seeps. *RHS 1656* A1

Malvaceae (Mallow Family)

Hibiscus laevis All. Halberd-leaf Rose-mallow C, DI, HC, JP, PY (hist.) Infrequent Tidal Freshwater Marsh and shores (HC, JP); low wet areas adjoining historic Tidal Freshwater Marsh (DI); open stream banks (C); wet open areas (PY). *RHS 1418* A2
(*P. Dowell 6441*, 13 Aug 1910, "Hunting Creek, Alexandria")

Hibiscus moscheutos L. Swamp Rose-mallow DI, FMR, HC Frequent Tidal Freshwater Marsh and shores (FMR, HC); low wet areas adjoining historic Tidal Freshwater Marsh (DI). A3
(*F.R. Fosberg 16688*, 27 Aug 1939, "Hunting Creek, Alexandria; edge of marshy creek")

Tilia americana L. var. *americana* American Basswood DI, EP, FP, HR, HRP, IHC, SS&SA-LC Rare Potomac River shoreline (DI); mesic woodland and stream banks. *RHS 1497* A2

Melastomataceae (Melastome Family)

Rhexia virginica L. Virginia Meadow Beauty BB Local Damp, sphagnous edges of remnant Fall Line Magnolia Bog. *RHS pv* A1

Menispermaceae (Moonseed Family)

Menispermum canadense L. Canada Moonseed CR, DK, HRS, OHC, TBP Rare Rich bottomland forest along old Cameron Run channel (CR); rich alluvial levee and floodplain forest along Holmes Run (DK); Basic Mesic Forest (HRS); forested stream banks (OHC, TBP). *RHS 2400* A1

Montiaceae (Montia Family)

Claytonia virginica L. Spring Beauty Common, often abundant. Mesic woodland; floodplain forest; bottomland forest. *RHS 1933* A4

Moraceae (Mulberry Family)

Morus rubra L. Red Mulberry Infrequent Dry to mesic upland forest; some reaching large size. *RHS 1864* A2
(*G. Vasey s.n.*, 1877, "National Cemetery, Alexandria")

Nymphaeaceae (Water-lily Family)

Nuphar advena (Ait.) Ait.f. Common Spatterdock HC, FMR Locally abundant (HC); rare (FMR). Tidal mudflats; old tidal channel (FMR). *RHS pv* A1
(*G. Vasey s.n.*, 1874, "Alexandria"; *L.F. Ward s.n.*, 5 May 1878, "Hunting Creek"; *G.H. Shull 257*, 22 Aug 1902, "forming considerable colonies in old channels and advancing shores, Four Mile Run"; *P.C. Standley 11509*, 19 May 1915, "swamp one mile east of Alexandria")

Nyssaceae (Tupelo Family)

Nyssa sylvatica Marsh. Black Gum Common Dry to mesic upland forest; woodland seeps. *RHS 2398* A4

Oleaceae (Olive Family)

Chionanthus virginicus L. Fringetree Infrequent Dry to mesic upland forest; woodland seeps. *RHS 2501* A3

Fraxinus americana L. White Ash Frequent Basic Mesic Forest; mesic woodland; bottomland forest. *RHS 2634* A4
(*G.B. Sudworth s.n.*, 12 Oct 1888, "Alexandria Canal")

Fraxinus pennsylvanica Marsh. Green Ash Frequent, occasionally locally abundant. Low mesic woodland; floodplain forest; bottomland forest; swamps; tidal shores. *RHS 1296* A4
(*W.H. Seaman s.n.*, 1915, "Alexandria")

Fraxinus profunda (Bush) Bush Pumpkin Ash HC Local Tidal shore. *RHS 1728* A1
(*J.H. Painter 912*, 9 Aug 1904, "open swamp, Four Mile Run, Alexandria")

Onagraceae (Evening-primrose Family)

Circaea canadensis (L.) Hill ssp. *canadensis* Enchanter's Night-shade Frequent, often locally abundant. Mesic woodland. *RHS 2544* A4

Epilobium coloratum Biehler Purple-leaved Willow-herb HC, JP Rare Moist to wet open areas. *RHS 1439* A1

Ludwigia alternifolia L. Seedbox Frequent Moist to wet open areas; gravel bars and mudflats; swamps. *RHS 1826* A4

Ludwigia decurrens Walt. Winged Water-primrose AR, C, DI, FMR, H, HC, JP Rare, occasionally locally abundant. Gravel bars and mudflats (C, FMR, H); Tidal Freshwater Marsh and shores (HC, JP); low wet areas adjoining historic Tidal Freshwater Marsh (DI); shallow impounded water at floor of abandoned reservoir (AR). *RHS 1722* A2
(*J.W. Chickering, Jr. s.n.*, 1875, "near Alexandria"; *L.F. Ward s.n.*, 3 Oct 1876, "Hunting Creek, roadside near the bridge [Rt. 1]"; *G.H. Shull 248*, 21 Aug 1902, "between tides in Hunting Creek, Alexandria")

Ludwigia palustris (L.) Ell. Marsh Seedbox Frequent, often locally abundant. Gravel bars and mudflats; Tidal Freshwater Marsh and shores; ditches and wet open areas. *RHS 2362* A4
(*P. Dowell 6453*, 13 Aug 1910, "Hunting Creek, Alexandria")

Oenothera biennis L. Common Evening-primrose Common Dry to moist open areas; railroad tracks. *RHS 1634* A4
["The *Oenothera biennis* complex in Virginia comprises *O. biennis*, *O. glazioviana*, *O. nutans*, *O. oakesiana*, *O. parviflora*, and *O. villosa* ssp. *villosa*. Complex interaction of plastome and genome define these so-called species, which are problematic even for those that study them intensively. The few annotated specimens provide only sketchy distributional information. We are currently unable to map any of the individual members of this difficult and confusing complex, except for *O. parviflora*…" (VBA 2015)]

Oenothera fruticosa L. ssp. *fruticosa* Narrow-leaf Sundrops AH
(*G.S. Miller, Jr. s.n.*, 30 May 1901, "near Alexandria"; "near Seminary"; *E.S. Steele s.n.*, 30 Jun 1907, "West End"; *T. Bradley 5674*, 16 Jun 1973, "old field, marsh, and streambank; Clermont Dr. and Cameron Run")

Oenothera gaura W.L. Wagner & Hoch Biennial Gaura C, FMR, H Rare Open stream banks. *RHS 1514* A1
(*F.R. Fosberg 23966*, 12 Sep 1945, "Hunting Creek, in edge of estuarine marsh; higher ground on roadside, one plant seen")
[= *Gaura biennis* L.]

Oenothera perennis L. Little Sundrops AH
(*F.R. Fosberg 35713*, 23 May 1954, "south of Shirley Highway, east of Seminary Road; small colony in old field with *Solidago*, *Rubus*, *Fragaria*, grasses, etc.")

Oenothera pilosella Raf. ssp. *pilosella* Meadow Evening-primrose AH
(*G. Vasey s.n.*, 6 Jun 1884, "near Alexandria")

Orobanchaceae (Broomrape Family)

Agalinis purpurea (L.) Pennell Purple False Foxglove C, HC Rare Dry to moist open areas.

RHS s.n. A1
(*H.D. House 399*, 28 Aug 1904, "near Alexandria")

Aureolaria flava (L.) Farw. Smooth Yellow False Foxglove WBP Local Oak-Heath Forest. *MTS 3241* A1

Aureolaria pedicularia (L.) Raf. Fern-leaf Yellow False Foxglove WBP Local Acidic Oak-Hickory Forest. *RHS 1785* A1

Aureolaria virginica (L.) Pennell Downy Yellow False Foxglove EW, SA, SF, WBP, YP Rare Oak-Heath Forest; Acidic Oak-Hickory Forest. *RHS 1548* A1

Epifagus virginiana (L.) W. Bart. Beechdrops Frequent, occasionally locally abundant. Dry to mesic upland forest; parasitic on *Fagus grandifolia* roots. *RHS 2451* A4

Orobanche uniflora L. Cancer-root DK Local North bank of old oxbow channel at rich alluvial levee (DK). *RHS 2002* A1

Pedicularis lanceolata Michx. Swamp Lousewort G5/S3/AH
(*L.F. Ward s.n.*, 4 Oct 1879, "Hunting Creek"; *L.F. Ward s.n.*, 20 Jun 1880, "Hunting Creek"; *E.S. Steele s.n.*, 4 Sep 1899, "Hunting Creek")

Oxalidaceae (Wood-sorrel Family)

Oxalis dillenii Jacq. Southern Yellow Wood-sorrel Frequent Edges and openings of dry to mesic upland forest; dry open areas. *RHS 2263* A3

Oxalis stricta L. Common Yellow Wood-sorrel Frequent Low mesic woodland; floodplain forest; dry to moist open areas. *RHS 2475* A4
(*G.S. Miller, Jr. s.n.*, 23 Aug 1902, "near Seminary Station; on railway embankment"; *E.C. Leonard 366a*, 13 May 1918, "Alexandria")

Oxalis violacea L. Violet Wood-sorrel CR, DK, OCC Rare, occasionally locally abundant. Rich bottomland forest along old Cameron Run channel (CR); rich alluvial levee and floodplain forest along Holmes Run (DK); floodplain forest (OCC). *RHS 1998* A1

Papaveraceae (Poppy Family)

Sanguinaria canadensis L. Bloodroot CR, DK, IHC, PF, SS&SA-LC Rare Rich bottomland forest along old Cameron Run channel (CR); rich alluvial levee (DK); Mesic Mixed Hardwood Forest, usually on slopes. *RHS 2033* A1

Passifloraceae (Passionflower Family)

Passiflora incarnata L. Purple Passionflower AR, MJP, OT, PY Rare Dry, gravelly banks and hedgerows (AR, MJP); masonry along King Street east of Alexandria Union Station (OT); dry, gravelly banks along railroad tracks (PY). *RHS 2309* A1

Passiflora lutea L. Yellow Passionflower BH, CP, DK, FP, M, SRS, SS, Taney Avenue Park, TP Infrequent, occasionally locally abundant. Mesic upland forest, usually near streams; floodplain forest (DK); open areas along railroad tracks (BH, SS); Acidic Oak-Hickory Forest (SRS); bottomland swamp forest remnant (TP). *RHS 1460* A3
(*L.F. Ward s.n.*, 4 Oct 1879, "Cameron Run")

Penthoraceae (Ditch Stonecrop Family)

Penthorum sedoides L. Ditch Stonecrop C, DI Rare Gravel bars and mudflats (C); swamps (DI). A1
(*G.H. Shull 237*, 19 Aug 1902, "wet meadowland reclaimed from Hunting Creek marsh, Alexandria"; *P. Dowell 3107*, 7 Aug 1904, "Hunting Creek, Alexandria"; reported for "Alexandria Reservoir" on 21 Aug 1921 by Nellie C. Knappen)

Phrymaceae (Lopseed Family)

Mimulus alatus Ait. Winged Monkeyflower JP Local Freshwater Tidal Hardwood Swamp; wet open areas. *RHS 1438* A1
(*G.H. Shull 205, 206*, 12 Aug 1902, "along beach of Hunting Creek between tides ¾ mi. SW of Alexandria"; *P. Dowell 6446*, 13 Aug 1910, "Hunting Creek, Alexandria")

Mimulus ringens L. var. *ringens* Square-stemmed Monkeyflower C, FMR, WBP Rare Gravel bars and mudflats (C); Freshwater Tidal Hardwood Swamp (FMR); semi-open, mucky seep (WBP). *RHS 1519* A1

Phryma leptostachya L. var. *leptostachya* Lopseed DK, SP Rare Acidic Oak-Hickory Forest. *RHS 1368* A1
["This species is a relict of the once-extensive Arcto-Tertiary Flora and a classic example of the contemporary eastern Asia-eastern North America disjunct pattern. All North American plants are var. *leptostachya* whereas e. Asian plants have been called var. *asiatica*. They differ little morphologically but show considerable DNA divergence. A North American origin of the genus, with subsequent dispersion to eastern Asia 3 to 6 million years ago, has been hypothesized (Nie et al., 2006, Amer. J. Bot. 93: 1343-1356). Given the long separation and current molecular divergence, recognition of infraspecific taxa seems appropriate." (VBA 2015)]

Phyllanthaceae (Leaf-flower Family)

Phyllanthus caroliniensis Walt. ssp. *caroliniensis* Carolina Leaf-flower BB, OT, SSE Rare Damp open ground (BB, OT); gravel bars along the south branch of Lucky Run (SSE). *RHS 2655* A1
(*E.S. Steele s.n.*, 1 Aug 1898, "Del Ray")

Phytolaccaceae (Pokeweed Family)

Phytolacca americana L. var. *americana* Pokeweed Common Dry to moist open areas. *RHS 2321* A4

Plantaginaceae (Plantain Family)

Callitriche heterophylla Pursh ssp. *heterophylla* Large Water-starwort DK Local Impoundment wetland. *RHS 2458* A1
(*P.C. Standley 11517*, 19 May 1915, "along Hunting Creek, near Alexandria")

Callitriche terrestris Raf. Terrestrial Water-starwort CV Local Seasonally damp ground with mosses along semi-open edge of wooded lot at 822 Marshall Lane. *RHS 3309* A1

Chelone glabra L. White Turtlehead CP, DK, R, WBP Infrequent Woodland seeps and banks of small seepage streams (DK, R, WBP); Acidic Seepage Swamp (CP). *RHS 1745* A1
(*W.L. McAtee 2780*, 23 Sep 1917, "Hunting Creek"; *F.R. Fosberg 16698*, 27 Aug 1939, "Hunting Creek, Alexandria; edge of marshy creek")

Gratiola neglecta Torr. Clammy Hedge-hyssop DI Locally abundant. Seasonally wet, open depressions. *RHS 1502* A1

Gratiola viscidula Pennell Short's Hedge-hyssop AH
(*G.H. Shull 230*, 19 Aug 1902, "in upper part of Hunting Creek marsh with *Eleocharis palustris*")

Nuttallanthus canadensis (L.) D.A. Sutton Blue Toadflax EV, FP Rare Woodland edge along Maple Hill Place near the southeast entrance to Forest Park; sandy soil along railroad tracks (EV). *RHS 1302* A1
[= *Linaria canadensis* (L.) Dumont]

Penstemon digitalis Nutt. ex Sims Foxglove Beard-tongue CR, DI, PH, PY Rare Dry to moist open areas (DI, PH, PY); low, damp meadow (CR). *RHS 1310* A1

Penstemon laevigatus Ait. Smooth Beard-tongue AH
(*E.S. Steele s.n.*, 30 Jun 1907, "West End")

Plantago cordata Lam. King-root G4/SH/AH
(*F.M. Comstock s.n.*, 1881, "Alexandria"; *G.H. Shull 217*, 13 Aug 1902, "between tides, on gravelly bar, extending into the Potomac River, at Alexandria Light"; *P.C. Standley 11534*, 19 May 1915, "in water, Alexandria Light"; *W.L. McAtee 2775*, 23 Sep 1917, "Hunting Creek")

Plantago rugelii Dcne. American Plantain Frequent Mesic woodland, often in disturbed areas and along trails; moist open areas. A4
(*E.C. Leonard 6283*, 5 Sep 1927, "grassy bank of Hunting Creek between Alexandria and road")

Plantago virginica L. Virginia Plantain Infrequent Dry to mesic, sandy or gravelly open areas; railroad tracks. *RHS 1981* A3
(*E.C. Leonard 365*, 13 May 1918, "Alexandria")

Veronica officinalis L. Common Speedwell Frequent Edges and openings of dry to mesic upland forest; dry to moist open areas. *RHS 2497* A4

Veronica peregrina L. var. *peregrina* Common Purslane Speedwell Frequent Moist to wet open areas. *RHS 1971* A4
(*E.C. Leonard 349*, 13 May 1918, "wet grassy soil near river, Alexandria"; *E.C. Leonard 371*, 13 May 1918, "wet soil along river")

Veronica scutellata L. Marsh Speedwell G5/S1/AH
(*F.W. Pennell 2591*, 13 Aug 1910, "Alexandria")

Platanaceae (Planetree Family)

Platanus occidentalis L. Sycamore Frequent Low mesic woodland, especially along stream banks; floodplain forest; bottomland forest. *RHS 2583* A4

Polemoniaceae (Jacob's Ladder Family)

Phlox divaricata L. Wild Blue Phlox IHC, TBP Rare Floodplain forest along Timber Branch. *RHS 2476* A1

Phlox maculata L. Meadow Phlox AH
(*P. Dowell 6359*, 23 Jul 1910, "along RR, between St. Asaph and Nauck"; reported for "Cameron Run" on 31 Jul 1921 by Nellie C. Knappen)
Phlox paniculata L. Fall Phlox EV Local Moist open areas along railroad tracks. *RHS 1599* A1

Polygalaceae (Milkwort Family)

Polygala curtissii Gray Curtiss' Milkwort FP Local Damp, exposed soil and blowdowns of old successional *Pinus virginiana* forest atop terrace. *RHS 3328* A1
(*A.H. Curtiss s.n.*, 1865, "near Alexandria" [possible type specimen]; *G. Vasey s.n.*, 1872, "near Alexandria"; *P. Dowell 6362*, 23 Jul 1910, "St. Asaph")

Polygonaceae (Smartweed Family)

Fallopia scandens (L.) Holub Climbing False Buckwheat Frequent Open stream banks; railroad tracks; hedgerows; dry to moist open areas. *RHS 1513* A3
[= *Polygonum scandens* L. var. *scandens*]
Persicaria amphibia (L.) Gray Water Smartweed DI, W (hist.) Local Wet open areas and ditches with shallow, ponded water. *RHS 1294* A1
(*G.H. Shull 236*, 19 Aug 1902, "in reclaimed part of Hunting Creek Marsh, Alexandria")
[= *Polygonum amphibium* L. var. *emersum* Michx.]
Persicaria arifolia (L.) Haraldson Halberd-leaf Tearthumb DK, FMR, HC, JP Infrequent, often locally abundant. Tidal Freshwater Marsh and shores; swamps; impoundment wetland (DK). *RHS 1536* A3
(*G.H. Shull 229*, 19 Aug 1902, "in ditch along roadside near Hunting Creek, Alexandria")
[= *Polygonum arifolium* L.]
Persicaria hydropiper (L.) Spach Marsh-pepper Smartweed AH?
(*G.H. Shull 254*, 23 Aug 1902, "along SW side of point running out to Alexandria Light")
[= *Polygonum hydropiper* L.]
Persicaria hydropiperoides (Michx.) Small Mild Water-pepper Infrequent Gravel bars and mudflats; moist to wet open areas. *RHS 2172* A3
[= *Polygonum hydropiperoides* Michx.]
Persicaria lapathifolia (L.) Gray Dock-leaf Smartweed Frequent Tidal Freshwater Marsh and shores; gravel bars and mudflats. *RHS 1046* A3
[= *Polygonum lapathifolium* L.]
Persicaria pensylvanica (L.) M. Gomez Pennsylvania Smartweed Common Tidal Freshwater Marsh and shores; gravel bars and mudflats; dry to wet open areas. *RHS 1047* A4
(*G.H. Shull 221*, 13 Aug 1902, "in ditch and dry ground adjoining RR south of Catholic Cemetery, Alexandria"; *T. Bradley 6067*, 9 Sep 1973, "Eisenhower Blvd. near RR")
[= *Polygonum pensylvanicum* L.]
Persicaria punctata (Ell.) Small Dotted Smartweed Common Tidal Freshwater Marsh and shores; gravel bars and mudflats; moist to wet open areas. *RHS 1048* A4
(*G.H. Shull 194*, 11 Aug 1902, "along Hunting Creek ¼ mi. SW of Alexandria, near high tide")
[= *Polygonum punctatum* Ell.]

Persicaria sagittata (L.) H. Gross ex Nakai Arrow-leaf Tearthumb Frequent, often locally abundant. Tidal Freshwater Marsh and shores; gravel bars and mudflats; swamps. *RHS 2359* A4
(*G.H. Shull 207*, 12 Aug 1902, "along beach between tides near Hunting Creek, ¾ mi. SW of Alexandria")

Persicaria virginiana (L.) Gaertn. Virginia Knotweed Frequent Mesic woodland. *RHS 2324* A4
(Reported for "Lincolnia" on 31 Jul 1921 by Nellie C. Knappen)
[= *Polygonum virginianum* L.]

Polygonum erectum L. Erect Knotweed Infrequent Dry to moist, often disturbed open areas. *RHS 2518* A3

Rumex altissimus Wood Pale Dock DI, FMR, HR, PY (hist.) Rare Old tidal channels; dry to moist open areas along railroad tracks (PY). *RHS 1181* A1

Primulaceae (Primrose Family)

Lysimachia ciliata L. Fringed Loosestrife Frequent Mesic woodland along streams; floodplain forest; swamps; tidal shores. *RHS 2260* A3
(*G. Vasey and F.V. Coville s.n.*, 22 Jul 1888, "along roadway to bridge over mouth of Hunting Creek")

Lysimachia lanceolata Walt. Lanceleaf Loosestrife AH
(*G.H. Shull 210*, 12 Aug 1902, "along upper edge of beach, Hunting Creek, ½ mile SSW of Alexandria")

Lysimachia quadrifolia L. Whorled Loosestrife Infrequent Dry to mesic upland forest. *RHS 2798* A3
(*T. Bradley 5680*, 17 Jun 1973, "forest and field just E of junction of Van Dorn and Eisenhower Blvd.")

Ranunculaceae (Buttercup Family)

Aconitum uncinatum L. Blue Monkshood AH
(*P.C. Standley 5885*, 17 Sep 1910, "moist woods near St. Elmo")

Actaea racemosa L. Common Black Cohosh BP, DK, HRS, M, NOVA, R Rare Mesic upland forest, often on slopes and along streams; rich alluvial levee and floodplain forest along Holmes Run (DK); Basic Mesic Forest (HRS). *RHS 2629* A1
[= *Cimicifuga racemosa* (L.) Nutt.]

Anemone quinquefolia L. var. *quinquefolia* Wood Anemone DK, R Rare, occasionally locally abundant (R). Mesic woodland along streams. *RHS 1988* A1
(*G.S. Miller, Jr. s.n.*, 28 Apr 1901, "near Alexandria")

Clematis ochroleuca Ait. Curlyheads AH
(*G. Vasey s.n.*, 1875, "Alexandria"; *L.F. Ward 818*, 23 May 1876, "Hunting Creek"; *L.F. Ward s.n.*, 20 Jun 1880, "Hunting Creek"; reported for "Hume Springs" on 2 Aug 1922 by Nellie C. Knappen)

Clematis virginiana L. Virgin's-bower CR, JMP, TBP Rare Fenceline along low, damp meadow (CR); open seep (JMP); floodplain forest (TBP). *RHS 1914* A1
(*G.H. Shull 202*, 12 Aug 1902, "among bushes in wet ground near road across Hunting Creek,

Alexandria"; *F.R. Fosberg 16694*, 27 Aug 1939, "Hunting Creek, Alexandria; edge of marshy creek")

Hepatica americana (DC.) Ker-Gawl. Round-lobed Hepatica WBP Local Acidic Oak-Hickory Forest. *WBP pv* A1
(*G.S. Miller, Jr. s.n.*, 28 Apr 1901, "near Alexandria")
["Placement of our *Hepatica* spp. in *Anemone* by Hoot et al. (1994, Syst. Bot. 19: 169-200) is based on molecular phylogenetic studies which included only *Hepatica americana*. While technically "within" *Anemone, Hepatica* falls out in a peripheral position in the clade adjacent to the outgroup (*Clematis*). Previous nonmolecular studies have emphasized the unique morphology in *Hepatica* (position of involucre, stalked achenes, foliar characters, and absence of above-ground stem). These seem reason enough to maintain *Hepatica* at the level of genus pending more comprehensive phylogenetic studies." (VBA 2015)]

Ranunculus abortivus L. Kidneyleaf Buttercup Common Low mesic woodland; floodplain forest; bottomland forest; moist open areas. *RHS 1937* A4
(*G.S. Miller, Jr. s.n.*, 28 Apr 1901, "near Alexandria")

Ranunculus ambigens S. Wats. Water-plantain Crowfoot G4/S1/AH
(*G. Vasey & F.V. Coville s.n.*, 1888, "marsh near bridge over mouth of Hunting Creek")

Ranunculus recurvatus Poir. var. *recurvatus* Hooked Buttercup Infrequent Mesic woodland along small streams. *RHS 2069* A3

Ranunculus sceleratus L. var. *sceleratus* Cursed Crowfoot AAHP, FMR, JP, PG Rare Damp, open ground of remnant Tidal Freshwater Marsh and old tidal channels (AAHP, FMR, PG); wet ditches (JP). *RHS 1182* A1
(*C.L. Pollard s.n.*, 15 May 1897, "Alexandria"; *P.C. Standley 11539*, 19 May 1915, "swamp near Alexandria Light"; *E.C. Leonard 342*, 13 May 1918, "dump near swamp, Alexandria")

Thalictrum dioicum L. Early Meadow-rue DK, IHC, M, PF Rare Mesic, often gravelly upland forest slopes. *RHS 1149* A1

Thalictrum pubescens Pursh Common Tall Meadow-rue Infrequent Stream banks; swamps. *RHS 1894* A3

Thalictrum revolutum DC. Skunk Meadow-rue AH
(*G.S. Miller, Jr. s.n.*, 24 Aug 1902, "in a small open swamp 3 miles west of Alexandria")

Thalictrum thalictroides (L.) Eames & Boivin Rue-anemone DK, WBP Rare Dry to mesic upland forest, often on slopes; bedrock outcrops along the south side of Holmes Run (DK). *RHS pv* A1

Rhamnaceae (Buckthorn Family)

Ceanothus americanus L. New Jersey Tea WBP Local Acidic Oak-Hickory Forest. *WBP pv* A1
[= *Ceanothus americanus* L. var. *americanus*]

Rosaceae (Rose Family)

Agrimonia parviflora Ait. Small-flowered Agrimony PY (hist.) Local Damp, open field that was largely destroyed for the Potomac Greens development in the mid-2000s. *RHS 1812* AH?

Agrimonia rostellata Wallr. Woodland Agrimony M Locally abundant. Mesic woodland along small

stream. *RHS 1363* A1

(*P.C. Standley 5895*, 17 Sep 1910, "dry woods near St. Elmo")

Amelanchier arborea (Michx. f.) Fern. Downy Serviceberry Frequent Dry to mesic upland forest. *RHS 1114* A4

Amelanchier canadensis (L.) Medik. Canadian Serviceberry BB, CP, DK, R, SSE, WBP Rare Woodland seeps; Fall Line Magnolia Bog remnant (BB, WBP). *RHS 2567* A1

Amelanchier laevis Wieg. Smooth Serviceberry SF Local Oak-Heath Forest. *RHS 1115* A1

Aronia arbutifolia (L.) Pers. Red Chokeberry BB, BW, DK, JDC, R, WBP Rare Woodland seeps; Fall Line Magnolia Bog remnant (BB); small forested swamp below Juvenile Detention Center at 200 S. Whiting Street (JDC). *RHS 2587* A1

Crataegus calpodendron (Ehrh.) Medik. Pear Hawthorn PF Local A single tree at the damp toe slope of Oak-Heath Forest and gravelly colluvial slope along Gunston Road. *RHS 3682* G5/S1/A1

[This state rare tree is likely an old surviving relic from the wild that has thrived at this site since the early 20th century when most of the western half of Alexandria was heavily forested, pastured, and rural. This tree is also large enough to qualify as National Champion, the largest known of its kind.]

Crataegus crus-galli L. var. *crus-galli* Cockspur Hawthorn DK, GWMP, QR (hist.), SF, UP Rare Dry to mesic upland forest (SF, UP); forested seeps (DK) and swamps (GWMP, QR). *RHS 1802* A1

(*L.F. Ward 816*, 23 May 1876, "Hunting Creek"; *G.S. Miller, Jr. s.n.*, 2 May 1901, "near Seminary; between Mahoneyville Distillery and Telegraph Road"; *P.C. Standley 11533*, 19 May 1915, "near Alexandria Light")

Crataegus macrosperma Ashe Big-fruited Hawthorn BG (4801 Maury Lane), SP, W, WBP Local Dry to mesic upland forest. *RHS 1443* A1

Crataegus margarettiae Ashe Margaret's Hawthorn PC Local Dry, steep gravelly bank along edge of Oak-Heath Forest remnant. *RHS 1853* A1

Crataegus phaenopyrum (L. f.) Medik. Washington Hawthorn GWMP, JP Rare Edges of Freshwater Tidal Hardwood Swamp and low, damp thickets near the Potomac River. *RHS 1919* A1

["The Washington haw occurs with some regularity in native habitats in the southeastern portion of the state. Other stations may represent plantings or local escapes from cultivation." (VBA 2015). Most Alexandria specimens occur in the characteristic habitat and appear to be native, though VBA's comments as to this taxon's doubtful nativity in northern Virginia are worthy of consideration.]

Crataegus pruinosa (Wendl. f.) K. Koch var. *pruinosa* Frosted Hawthorn EW, HW, LA, SP, SR, 3832 Seminary Road Rare Dry to mesic upland forest; old successional forest of planted *Pinus taeda* (c. 1940s) near the intersection of W. Braddock Road and N. Quaker Lane (EW). *RHS 3848* A1

Crataegus pruinosa (Wendl. f.) K. Koch var. *rugosa* (Ashe) Kruschke Appalachian Frosted Hawthorn W Local Acidic Oak-Hickory Forest along the northwest side of N. Beauregard Street opposite Roanoke Avenue. *RHS 3778* A1

Crataegus pruinosa (Wendl.) K. Koch var. *virella* (Ashe) Kruschke Hairy Frosted Hawthorn EV, FW Weedy remnants of Acidic Oak-Hickory Forest along the toe slope of Wheeler Avenue opposite the historic Dominion Mill (EV); successional pine-oak-heath forest (FW). *RHS 1904* A1

Crataegus viridis L. Green Hawthorn GHP, M, ME, WBP Rare Mesic woodland along streams

and seepages (M, WBP); wooded thicket at the toe slope of the steep, southwest-facing edge of the Mount Ida escarpment (GHP); mesic woodland below Mount Eagle (ME). *RHS 1840* A1

Fragaria virginiana Duchesne Wild Strawberry WBP (hist.) Local Floodplain forest along Winkler Run. *WBP pv* AH

(Reported for "old field" on the northeast side of the intersection of Shirley Highway and Seminary Road on 23 May 1954 by F.R. Fosberg)

Geum canadense Jacq. White Avens Common Low mesic woodland; floodplain forest; swamps; moist to wet open areas. *RHS 2541* A4

Geum laciniatum Murr. Rough Avens G5/S1/AH

(*L.F. Ward s.n.*, 1879, "Hunting Creek, Alexandria"; *L.F. Ward s.n.*, 15 Jun 1879, "Hunting Creek")

[If recognizing the two varieties of this species, Alexandria plants are *Geum laciniatum* Murr. var. *laciniatum*, with glabrous achenes.]

Geum virginianum L. Cream Avens BG (4875 Maury Lane), DK, W Rare Semi-open, mossy glade in *Quercus montana* grove atop terrace (BG); Acidic Oak-Hickory Forest along the west side of Shirley Highway (395) that was cleared in the late 2000s for construction of the BRAC Building (W); floodplain forest along Holmes Run (DK). *RHS 2264* A1

Malus coronaria (L.) P. Mill. Sweet Crabapple JMP, RW, ST (hist.), VTS Rare Dry to mesic upland forest edges. *RHS 2799* A1

Potentilla canadensis L. Dwarf Cinquefoil Frequent, occasionally locally abundant. Edges and openings of dry to mesic upland forest; open grassy areas. *RHS 2005* A4

Potentilla norvegica L. Rough Cinquefoil FMR, PY, WBP Rare Floodplain forest; tidal shores; wet open areas. *RHS 1775* A1

Potentilla simplex Michx. Common Cinquefoil Infrequent Moist open areas; low mesic woodland. *RHS 2734* A3

Prunus serotina Ehrhart ssp. *serotina* Black Cherry Common Upland forest edges; low mesic woodland; floodplain forest; dry to moist open areas; a characteristic and lasting tree on abandoned Civil War fort earthworks of the D.C. region. *RHS 2013* A5

(*G. Vasey s.n.*, 1877, "Alexandria"; *G.S. Miller, Jr. s.n.*, 9 Aug 1903, "near Alexandria")

Rosa carolina L. ssp. *carolina* Pasture Rose BW, HWS, LW, NOVA, PH, PY (hist.), RW, W, WBP Infrequent Acidic Oak-Hickory Forest; dry, gravelly banks and fields (PH, PY). *RHS 1491* A2

Rosa palustris Marsh. Swamp Rose HC Local Tidal shore. *RHS 1538* A1

Rubus allegheniensis Porter Allegheny Blackberry DK Local Woodland seep. *RHS 2588* A1

Rubus cuneifolius Pursh Sand Blackberry FW, PA, PH, SH Infrequent, occasionally locally abundant. Dry, sandy-gravelly open areas and old fields. *RHS 2178* A1

(*P. Dowell 6358*, 23 Jul 1910, "low ground, near RR; between St. Asaph and Nauck")

Rubus flagellaris Willd. Common Dewberry Frequent, occasionally locally abundant. Dry to mesic upland forest; floodplain forest; bottomland forest; dry to moist open areas. *RHS 2015* A4

Rubus hispidus L. Bristly Dewberry DK, R, WBP Rare, occasionally locally abundant. Woodland seeps. *RHS 2585* A1

Rubus occidentalis L. Black Raspberry Infrequent Mesic upland forest; floodplain forest; bottomland forest. *RHS 2538* A3

Rubus pensilvanicus Poir. Pennsylvania Blackberry Common, often locally abundant. Upland forest

edges; mesic forest; bottomland forest; dry to moist open areas. *RHS 2284* A4
[Incl. *Rubus argutus* Link]

Rubiaceae (Madder Family)

Cephalanthus occidentalis L. Buttonbush DI, DK, GWMP, HC, OHC, PG Infrequent Tidal shores (HC); old tidal channels (DI, GWMP, PG); impoundment wetland (DK), stream bank along the old channel of Holmes Run (OHC). *RHS 1727* A1
(*F.R. Fosberg 16692*, 27 Aug 1939, "Hunting Creek, Alexandria; edge of marshy creek")

Diodia teres Walt. Common Buttonweed Infrequent, often locally abundant. Dry, gravelly or sandy open areas; railroad tracks. *RHS 1456* A3
(Reported for "Lincolnia" on 31 Jul 1921 by Nellie C. Knappen; *F.R. Fosberg 16686*, 27 Aug 1939, "Hunting Creek Alexandria; edge of marshy creek, filled ground")

Diodia virginiana L. Virginia Buttonweed Infrequent, often locally abundant and covering broad areas. Low, damp to wet, meadowy open areas along the Potomac River shoreline from Daingerfield Island to Hooff's Run; damp, open grassy areas and upland clearings. *RHS 1388* A3

Galium aparine L. Cleavers Frequent, occasionally locally abundant. Low mesic woodland; floodplain forest; bottomland forest; weedy, disturbed open areas. *RHS 1979* A4

Galium asprellum Michx. Rough Bedstraw AH
(*L.F. Ward s.n.*, 3 Oct 1876, "Hunting Creek")

Galium circaezans Michx. Forest Bedstraw Frequent Dry to mesic upland forest. *RHS 2584* A4

Galium pilosum Ait. Hairy Bedstraw BG (4875 Maury Lane), PA Rare Oak-Heath Forest edges. *RHS 2929* A1

Galium tinctorium (L.) Scop. Three-lobed Bedstraw AH
(*G.H. Shull 213*, 12 Aug 1902, "associated with grasses in older part of a bog along Hunting Creek, Alexandria")

Galium triflorum Michx. Sweet-scented Bedstraw Frequent Mesic woodland; floodplain forest; moist open areas. *RHS 1788* A4

Houstonia caerulea L. Common Bluets Infrequent Edges and openings of dry to mesic upland forest; under oaks with *Danthonia spicata* in savannah-like settings. *RHS 1993* A3

Houstonia longifolia Gaertn. Longleaf Bluets W (hist.) Local Dry to mesic upland forest. *WBP pv* AH

Houstonia purpurea L. var. *purpurea* Summer Bluets Frequent Dry to mesic upland forest. *RHS 1490* A4

Mitchella repens L. Partridge-berry Infrequent, occasionally locally abundant. Mesic upland forest; woodland seeps; old successional *Pinus virginiana* forest. *RHS 2760* A3

Salicaceae (Willow Family)

Populus deltoides Bartram ex Marshall ssp. *deltoides* Eastern Cottonwood Frequent, occasionally locally abundant. Floodplain forest; low, moist to wet areas along streams and the Potomac River. *RHS 1093* A4

Populus grandidentata Michx. Bigtooth Aspen EV, W Rare Edges of dry to mesic upland forest; open disturbed or cleared areas; railroad tracks. *RHS 2847* A1

Salix caroliniana Michx. Carolina Willow C, CC, OB Rare Gravel bars (C); Potomac shoreline (CC, OB). *RHS 1518* A1
(*T. Bradley 5673*, 16 Jun 1973, "old field, marsh, and streambank; Clermont Dr. and Cameron Run")

Salix eriocephala Michx. Heart-leaved Willow AH
(*L.F. Ward s.n.*, 1881, "Alexandria"; *C.R. Ball 2594*, 30 May 1935, "Four Mile Run, between Mt. Vernon Ave. and Glebe Road; shrub 10 ft. high, in low ground")

Salix nigra Marsh. Black Willow Frequent, occasionally locally abundant. Gravel bars and mudflats; tidal shores; swamps; low, wet woodland; moist to wet open areas. *RHS 1987* A4
(*J.W. Chickering, Jr. s.n.*, 27 May 1874, "Alexandria"; *J.H. Painter 1245*, 3 May 1905, "edge of water, Hunting Creek"; *E.C. Leonard 375*, 13 May 1918, "Alexandria"; *E.C. Leonard 382*, 13 May 1918, "bank along river, Alexandria"; *C.R. Ball 2593*, 30 May 1935, "Four Mile Run, between Mt. Vernon Ave. and Glebe Road; tree with 2 trunks, 16 in. in diameter")

Salix sericea Marsh. Silky Willow AH
(*T. Bradley 18571*, 12 Sep 1982, "near the Wilkes St. Tunnel and Union St. in Alexandria")

Santalaceae (Sandalwood Family)

Comandra umbellata (L.) Nuttall var. *umbellata* Eastern Bastard Toadflax WBP Local Oak-Heath Forest. *JMP s.n.* A1

Phoradendron leucarpum (Raf.) Reveal & M.C. Johnston ssp. *leucarpum* American Mistletoe Local Growing on the lower trunk of *Gleditsia triacanthos* along the south side of the 800 block of Queen Street. *RHS 2882* A1
(*J.W. Chickering, Jr. s.n.*, 6 Apr 1874, "Alexandria")

Sapindaceae (Soapberry Family)

Acer negundo L. var. *negundo* Boxelder Frequent, occasionally locally abundant. Floodplain forest; low stream banks; swamp forest. *RHS 1936* A4

Acer rubrum L. Red Maple Common Dry to mesic upland forest; woodland seeps; floodplain forest; bottomland forest; swamps. *RHS 1906* A5

Acer saccharinum L. Silver Maple Infrequent, occasionally locally abundant. Floodplain forest; swamp forest. *RHS 2000* A4

Saururaceae (Lizard's-tail Family)

Saururus cernuus L. Lizard's-tail CSF, DI, FMR, OCC Rare, often locally abundant. Forested swamps. *RHS 1494* A2
(*I. Tidestrom 336*, 2 Sep 1904, "growing in marsh, Hunting Creek")

Saxifragaceae (Saxifrage Family)

Micranthes virginiensis (Michx.) Small Early Saxifrage DK Local Rock outcrops and banks along Holmes Run. *RHS 1997* A1

[= *Saxifraga virginiensis* Michx.]

Scrophulariaceae (Snapdragon Family)

Scrophularia marilandica L. Eastern Figwort CR, CSF Rare Rich bottomland forest along old Cameron Run channel (CR); bottomland forest (CSF). *RHS 1892* A1

Solanaceae (Nightshade Family)

Physalis longifolia Nutt. var. *subglabrata* (Mackenzie & Bush) Cronq. Longleaf Ground-cherry Infrequent Moist open areas. *RHS 2304* A3

Physalis pubescens L. Downy Ground-cherry GHP Local Exposed sandy soil of steep, southwest-facing edge of the Mount Ida escarpment. *RHS 3734* A1
(*L.F. Ward s.n.*, 28 Oct 1877, "near Hunting Creek")

Physalis virginiana P. Mill. Virginia Ground-cherry NOVA, W Rare Edges and openings of Acidic Oak-Hickory Forest. *RHS 2376* A1

Solanum carolinense L. var. *carolinense* Horse-nettle Frequent Dry to moist open areas. *RHS 2552* A4

Solanum ptychanthum Dunal Eastern Black Nightshade Frequent Dry to moist open areas; railroad tracks. *RHS 1701* A4

Staphyleaceae (Bladdernut Family)

Staphylea trifolia L. Bladdernut CR, DI, TP Rare Rich bottomland forest along old Cameron Run channel (CR); Potomac River shoreline (DI); rich bottomland forest remnant along Holmes Run (TP). *RHS 1498* A1

Ulmaceae (Elm Family)

Ulmus americana L. American Elm Frequent Low mesic woodland and stream banks; floodplain forest; bottomland forest; forested swamps; moist open areas along the Potomac River. *RHS 2303* A4

Ulmus rubra Muhl. Slippery Elm Infrequent Low mesic woodland; dry to moist open areas. *RHS 1855* A3

Urticaceae (Nettle Family)

Boehmeria cylindrica (L.) Sw. False Nettle Frequent Floodplain forest; bottomland forest; swamps; Tidal Freshwater Marsh and shores. *RHS 2323* A4

Laportea canadensis (L.) Weddell Wood Nettle DI, JP Rare Freshwater Tidal Hardwood Swamp. *RHS 2320* A1

Parietaria pensylvanica Muhl. ex Willd. Rock Pellitory Infrequent Masonry of Old Town; WST *RHS 1366* A2
(*T. Bradley 5669*, 16 Jun 1973, "dry field near Las Vegas St. and Cameron Run, Alexandria")

Pilea fontana (Lunell) Rydb. Lesser Clearweed FMR, OB Rare (probably more widespread along the Potomac River). Tidal Freshwater Marsh and shores. *RHS 2385* A1

Pilea pumila (L.) Gray Clearweed Frequent Tidal Freshwater Marsh and shores; swamps; moist to wet open areas. *RHS 1463* A4

Verbenaceae (Verbena Family)

Phyla lanceolata (Michx.) Greene Frogfruit DI Local Wet ditch at edge of historic Tidal Freshwater Marsh community. *RHS 3952* A1
(*G.H. Shull 195*, 11 Aug 1902, "in moist ground along Hunting Creek, ¼ mi. SSW of Alexandria")

Verbena hastata L. Blue Vervain C, JP Rare Tidal shores; gravel bars and mudflats. *RHS 1512* A1

Verbena simplex Lehm. Narrow-leaf Vervain AH
(*D. LeRoy Topping s.n.*, 20 Jun 1897, "near Alexandria")

Verbena urticifolia L. White Vervain Frequent Dry to moist open areas; railroad tracks. *RHS 1783* A4
(Reported for "Alexandria" on 31 Jul c. 1921 by Nellie C. Knappen)

Violaceae (Violet Family)

Viola affinis Le Conte Le Conte's Violet R, Shuter's Hill, WBP Rare, occasionally locally abundant. Damp, open swales (Shuter's Hill); low mesic woodland (R); confluence of woodland seep and floodplain (WBP). *RHS 4082* AU
(*E.C. Leonard 1893*, 9 Apr 1922, "Cameron Run, common and abundant")
["McKinney (1992) considers this species to be a variety of *V. sororia* restricted to the far north and western U.S. He considers our plants to be referable to *V. sororia* var. *missouriensis*. As interpreted here, the name is applied to wetland plants, generally glabrescent and having leaves longer than wide. For the time being, we follow the long held traditional view found in most current manuals." (VBA 2015)]

Viola bicolor Pursh Field Pansy Frequent, occasionally locally abundant. Dry to moist, open grassy areas. *RHS 1945* A3
(*E.C. Leonard 1895*, 9 Apr 1922, "abundant in meadows, Cameron Run")

Viola cucullata Ait. Marsh Blue Violet DK, R, WBP Rare Woodland seeps. *RHS 1995* A1
["Though belonging to a confusing array of stemless blue violets, the Marsh Blue Violet may be reliably recognized by several diagnostic characters: paler blue flowers normally elevated well above the leaves, narrowly acute sepals, dark-pigmented inclusions in the foliage and sepals, and a mass of fine-textured roots in addition to the few coarser ones. This last feature helps greatly to separate it from *V. affinis*, though, as far as we know, it has not been noted in previous works." (VBA 2015)]

Viola hirsutula Brainerd Southern Wood Violet WBP Local Acidic Oak-Hickory Forest. *RHS 3369* A1

Viola lanceolata L. var. *lanceolata* Lance-leaved Violet AH
(*G.S. Miller, Jr. s.n.*, 20 May 1901, "near Alexandria"; reported for "Alexandria Reservoir" on 15 Sep c. 1921 by Nellie C. Knappen)

Viola palmata L. var. *dilatata* Elliott Cleft Violet EW Local Oak-Heath Forest near the seepage headwaters of Taylor Run. *RHS 2797* A1
(*G.S. Miller s.n.*, 20 May 1901, "near Alexandria"; *P. Dowell 6365*, 23 Jul 1910, "woods between St. Asaph and Nauck")
["Var. *dilatata* is distinguished by consistently having more deeply cut leaves and will be found in the more eastern counties." (VBA 2015). Regarding the above G.S. Miller specimen, Ezra Brainerd in 1917 determined it to be "*V. stoneana* x *V. triloba*: a reversion to leaf patterns of *V. stoneana* to pubescence and uncut primary leaf of *V. triloba*."]

Viola palmata L. var. *palmata* Wood Violet WBP Local Banks of small seepage stream originally emanating from the east side of Shirley Highway ("395 Stream"). *JMP s.n.* A1
(*C.L. Pollard s.n.*, 15 May 1897, "Alexandria"; *W. Palmer s.n.*, 2 Jun 1901, "Lincolnia, low woods"; *H.D. House 659*, 3 May 1905, Hunting Creek, Alexandria")
[Incl. *V. stoneana* House and *V. triloba* Schwein; "Many recent authors consider this taxon to be of hybrid origin...As treated here, *Viola palmata* is a somewhat polymorphic species with wide variability in leaf lobing and other characters…More systematic and range-wide study of this complex is certainly warranted." (VBA 2015)]

Viola primulifolia L. Primrose-leaved Violet BB, DK, R, WBP Rare Damp, sphagnous edges of Fall Line Magnolia Bog remnant (BB); woodland seeps. *RHS 1989* A1

Viola pubescens Ait. var. *scabriuscula* Schwein. ex Torr. & Gray Smooth Yellow Violet AH
(*E.C. Leonard 1894*, 9 Apr 1922, "occasional in rich floodplain woods, Cameron Run")

Viola sagittata Ait. Arrow-leaved Violet WBP, 3800 Seminary Road Rare Dry to mesic upland forest; dry oak savannah in front of the residence at 3800 Seminary Road. *RHS 4107* A1
(*C.L. Pollard s.n.*, 15 May 1897, "Alexandria"; *G.S. Miller s.n.*, 30 Apr 1901, "near Alexandria"; *G.S. Miller s.n.*, 2 May 1901, "near Alexandria"; *H.D. House 661*, 31 May 1905, "Hunting Creek, Alexandria")

Viola sororia Willd. Common Blue Violet Common, often locally abundant. Low mesic woodland; forested stream banks; floodplain forest; moist open areas. *RHS 1941* A4
(*P.C. Standley 11531*, 19 May 1915, "edge of marsh near Alexandria Light")
[Incl. *V. papilionacea* Pursh and *V. septentrionalis* Greene; "*Viola sororia* apparently hybridizes with several other species to produce a confusing array of morphologies. As used here, the name is restricted to homophyllus plants with moderately pubescent, wide leaves. A form bearing whitish flowers with central blue lines has been called the 'Confederate Violet' and often grows intermixed with the typical blue-flowered form." (VBA 2015)]

Viola striata Ait. Striped Violet WBP (hist.) Local Floodplain forest along Winkler Run that was destroyed in the early 1990s for construction of a stormwater retention pond. *WBP pv* AH

Vitaceae (Grape Family)

Parthenocissus quinquefolia (L.) Planch. Virginia-creeper Common, often locally abundant. Dry to mesic upland forest; low mesic woodland; bottomland forest; dry to moist open areas. A5
(*P.C. Standley 5894*, 17 Sep 1910, "thickets near St. Elmo")

Vitis aestivalis Michx. var. *aestivalis* Summer Grape Frequent Dry to mesic upland forest. *RHS 1770* A4

Vitis aestivalis Michx. var. *bicolor* Deam Silverleaf Grape FH, KC, M, PC, SS&SA-LC Infrequent,

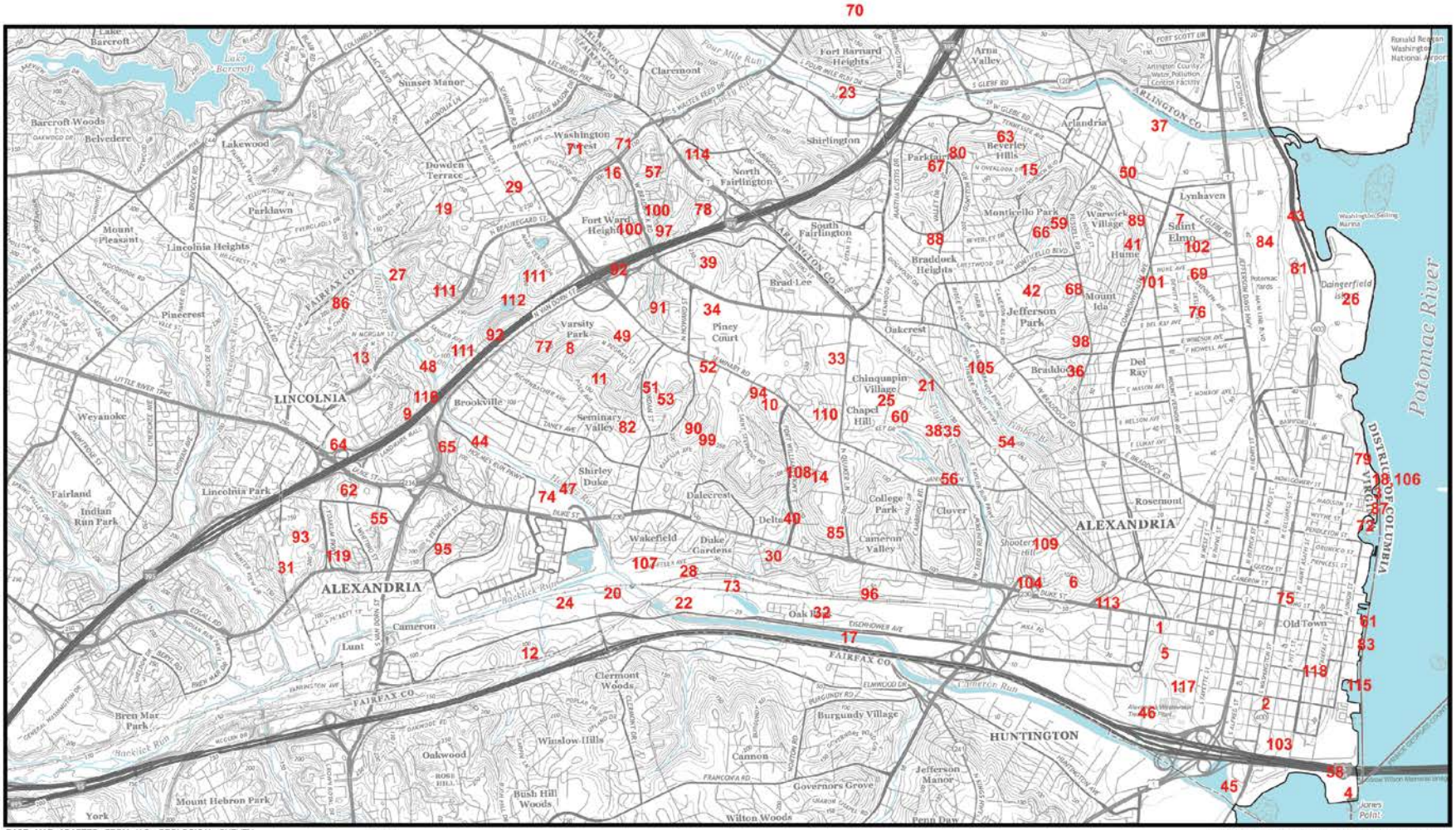
occasionally covering large areas. Dry to mesic upland forest. *RHS 2320* A1
[= *V. aestivalis* Michx. var. *argentifolia* (Munson) Fern.]

Vitis cinerea (Engelm.) Engelm. ex Millardet var. *floridana* Munson Florida Grape Frequent Low, damp thickets; swamps; old tidal channel along the parkway opposite Daingerfield Island; open edges of mesic woodland. *RHS 2339* A3
[This species occurs mostly east of N. Quaker Lane in Alexandria.]

Vitis labrusca L. Fox Grape BB (outflow at 1335 N. Pegram Street); CP, DK, KD, Taylor Run Park Rare Woodland seeps; swamps, stream banks. *RHS 1818* A1

Vitis vulpina L. Winter Grape Common Low mesic woodland; Basic Mesic Forest; floodplain forest; bottomland forest; dry to moist open areas. *RHS 2336* A5

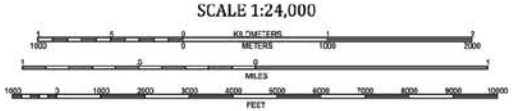
Plate 1



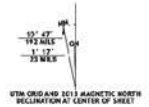
BASE MAP ADAPTED FROM U.S. GEOLOGICAL SURVEY NATIONAL MAP, 2013: TOPOGRAPHIC MAPS OF THE ALEXANDRIA, VA-DC-MD AND ANNANDALE, VA 7.5-MINUTE QUADRANGLES, NAD 1983. CARTOGRAPHY BY A.H. FLEMING

MAP LOCATION

SCALE 1:24,000



CONTOUR INTERVAL 10 FEET
NORTH AMERICAN VERTICAL DATUM OF 1988



UTM GRID AND 2013 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

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MAP OF PLACE NAMES AND REMNANT NATURAL COMMUNITIES IN THE CITY OF ALEXANDRIA, VIRGINIA, AND VICINITY

By R.H. Simmons, 2016
Natural Resources Division
Department of Recreation, Parks & Cultural Activities