

Additions to the Vascular Flora of the George Washington Memorial Parkway, Virginia, Maryland, and the District of Columbia

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ABSTRACT

A total of 298 taxa new to the vascular flora of the George Washington Memorial Parkway (GWMP), in Virginia, Maryland, and the District of Columbia, are documented. Additionally, 13 taxa previously known only from historical specimens are documented as still extant within GWMP. These records bring the known flora of the GWMP to 1313 taxa. Of these, 79 are known only from historical specimens. Seventeen adventive taxa may represent the first records for the Commonwealth of Virginia, and one is a first record for the District of Columbia. A total of 21 additional taxa are first records for Fairfax County and six are new records for Arlington County. Fifteen of the newly documented taxa are listed as rare within the Commonwealth, bringing the total to 37 state-rare plants found within GWMP. Taxa non-native to the District of Columbia and vicinity comprise 28.6% of the flora.

Key words: Arlington County, biodiversity, District of Columbia, Fairfax County, flora, George Washington Memorial Parkway, Maryland, Montgomery County, National Park, vascular plants, Virginia.

INTRODUCTION

The only published floras for National Park Service sites found within the George Washington Memorial Parkway (GWMP) are from the 323 ha Great Falls Park (Grimshaw & Bradley, 1973; Steury et al., 2008). The purpose of this study was to inventory all of the remaining GWMP sites comprising approximately 1659 ha and to document with a voucher specimen any species not found in Great Falls Park, thus assessing the totality of the vascular flora of the GWMP.

In addition to substantial natural areas, the GWMP contains numerous historic sites, memorials, and roadsides where non-native ornamental plant species have been introduced. Some of the Parkway's most invasive non-native plants, such as porcelainberry (*Ampelopsis brevipedunculata* (Maxim.) Trautv.), English ivy (*Hedera helix* L.), Japanese honeysuckle (*Lonicera japonica* Thunb.), amur honeysuckle (*Lonicera maackii* (Rupr.) Herder), and linden viburnum (*Viburnum dilatatum* Thunb.), were included on historical planting plans for the Parkway developed by Wilbur Simonson in 1932. These species and others have spread into nearby natural areas, including Great

Falls Park, while other non-native species included on historical planting plans for GWMP have apparently remained benign. In addition to naturally established vegetation, this inventory attempted to include all woody species planted within the GWMP and to assess which species are spreading into the surrounding environment. The only exceptions included the formal gardens at Arlington House, the community gardens at Jones Point Park, flower gardens at Glen Echo Park, and the Rhododendron cultivars planted in the Lyndon Baines Johnson Memorial Grove and Lady Bird Johnson Park on Columbia Island.

STUDY SITES

The GWMP administers approximately 1982 ha under National Park Service jurisdiction in Fairfax and Arlington counties and the City of Alexandria, Virginia, Montgomery County, Maryland, and the District of Columbia (Fig. 1). The GWMP includes many sites extending from the intersection with Interstate Route 495, to its terminus at Mt. Vernon. Disjunct sites occur at Great Falls Park in Fairfax County, Virginia and the Clara Barton Parkway in Montgomery County,

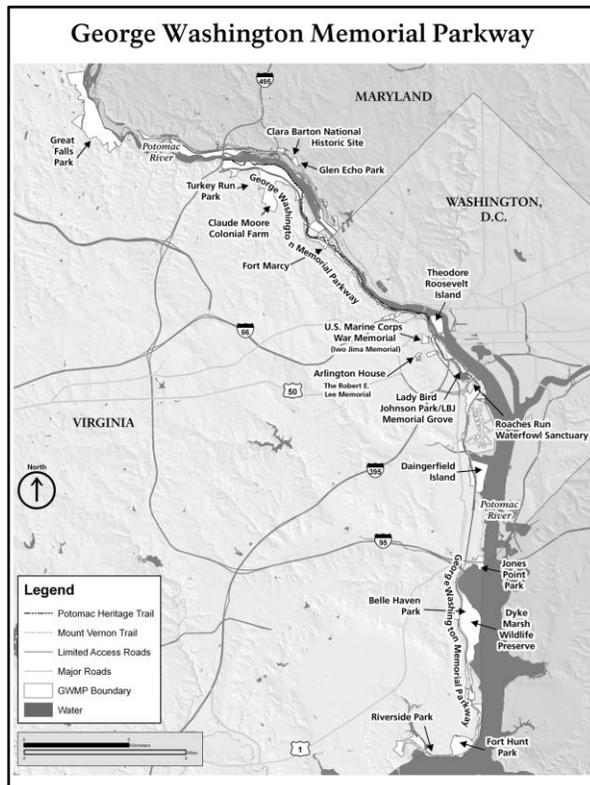


Fig. 1. The study site, George Washington Memorial Parkway, a unit of the National Park Service, including the Clara Barton Parkway and historical sites, monuments, and natural areas.

Maryland. Significant natural areas are found at Great Falls Park (323 ha), Turkey Run Park and Claude Moore Farm (297 ha), along the Potomac Heritage Trail within the Potomac River Gorge south of Turkey Run Park (220 ha), on Theodore Roosevelt Island (40.5 ha), in the woodlots at Arlington House and the U.S. Marine Corps War Memorial (Iwo Jima Memorial, 7.8 ha), at Roaches Run Waterfowl Sanctuary (38 ha, including 22 ha of open water), on Daingerfield Island (35.5 ha), at Dyke Marsh (234.5 ha), at Fort Hunt Park (41 ha), and along the southern portions of the Mount Vernon Trail and Little Hunting Creek (57 ha). These areas fall within the region broadly classified as oak-hickory-pine forest by Skeen et al. (1993), but are strongly dominated by deciduous woodland within the park. The Dyke Marsh site contains a 131 ha tidal marsh and swamp. Although all of these sites also have maintained landscapes and yards, these are most common along the northern portions of the Mount Vernon Trail, at the Lyndon Baines Johnson (LBJ) Memorial Grove on the Potomac and Lady Bird Johnson Park, at Arlington House, and at the Clara Barton National Historic Site and Glen Echo Park. All sites occur within the

Piedmont and Coastal Plain physiographic provinces.

Construction on the southern half of the GWMP (originally called the Mount Vernon Memorial Highway), which ran from Memorial Circle to Mt. Vernon, began in 1928 and was finished by 1932. The Capper-Crampton Act of 1930 authorized integrating the Mount Vernon Memorial Highway into a more extensive parkway system to be called the George Washington Memorial Parkway, which was completed in 1962. The same legislation authorized the Clara Barton Parkway in Maryland, which was completed by 1970.

MATERIALS AND METHODS

Occasional collections were made for this study between 2003 and 2006, with the bulk of the collecting taking place sporadically from 2007 through 2010 after the field work for the flora of Great Falls Park was completed (Steury et al., 2008). A voucher specimen was deposited in the GWMP Herbarium at Turkey Run Park Headquarters in McLean, Virginia for each new vascular plant taxon found. To document historical occurrences from the GWMP, computerized searches of records from the District of Columbia and Vicinity collection, in the United States National Herbarium, Smithsonian Institution (US), were made on terms such as “Theodore Roosevelt Island, Dyke Marsh, and Turkey Run”. A few specimens not otherwise documented during this survey were located at the herbarium at George Mason University (GMUF).

RESULTS AND DISCUSSION

Taxonomic Summary

A total of 298 taxa, (283 species, four infraspecific taxa, and 11 hybrids), 114 genera, and 14 families were added to the vascular flora of the GWMP. Thirteen additional taxa, previously listed as historical in Great Falls Park (Steury et al., 2008) are documented as still extant within GWMP. These records bring the current total vascular flora of GWMP to 1313 taxa, representing 1284 species, 11 infraspecific taxa, and 18 hybrids from 607 genera in 153 families. Plants are comprised of 44 pteridophytes, 138 trees (16 coniferous, 122 deciduous), 148 shrubs and low suffrutescent taxa, 25 woody vines, and 958 herbaceous taxa (40 vines, 19 submerged or floating aquatic species, 119 grasses, 115 sedges, 13 rushes, and 652 forbs). These include 62 woody species that have been planted in landscapes along the GWMP which were not found naturally occurring elsewhere within GWMP. Of these 62, 14 are native to the Washington-Baltimore

area as defined by Shetler & Orli (2000, 2002), but not native to GWMP based on historical voucher evidence, and 48 are non-native species. Of the 62 planted species, 12 (19.4%) (*Aesculus flava*, *Castanea mollissima*, *Cladrastris kentukea*, *Crataegus mollis*, *Hovenia dulcis*, *Koelreuteria paniculata*, *Lonicera fragrantissima*, *Pyrus pyrifolia*, *Rhamnus cathartica*, *Sophora japonica*, *Ulmus parviflora*, and *Viburnum plicatum*) demonstrated evidence of escaping to other areas along the GWMP. Families having the greatest species richness are Asteraceae (135), Poaceae (119), Cyperaceae (115), Fabaceae (64), Rosaceae (64), Lamiaceae (38), and Scrophulariaceae (32). Of these, 79 are known only from historical specimens. Non-native taxa, following Shetler & Orli (2000, 2002), comprise 28.6% (375 taxa) of the vascular flora of GWMP.

State and County Records

Based on published records (Kartesz, 1999; Virginia Botanical Associates, 2010), at the time of the collections, 17 adventive, naturally established, taxa found during this study may represent the first records for the Commonwealth of Virginia: *Alnus glutinosa*, *Castanea mollissima*, *Cladrastis kentukea*, *Crataegus monogyna*, *Crocus vernus*, *Hovenia dulcis*, *Ilex aquifolium*, *Kalopanax septemlobus*, *Liriope muscari*, *Liriope spicatum*, *Malus baccata*, *Malus floribunda*, *Malus sieboldii*, *Skimmia japonica*, *Viburnum lantana*, *Viburnum sieboldii*, and *Vigna radiata*. The records of *Arum italicum*, *Claytonia rubra*, and *Sagina procumbens* are recent additions to the flora of the Commonwealth (Simmons et al., 2008; Steury, 2010). Twenty-one additional collections were first records for Fairfax County: *Acer palmatum*, *Aesculus flava*, *Aphanes microcarpa*, *Carex molesta*, *Crataegus mollis*, *Epipactis helleborine*, *Frangula caroliniana*, *Lonicera fragrantissima*, *Myosotis discolor*, *Nandina domestica*, *Oplismenus hirtellus* ssp. *undulatifolius*, *Pennisetum alopecuroides*, *Poncirus trifolia*, *Ranunculus parviflorus*, *Sherardia arvensis*, *Sophora japonica*, *Thlaspi alliaceum*, *Trillium luteum*, *Viburnum plicatum*, *Viburnum x rhytidophylloides*, and *Wisteria frutescens* (Virginia Botanical Associates, 2010). The City of Alexandria is included with Fairfax County for the purposes of the Digital Atlas of Virginia Flora (Virginia Botanical Associates, 2010). The records of *Ginkgo biloba*, *Gratiola virginiana*, *Philadelphus coronarius*, *Prunus virginiana*, *Rhamnus cathartica*, and *Urtica dioica* ssp. *gracilis* are the first for Arlington County (Harvill et al., 1992; Virginia Botanical Associates, 2010). The collection of *Pachysandra procumbens* is the first record for the District of Columbia (Kartesz,

1999; Shetler & Orli, 2000). Fifteen of the taxa reported here are listed as rare in Virginia (Townsend, 2009): *Arabis patens*, *Carex decomposita* (historical), *Carex lacustris* (historical), *Carex pallescens* (historical), *Crataegus mollis*, *Desmodium canadense* (historical), *Geum laciniatum*, *Matteuccia struthiopteris*, *Phacelia covillei*, *Plantago cordata* (historical), *Quercus hemisphaerica*, *Schoenoplectus fluviatilis*, *Sida hermaphrodita*, *Symphytotrichum shortii*, and *Viburnum lentago*. These additional records of state-rare plants increase the total known from GWMP to 37 species.

An unusual, possibly hybridized, *Quercus* of the section Lobatae was collected (*Steury 080917.1*) on Columbia Island along the shore of the Potomac River opposite the southern end of Theodore Roosevelt Island. The longest leaves measured 29.5 cm x 2.5 cm and often possess a single lobe below the middle of the leaf (Fig. 2). Three young trees with similar leaf forms occur over a distance of 15 m on a low, wet, tidal shore. The largest tree is 7 m tall and 8 cm DBH. The specimen was examined by Alan Whittemore at the National Arboretum, who suggested that the peculiar leaf shape is possibly due to a mutation causing overproduction or oversensitivity to one of the plant's hormones. The species of this peculiar form is difficult to determine because its morphology is so disturbed, but it may include *Quercus phellos* or the *Q. laurifolia* unintentionally planted in a row of *Q. phellos* at the nearby Iwo Jima Memorial.



Fig. 2 *Quercus* sp. (section Lobatae), collected on Columbia Island, District of Columbia, along the shore of the Potomac River, 17 September 2008.

LIST OF SPECIES

Families, genera, and species are arranged alphabetically within major taxonomic groups. Nomenclature follows Kartesz (1999) with the exceptions of *Stachys hispida* which follows Gleason & Cronquist (1991) and Weakley (2008), *Atriplex dioica* follows Welsh (2003), *Chimonanthus praecox* follows Li & Barthotomew (2008), and *Skimmia japonica* which follows Ohwi (1965). Taxa not native to the Washington–Baltimore area are marked with an asterisk. Nativity follows Shetler & Orli (2000, 2002). Taxa not marked with an asterisk, but described as “planted” in the list of species, should be considered non-native to the GWMP. Taxa last collected prior to 1969 are noted as “historical” and their most recent year of collection from the Parkway is cited. Taxa listed as rare in Virginia are marked with a double asterisk. Collection numbers are given when known. Collection numbers of the author correspond to the date of the collection (e.g., 070823.4 is the fourth specimen collected on 23 August 2007). The name of the collector and date of the collection are cited when the collection was made by someone other than the author. The county, location, and habitat of the taxon, and information on species abundance, are listed when known. Specimens are deposited in the GWMP Herbarium at Turkey Run Park Headquarters in McLean, Virginia unless noted otherwise after the collection number.

PTERIDOPHYTES

DRYOPTERIDACEAE

Diplazium pycnocarpon (Spreng.) Broun–070823.4, Fairfax County, Turkey Run Park, Potomac River floodplain, rare in a few small patches north of Turkey Run.

Dryopteris goldiana (Hook. ex Goldie) Gray–15422 G.P. Fleming, 16 August 2006, Fairfax County, Turkey Run Park, rich wooded bouldery slope above Potomac River floodplain between Turkey Run and Dead Run, about 12 plants.

***Matteuccia struthiopteris* (L.) Todaro–070823.3, Fairfax County, Turkey Run Park, Potomac River floodplain, thousands of plants in patches along the entire length of the park.

OPHIOGLOSSACEAE

Ophioglossum vulgatum L.–090429.3, Fairfax County, edge of swampy drainage along southbound GWMP north of Little Hunting Creek, 16 plants in one patch.

This species was reported as historical in Great Falls Park.

PTERIDACEAE

Pellaea atropurpurea (L.) Link–s.n. W. Palmer (US), 6 July 1877, District of Columbia, Theodore Roosevelt Island (historically known as Analostan Island), causeway, historical.

GYMNOSPERMS

CUPRESSACEAE

**Cryptomeria japonica* (L.f.) D. Don.–090413.1, Arlington County, planted in median area west of parking lot at Arlington House.

**Platycladus orientalis* (L.) Franco–090413.4, Arlington County, planted in median area west of parking lot at Arlington House.

Taxodium distichum (L.) L.C. Rich.–080423.2, District of Columbia, Theodore Roosevelt Island, undoubtedly planted; also planted in Arlington County at the north end of Roaches Run Waterfowl Sanctuary.

Thuja occidentalis L.–080312.4, Fairfax County, southbound GWMP opposite Ft. Marcy, persisting at old home site. Also observed as plantings along the Mt. Vernon trail south of Daingerfield Island and on the east side of Arlington House.

GINKGOACEAE

**Ginkgo biloba* L.–090423.2, Arlington County, escaped in woods north of Arlington House, two young trees.

PINACEAE

**Cedrus deodara* (Roxb. Ex D. Don) G. Don f.–080327.1, City of Alexandria, planted on Daingerfield Island; also planted behind Arlington House.

**Picea abies* (L.) Karst–080312.6, Fairfax County, old home site along southbound GWMP opposite Ft. Marcy, one tree.

Pinus pungens Lamb.–080310.1, Fairfax County, Turkey Run Park, near crest of slope above eastern bank of Dead Run, three trees, the two largest measured 32.5 cm and 41.2 cm DBH.

Pinus rigida P. Mill.–100126.1, Arlington County, near Fairfax County line, bank crest of Pimmit Run on south side of GWMP, one tree.

Pinus taeda L.–080324.3, City of Alexandria, planted along GWMP just south of Four Mile Run, fruiting. There are no naturally occurring stands of this species known from GWMP.

TAXACEAE

**Taxus baccata* L.–080312.5, Fairfax County, southbound GWMP opposite Ft. Marcy, persisting at old home site.

DICOTYLEDONS

ACERACEAE

**Acer campestre* L.–090729.1, planted or possibly escaped between southern terminus Mt. Vernon Trail and GWMP, three small trees.

**Acer griseum* (Franchet) Pax–090428.3, Arlington County, planted in median area west of parking lot at Arlington House.

**Acer palmatum* Thumb.–080407.2, Fairfax County, Turkey Run Park, roadside, one large tree. This is an uncommon, but well established, introduced species in most woodlands along the GWMP.

AMARANTHACEAE

**Alternanthera philoxeroides*–100909.1, Fairfax County, Dyke Marsh, edge of tidal marsh along Potomac River.

Amaranthus albus L.–080610.9, District of Columbia, Humpback Bridge, crack in cement curbing.

**Amaranthus blitum* L.–070904.7, District of Columbia, Columbia Island, in bare soil in turf grass area at south end of island.

Amaranthus cannabinus (L.) Sauer–070829.15, District of Columbia, Columbia Island, Boundary Channel, in water at edge of channel. Common in most GWMP coastal plain wetlands.

Amaranthus retroflexus L.–1250 P. Fleming (US), 11 August 1989, District of Columbia, Columbia Island.

ANACARDIACEAE

Rhus glabra L.–070829.32, Fairfax County, Dyke Marsh, common along Haul Road.

APIACEAE

Eryngium aquaticum L.–s.n. L.F. Ward (US), 19 August 1877, Arlington County, Roaches Run, historical.

Oxypolis rigidior (L.) Raf.–090429.4, Fairfax County, hummock in swampy drainage along southbound GWMP north of Little Hunting Creek, one patch of 11 plants. This plant is also fairly common in the swamp forest of Dyke Marsh.

Sanicula trifoliata Bickn.–080624.3, Fairfax County, Turkey Run Park, rich deciduous floodplain woods along Potomac Heritage Trail below parking area C-1, 11 plants along 50 m of trail side.

APOCYNACEAE

**Vinca major* L.–080407.8, Fairfax County, Dyke Marsh, along entrance road to Belle Haven Marina, one small patch.

**Vinca minor* L. ‘Elizabeth Cran’–090413.8, Arlington County, this is the dark purple double flowered cultivar of *V. minor* that is invasive in woodlands north of Arlington House.

AQUIFOLIACEAE

**Ilex x altaclerensis* (Loud.) Dallim.–080327.18, City of Alexandria, Daingerfield Island, apparently planted, persisting in wooded areas that were once a tree nursery.

**Ilex aquifolium* L.–090625.1, Fairfax County, escaped along Potomac Heritage Trail north of Ft. Marcy, one tree 3 m tall.

**Ilex x attenuata* Ashe–080327.20, City of Alexandria, Daingerfield Island, apparently planted, persisting in wooded areas that were once a tree nursery.

* *Ilex cornuta* Lindl. & Paxton–080327.19, City of Alexandria, Daingerfield Island, apparently planted, persisting in wooded areas that were once a tree nursery.

**Ilex crenata* Thunb.–080519.23, Fairfax County, edge of swamp along Mt. Vernon Trail opposite Cigarette Turnaround. This shrub is a common roadside escape along the GWMP especially between the Rt. 123 exits and Dyke Marsh.

**Ilex x koehneana* Loesner–080327.17, City of Alexandria, Daingerfield Island, apparently planted, persisting in wooded areas that were once a tree nursery.

ARALIACEAE

**Kalopanax septemlobus* (Thunb. ex A. Murr.) Koidz–100422.1, Fairfax County, beech woods along

Little Hunting Creek, 0.5 km north of Mt. Vernon, one young tree.

Panax quinquefolius L.–080626.5, Fairfax County, Turkey Run Park, rich deciduous woods on east-facing bank slope above Turkey Run, rare but widespread, often occurring as single plants.

Panax trifolius L.–070414.1, Fairfax County, Turkey Run Park, rich deciduous floodplain woods along Potomac Heritage Trail, uncommon.

ASTERACEAE

Baccharis halimifolia L.–060920.1, Fairfax County, Jones Point Park, edge of marsh near mouth of Hunting Creek, five shrubs.

Bidens laevis (L.) B.S.P.–070926.8, Fairfax County, Dyke Marsh, abundant throughout.

**Cardus nutans* L. ssp. *macrolepis* (Petern.) Kazmi–080603.3, Arlington County, GWMP southbound roadside at Roaches Run, hundreds of plants.

**Centaurea calcitrapa* L.–253 G.H. Shull (US), 23 August 1902, City of Alexandria, Jones Point Park, near lighthouse, historical.

**Chondrilla juncea* L.–080724.1, Arlington County, bank of Roaches Run Waterfowl Sanctuary, rare.

Cirsium altissimum (L.) Spreng.–s.n. L.F. Ward (US), 22 July 1876, above Aqueduct Bridge (present-day Key Bridge), historical.

**Cirsium arvense* (L.) Scop.–070829.3, Arlington County, along Potomac Heritage Trail near Spout Run. This species was also found in Great Falls Park in July 2009.

Coreopsis tinctoria Nutt.–070926.4, District of Columbia, Columbia Island, crest of Potomac River, a few plants growing from large *Ampelopsis brevipedunculata* vine tangle.

Eupatorium sessilifolium L.–100506.1 J.M. Parrish & B.W. Steury, Arlington County, Potomac River bluff at mouth of Gulf Branch, four small clumps.

Euthamia graminifolia (L.) Green–081112.2, Fairfax County, under powerline near Claude Moore Farm, fairly common at this site.

Helianthus tuberosus L.–070924.2, Fairfax County, Belle Haven, Potomac River shore, at least one hundred plants; also observed along Potomac River shore in Turkey Run Park.

Hieracium paniculatum L.–100715.2 with J. Parrish, Arlington County, southern side of the mouth of Gulf Branch, at least 20 plants.

**Hypochaeris radicata* L.–080519.22, Fairfax County, along edge of Mt. Vernon Trail / GWMP roadside near Hog Gut in Dyke Marsh, rare.

**Lactuca saligna* L.–317 R. Kanal (US), 10 September 1988, District of Columbia, Columbia Island.

**Lactuca serriola* L.–070829.12, Arlington County, along Potomac Heritage Trail north of Theodore Roosevelt Island, a common weed.

Pluchea odorata (L.) Cass.–100826.1 with I. Steury, Fairfax County, Potomac River gravel shore just south of Collingwood exit, two plants.

Polymnia canadensis L.–080729.1, Fairfax County, Potomac River floodplain along Potomac Heritage Trail south of Wisteria Run, three patches with a total of approximately 40 plants, also observed along Dead Run.

Prenanthes altissima L.–6094 G. Fleming and B. Fleming (GMUF), 20 September 1991, Fairfax County, Turkey Run Park, moist rich wooded bluff above Potomac River.

Symphyotrichum puniceum (L.) A.&D. Löve–080918.2, City of Alexandria, Daingerfield Island, edge of swamp along boardwalk, at least 12 flowering stems.

Symphyotrichum subulatum (Michx.) Nesom–s.n. S.G. Shetler (US), 12 October 1979, Fairfax County, Dyke Marsh.

***Symphyotrichum shortii* (Lindl.) Nesom–s.n. E.S. Burgess (US), 2 October 1888, Violets Rock at Spout Run (this species is still extant in this general vicinity but not recently collected).

**Youngia japonica* (L.) DC.–080603.1, District of Columbia, Columbia Island, under white pine stand on north end of island. This species was also observed in Great Falls and Turkey Run Parks, Fairfax County.

BERBERIDACEAE

**Berberis julianiae* Schneid.-090505.3, Arlington County, planted in hedge rows on west side of Arlington House near bus stop.

Caulophyllum thalictroides (L.) Michx.-080415.1, Fairfax County, Turkey Run Park, rich deciduous floodplain woods, especially common near Dead Run.

**Mahonia aquifolium* (Pursh) Nutt.-080401.1, Fairfax County, Turkey Run Park, planted near park police substation.

**Mahonia bealei* (Fortune) Carr.-070829.23, Fairfax County, edge of woodland near southern terminus of Mount Vernon Trail. This species is also well established along the Potomac Heritage Trail between the 123 exits and Fort Marcy.

**Nandina domestica* Thunb.-080312.2, Fairfax County, escaped in rich deciduous woods along Potomac Heritage Trail south of Rt. 123 exits, rare.

BETULACEAE

**Alnus glutinosa* (L.) Gaertn.-090629.2 J. Parrish, R. Simmons, E. Oberg & B. Steury, Arlington County, escaped on southern shore of Roaches Run, one large shrub. This non-native tree was also collected in Fairfax County along Pimmit Run, 100503.4.

Corylus americana Walt.-070829.2, Fairfax County, bank of Pimmit Run near GWMP Bridge, approximately 20 shrubs; also common along an unnamed stream under powerline at Claude Moore Farm.

BIGNONIACEAE

Bignonia capreolata L.-081022.1, Arlington County, along tree line on southbound side of GWMP opposite Regan Washington National Airport, probably persisting from a historical planting at a nearby site.

BORAGINACEAE

**Buglossoides arvensis* (L.) I.M. Johnston-080407.3, Fairfax County, Turkey Run Park, northbound GWMP roadside at Turkey Run, about 50 plants at this site.

Hackelia virginiana (L.) I.M. Johnson-090428.8, Fairfax County, rich deciduous woods along Potomac Heritage Trail between 123 exits and Ft. Marcy, rare.

**Myosotis discolor* Pers.-090507.6, City of Alexandria, roadside median area opposite Daingerfield Island,

hundreds of plants.

Myosotis laxa Lehm.-080519.15, Fairfax County, Dyke Marsh, wet ditch along Mt. Vernon Trail, approximately 50 plants. This species was historically collected at Great Falls Park.

Myosotis macrosperma Engelm.-080519.29, District of Columbia, Theodore Roosevelt Island, trailside on southeastern side of island, 17 plants observed.

BRASSICACEAE

***Arabis patens* Sull.-060420.1, Fairfax County, Turkey Run Park, sandy, rocky floodplain near mouth of southern shore of Turkey Run, one plant with 11 flowering stems.

**Brassica rapa* L.-080327.5, District of Columbia, Columbia Island, common weed in flowerbeds at LBJ Memorial Grove.

**Capsella bursa-pastoris* (L.) Medik.-080424.8, District of Columbia, Columbia Island, fairly common weed in flowerbeds and lawns.

**Rorippa nasturtium-aquaticum* (L.) Hayek-090518.2, Fairfax County, first stream under power line at Claude Moore Farm, one small patch 0.5 m x 0.3 m.

**Sisymbrium officinale* (L.) Scop.-080428.8, Fairfax County, Dyke Marsh, edge of gravel along Haul Road; also common in flowerbeds at LBJ Memorial Grove.

**Thlaspi alliaceum* L.-080416.4, City of Alexandria, Daingerfield Island, edge of Mt. Vernon Trail, 11 plants.

**Thlaspi arvense* L.-080416.5, District of Columbia, Columbia Island, an uncommon weed in flower beds at LBJ Memorial Grove.

BUXACEAE

**Buxus sempervirens* L.-080401.3, Fairfax County, Turkey Run Park, planted near trailer north of Resource Management Building and other GWMP sites with buildings.

Pachysandra procumbens Michx.-040318.1 D. Sealy, B Steury & D. Pavek, District of Columbia, Theodore Roosevelt Island, deciduous woods near center of island, one patch measuring 4.3 m x 1.2 m. The nativity of this species at this site is doubtful.

**Pachysandra terminalis* Sieb. & Zucc.-080312.3,

Fairfax County, old home site on southbound GWMP opposite Ft. Marcy, hundreds of plants in one large patch.

CALYCANTHACEAE

**Chimonanthus praecox* (L.) Link-080320.11, City of Alexandria, Daingerfield Island, evidently planted and persisting in areas that are now woodlands.

CAPRIFOLIACEAE

**Abelia x grandiflora* (Andre) Rehd.-070926.50, District of Columbia, Columbia Island, planted near Navy and Marine Memorial.

**Lonicera fragrantissima* Lindl. & Paxton-080315.1, Fairfax County, woodland edge along southbound GWMP just south of West Boulevard Drive exit, a few shrubs; 080327.6, Fairfax County, persisting and likely spreading from plantings at old home site on southbound GWMP opposite Ft. Marcy.

Lonicera sempervirens L.-090413.7, Arlington County, gravel terrace woodland north of Arlington House, uncommon, this is the only known location for this species in GWMP.

**Lonicera xylosteum* L.-s.n. L.K. Thomas (US), 7 May 1963, District of Columbia, Theodore Roosevelt Island, historical.

Sambucus racemosa L.-090827.1, Turkey Run Park, along Potomac Heritage Trail on bank of Potomac River near eastern end of park, one shrub.

**Viburnum carlesii* Hemsl.-080410.1, Arlington County, planted around GWMP maintenance building.

**Viburnum lantana* L.-090421.1, City of Alexandria, escaped on bank of Potomac River at southern end of Mirant Power Plant, one shrub.

***Viburnum lentago* L.-090507.2, City of Alexandria, two shrubs in roadside ditch along southbound GWMP opposite Daingerfield Island. According to historic planting plans this species was planted along the GWMP. These two shrubs are likely descendants of those plantings however they are no longer visible from the parkway.

**Viburnum plicatum* Thumb.-070507.1, Fairfax County, Turkey Run Park, escaped in rich deciduous woods, one shrub; 090511.1, Fairfax County, Dead Run Swamp, three shrubs. This species has also been planted at Turkey Run Park and LBJ Grove.

**Viburnum x rhytidophylloides* Sur.-080428.5, Fairfax County, planted along Crest Lane, a few plants escaping to or persisting in nearby deciduous woods.

**Viburnum sieboldii* Miq.-100422.1, Arlington County, well established escape in deciduous woodland in wet soils along a drainage between the GWMP and Fort C.F. Smith. To my knowledge this species has not been planted along the GWMP.

**Weigela florida* (Bunge) A. DC.-090505.4, Arlington County, planted in median area west of parking lot at Arlington House.

CARYOPHYLLACEAE

**Holosteum umbellatum* L.-090408.3, Fairfax County, edge of Potomac River Gorge approximately 150 m south of Overlook One, approximately 20 plants.

**Sagina procumbens* L.-090505.1, Arlington County, crack in asphalt pavement at Arlington House parking lot, a few clumps.

**Scleranthus annuus* L.-080410.3, Fairfax County, common along GWMP roadside at overlook one and other roadside turf grass sites.

**Spergularia rubra* (L.) J. & K. Presl.-070523.1, Fairfax County, Turkey Run Park, roadside near entrance to headquarters, hundreds of plants.

CELASTRACEAE

**Euonymus kiautschovica* Loes.-080327.4, Arlington County, shore of Boundary Channel just south of inlet to Potomac River, becoming naturalized in GWMP.

CHENOPODIACEAE

Atriplex dioica Raf.-081002.1, City of Alexandria, Daingerfield Island, maintenance yard.

CLETHRACEAE

Clethra alnifolia L.-060907.1, Fairfax County, Turkey Run Park, edge of woods near parking area C-2, probably planted, at least 12 shrubs. This species is also planted in LBJ Memorial Grove. There are no naturally occurring populations in GWMP, and the plantings are likely spreading vegetatively.

CONVOLVULACEAE

**Convolvulus arvensis* L.-080610.5, District of Columbia, Columbia Island, GWMP roadsides, common.

**Ipomoea coccinea* L.-070910.3, City of Alexandria,

Daingerfield Island, along Mount Vernon Trail, rare.

CORNACEAE

Cornus alternifolia L.f.–100503.1 J.M. Parrish & B.W. Steury, Fairfax County, Turkey Run Park, rocky base of slope on western side of Dead Run, one young tree. There are also historical records for this species collected from our area between 1877 and 1926 such as S.F. Blake's 1926 voucher 9371 (US) collected "opposite Plummer's Island."

**Cornus kousa* Hance–080908.1, Fairfax County, a few trees planted on GWMP southbound roadside between Collingwood Road exit and Mt. Vernon.

**Cornus mas* L.–080603.4, Fairfax County, widely planted along the GWMP between Turkey Run and south of Belle Haven, no definite evidence of plants escaping.

Cornus racemosa Lam.–090611.8, Fairfax County, planted along southern terminus of Mt. Vernon Trail at one site.

ERICACEAE

**Enkianthus campanulatus* (Miq.) Nichols–100505.1, Fairfax County, Turkey Run Park, planted near park headquarters building.

Vaccinium caesariense Mackenzie–090413.3, Fairfax County, hummocks in vernal pool along southbound GWMP south of Little Hunting Creek, a few shrubs.

FABACEAE

Amorpha fruticosa L.–070829.26, Fairfax County, Dyke Marsh, Potomac shore along Haul Road, common at this site.

Chamaecrista fasciculata (Michx.) Greene–100721.1, Arlington County, Potomac Heritage Trail, a clump of eight plants between Spout Run and Donaldson Run; also historically collected at Great Falls Park.

Cladrastis kentukea (Dum.-Cours.) Rudd.–060615.2, Fairfax County, along Mount Vernon Trail near southern terminus, a few large trees, evidently planted, and numerous saplings escaping in nearby areas.

***Desmodium canadense* (L.) DC.–216 G.H. Shull (US), 13 August 1902, City of Alexandria, Jones Point Park, near lighthouse, historical.

**Lathyrus latifolius* L.–101008.1, Arlington County,

bank of Four Mile Run at GWMP, a few plants.

**Sophora japonica* L.–070829.17, District of Columbia, Columbia Island, bank of Boundary Channel, abundant, mature fruiting trees and numerous young saplings; 080716.1, Fairfax County, Dyke Marsh, edge of woods along Haul Road. This species was planted in LBJ Memorial Grove and is now an abundant escape along the bank of Boundary Channel and the Potomac River shore at least from Spout Run to Dyke Marsh.

Strophostyles helvula (L.) Ell.–070829.35, Fairfax County, Dyke Marsh, along edge of Haul Road, one patch about 1 m x 1 m. This species is known from historical collections at Great Falls Park.

**Vicia tetrasperma* (L.) Schreb.–1168 P. Fleming (US), 24 June 1989, District of Columbia, Columbia Island.

**Vicia villosa* Roth–080610.8, District of Columbia, Columbia Island, between Mt. Vernon Trail and Potomac River, rare; also historically known from Great Falls Park.

**Vigna radiata* (L.) R. Wilczek–100830.1 with C.A. Davis, Fairfax County, Great Falls Park, Sandy Landing, one plant growing in sand between Potomac River and boat ramp.

Wisteria frutescens (L.) Poir.–080519.26, City of Alexandria, Daingerfield Island, edge of creek flowing into Potomac River and southern end of island, well established at this site.

FAGACEAE

**Castanea mollissima* Blume–080731.2, Fairfax County, Riverside Park, escaped along shore of Potomac River, one tree. This species is planted in Belle Haven picnic area at Dyke Marsh, Fairfax County and on Columbia Island, District of Columbia.

Castanea pumila Mill.–050531.1, Fairfax County, Fort Marcy, east side of earthworks, one tree about 3 m tall.

**Quercus acutissima* Carruthers–070904.4, City of Alexandria, Daingerfield Island, commonly planted.

***Quercus hemisphaerica* Bartr. ex Willd.–070327.15, City of Alexandria, Daingerfield Island, one young tree, perhaps the progeny of a tree once planted on the island.

Quercus x heterophylla Michx.–080922.1, Arlington

County, bank of Potomac River opposite the middle of Theodore Roosevelt Island, one tree measuring 89.4 cm DBH.

**Quercus laurifolia* Michx.-090217.1, Arlington County, two large trees planted on southbound side of GWMP opposite Regan Washington National Airport. Also, four trees are planted in a line of *Q. phellos* at the Iwo Jima Memorial.

Quercus lyrata Walter-061017.1, Fairfax County, Belle Haven picnic area. This species is widely planted and long persisting, but naturally absent, along the GWMP from Belle Haven to near Mount Vernon.

Quercus macrocarpa Michx.-100929.3, Arlington County, one large tree planted at north end of Gravelly Point along railroad overpass.

Quercus marilandica Muenchh.-s.n., G. Zell, 7 November 2008, Arlington County, Pimmit Run near GWMP on dry west-facing slope, one tree.

**Quercus robur* L.-090729.2, Fairfax County, two trees planted on eastern side of Mt. Vernon Trail near southern terminus.

Quercus sect. *Lobatae*-080917.1, District of Columbia, Columbia Island, low, wet, tidal shore along Potomac River opposite southern end of Theodore Roosevelt Island near Arlington County line, three young trees with similar leaf forms over an area of 15 m, all vegetative, Fig. 2.

GERANIACEAE

**Erodium cicutarium* (L.) L'Hér. ex Ait.-090518.10, Fairfax County, roadside bank along northbound GWMP at 123 on-ramp, approximately 100 plants.

**Geranium molle* L.-080428.2, Fairfax County, lawns at Belle Haven picnic area, abundant along GWMP roadsides.

**Geranium pusillum* L.-080610.7, District of Columbia, Columbia Island, in turf grass along Mt. Vernon Trail, a few plants.

GROSSULARIACEAE

Itea virginica L.-080519.24, Fairfax County, Dyke Marsh, edge of swamp along Mt. Vernon Trail opposite Cigarette Turnaround, rare; also observed at Roaches Run, Arlington County.

HALORAGACEAE

**Myriophyllum spicatum* L.-070926.11, Fairfax County, Dyke Marsh, a common aquatic species in bays of Dyke Marsh.

HAMAMELIDACEAE

**Hamamelis mollis* Oliver-090224.1, Arlington County, planted along southbound GWMP roadside at second exit for Regan Washington National Airport.

Liquidambar styraciflua L.-070829.38, Fairfax County, Dyke Marsh, common along Haul Road, also observed at most other GWMP Coastal Plain sites but absent above the Fall Line.

HIPPOCASTANACEAE

**Aesculus x carnea* Hayne-090507.3, City of Alexandria, Daingerfield Island, planted near greenhouse offices.

Aesculus flava Ait.-080428.4, Fairfax County, Dyke Marsh, Belle Haven, probably historically planted in the area, now escaping along the Haul Road entrance and surrounding areas, numerous young trees; also planted in the District of Columbia at LBJ Memorial Grove.

**Aesculus glabra* Willd.-080428.3, Fairfax County, Dyke Marsh, Belle Haven, one tree planted near restrooms in picnic area.

HYDRANGEACEAE

**Deutzia scabra* Thunb.-090616.2, Montgomery County, planted on western side of Clara Barton House.

**Philadelphus coronarius* L.-090428.2, Arlington County, deciduous woods north of Arlington House, a few shrubs.

HYDROPHYLLACEAE

Hydrophyllum virginianum L.-080423.1, District of Columbia, Theodore Roosevelt Island, rich woods along trail in southwestern corner of island, uncommon; also observed in Turkey Run Park.

***Phacelia covillei* S. Wats.-090514.1, Fairfax County, abundant along eastern side of Dead Run floodplain south of GWMP. This species is common within GWMP on floodplains in the Potomac River Gorge of Maryland and Virginia and is also occasionally found at upland sites above the Gorge and along nearby tributaries, especially Dead Run.

LAMIACEAE

**Ajuga reptans* L.-090421.3, Fairfax County, along Potomac Heritage Trail between 123 exits and Ft. Marcy, a few plants.

**Calamintha nepeta* (L.) Savi-1364 P. Fleming (US), 2 October 1991, District of Columbia, Columbia Island, shore of Potomac.

**Chaiturus marrubiastrum* (L.) Reichenb.-090813.1, Fairfax County, Turkey Run Park, bank of Potomac River, approximately 10 plants.

Physostegia virginiana (L.) Benth.-080716.3, Arlington County, boulder outcrop in Potomac River just north of Spout Run, at least 100 stems; also observed near lighthouse on shore of Potomac at Jones Point, City of Alexandria.

Pycnanthemum virginianum (L.) T. Dur. & B.D. Jackson ex B.L. Robins & Fern.-s.n. L.F. Ward (US), 19 October 1879, Arlington County, Roaches Run, historical.

Stachys hispida Pursh.-070829.30, Fairfax County, Dyke Marsh, Potomac shore along Haul Road, approximately 30 plants.

LARDIZABALACEAE

**Akebia quinata* (Houtt.) Dcne.-070822.1, Montgomery County, Clara Barton Parkway, just north of Chain Bridge, an abundant invasive species in this area.

LYTHRACEAE

Cuphea viscosissima Jacq.-060927.1, Arlington County, crest of southern bank slope of Pimmit Run near Chain Bridge, Arlington County, at least 20 plants.

**Lagerstroemia indica* L.-070904.1, District of Columbia, Columbia Island, shore of Boundary Channel, probably escaped.

**Lythrum salicaria* L.-070829.40, Fairfax County, Dyke Marsh, uncommon but widespread in the marsh.

MAGNOLIACEAE

**Magnolia grandiflora* L.-080313.1, Fairfax County, southbound GWMP roadside, an uncommon but consistent escape between Dyke Marsh and Mt. Vernon.

**Magnolia x soulangiana* Soul.-Bod.-080320.1, Fairfax County, Turkey Run Park, planted near

maintenance shed.

MALVACEAE

Hibiscus moscheutos L.-070829.31, City of Alexandria, Daingerfield Island, edge of swamp near north end of boardwalk; also observed in most large GWMP Coastal Plain wetlands.

**Malva neglecta* Wallr.-070829.6, Arlington County, along Potomac Heritage Trail near Spout Run, rare.

**Malva sylvestris* L.-1246 P. Fleming (US), 11 August 1989, District of Columbia, Columbia Island, shore of Potomac.

***Sida hermaphrodita* (L.) Rusby-070829.5, Arlington County, along Potomac Heritage Trail on shore of Potomac River, three stems growing from large vine tangle of *Ampelopsis brevipedunculata*. Weed management at the site has increased the population to 16 plants by August 2009. Plants as short as 30 cm observed in flower.

MORACEAE

**Ficus carica* L.-090616.1, Montgomery County, planted on east and south sides of the Clara Barton Home.

MYRICACEAE

Morella cerifera (L.) Small-080327.8, Arlington County, shore of Boundary Channel just south of inlet from Potomac River, possibly an escape from nearby plantings along GWMP roadside north of Daingerfield Island, no obviously native populations known from GWMP, one patch about 10 m x 5 m.

NYMPHAEACEAE

Nuphar lutea (L.) Sm. ssp. *advena* (Ait.) Kartesz & Gandhi-070829.24, Fairfax County, Dyke Marsh, the dominant component of low marsh areas; also historically known from Great Falls Park.

OLEACEAE

**Fraxinus excelsior* L.-070904.54, Fairfax County, Belle Haven, picnic area, a few trees planted near the Potomac River, trees old but small and depauperate evidently due to acidic soil conditions; also planted in picnic area at Great Falls Park and along the Potomac River at Gravelly Point in Arlington County. It is probably mistakenly being sold as *Fraxinus nigra* Marsh.

Fraxinus profunda (Bush) Bush-070926.1, Fairfax County, Dyke Marsh, common along tidal shores of

marsh.

**Ligustrum ovalifolium* Hassk.–090611.2, Fairfax County, edge of swamp at Dyke Marsh near River Farm Drive, one shrub.

**Ligustrum japonicum* Thunb.–080110.1, City of Alexandria, Daingerfield Island, three shrubs on bank of Potomac River; also well established along the southbound side of the GWMP opposite Dyke Marsh.

**Ligustrum sinense* Lour.–080519.34, District of Columbia, Theodore Roosevelt Island, edge of trail on north end of island, a few shrubs.

ONAGRACEAE

Epilobium coloratum Biehler–1439 R.H. Simmons & M.T. Strong, 10 August 2003, City of Alexandria, Jones Point Park, moist to wet open areas.

Ludwigia decurrens L.–060920.3, Fairfax County, Jones Point Park, edge of marsh near mouth of Hunting Creek, at least 6 plants. This species is also present on Daingerfield Island and at Dyke Marsh.

Oenothera laciniata Hill.–1160 P. Fleming (US), 24 June 1989, District of Columbia, Columbia Island.

PAPAVERACEAE

**Chelidonium majus* L.–030519.1, Fairfax County, Turkey Run Park, sandy floodplain along Potomac River near Soapstone Valley, a few plants.

PASSIFLORACEAE

**Passiflora incarnata* L.–070829.9, Arlington County, along Potomac Heritage Trail near Key Bridge, patch approximately 20 m x 4 m, and at northern end of Gravelly Point along railroad overpass.

PLANTAGINACEAE

***Plantago cordata* Lam.–11534 P.C. Standley (US), 19 May 1915, City of Alexandria, Jones Point Park, in Potomac River near lighthouse, historical.

POLYGALACEAE

Polygala mariana P. Mill.–080724.7, Fairfax County, along Mount Vernon Trail just north of Collingwood Road exit, bare turf grass area, at least 20 plants.

POLYGONACEAE

Polygonum erectum L.–100422.2, Fairfax County, GWMP southbound roadside near Dead Run, fairly common roadside species in this area. This species was reported as historical in Great Falls Park.

Rumex verticillatus L.–080519.28, District of Columbia, Theodore Roosevelt Island, fringe swamp near bridge to island, common at this site.

PORTULACACEAE

**Claytonia rubra* (T.J. Howell) Tidestrom–090407.1, Arlington County, edge of Potomac River Gorge south of southernmost overlook about 25 m from GWMP, at least 163 plants.

RANUNCULACEAE

**Ranunculus parviflorus* L.–080402.1, Fairfax County, Claude Moore Farm, disturbed area around gift shop, approximately 30 plants; 080519.4, Fairfax County, Belle Haven picnic area, turf grass near restrooms, rare. It was also observed at Ft. Hunt.

**Ranunculus repens* L.–s.n. P.C. Standley (US), 19 May 1915, City of Alexandria, Jones Point Park, near lighthouse, historical. This species was also historically collected on Theodore Roosevelt Island in the District of Columbia.

RHAMNACEAE

Frangula caroliniana (Walt.) Gray–080811.3, City of Alexandria, Daingerfield Island, edge of woods on southwestern side near Mt. Vernon Trail, probably escaped or planted, one multi-trunked tree.

**Hovenia dulcis* Thunb.–060615.4, Fairfax County, along Mount Vernon Trail near southern terminus, probably planted, a few large trees with seedlings present in nearby woods.

**Rhamnus cathartica* L.–080724.3, Arlington County, bank of Roaches Run Waterfowl Sanctuary along GWMP, probably planted historically, now escaping and widespread near Roaches Run. This species is also planted at Rt. 123 exits off GWMP.

ROSACEAE

Agrimonia parviflora Ait.–081112.3, Fairfax County, under powerline near Claude Moore Farm, uncommon. This species is historically known from Great Falls Park.

**Aphanes microcarpa* (Boiss. & Reut.) Rothm.–080522.2, Fairfax County, northbound GWMP roadside at Collingwood exit, thousands of plants, also found at Ft. Hunt 100505.1.

**Chaenomeles speciosa* (Sweet) Nakai–080327.7, Fairfax County, southbound GWMP roadside just north of Ft. Marcy, probably planted and long persisting near

old home site.

**Cotoneaster salicifolius* Franchet-080403.5, District of Columbia, Columbia Island, planted at the base of LBJ Memorial.

***Crataegus mollis* Scheele-070829.20, Fairfax County, Belle Haven, woodlot just north of Dyke Marsh, probably historically planted, now escaping and established along edge of woods and Mount Vernon Trail.

**Crataegus monogyna* Jacq.-041017.1 with *G. Fleming*, Fairfax County, Turkey Run Park, trailside through deciduous woods south of headquarters, one shrub. 090625.2, Fairfax County, along Potomac Heritage Trail north of Ft. Marcy, two shrubs.

***Geum laciniatum* Murray-060615.1, Fairfax County, Dyke Marsh, along Haul Road on peninsula near boardwalk, nine plants.

**Malus baccata* (L.) Borkh.-090413.2, Fairfax County, escaped along GWMP roadsides north and south of Rt. 123 exits.

**Malus floribunda* Sieb. Ex Van Houtte-090413.3, Fairfax County, escaped along GWMP roadsides near Rt. 123 exits, on the southern portions of the parkway, and in woods at Arlington House.

**Malus* cf. *prunifolia* (Willd.) Borkh.-090413.4, City of Alexandria, planted at Jones Point Park near lighthouse. This tree is apparently hybridized with another unknown *Malus* species.

**Malus sieboldii* (Regel) Rehd.-100422.3, Fairfax County, escaped in moist deciduous woods on bank of Dead Run near GWMP, one tree. This species was also observed on the bank of Pimmit Run.

Photinia melanocarpa (Michx.) Robertson & Phipps-070926.51, District of Columbia, Columbia Island, planted along edge of parking area at LBJ Memorial Grove.

**Photinia serratifolia* (Desf.) Kalkm.-070904.53, District of Columbia, Columbia Island, planted along parking lot at LBJ Memorial Grove.

**Prunus laurocerasus* L.-070905.1, District of Columbia, Columbia Island, planted in beds within LBJ Memorial Grove.

**Prunus mahaleb* L.-s.n. W.H. Seaman (US), District of Columbia, Theodore Roosevelt Island, historical.

**Prunus serrulata* Lindl.-090414.1, Arlington County, one tree planted in front of GWMP maintenance yard.

Prunus virginiana L.-090428.5, Arlington County, mid-level of gravel terrace woodland northwest of Arlington House, one patch 13 m diameter. This is the first known record for this species from the Coastal Plain of Virginia.

**Pyrus pyrifolia* (Burm.) F. Nakai-070904.6, District of Columbia, Columbia Island, planted and possibly escaped on southern end of island.

**Rhodotypos scandens* (Thunb.) Makino-080327.3, Arlington County, bank of Boundary Channel just south of inlet from Potomac River, a few plants. This species was also found along the GWMP at Spout Run and on Theodore Roosevelt Island.

**Rosa canina* L.-s.n. P Bartsch (US), 24 May 1896, Arlington County, south of Roaches Run, historical.

**Rubus laciniatus* Willd.-090311.3, City of Alexandria, bank of Potomac River at edge of Mt. Vernon Trail just south of Four Mile Run, a few plants

RUBIACEAE

**Cruciata pedemontana* (Bellardi) Ehrend.-080423.6, Fairfax County, edge of Potomac River Gorge just south of first overlook, 50-100 young plants.

Diodia virginiana L.-060920.4, City of Alexandria, Jones Point Park, high edge of marsh near mouth of Hunting Creek, one patch about 2 m x 3 m; also at Dyke Marsh and other low wet areas on the Coastal Plain.

Galium obtusum Bigelow-090527.3, Dyke Marsh, moist meadow near end of Haul Road, a few plants.

**Sherardia arvensis* L.-090520.1, Fort Hunt Park, roadside near area A, one patch 0.3 m x 0.2 m.

RUTACEAE

**Phellodendron amurense* Rupr.-070904.2, Fairfax County, Belle Haven, along Mount Vernon Trail just south of entrance to marina, probably planted.

**Poncirus trifolia* (L.) Raf.-090429.7, Fairfax County, median area between GWMP and Mt. Vernon parking

lot, one tree, escaped or possibly planted.

**Skimmia japonica* Thunb.–090629.1 R. Simmons & E. Oberg, Arlington County, escaped in woods along southern edge of Roaches Run.

SALICACEAE

**Populus alba* L.–090611.1, Arlington County, edge of woodlot at Iwo Jima Memorial, two trees, escaped.

**Salix alba* L.–080423.3, District of Columbia, Theodore Roosevelt Island, fringe swamp on east side of island, one large tree, escaped.

Salix eriocephala Michx.–s.n. L.F. Ward (US), 27 April 1881, District of Columbia, Theodore Roosevelt Island, historical.

**Salix fragilis* L.–080519.11, Fairfax County, Dyke Marsh, edge of marsh near terminus of Haul Road, a few trees in this area.

**Salix matsudana* Koidzumi–100728.1, City of Alexandria, Daingerfield Island, bank of Potomac River, one tree, escaped.

Salix sericea Marsh.–s.n. G.B. Sudworth (US), 3 May 1889, District of Columbia, Theodore Roosevelt Island, historical.

SAPINDACEAE

**Koelreuteria paniculata* Laxm.–070829.16, District of Columbia, Columbia Island, bank of Boundary Channel. Planted in LBJ Memorial Grove and now escaping along bank of Boundary Channel.

SAXIFRAGACEAE

Astilbe biternata (Vent.) Britt.–070823.2, Fairfax County, Turkey Run Park, Potomac River floodplain south of Turkey Run, one patch about 3 m x 2 m.

Mitella diphylla L.–060511.1, Fairfax County, Turkey Run Park, base of slope above southern bank of Turkey Run, near mouth, five plants.

SCROPHULARIACEAE

Gratiola virginiana L.–3707 M.T. Strong, J. Parrish, R. Simmons, & G. Zell (US), 11 September 2006, Arlington County, tidal swamp on western side of Roaches Run Waterfowl Sanctuary.

**Kickxia elatine* (L.) Dumort.–080825.1, Fairfax County, Great Falls Park, low terrace of riverside

outcrop barren, one plant.

**Linaria vulgaris*–080610.11, Arlington County, southbound GWMP roadside just north of Four Mile Run, one patch approximately 2 m x 3 m.

Mimulus ringens–051103.2, Fairfax County, Turkey Run Park, drought dry mouth of Turkey Run at edge of Potomac River, at least 20 plants. One plant observed in Great Falls Park on 23 July 2008 along small stream just above Potomac River south of Sandy Landing.

Nuttallanthus canadensis (L.) D.A. Sutton–100526.1, Fairfax County, Turkey Run Park, open slope above Potomac River near the Leiter Mansion ruins, hundreds of plants.

Penstemon digitalis (Sweet) Nutt.–3199 R. Simmons, 27 May 2009, City of Alexandria, Daingerfield Island, bank of remnant tidal channel and open grassy area.

Veronica americana Schwein. ex Benth.–090518.1, Fairfax County, first stream under power line at Claude Moore Farm, approximately 12 plants.

SOLANACEAE

**Lycium chinense* P. Mill.–1217 P. Fleming (US), 5 August 1989, District of Columbia, Columbia Island.

**Solanum dulcamara* L.–070829.10, Fairfax County, GWMP roadside near Rt. 123 exit, uncommon throughout GWMP.

TILIACEAE

**Tilia cordata* P. Mill.–080610.10, City of Alexandria, planted in GWMP median area opposite Daingerfield Island.

THEACEAE

**Camellia japonica* L.–090226.1, Montgomery County, planted on east side of Clara Barton home.

ULMACEAE

Celtis laevigata Willd.–090507.4, City of Alexandria, Daingerfield Island, apparently planted along entrance road.

**Ulmus parvifolia* Jacq.–070926.6, District of Columbia, Columbia Island, crest of Potomac River shore, planted and escaping to nearby riverbank areas.

**Zelkova serrata* (Thumb.) Makino–070725.2, Fairfax County, Belle Haven, commonly planted in the Coastal

Plain section of the GWMP.

URTICACEAE

Parietaria pensylvanica Muhl. ex Willd.-070829.18, District of Columbia, Columbia Island, edge of fallow planting bed in LBJ Memorial Grove.

Pilea fontana (Lunell) Rydb.-070926.9, Fairfax County, Dyke Marsh, uncommon near Belle Haven Marina and along open tidal shores.

Urtica dioica L. ssp. *gracilis* (Ait.) Seland-100715.1 with *J. Parrish*, Arlington County, a few plants on floodplain between Gulf Branch and Donaldson Run.

VALERIANACEAE

**Valerianella locusta* (L.) Lat.-080424.5, City of Alexandria, Jones Point Park, along Mt. Vernon Trail just south of Woodrow Wilson Bridge, approximately 50 plants.

VERBENACEAE

**Vitex agnus-castus* L.-070926.7, District of Columbia, Columbia Island, LBJ Memorial Grove, one shrub planted or escaped under larger shrubs along parking area.

VIOLACEAE

Hybanthus concolor (T.F. Forst.) Spreng.-s.n. *J.M. Parrish*, 31 August 2006, Arlington County, forested floodplain between Windy Run and Donaldson Run.

Viola triloba Schwein. var. *dilatata* Ell. Brain.-090429.1, Fairfax County, edge of Mt. Vernon Trail approximately one km north of Mt. Vernon, deciduous woods near stream, rare.

VITACEAE

**Ampelopsis brevipedunculata* (Maxim.) Trautv.-070829.13, Arlington County, shore of Potomac River along Potomac Heritage Trail. This is an abundant invasive species throughout the Coastal Plain areas of GWMP.

MONOCOTYLEDONS

ACORACEAE

Acorus calamus L.-070829.39, Fairfax County, Dyke Marsh, fairly common component of the marsh.

ARACEAE

**Arum italicum* P. Mill.-080312.1, Fairfax County, rich woods along Potomac Heritage Trail just south of Rt. 123 exits, 12 patches along 94 m of trailside.

CYPERACEAE

Carex bromoides Schkuhr ex Willd.-s.n. *J.M. Parrish*, 25 May 2007, Arlington County, Roaches Run Waterfowl Sanctuary.

Carex comosa Boott-080519.13, Fairfax County, Dyke Marsh, edge of marsh along Haul Road, uncommon.

***Carex cristatella* Britt.-1072 *C. Lea* (US), 29 May 1999, District of Columbia, Theodore Roosevelt Island. This species was historically collected at Great Falls Park.

***Carex decomposita* Muhl.-13024 *A.S. Hitchcock* (US), 13 July 1917, Fairfax County, Dyke Marsh, historical.

Carex granularis Muhl. ex Willd.-080519.10, Fairfax County, Dyke Marsh, edge of marsh along boardwalk at end of Haul Road, fairly common at various sites near the marsh.

**Carex hirta* L.-080424.9, City of Alexandria, Jones Point Park, along edge of mulched trail on east side of peninsula just south of Woodrow Wilson Bridge, spreading over 10 m of woodland edge.

Carex hitchcockiana Dewey-090505.6, Fairfax County, Turkey Run Park, edge of Potomac Heritage Trail on Potomac River floodplain north of Turkey Run, seven tufts.

***Carex lacustris* Willd.-s.n. *C.L. Pollard* (US), 25 May 1899, Dyke Marsh, Fairfax County. *s.n. P. Bartsch* (US), 24 May 1896, Arlington County, Roaches Run, historical.

Carex molesta Mackenzie ex Bright-090527.5, Fairfax County, Dyke Marsh, mesic meadow along Haul Road near apex of peninsula, at least 100 plants over 0.1 ha.

Carex oligocarpa Schk. Ex Willd.-1456 *C. Lea* (GMUF), 6 May 2000, Fairfax County, Turkey Run Park, Potomac River floodplain just north of Turkey Run.

***Carex pallescens* L.-s.n. *T. Holm* (US), 27 May 1893, Arlington County, Potomac shore near Aqueduct Bridge (present-day Key Bridge), historical.

Carex stipata Muhl. ex Willd.-080519.30, District of Columbia, Theodore Roosevelt Island, tidal fringe swamp near bridge to island, common; also observed at Dyke Marsh.

Carex stipata Muhl. ex Willd. var. *maxima* Chapman–1080 C. Lea (US), 29 May 1999, District of Columbia, Theodore Roosevelt Island, swamp trail.

**Carex texensis* (Torr.) Bailey–090507.5, moist roadside ditch along southbound GWMP opposite Daingerfield Island, a few tufts.

**Cyperus difformis* L.–080724.2, City of Alexandria, Daingerfield Island, low wet area of turf grass at south end of soccer field, 11 plants.

Cyperus lupulinus (Spreng.) Marcks–080731.1, Fairfax County, Fort Hunt Park, open disturbed area on World War II battery, abundant at one site.

Eleocharis engelmannii Steud.–080618.5, City of Alexandria, Daingerfield Island, edge of swamp north of boardwalk.

***Schoenoplectus fluviatilis* (Torr.) M.T. Strong–080519.25, Fairfax County, Dyke Marsh, Hog Gut, fairly common throughout marsh. This species is also present in a remnant marsh at Jones Point in the City of Alexandria and at Roaches Run Waterfowl Sanctuary in Arlington County.

IRIDACEAE

**Crocus vernus* (L.) Hill–090318.1, Fairfax County, escaped along southern terminus of Mt. Vernon Trail, 13 plants.

**Iris pseudacorus* L.–080519.2, Fairfax County, Dyke Marsh, uncommon along edge of marsh. This iris is also present in the marsh on Theodore Roosevelt Island in the District of Columbia.

JUNACEAE

Juncus debilis Gray–090527.8, Dyke Marsh, gravely tidal shore of Potomac River on southern side of Haul Road peninsula, hundreds of plants.

Juncus diffusissimus Buckl.–080618.3, City of Alexandria, Daingerfield Island, edge of wetland just north of boardwalk, one tuft with approximately 50 fruiting culms.

LILIACEAE

**Galanthus nivalis* L.–080410.2, Fairfax County, woods northwest of Mt. Vernon, persisting and evidently spreading at old home site. This species was also observed along the northern bank of Pimmit Run near the GWMP.

**Hosta ventricosa* (Salisb.) Stearn–080626.1, Fairfax County, Turkey Run Park, rich woods along bank of Turkey Run about 200 m from GWMP.

**Hyacinthus orientalis* L.–080401.2, Fairfax County, Turkey Run Park, escaped in yard behind Resource Management Building.

**Liriope muscari* (Dcne.) Bailey–070910.1, Arlington County, along Potomac Heritage trail on bank of Potomac River just north of Theodore Roosevelt Island, well established escape.

**Liriope spicatum* Lour.–090730.1, Fairfax County, well established in woods west of Claude Moore Farm and north of Langley Fork Park.

**Narcissus poeticus* L.–080403.3, District of Columbia, Columbia Island, escaped along bank of Boundary Channel.

**Trillium luteum* (Muhl.) Harbison–090421.2, Fairfax County, rich deciduous woodland along Potomac Heritage Trail approximately 1 km north of Ft. Marcy, 5 plants, 3 flowering.

NAJADACEAE

**Najas minor* All.–070926.10, Fairfax County, Dyke Marsh, an abundant and invasive aquatic species in bays of Dyke Marsh.

Najas guadalupensis (Spreng.) Magnus–070926.12, Fairfax County, Dyke Marsh, an uncommon to rare aquatic species in bays of Dyke Marsh.

ORCHIDACEAE

**Epipactis helleborine* (L.) Crantz–080811.1, Fairfax County, Potomac River Gorge, rich woods on slope of Potomac River just north of Pimmit Run. 090624.1, Montgomery County, Glen Echo, bank of Minnehaha Creek.

Spiranthes ovalis Lindl. var. *erostellata* Catling–091005.2 with *J. Parrish*, Turkey Run Park, Tulip Popular woodland south of GWMP, at least 100 plants. Smaller populations occur on the north side of the GWMP near the NPS headquarters buildings.

POACEAE

**Agrostis gigantea* Roth.–400 R. Kanal (US), 24 June 1989, District of Columbia, Columbia Island.

**Aira caryophyllea* L.–080522.1, Fairfax County,

southbound GWMP roadside just south of Collingwood exit, hundreds of plants.

Alopecurus carolinianus Walt.–080519.17, Fairfax County, Dyke Marsh, wet ditch along Mt. Vernon Trail, hundreds of plants.

Arundinaria gigantea (Walt.) Muhl. ssp. *tecta* (Walt.) McClure–080305.1, Fairfax County, bank of Dead Run, one patch 10 m x 10 m.

**Bromus commutatus* Schrad.–080519.31, District of Columbia, Theodore Roosevelt Island, large patch on southern tip of island; also historically recorded from Great Falls Park.

**Bromus inermis* Leyss.–080610.1, Montgomery County, Clara Barton Parkway southbound roadside at pumping station, a few plants.

**Bromus racemosus* L.–224 R. Kanal (US), 21 May 1988, District of Columbia, Columbia Island.

**Bromus sterilis* L.–348 R. Kanal (US), 29 May 1989, District of Columbia, Columbia Island.

**Bromus tectorum* L.–080423.4, GWMP roadside along edge of Potomac River Gorge just south of overlook one, thousands of plants.

**Elymus repens* (L.) Gould–080610.3, District of Columbia, Columbia Island, bank of Potomac River, uncommon.

Hordeum pusillum Nutt.–080519.16, Fairfax County, GWMP roadside at Dyke Marsh, about 50 plants.

Leptochloa fusca (L.) Kunth ssp. *fascicularis* (Lam.) N. Snow–070829.21, City of Alexandria, Daingerfield Island, wet depression in turf grass and at edge of swamp, hundreds of plants.

**Oplismenus hirtellus* (L.) Beauv. ssp. *undulatifolius* (Ard.) U. Scholz–080915.2, Fairfax County, Great Falls Park, rich woods on slope above maintenance building. This population has been targeted as part of an active eradication program.

**Paspalum dilatatum* Poir.–061011.1, Arlington County, GWMP roadside near Memorial Avenue, at least 15 plants.

Paspalum laeve Michx.–070829.36, City of Alexandria, Jones Point Park, turf grass near wooded

edge of tidal Potomac shore, fairly common.

Paspalum setaceum Michx.–070829.28, City of Alexandria, Daingerfield Island, turf grass near edge of wetland, fairly common.

**Pennisetum alopecuroides* (L.) Spreng.–101003.1, Fairfax County, Dyke Marsh, well established along Haul Road.

**Phleum pratense* L.–080918.3, Arlington County, bank of Potomac River opposite southern end of Theodore Roosevelt Island, surprisingly rare in GWMP.

**Phragmites australis* (Cav.) Trin. Ex Steud. ssp. *australis*–070829.33, City of Alexandria, Daingerfield Island; also at Dyke Marsh and Roaches Run, slowly being eradicated from these sites by herbicide treatments.

**Phyllostachys aurea* Carr. Ex A.&C. Riviere–080327.6, Fairfax County, southbound GWMP roadside at Cigarette Turnaround, large patch vigorously spreading, probably planted somewhere upslope.

**Phyllostachys aureosulcata* McClure–080414.1, Montgomery County, probably planted and now vigorously spreading over large area behind Clara Barton house.

**Phyllostachys nigra* (Lodd.) Munro var. *henionis* (Mitf.) Stapf ex Rendle–080407.1, Fairfax County, southbound GWMP roadside near overlooks, large patch vigorously spreading, planted by adjacent land owner.

**Pseudosasa japonica* (Sieb. & Zucc. ex Steud.) Makino ex Nakai–080403.2, Fairfax County, southbound GWMP opposite Dyke Marsh, at least two sites with hundreds of stems, probably spreading from plantings near this area.

**Setaria pumila* (Poir.) Roemer & J.A. Schultes–420 R. Kanal (US), 2 October 1991, District of Columbia, Columbia Island.

**Vulpia myuros* (L.) K.C. Gmel.–080519.19, Fairfax County, GWMP roadside near Little Hunting Creek, thousands of plants.

Zizania aquatica L.–070829.25, Fairfax County, Dyke Marsh, common but patchy throughout.

PONTEDERIACEAE

Heteranthera reniformis Ruiz & Pavon—s.n., J.M. Parrish, 3 November 2007, Arlington County, mudflat along Potomac River opposite southern end of Theodore Roosevelt Island.

Pontederia cordata L.—070829.27, Fairfax County, Dyke Marsh, fairly common along edges of tidal channels in marsh; listed as historical at Great Falls Park.

SPARGANIACEAE

Sparganium eurycarpum Engelm.—080519.7, Fairfax County, Dyke Marsh, along boardwalk at end of Haul Road, rare.

TYPHACEAE

Typha angustifolia L.—080527.9, Fairfax County, Dyke Marsh, the dominant species in the marsh; also historically recorded at Great Falls Park.

LITERATURE CITED

- Dirr, M. A. 1998. Manual of Woody Landscape Plants: Their Identification, Ornamental Characteristics, Culture, Propagation and Uses, 5th Ed. Stipes Publishing, Champaign, IL. 1,187 pp.
- Gleason, H. A., & A. Cronquist. 1991. Manual of Vascular Plants of Northeastern United States and Adjacent Canada, 2nd Ed. New York Botanical Garden, Bronx, New York. 910 pp.
- Grimshaw, S., & T. R. Bradley. 1973. The vascular flora of Great Falls National Park, Fairfax County, Virginia. *Castanea* 38: 229-261.
- Harvill, A. M., Jr., T. R. Bradley, C. E. Stevens, T. P. Wieboldt, D. M. E. Ware, D. W. Ogle, G. W. Ramsey, & G. P. Fleming. 1992. Atlas of the Virginia Flora III. Virginia Botanical Associates, Burkeville, VA. 144 pp.
- Kartesz, J. T. 1999. A synonymized checklist and atlas with biological attributes for the vascular flora of the United States, Canada, and Greenland. First Edition. In: Kartesz, J. T. & C. A. Meacham. Synthesis of the North American Flora, Version 1.0. North Carolina Botanical Gardens, Chapel Hill, NC.
- Li, B., & B. Barthotomew. 2008. Calycanthaceae. Pp. 92-96 In Z. Y. Wu, P. H. Raven, & D. Y. Hong (eds.), *Flora of China*. Vol. 7 (Menispermaceae through Capparaceae). Science Press, Beijing, and Missouri Botanical Garden Press, St. Louis.
- Ohwi, J. 1965. *Flora of Japan*. F. G. Meyer & E. H. Walker, editors. Smithsonian Institution, Washington, D.C. 1,067 pp.
- Shetler, S. G., & S. S. Orli. 2000. Annotated checklist of the vascular plants of the Washington - Baltimore Area. Part I. ferns, fern allies, gymnosperms, and dicotyledons. Department of Botany, National Museum of Natural History, Smithsonian Institution, Washington, D.C. 186 pp.
- Shetler, S. G., & S. S. Orli. 2002. Annotated checklist of the vascular plants of the Washington - Baltimore Area. Part II. Monocotyledons. Department of Botany, National Museum of Natural History, Smithsonian Institution, Washington, D.C. 95 pp.
- Simmons, R. H., M. T. Strong, & J. M. Parrish. 2008. Noteworthy collections: Virginia. *Castanea* 73: 328-332.
- Skeen, J. N., P. D. Doerr, & D. H. Van Lear. 1993. Oak-hickory-pine forests. Pp. 1-33 In W. H. Martin, S. G. Boyce, & A. C. Echternacht (eds.), *Biodiversity of the Southeastern United States: Upland Terrestrial Communities*. John Wiley & Sons, Inc. New York, NY.
- Steury, B. W. 2010. Noteworthy collections: Virginia. *Castanea* 75: 134-135.
- Steury, B. W., G. P. Fleming, & M. T. Strong. 2008. An emendation of the vascular flora of Great Falls Park, Fairfax County, Virginia. *Castanea* 73: 123-149.
- Townsend, J. F. 2009. Natural Heritage resources of Virginia: rare plants. Natural Heritage Technical Report 09-07. Virginia Department of Conservation and Recreation, Division of Natural Heritage, Richmond, VA. 62 pp. plus appendices
- Weakley, A. S. 2008 draft. *Flora of the Carolinas, Virginia, and Georgia, and Surrounding Areas*. UNC Herbarium, North Carolina Botanical Garden, University of North Carolina at Chapel Hill.
- Welsh, S. L. 2003. North American species of *Atriplex* Linnaeus (Chenopodiaceae). Marcus E. Jones Endowment Fund, Brigham Young University, Provo, UT. 157 pp.
- Virginia Botanical Associates. 2010. Digital Atlas of the Virginia Flora (http://www.biol.vt.edu/digital_atlas/). c/o Massey Herbarium, Department of Biological Sciences, Virginia Tech, Blacksburg, VA.