



Non-Native Invasive Plants of the City of Alexandria, Virginia

Non-native invasive plants have increasingly become a major threat to natural areas, parks, forests, and wetlands by displacing native species and wildlife and significantly degrading habitats. Today, they are considered perhaps the greatest threat to natural areas and global biodiversity, second only to habitat loss resulting from development and urbanization (Vitousek et al. 1996).

The Virginia Department of Conservation and Recreation has identified 90 non-native invasive plants that threaten natural areas and lands in Virginia (Heffernan et al. 2014) and Swearingen et al. (2010) include 80 plants from a list of nearly 280 non-native invasive plant species documented within the mid-Atlantic region. Largely overlapping with these and other regional lists are 104 species that were documented in the City of Alexandria, Virginia during vegetation surveys and natural resource assessments by the City of Alexandria Dept. of Recreation, Parks, and Cultural Activities (RPCA), Natural Lands Management Section.

Exotic species are those that are not native to a particular place or habitat as a result of human intervention. A non-native invasive plant is here defined as one that exhibits some degree of invasiveness, whether dominant and widespread in a particular habitat or landscape – regardless of the quality or condition of the site – or much less common but long-lived and extremely persistent in places where it occurs. The presence of non-native invasive plants is largely the result of soil and habitat disturbance, though many of these species are capable of eventually spreading from degraded areas into relatively undisturbed sites, such as interior forest.

Hundreds of exotic plants growing in a variety of habitats occur in the City of Alexandria. Many of these are widespread, early spring-blooming annuals of lawns and open disturbed areas, such as Chickweeds (*Stellaria* spp.), Speedwells (*Veronica* spp.), Hairy Bittercress (*Cardamine hirsuta*), and others. Some, like Mugwort (*Artemisia vulgaris*), Bermuda Grass (*Cynodon dactylon* var. *dactylon*), and Dandelion (*Taraxacum officinale*), are familiar, difficult to eradicate perennial weeds of lawn and garden. Many others are commonly visible along roadways, medians, cracks in pavement, industrial sites, and other highly disturbed places.

However, only exotic plants that are especially invasive, damaging, and persistent, including species that produce a pervasive seed bank and those that prevent natural succession by native plants, are included on the following list. Native species that are typically weedy in disturbed areas, such as Poison Ivy (*Toxicodendron radicans*), Black Locust (*Robinia pseudoacacia*), Black Cherry (*Prunus serotina*), Common Pokeweed (*Phytolacca americana*), etc., are not included here because they are not non-native invasive species, they do not degrade natural areas, and they are important for native wildlife.



Fig. 1. Extensive, old colony of Orange Day-lily at the Old Cameron Run Channel Floodplain Forest at the confluence of Strawberry Run and the old Cameron Run channel along the railroad tracks in the City of Alexandria, Virginia. Photo by R.H. Simmons.

Non-native invasive plants occurring within the City of Alexandria are actively monitored by RPCA Natural Lands Management Section which also coordinates and oversees various control efforts, including joint projects with our specialty contractor, other City depts. and staff, partner organizations, and volunteers.

Herbaceous Plants

* Species that are particularly invasive and destructive in Alexandria.

*Garlic Mustard (*Alliaria petiolata*)

Joint-head Grass (*Arthraxon hispidus* var. *hispidus*)

Fountain Grass (*Cenchrus purpurascens*) [= *Pennisetum alopecuroides*]

Knapweed (*Centaurea* spp.)

Canada Thistle (*Cirsium arvense*)

*Common Thistle (*Cirsium vulgare*)

Variable Flatsedge (*Cyperus difformis*)

Helleborine (*Epipactis helleborine*)

Weeping Lovegrass (*Eragrostis curvula*)

Mulberry-weed (*Fatoua villosa*)

*Lesser Celandine (*Ficaria verna*) [= *Ranunculus ficaria*]

*Ground-ivy (*Glechoma hederacea*)

Orange Day-lily (*Hemerocallis fulva*)

Hydrilla (*Hydrilla verticillata*)
 Yellow Iris (*Iris pseudacorus*)
 Pasture Spikesedge (*Kyllinga gracillima*)
 Yellow Archangel (*Lamium galeobdolon*) [= *Lamiastrum galeobdolon*]
 *Chinese Lespedeza (*Lespedeza cuneata*)
 Big Blue Lilyturf (*Liriope muscari*)
 Creeping Lilyturf (*Liriope spicata*)
 Floating Primrose-willow (*Ludwigia peploides* var. *glabrescens*)
 Annual Honesty, Money Plant (*Lunaria annua*)
 Purple Loosestrife (*Lythrum salicaria*)
 *Japanese Stiltgrass (*Microstegium vimineum*)
 Chinese Silvergrass, Eulalia (*Miscanthus sinensis*)
 Marsh Dewflower (*Murdannia keisak*) [= *Aneilema keisak*]
 Parrot Feather (*Myriophyllum aquaticum*)
 Eurasian Water-milfoil (*Myriophyllum spicatum*)
 Java Dropwort (*Oenanthe javanica*)
 Common Star-of-Bethlehem (*Ornithogalum umbellatum*)
 Dallis Grass (*Paspalum dilatatum*)
 Beefsteak Plant (*Perilla frutescens*)
 Long-bristled Smartweed (*Persicaria longiseta*) [= *Polygonum cespitosum*]
 *Common Reed (*Phragmites australis* ssp. *australis*)
 Japanese Knotweed (*Reynoutria japonica*) [= *Polygonum cuspidatum*]
 Giant Knotweed (*Reynoutria sachalinensis*) [= *Polygonum sachalinense*]
 Curly Dock (*Rumex crispus* ssp. *crispus*)
 Crown Vetch (*Securigera varia*) [= *Coronilla varia*]
 Yellow Foxtail (*Setaria pumila* ssp. *pumila*)
 Green Foxtail (*Setaria viridis* var. *viridis*)
 Johnson Grass (*Sorghum halepense*)
 Vetch (*Vicia* spp.)
 Oriental False Hawksbeard (*Youngia japonica*) [= *Crepis japonica*]

Vines

Five-leaf Akebia (*Akebia quinata*)
 *Porcelain-berry (*Ampelopsis brevipedunculata*)
 *Oriental Bittersweet (*Celastrus orbiculatus*)
 *Sweet Autumn Clematis (*Clematis terniflora*)
 Chinese Yam (*Dioscorea polystachya*) [= *Dioscorea batatas*]
 *Winter Creeper (*Euonymus fortunei*)
 *English Ivy (*Hedera* spp.) [Recent morphological studies of *Hedera* spp. in the greater D.C. area have shown diploid *H. helix* to be by far the most common naturalized *Hedera* sp. in the region, with rare to infrequent occurrences of tetraploid *H. hibernica* (McAllister and Simmons, in prep.). Alan Whittemore and Jun Wen are also running flow cytometry on *Hedera* spp. to determine ploidy; the results of which so far have largely confirmed the findings of the morphological

studies. Flow cytometry studies have also found triploids in areas where *H. helix* and *H. hibernica* grow together (Alan Whittemore, pers. comm.)]

*Japanese Honeysuckle (*Lonicera japonica*)

Mile-a-minute Weed (*Persicaria perfoliata*) [= *Polygonum perfoliatum*]

Kudzu (*Pueraria montana*)

Greater Periwinkle (*Vinca major*)

Common Periwinkle (*Vinca minor*)

Japanese Wisteria (*Wisteria floribunda*)

Chinese Wisteria (*Wisteria sinensis*) [“Some of our material may represent *Wisteria x formosa* Rehder, a complex series of hybrids and backcrosses between *W. floribunda* and *W. sinensis*.” (VBA 2017)]

Shrubs

Japanese Barberry (*Berberis thunbergii*)

Butterfly-bush (*Buddleia davidii*)

Hardy Orange (*Citrus trifoliata*) [= *Poncirus trifoliata*]

Thorny Olive (*Elaeagnus pungens*)

Autumn Olive (*Elaeagnus umbellata*)

*Burning Bush (*Euonymus alatus*)

Rose-of-Sharon (*Hibiscus syriacus*)

Chinese Holly (*Ilex cornuta*)

Japanese Holly (*Ilex crenata*)

Privet (*Ligustrum* spp.) [Japanese Privet (*Ligustrum japonicum*), Border Privet (*Ligustrum obtusifolium* var. *obtusifolium*), California Privet (*Ligustrum ovalifolium*), Chinese Privet (*Ligustrum sinense*), and Common Privet (*Ligustrum vulgare*) all occur in Alexandria, as well as likely others.]

*Amur honeysuckle (*Lonicera maackii*)

Leatherleaf Mahonia (*Berberis bealei*) [= *Mahonia bealei*]

Holly Osmanthus (*Osmanthus heterophyllus*)

Bamboo (*Phyllostachys* spp.) [Apparently, Yellow Groove Bamboo (*Phyllostachys aureosulcata*) is frequently confused for Golden Bamboo (*Phyllostachys aurea*), when in fact Yellow Groove Bamboo is far more common in Virginia (Caryn Rickel, pers. comm.)]

Arrow Bamboo (*Pseudosasa japonica*)

*Multiflora Rose (*Rosa multiflora*)

*Himalayan Blackberry (*Rubus discolor*) [Eedes and Newton (1988) state that *R. ulmifolius* is probably the only variable sexual species in subgenus *Rubus*. *R. bifrons* is given as of dubious attribution, and *R. discolor* and *R. armeniacus* as synonyms of *R. procerus* Mueller ex Boulay, *Ronces Vosg.* 7 (1864), with the comment that it is probably a widespread species native to Europe with 2n=28 (so tetraploid and apomictic), which was probably sent from Germany to the U.S. nurseries where it was given the name 'Himalayan Giant' and exported back to Europe (Hugh McAllister, pers. comm.). According to Eedes and Newton, *R. procerus/discolor* “is readily bird-sown and quickly forms dense patches of very robust plants” and is “usually distinguished from related species without difficulty by its large size.”]

*Wineberry (*Rubus phoenicolasius*)

Linden Arrow-wood (*Viburnum dilatatum*)

Tea Viburnum (*Viburnum setigerum*)

Trees

Norway Maple (*Acer platanoides*)

*Tree-of-Heaven (*Ailanthus altissima*)

*Mimosa, Silk Tree (*Albizia julibrissin*)

Golden Rain Tree (*Koelreuteria paniculata*)

Siberian Crabapple (*Malus baccata*)

Japanese Flowering Crabapple (*Malus floribunda*)

Crabapple (*Malus* spp.) [Includes the likely many hybrids and backcrosses between *M. baccata* and *M. floribunda* and other exotic *Malus* species]

*White Mulberry (*Morus alba*)

Princess Tree (*Paulownia tomentosa*)

Sweet Cherry (*Prunus avium*)

*Higan Cherry (*Prunus subhirtella*)

*Callery Pear, Bradford Pear (*Pyrus calleryana*) [Includes all named varieties and cultivars of *P. calleryana*, such as “Aristocrat”, “Autumn Blaze”, “Chanticleer”, “Cleveland Select”, “Redspire”, Whitehouse”, etc.]

Sawtooth Oak (*Quercus acutissima*)

*White Willow (*Salix alba*)

Crack Willow (*Salix fragilis*)

Pagoda Tree (*Styphnolobium japonicum*) [= *Sophora japonica*]

*Siberian Elm (*Ulmus pumila*)

Watchlist

Italian Arum (*Arum italicum*)

Spotted Laurel (*Aucuba japonica*)

Meadow Sedge (*Carex flaccosperma*) [This taxon is not native to anywhere near Alexandria; “in the eastern U.S., it ranges as far north as the southeastern portion of Virginia” (Rob Naczi, pers. comm.). It is commonly available through the nursery industry and is popular for its bluish-green foliage.]

Japanese Shield Fern (*Dryopteris erythrosora*)

European Spindle Tree (*Euonymus europaeus*)

Castor Aralia (*Kalopanax septemlobus*)

Cherry Laurel (*Prunus laurocerasus*)

Ravenna-grass (*Tripsidium ravennae*) [= *Saccharum ravennae*; *Erianthus ravennae*]

Tall False Hawksbeard (*Youngia thunbergiana*)

Japanese Zelkova (*Zelkova serrata*)



Fig. 2. Massive smothering infestation of Porcelain-berry at Daingerfield Island in the City of Alexandria, Virginia. This species, Oriental Bittersweet, and Japanese Stiltgrass first arrived in the D.C. region in the mid-to-late 1990s and have spread exponentially since then and today occupy vast areas of the landscape. Photo by R.H. Simmons.

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Fig. 3. A nearly continuous carpet of Japanese Stiltgrass throughout the entire deer-overbrowsed forest floor of the upper “Gold Mine Tract” (Great Falls Park) along MacArthur Blvd. in Montgomery County, Maryland. Deer overpopulation has been a serious problem in Montgomery County for decades, but like many other forested natural areas in the region, Stiltgrass was virtually absent from this park in the mid-to-late 1990s. However, the Stiltgrass, which opportunistically invades areas of soil disturbance such as caused by deer trails and hooves, rapidly followed the deer into interior forested areas and became established. Photo by R.H. Simmons.