



# INVASIVE PLANTS

## WHAT ARE INVASIVE PLANTS?

Invasive plants are non-native species that have been introduced by humans either intentionally or unintentionally and have become serious threats to natural ecosystems, economic activity, and humans. Many of these exotic plants were brought to North America during the 19th and early 20th centuries as garden ornamentals or for medicinal use. Others were imported as livestock feed, to forestall erosion, and for surface mine reclamation. A few plants were used in manufacturing tools, musical instruments, or cane fishing poles. Today a few species are still sold for home planting.

Invasive plants don't always originate in another country or on another continent. Some plants that are important contributors to one North American environment as food source and habitat may prove invasive in another. Black locust *Robinia pseudoacacia* is a United States native that has invaded the Cape Cod National Seashore and is threatening areas in several other states.

## What Makes Plants Invasive

Plants with the highest invasive potential tend to share some or all of these characteristics:

- A lack of natural predators, i.e., competition with other plants, soil conditions, weather, an insect or disease, and herbivores outside their native range
- Prolific seeders – a single mature female Tree-of-Heaven *Ailanthus altissima* can produce over 300,000 seeds per year
- Multiple reproductive capabilities – English Ivy *Hedera helix* grows vigorously from the tip of

stems; new plants grow from cuttings or stem fragments that make contact with the soil, and by seeds eaten and dispersed by birds

- Vigorous growers or aggressive root systems that dominate and push out surrounding vegetation – Bradford or Callery Pear *Pyrus calleryana* spreads rapidly by seed and vegetatively to form dense thickets; once established, Kudzu *Pueraria lobata* can grow up to one foot a day and 60 feet annually
- Disperses readily by wind, water, wildlife, or human activity – seeds of Japanese Stiltgrass *Microstegium vinimeum* are easily spread by adhering to clothing, shoes, equipment, and animal fur; Autumn Olive *Elaeagnus umbellata* produces berries that are eaten and dispersed by wildlife
- Adaptability – Multiflora Rose *Rosa multiflora* grows aggressively in a wide range of soil, moisture, and light conditions and can invade forests, fields, and wetlands
- Pioneer species – Japanese Stiltgrass *Microstegium vinimeum* is one of the first species to establish in areas subject to regular disturbance such as flooding, mowing, tilling, and heavy foot traffic and is often found along hiking trails, roadways and ditches, powerline rights-of-way, moist woodlands, and home gardens
- Chemicals produced in leaves or root systems which inhibit growth of other plants around them – the roots of Common Reed *Phragmites australis* secrete powerful toxins that destroy the structural proteins of roots in neighboring plants

Negative impacts of invasive species:

- Direct competition with native species for moisture, sunlight, nutrients, and space
- Reduction or extinction of native species when invasive species outcompete slower-growing, rare or vulnerable plant populations
- Loss of biodiversity in areas where natives have been pushed out and exotic species have taken over
- Destruction of vertical forest structure – ground cover vegetation, understory shrubs and young trees, and mature tree canopy layer are needed to sustain diversity of both plants and animals
- Altered ecosystem function such as change in water flow or soil chemistry, or loss of forest layer
- Habitat degradation caused by establishment and spread of invasive species
- Increased soil erosion
- Degraded water quality
- Decreased recreational value – Common Reed *Phragmites australis* can reduce native fish and wildlife populations, limiting recreational values for birdwatchers, walkers, naturalists, boaters, and hunters
- Decreased timber and wildlife productivity due to poor quality agriculture lands
- Economic damage due to costs from decreased productivity and significant resources and expenses required for management and control

## Management and Control

Several methods of control are available to slow down or eradicate the damage caused by invasive plants. Mechanical control includes hand-pulling, digging, mowing, disking, grazing, and burning but repeat mechanical applications and chemical follow-up are likely needed to manage many species. Biological control introduces natural predators to control pests; however, there is risk of the predators becoming invasive themselves. Chemical control involves the use of herbicides, pesticides or fungicides but chemicals vary in their selectivity for killing species. Some chemicals can leach into the soil and run into waterways while others can remain in the soil for extended periods of time.

Knowing how a particular species grows, spreads and reproduces will help determine the most appropriate method for control. But keep in mind: once an invasive plant is contained or removed from a site, the area must immediately be reestablished with native species or it will be reclaimed by invasive plants again. The easiest and most effective method for managing and controlling invasive species from spreading in the landscape is prevention. Stop planting them. If people stop buying invasive plants, nurseries and garden centers will stop carrying them. Many resources are available online and through Virginia Cooperative Extension to help identify invasive species and suggest native alternatives to plant instead. A list of resources is also included with this chapter.

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## INVASIVES OF PARTICULAR CONCERN IN SOUTHEAST VIRGINIA\*

Invasive, non-native plants do not provide the same ecosystem services as natives and have a harmful effect on our environment, not only in the suburban community but also in our forests, parks, and other natural areas.

The non-native species listed in the following chart are of particular concern to Southeast Virginia, and are currently ranked on the Virginia Invasive Species List as exhibiting high (\*\*\*) , medium (\*\*) or low (\*) based on their threat to natural communities and native species.



*Campsis radicans*

Invasive Species	Southeast Virginia Native	Alternatives
<p><b>Autumn Olive ***</b> <i>Elaeagnus umbellata</i></p>	<p><b>Groundsel</b> <i>Baccharis halimifolia</i></p>	<p><b>Buttonbush</b> <i>Cephalanthus occidentalis</i></p> <p><b>Sweet Pepperbush</b> <i>Clethra alnifolia</i></p> <p><b>Yaupon Holly</b> <i>Ilex vomitoria</i></p> <p><b>Gallberry or Inkberry</b> <i>Ilex glabra</i></p> <p><b>Virginia Sweetspire</b> <i>Itea virginica</i></p> <p><b>Elderberry</b> <i>Sambucus canadensis</i></p> <p><b>Mapleleaf Viburnum</b> <i>Viburnum acerifolium</i></p> <p><b>Smooth Witherod</b> <i>Viburnum nudiflorum</i></p> <p><b>Black Haw</b> <i>Viburnum prunifolium</i></p>
<p><b>Bradford or Callery Pear **</b> <i>Pyrus calleryana</i></p>	<p><b>Serviceberries</b> <i>Amelanchier spp.</i></p>	<p><b>Common Pawpaw</b> <i>Asimina triloba</i></p> <p><b>Hawthorns</b> <i>Crataegus spp.</i></p> <p><b>Eastern Redbud</b> <i>Cercis canadensis</i></p> <p><b>Flowering Dogwood</b> <i>Cornus florida</i></p> <p><b>Common Persimmon</b> <i>Diospyros virginiana</i></p>
<p><b>Chinese Silvergrass **</b> <i>Miscanthus sinensis</i></p>	<p><b>Switchgrass</b> <i>Panicum virgatum</i></p>	
<p><b>Chocolate Vine or Five-leaf Akebia **</b> <i>Akebia quinata</i></p>	<p><b>Carolina or Yellow Jessamine</b> <i>Gelsemium sempervirens</i></p>	<p><b>Trumpet creeper</b> <i>Campsis radicans</i></p> <p><b>Trumpet or Coral Honeysuckle</b> <i>Lonicera sempervirens</i></p> <p><b>Crossvine</b> <i>Bignonia capreolata</i></p>
<p><b>English Ivy **</b> <i>Hedera helix</i></p>	<p><b>Wild Ginger</b> <i>Asarum canadense</i></p>	<p><b>Crossvine Galax urceolata, Galax</b> <i>Bignonia capreolata</i></p> <p><b>Carolina or Yellow Jessamine</b> <i>Gelsemium sempervirens</i></p> <p><b>Partridge-berry</b> <i>Mitchella repens</i></p> <p><b>Virginia-creeper</b> <i>Parthenocissus quinquefolia</i></p> <p><b>Golden Ragwort</b> <i>Packera aurea</i></p>

Invasive Species	Southeast Virginia Native	Alternatives
<p><b>Japanese Honeysuckle ***</b> <i>Lonicera japonica</i></p>	<p><b>Crossvine</b> <i>Bignonia capreolata</i></p>	<p><b>Trumpet creeper</b> <i>Campsis radicans</i></p> <p><b>Virginia-creeper</b> <i>Parthenocissus quinquefolia</i></p> <p><b>Carolina or Yellow Jasmine</b> <i>Gelsemium sempervirens</i></p> <p><b>Trumpet or Coral Honeysuckle</b> <i>Lonicera sempervirens</i></p> <p><b>Purple Passionflower or Maypop</b> <i>Passiflora incarnata</i></p>
<p><b>Japanese Stiltgrass ***</b> <i>Microstegium vimineum</i></p>	<p><b>Saltgrass</b> <i>Distichlis spicata</i></p>	<p><b>Narrowleaf Blue-Eyed Grass</b> <i>Sisyrinchium angustifolium</i></p>
<p><b>Japanese Wisteria *</b> <i>Wisteria floribunda</i>,</p> <p>and</p> <p><b>Chinese Wisteria **</b> <i>Wisteria sinensis</i>,</p>	<p><b>Crossvine</b> <i>Bignonia capreolata</i></p>	<p><b>Trumpet creeper</b> <i>Campsis radicans</i></p> <p><b>Carolina or Yellow Jessamine</b> <i>Gelsemium sempervirens</i></p> <p><b>Trumpet or Coral Honeysuckle</b> <i>Lonicera sempervirens</i></p> <p><b>Virginia-creeper</b> <i>Parthenocissus quinquefolia</i></p> <p><b>Purple Passionflower or Maypop</b> <i>Passiflora incarnata</i></p> <p><b>American Wisteria</b> <i>Wisteria frutescens</i></p>
<p><b>Mimosa Silk Tree **</b> <i>Albizia julibrissi</i></p>	<p><b>Serviceberry</b> <i>Amelanchier arborea</i> and <i>A. canadensis</i></p>	<p><b>Eastern Redbud</b> <i>Cercis canadensis</i></p> <p><b>White Fringetree</b> <i>Chionanthus virginicus</i></p> <p><b>Silky Dogwood</b> <i>Cornus amomum</i></p> <p><b>Northern Spicebush</b> <i>Lindera benzoin</i></p> <p><b>River Birch</b> <i>Betula nigra</i></p>
<p><b>Multiflora Rose ***</b> <i>Rosa multiflora</i></p>	<p><b>Carolina or Pasture Rose</b> <i>Rosa Carolina</i></p>	<p><b>Swamp Rose</b> <i>Rosa palustris</i></p>
<p><b>Porcelain-Berry ***</b> <i>Ampelopsis brevipedunculat</i></p>	<p><b>Crossvine</b> <i>Bignonia capreolata</i></p>	<p><b>Carolina or Yellow Jessamine</b> <i>Gelsemium sempervirens</i></p> <p><b>Trumpet or Coral Honeysuckle</b> <i>Lonicera sempervirens</i></p>
<p><b>Tree of Heaven ***</b> <i>Ailanthus altissima</i></p>	<p><b>Eastern Redbud</b> <i>Cercis canadensis</i></p>	<p><b>Common Persimmon</b> <i>Diospyros virginiana</i></p> <p><b>Winged or Shining Sumac</b> <i>Rhus copallinum</i></p>

## Learn More About Invasive Plants and How You Can Help

Virginia Department of Conservation and Recreation, Division of Natural Heritage:

<https://www.dcr.virginia.gov/natural-heritage/invspinfo>

USDA National Invasive Species Information Center:

<https://www.invasivespeciesinfo.gov>

Center for Invasive Species and Ecosystem Health:

<https://www.invasive.org/species/weeds.cfm>

*Mistaken Identity – Invasive Plants and their Native Look-Alikes* (Pub):

[https://www.nrcs.usda.gov/Internet/FSE\\_DOCUMENTS/nrcs144p2\\_024329.pdf](https://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs144p2_024329.pdf)

*Plant Invaders of Mid-Atlantic Natural Areas* (Pub):

<https://www.invasive.org/alien/pubs/midatlantic/midatlantic.pdf>

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This content also is online - <https://www.plantvirginianatives.org/nonnative-invasive-plants-of-concern-in-southeast-virginia-and-regional-native-alternatives>

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USDA. U.S. Forest Service. (2021). *Invasive Plants*. <https://www.fs.fed.us/wildflowers/invasives/>

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## RESOURCES

### Related Topics–Publications:

Miller, J. H., Manning, S. T., Enloe, S. F. (2013). *A management guide for invasive plants in southern forests. (slightly revised 2013 and 2015)*. General Technical Report SRS–131. Asheville, NC: U.S. Department of Agriculture Forest Service, Southern Research Station. 120 pp.

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U.S. Fish and Wildlife Service, Chesapeake Bay Field Office. (2003). *Native plants for wildlife habitat and conservation landscaping: Chesapeake Bay watershed*. [PDF document]. Retrieved from: <https://www.fws.gov/chesapeakebay/PDF/resources/Native-Plants-for-Wildlife-Habitat-and-Conservation-Landscaping.pdf>

Virginia Tech Landowner Education Program. (2020). *Challenges to sustainable forestry: Exotic invasive plants*. [PDF document]. Retrieved from: [https://forestupdate.frec.vt.edu/content/dam/forestupdate\\_frec\\_vt\\_edu/real-estate/resources/presentations/exotics.pdf](https://forestupdate.frec.vt.edu/content/dam/forestupdate_frec_vt_edu/real-estate/resources/presentations/exotics.pdf)

### Related Topics--Websites:

The Biota of North America Program. North American Vascular Flora. <http://www.bonap.org/>

Blue Ridge PRISM. Partnership for Regional Invasive Species Management. <https://blueridgeprism.org/>

Chesapeake Bay Foundation. <https://www.cbf.org/join-us/more-things-you-can-do/in-your-yard/native-plants.html>

Digital Atlas of the Virginia Flora. <http://vaplantatlas.org/>

Invasive Plant Atlas of the United States. <https://www.invasiveplantatlas.org/list.html?id=176>

NatureServe. <http://natureserve.org/>

Plant Virginia Natives. <https://www.plantvirginianatives.org/>

USDA Plants Database. USDA Plants Database

Virginia Department of Forestry. Invasive Plants in Virginia : Virginia Department of Forestry

Virginia Invasive Species. <http://www.invasivespeciesva.org/>

Virginia Native Plant Society. [https://vnps.org/Virginia Tech Landowner Education Program](https://vnps.org/Virginia_Tech_Landowner_Education_Program).  
<https://forestupdate.frec.vt.edu/landownerprograms.html>

### **Where to Buy Native Plants:**

Gloucester Extension Master Gardeners Plant Extravaganza,  
<https://www.gloucesterva.info/639/Master-Gardeners> - plant sale held every September

Local nurseries in Gloucester

Lewis Ginter Botanical Garden, <https://www.lewisginter.org/> - plant sales held spring and fall

Norfolk Botanical Garden, <https://norfolkbotanicalgarden.org/> - plant sale held Mother's Day weekend

Northern Neck Extension Master Gardeners, <https://nnmg.org/> - check website for upcoming sales

Virginia Department of Forestry (tree seedlings only),  
<https://dof.virginia.gov/forest-management-health/seedling-nurseries/>

Virginia Living Museum, Newport News, VA, <https://thevlm.org/> - plant sales held April & September

Virginia Native Plant Society, [www.vnps.org](http://www.vnps.org) - check local John Clayton Chapter link  
(<https://vnps.org/johnclayton/>) for upcoming sales

Williamsburg Botanical Garden, <https://williamsburgbotanicalgarden.org/> - check website for upcoming sales

