

INVASIVE ALIEN PLANTS OF VIRGINIA

<u>Common Name</u>	<u>Scientific Name</u>	<u>Common Name</u>	<u>Scientific Name</u>
Alligator-weed	<i>Alternanthera philoxeroides</i>	Kudzu-vine*	<i>Pueraria lobata</i>
Amur cork-tree°	<i>Phellodendron amurense</i>	Leafy spurge°	<i>Euphorbia esula</i>
Amur honeysuckle°	<i>Lonicera maackii</i>	Lesser celandine	<i>Ranunculus ficaria</i>
Aneilima*	<i>Murdannia keisak</i>	Linden viburnum°	<i>Viburnum dilatatum</i>
Asiatic sand sedge*	<i>Carex kobomugi</i>	Mile-a-minute°	<i>Polygoum perfoliatum</i>
Autumn olive	<i>Elaeagnus umbellata</i>	Mimosa	<i>Albizia julibrissin</i>
Balloon-vine°	<i>Cardiospermum halicababum</i>	Moneywort	<i>Lysimachia nummularia</i>
Beafsteak plant*	<i>Perilla frutescens</i>	Morrow's honeysuckle*	<i>Lonicera morrowi</i>
Bell's honeysuckle°	<i>Lonicera x bella</i>	Mugwort *	<i>Artemisia vulgaris</i>
Bermuda-grass	<i>Cynodon dactylon</i>	Multiflora rose*	<i>Rosa multiflora</i>
Birdsfoot trefoil	<i>Lotus corniculatus</i>	Musk thistle	<i>Carduus nutans</i>
Black pine°	<i>Pinus thunbergii</i>	Nipplewort	<i>Lapsana communis</i>
Blunt-leaved privet	<i>Ligustrum obtusifolium</i>	Norway maple	<i>Acer platanoides</i>
Brazilian water-weed	<i>Egeria densa</i>	Oatgrass	<i>Arrhenatherum elatius</i>
Bristled knotweed	<i>Polygonum cespitosum</i>	Orchard-grass	<i>Dactylis glomerata</i>
Brown knapweed	<i>Centaurea jacea</i>	Oriental bittersweet*	<i>Celastrus orbiculatus</i>
Bugleweed	<i>Ajuga reptans</i>	Parrot's feather	<i>Myriophyllum aquaticum</i>
Bull-thistle*	<i>Cirsium vulgare</i>	Periwinkle	<i>Vinca minor</i>
Canada bluegrass	<i>Poa compressa</i>	Poison hemlock	<i>Conium maculatum</i>
Canada-thistle*	<i>Cirsium arvense</i>	Porcelain-berry °	<i>Ampelopsis brevipedunculata</i>
Chinese lespedeza*	<i>Lespedeza cuneata</i>	Purple loosestrife ∞°	<i>Lythrum salicaria</i>
Chinese privet	<i>Ligustrum sinense</i>	Purple loosestrife ∞°	<i>Lythrum virgatum</i>
Chinese tallow tree°	<i>Sapium sebiferum</i>	Quack-grass	<i>Agropyron repens</i>
Chinese wisteria	<i>Wisteria sinensis</i>	Red morning-glory	<i>Ipomoea coccinea</i>
Chinese yam*	<i>Dioscorea batatas</i>	Red sorrel	<i>Rumex acetosella</i>
Common buckthorn	<i>Rhamnus cathartica</i>	Redtop	<i>Agrostis gigantea</i>
Common chickweed	<i>Stellaria media</i>	Rhode Island bent-grass	<i>Agrostis tenuis</i>
Common cocklebur	<i>Xanthium strumarium</i>	Rough bluegrass	<i>Poa trivialis</i>
Common day-flower	<i>Commelina communis</i>	Russian olive°	<i>Elaeagnus angustifolia</i>
Common morning-glory	<i>Ipomoea purpurea</i>	Sawtooth oak°	<i>Quercus acutissima</i>
Common reed*	<i>Phragmites australis</i>	Short-fringed knapweed	<i>Centaurea dubia</i>
Common teasel	<i>Dipsacus sylvestris</i>	Siberian elm°	<i>Ulmus pumila</i>
Crown-vetch°	<i>Coronilla varia</i>	Sickle-pod	<i>Cassia obtusifolia</i>
Curled dock	<i>Rumex crispus</i>	Spotted knapweed°	<i>Centaurea maculosa</i>
Curled thistle*	<i>Carduus acanthoides</i>	Sweet breath of spring°	<i>Lonicera fragrantissima</i>
Cut-leaf teasel	<i>Dipsacus laciniatus</i>	Tall fescue*	<i>Festuca elatior</i>
Empress-tree	<i>Paulownia tomentosa</i>	Tartarian honeysuckle°	<i>Lonicera tatarica</i>
English Ivy*	<i>Hedera helix</i>	Thorny elaeagnus	<i>Elaeagnus pungens</i>
Eulalia*	<i>Microstegium vimineum</i>	Timothy	<i>Phleum pratense</i>
European water-milfoil	<i>Myriophyllum spicatum</i>	Tree of heaven*	<i>Ailanthus altissima</i>
Fennel	<i>Foeniculum vulgare</i>	Velvet-grass	<i>Holcus lanatus</i>
Field-bindweed	<i>Convolvulus arvensis</i>	Water chestnut°	<i>Trapa natans</i>
Fiveleaf akebia°	<i>Akebia quinata</i>	Water-flag	<i>Iris pseudacorus</i>
Garlic mustard°	<i>Alliaria petiolata</i>	Weeping lovegrass	<i>Eragrostis curvula</i>
Giant foxtail	<i>Setaria faberi</i>	White mulberry	<i>Morus alba</i>
Giant reed*	<i>Arundo donax</i>	White poplar	<i>Populus alba</i>
Gill-over-the-ground°	<i>Glechoma hederacea</i>	White sweet clover	<i>Melilotus alba</i>
Glossy buckthorn°	<i>Rhamnus frangula</i>	Wild onion	<i>Allium vineale</i>
Hydrilla°	<i>Hydrilla verticillata</i>	Wild parsnip	<i>Pastinaca sativa</i>
Ivy-leaved morning-glory	<i>Ipomoea hederacea</i>	Wineberry	<i>Rubus phoenicolasius</i>
Japanese barberry °	<i>Berberis thunbergii</i>	Winged burning bush°	<i>Euonymus alatus</i>
Japanese honeysuckle°	<i>Lonicera japonica</i>	Wintercreeper°	<i>Euonymus fortunei</i>
Japanese hops	<i>Humulus japonicus</i>	Yellow sweet clover	<i>Melilotus officinalis</i>
Japanese knotweed°	<i>Polygonum cuspidatum</i>		
Japanese spiraea	<i>Spiraea japonica</i>		
Japanese wisteria°	<i>Wisteria floribunda</i>		
Johnson-grass*	<i>Sorghum halepense</i>		
Jointed charlock	<i>Raphanus raphanistrum</i>		
Jointed-grass	<i>Anhraxon hispidus</i>		

* Especially troublesome
 ° Persistence in Virginia uncertain
 ∞ Including all cultivars

Scientific names follow Atlas of the Virginia Flora III by Harvill, et al., 1992.

FOR MORE INFORMATION, CONTACT:



Virginia Native Plant Society
 P.O. Box 844
 Annandale, Virginia 22003

or



Department of Conservation and Recreation
 Division of Natural Heritage
 1500 East Main Street, Suite 312
 Richmond, Virginia 23219

WARNING! INVASIVE ALIEN PLANTS

WHY ARE ALIEN PLANTS A SERIOUS THREAT?

Plants that are not a part of the indigenous (native) vegetation, but that have been introduced into a region are called aliens. For the most part, introduced, or alien, plant species form an important part of our environment, contributing immensely to agriculture, horticulture, landscaping, and soil stabilization. But among the thousands of plant species introduced to our area, some have displayed unexpected aggressive growth tendencies. The purpose of this fact sheet is to identify some of the more problematic species which, in many circumstances, degrade native plant communities.

While most alien plant species do not persist in the wild, introductions since European settlement have substantially changed the composition of native plant communities throughout North America. Of the roughly 2500 vascular plant species that grow in the wild in Virginia, some 350 are not native to the state. While many of these are restricted to roadsides and other heavily-disturbed sites, others readily invade natural and semi-natural landscapes.

Invasive alien plants typically exhibit the following characteristics:

- rapid growth and maturity,
- prolific seed production,
- highly successful seed dispersal, germination, and colonization,
- rampant spread,
- ability to out-compete native species,
- high cost to remove or control.

Invasive aliens thrive on disturbed sites. Native plant communities fragmented by human disturbances are most vulnerable to invasion, but even intact ecosystems can be invaded by the most aggressive alien species. Invasive alien plants leave behind the natural controls (e.g. insects) that keep them in check in their native habitats. Biodiversity is further threatened when alien plants harbor invasive pathogens, fungi, or other organisms that decimate native species, such as American Chestnut.

AWARENESS IS CRITICAL

Awareness of the problems caused by invasive alien plants is the first step in preventing their continued use. Public awareness will help increase responsible landscaping and conservation practices. Awareness by resource managers will help prevent the introduction of these species on public lands and preserve our natural heritage.

HOW YOU CAN HELP

Learn what species are native in your area. Use native species, grown from local stock if available, for conservation and landscaping purposes whenever possible. When using alien plants, avoid highly invasive species. Support public policies that restrict the introduction of invasive alien plants and get involved in organizations and agencies that work to protect biological diversity. Ask your nursery to sell native plants propagated from local stock. Plan and implement sound practices for the control of invasive alien plants in natural areas. A list of alien plants that have invasive tendencies in Virginia is provided on the overleaf.

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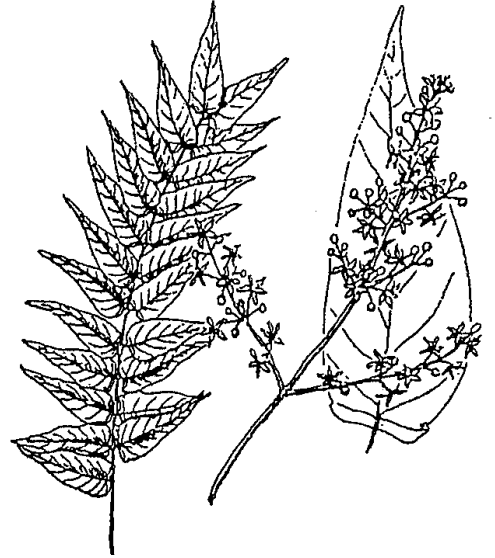
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Invasive Alien Plant Species of Virginia

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

Description

Tree-of-heaven is a small to medium-sized tree in the mostly tropical Quassia family. It has smooth gray bark. Leaves are compound, alternate, odd-pinnate, with 11 to 25 lanceolate leaflets. Most leaflets have one to three coarse teeth near their base. Tree-of-heaven leaves may be confused with those of sumac or black walnut. Flowers occur in panicles at the ends of branches; male flowers produce a strong odor which has been described as “the smell of burnt peanut butter.” The leaves when crushed also produce this distinctive, offensive odor. Seeds are centered in a papery sheath called a samara. The samaras are slightly twisted or curled, and twirl as they fall to the ground. They can be borne on the wind great distances from the parent plant.



Tree-of-Heaven (*Ailanthus*)

Habitat

Tree-of-heaven establishes itself readily on disturbed sites. These include vacant lots of the inner city, railroad embankments, highway medians, fence rows and roadsides. In naturally forested areas, disturbance created by severe storms or insect infestations can open the way for tree-of-heaven infestation.

Distribution

Tree-of-heaven is native to a region extending from China south to Australia. It was imported into the United States in 1784 by a Philadelphia gardener. In the western states it was brought over by Chinese immigrants who use it for medicinal purposes. Due to its rapid growth and prolific seed production, it quickly escaped from cultivation.

Threats

One tree-of-heaven can produce up to 350,000 seeds in a year. Seedlings establish a taproot three months from germination. Thus they quickly outrace many native plant species in competition for sunlight and space. Tree-of-heaven also produces a toxin in its bark, and leaves. As these accumulate in the soil, the toxin inhibits the growth of other plants. Ibis toxin is so effective it is being studied as a possible source for a natural herbicide. These factors combine to make tree-of-heaven a very aggressive invasive plant able to displace native tree and herb species. Furthermore, the root system is capable of doing damage to sewers and foundations.

Control

Tree-of-heaven is very difficult to remove once it has established a taproot. It has persisted in certain areas despite cutting, burning and herbiciding. Therefore, seedlings should be removed by hand as early as possible, preferably when the soil is moist to insure removal of the entire taproot. Larger plants should be cut; two cuttings a year may be necessary, once in the early growing season and once in the late growing season. Initially, this will not kill the plant; it will vigorously resprout from the roots, but seed production will be prevented and the plants will be lowered in stature. If continued over a period of several years, cutting during the growing season stresses the plants and may eventually kill them.

A glyphosate herbicide, either sprayed onto the leaves or painted onto a freshly cut stump will kill the plant. However, to insure the herbicide gets into the root system, it is best to apply this herbicide in the late growing season.

Invasive Alien Plant Species of Virginia

Oriental Bittersweet (*Celastrus orbiculatus* Thunb.)

Description

Oriental bittersweet is a deciduous, twining vine with alternate, round, glossy leaves. Small, greenish flowers occur in clusters in the axils. The leathery capsule surrounding the seed ripens to a bright orange. The native species, American bittersweet (*Celastrus scandens*), differs from the invasive by its leaves, which are oval or elliptic in shape, and the terminal panicle of flowers. Consult a natural resource specialist for an accurate identification.



Habitat

This species grows in alluvial woods, roadsides, thickets and old home sites. From there it may spread to undisturbed mesic or dry-mesic forests.

Distribution

Oriental bittersweet, a native of Asia, was brought to the United States for cultivation during the middle of the nineteenth century. It is now naturalized in 21 of the 33 states where it was introduced, a region extending from Maine south to Georgia, and west to Iowa. Oriental bittersweet is found in over half the counties of Virginia.

Threats

This plant can overrun natural vegetation in much the same way as kudzu (*Pueraria lobata*), overtopping all other vegetation and forming thick, nearly pure stands. It can strangle shrubs and tree limbs, and weaken a tree by girdling the trunk and weighting the crown, making the tree more susceptible to wind and ice damage. There is some evidence that it can hybridize with American bittersweet, thus threatening genetic integrity of the native species.

Control

Light infestations of a few small plants can be controlled by cutting the vines and handpulling the roots. Dense infestations can be treated by cutting the vines followed immediately by application of a glyphosate herbicide to the stumps. Merely cutting vines without removing or killing the roots will only stimulate vigorous regrowth. To ensure rootkill, a late season foliar application of herbicide may be necessary. Glyphosate herbicides are recommended because they are biodegradable. However, glyphosate is a nonselective, systemic herbicide that affects all green vegetation. To be safe and effective, herbicide use requires careful knowledge of the chemicals, appropriate concentrations, and the effective method and timing of their application. Contact a natural resource specialist for more information about controlling invasive plant species.

Alternative Plants for Cultivation

Many native species of vines are available through local nurseries or mail order. American bittersweet (*Celastrus scandens*) is our native bittersweet and does not exhibit the invasive tendencies of Oriental bittersweet. Crossvine (*Bignonia capreolata*), trumpet honeysuckle (*Lonicera sempervirens*), and trumpet creeper (*Campsis radicans*) are all climbing vines that produce bright red-orange flowers attractive to hummingbirds. Virgin's bower (*Clematis virginiana*) is a climbing vine which blooms in clusters of fragrant white flowers. Virginia creeper (*Parthenocissus quinquefolia*) grows well in the shade and its cluster of dark purple berries are an important food for birds. For more information on native plants for cultivation contact the Virginia Native Plant Society (see address below).

Illustration from *New Britton & Brown Illustrated Flora of the Northeast U.S. and Adjacent Canada*, by H.H. Gleason, New York Botanical Gardens Scientific Publications. Used with permission.

For more information, contact the Department of Conservation and Recreation or the Virginia Native Plant Society.



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