Natural Lands

Invasive Plant Species Identification Guide

The purpose of these cards is to aid in the identification of invasive plants in the field. Each card features photos and key identification features.

Additionally, the cards also contain potential look-alikes and control methods. For any control measures that include herbicide applications, all applications must be done by a licensed applicator following all product directions. Where trade names are used no endorsement is implied; Natural Lands and the authors of this document are not liable for problems associated with the use of herbicides described therein.

For easy use, plants are organized by type of plant: tree, shrub, vine, and herbaceous. Citations are included after the plant cards.

PA Department of Conservation & Natural Resources
Keystone

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Sources

DCNR Invasive Plants Fact Sheets
www.dcnr.pa.gov/Conservation/WildPlants/InvasivePlants/InvasivePlantFactSheets/Pages

Cornell Cooperative Extension Invasive Plants
www.albany.cce.cornell.edu/environment/invasive-plants

Invasive.org
www.invasive.org/species/weeds.cfm

PennState College of Agricultural Sciences. Plant ID.
www.plantscience.psu.edu/outreach/plant-id

University of Minnesota Extension. Invasive Species.
www.extension.umn.edu/invasive-species/identify-invasive-species#herbaceous-%28leafy%29-plants-2369613

University of Wisconsin-Madison. Castor Bean, Ricinus communis.
www.hort.extension.wisc.edu/articles/castor-bean-ricinus-communis/#:~:text=The%20species%20has%20glossy%20green,the%20tops%20of%20the%20stems

Herbaceous

Canada thistle	*Cirsium arvense*
castorbean	*Ricinus communis*
common reed	*Phragmites australis*
Japanese knotweed	*Fallopia japonica*
Japanese pachysandra	*Pachysandra terminalis*
Japanese stiltgrass	*Microstegium vimineum*
mile-a-minute	*Persicaria perfoliata*
mugwort	*Artemis vulgaris*

Shrubs

multiflora rose	*Rosa multiflora*
shrub honeysuckle	*Lonicera* sp.
wineberry	*Rubus phoenicolasius*

Vines

Japanese honeysuckle	*Lonicera japonica*
Japanese hops	*Humulus japonicus*
oriental bittersweet	*Celastrus orbiculatus*

Trees

Japanese angelica tree	*Aralia elata*
Japanese princess tree	*Paulowina tomentosa*
mimosa	*Albizia julibrissin*
Norway maple	*Acer platanoides*
tree-of-heaven	*Ailanthus altissima*

ID Features

MATURE HEIGHT: 1 – 4 feet

LEAVES: Irregularly toothed, spiny, alternate, leaf base encircles stem

FLOWERS: Numerous, pink to purple

FLOWERING PERIOD: June – October

SEEDS: Fall, feathery, windblown, numerous

STEMS: Thin, grooved, branched at top

HABITAT: Disturbed, open sites; fields; roadsides; agricultural fields; streambanks

OTHER: Large, spreading roots; colony forming

Canada Thistle

Cirsium arvense

Canada Thistle
Cirsium arvense

Control Methods

**Any control methods will need to be repeated for multiple years due to Canada thistle's extensive root system and rapid regrowth.*

MECHANICAL: Cut or pull small colonies, including the taproot, in the early spring.

CHEMICAL: Crossbow can be used, typically with moderate results, to control larger colonies. Herbicides can be applied when plants are in the rosette stage in the late summer or fall.

Native Plant Look-Alikes

field thistle (*Cirsium discolor*) – Can grow up to 8 feet tall. Flower buds are 2 inches across compared to Canada thistle, which is 1/5 – 4/5 inches across. Has spiny leaves (bracts) at the base of flower buds, which are lacking for Canada thistle.

pasture thistle (*Cirsium pumilum*) – Stems and bottoms of leaves have dense, wooly hairs. Stems typically have single or a few branches. Flowers reddish to a deep purple. Buds are 1.5 – 3 inches wide. Spiny leaves (bracts) at base of flower head.

PHOTOGRAPHY
Rob Routledge, Sault College, Bugwood.org
Jan Samanek, Phytosanitary Administration, Bugwood.org

ID Features

MATURE HEIGHT: Up to 40 feet, can grow 6 – 10 feet in a growing season

LEAVES: Large, 5 – 11 lobes, star-shaped, alternate, tropical looking, green to red-metallic or bronze, glossy

FLOWERS: Red with many fine petals, 8 – 18" tall flower stalk (also known as an inflorescence)

FLOWERING PERIOD: August – November

PODS: Pods golf ball sized; green, pink, or red; turns brown over time; curved, flexible spines

SEEDS: ½ long seeds, mottled black, brown, gray, yellow, maroon, and white, extremely poisonous

STEMS: Herbaceous to semi-woody stems

HABITAT: Roadsides, streambanks

OTHER: Dies off in freezing temperatures but easily reseeds and regrows the following year

PHOTOGRAPHY

John D. Byrd, Mississippi State University, Bugwood.org

Dan Clark, USDI National Park Service, Bugwood.org

Castorbean *Ricinus communis*

Highly Poisonous

Castorbean *Ricinus communis*

Highly Poisonous

Control Methods

Extreme care should be taken to avoid skin contact with or ingestion of any parts of the plant.

MANUAL: Dig out individual plants.

CHEMICAL: Treat with a postemergence herbicide from seedling through mature plant stage.

PHOTOGRAPHY

John D. Byrd, Mississippi State University, Bugwood.org

Dan Clark, USDI National Park Service, Bugwood.org

ID Features

MATURE HEIGHT: Up to 15 feet

LEAVES: Long, elongated leaves

FLOWERS: Purple or golden, feathery plumes

FLOWERING PERIOD: July and August

SEEDS: Abundant, wind-dispersed, occurring on feathery plumes

STEMS: Hollow

HABITAT: Wetlands, streambanks, pond edges, freshwater or brackish marshes

OTHER: Spreads by seeds or rhizomes; forms large colonies

Common Reed

Phragmites australis

Common Reed
Phragmites australis

Control Methods

CHEMICAL: Apply a wetland- approved herbicide directly to the stalks or leaves in the summer or early fall or cut stalks in the early summer then apply a wetland-approved herbicide eight weeks later into the stalks through a drip application.

Native Plant Look-Alikes

common cattail (*Typha latifolia*) – Dense, oval seed head with a spike at the top compared to common reed's feathery seed head. Up to 9 feet tall.

narrow leaved cattail (*Typha angustifolia*) – Dense, oval seed head with a spike at the top compared to common reed's feathery seed head. Up to 9 feet tall.

PHOTOGRAPHY
Joseph M. DiTomaso, University of California - Davis, Bugwood.org
Leslie J. Mehrhoff, University of Connecticut, Bugwood.org
Caleb Slemmons, National Ecological Observatory Network, Bugwood.org

ID Features

MATURE HEIGHT: 40 feet

LEAVES: Leaves either have leaflets along a central stem (bi-pinnately compound) or sets of leaflets on a side stem that then connect to the main stem (tri-pinnately compound), small hairs underneath, toothed

FLOWERS: White flowers on a large, multi-branched flower stalk (inflorescence), generally 30 – 60 cm tall and is wider than tall

FLOWERING PERIOD: Late summer

SEEDS: Small purple to black fruit

STEMS: Multi-stemmed, sharp spines on trunk

HABITAT: Wood edges, thickets, disturbed areas

OTHER: Spreads from root sprouts and bird dispersal of fruits

PHOTOGRAPHY
Natural Lands
John M. Randall, The Nature Conservancy, Bugwood.org
T. Davis Sydnor, The Ohio State University, Bugwood.org

Japanese Angelica Tree
Aralia elata

Japanese Angelica Tree
Aralia elata

Control Methods

CHEMICAL: Foliar or basal bark application in late summer to fall or cut stump application in the winter.

Native Plant Look-Alikes

Devil's walking stick (*Aralia spinosa*) – Flower head (inflorescence) is generally 40 inches tall and is taller than wide. The flowering head of Japanese angelica tree is 11 – 24 inches tall and is usually wider than it is tall.

ID Features

MATURE HEIGHT: 60 feet

LEAVES: 6 – 12 inches long, alternate, heart-shaped, hairy underside

FLOWERS: Long flower stalk (inflorescence) with purple, trumpet-shaped flowers

FLOWERING PERIOD: Spring

SEEDS: Large, gray-brown pods

STEMS: Smooth and shiny to rough gray-brown bark

HABITAT: Forest edges, streambanks, roadsides, disturbed areas

OTHER: Spreads through seed dispersal and fast-growing sprouts

Japanese Princess Tree

Paulownia tomentosa

Japanese Princess Tree
Paulownia tomentosa

Control Methods

CHEMICAL: Basal bark application during the fall

Native Plant Look-Alikes

catalpa (*Catalpa bignonoides*) – Catalpa has a white, solid pith while Japanese princess tree has a hollow pith. Catalpa also has long, bean-like pods compared to Japanese princess tree's round seed pods.

PHOTOGRAPHY
Pennsylvania Department of Conservation and Natural Resources - Forestry , Bugwood.org
Annemarie Smith, ODNR Division of Forestry, Bugwood.org
Leslie J. Mehrhoff, University of Connecticut, Bugwood.org
Chris Evans, University of Illinois, Bugwood.org

ID Features

MATURE HEIGHT: 80 feet in length

LEAVES: Opposite, semi-evergreen, generally oval, bottom-most (basal) leaves lobed

FLOWERS: White to yellow, fragrant

FLOWERING PERIOD: April – July

SEEDS: Small black fruits in the fall

STEMS: Woody vine

HABITAT: Forests, hedgerows, roadsides, wetlands, meadows, disturbed areas

OTHER: Spreads by seed dispersal, root growth, and runners

Japanese Honeysuckle

Lonicera japonica

Japanese Honeysuckle
Lonicera japonica

Control Methods

MANUAL: Small populations can be hand pulled, making sure to removal all plant material and minimizing soil disturbance.

CHEMICAL: Cut and herbicide stumps in the fall

Native Plant Look-Alikes

trumpet honeysuckle (*Lonicera sempervirens*) – Yellow to reddish-pink flowers. Leaves immediately beneath flowers are fused.

PHOTOGRAPHY

Chuck Bargeron, University of Georgia, Bugwood.org
Chris Evans, University of Illinois, Bugwood.org
Theodore Webster, USDA Agricultural Research Service, Bugwood.org
Leslie J. Mehrhoff, University of Connecticut, Bugwood.org
Chris Evans, University of Illinois, Bugwood.org

ID Features

MATURE HEIGHT: Potential to grow 35 feet in one growing season

LEAVES: Opposite, generally 5 lobed with rough surface and toothed edges

FLOWERS: Female flowers are hop-shaped, clustered flowers

FLOWERING PERIOD: Mid-summer

PODS: Yellow-brown, oval shaped

SEEDS: Flattened seeds on flower stalk (inflorescence)

STEMS: Vine with prickles

HABITAT: Disturbed areas, forest edges, fields, riverbanks, moist soil, full sun

OTHER: Spread through seeds and vegetative growth including root pieces

Japanese Hops
Humulus japonicus

Japanese Hops
Humulus japonicus

Control Methods

MANUAL: Pull vines prior to flowering. Remove roots when possible, bag and remove plant material.

CHEMICAL: Preemergent application followed by foliar application in July – September.

Native Plant Look-Alikes

Native common hop (*Humulus lupuloides, neomexicanus,* and *pubescens*) – Single to three lobes on leaves compared to five lobes of Japanese hops.

bur cucumber (*Sicyos angulatus*) – Stem has tendrils and no prickles.

PHOTOGRAPHY
Chris Evans, University of Illinois, Bugwood.org
Leslie J. Mehrhoff, University of Connecticut, Bugwood.org

ID Features

MATURE HEIGHT: 3 – 12 feet

LEAVES: Broadly oval with pointed tip, alternate

FLOWERS: Greenish-white flowers, 4 inches long

FLOWERING PERIOD: August – October

SEEDS: 3-sided brown seed in a papery fruit

STEMS: Straight, hollow stems with swollen joints at the nodes; new stems purplish to green then green in summer and reddish brown in the fall

HABITAT: Roadsides, streambanks, other moist and disturbed sites with sun

OTHER: Spreads easily through broken stem pieces and rhizomes, forms dense stands

Japanese Knotweed
Fallopia japonica

Japanese Knotweed
Fallopia japonica

Control Methods

CHEMICAL: Smaller infestations can be treated with stem injections. Larger colonies can also be treated with a foliar application after July 1; taller stems should be cut in June and treated once the leaves have regrown in late summer.

Native Plant Look-Alikes

pokeweed (*Phytolacca americana*) – Distinguishable by its purple-hued stem, more elongate leaves, and purple berries.

bamboo (*Bambusa* sp.) *invasive – Similar jointed stem to knotweed. Leaves are narrow and elongated. Bamboo also grows to a height of 30-75 feet.

PHOTOGRAPHY

Randy Westbrooks, Invasive Plant Control, Inc., Bugwood.org
David J. Moorhead, University of Georgia, Bugwood.org
Chris Evans, University of Illinois, Bugwood.org
Barbara Tokarska-Guzik, University of Silesia, Bugwood.org

ID Features

MATURE HEIGHT: 12 inches high

LEAVES: Evergreen, alternate, 2 – 4 inches long and 1 – 1.5 inches wide, oval with toothed end

FLOWERS: White, upright flower stalk (inflorescence)

FLOWERING PERIOD: March – April

SEEDS: Small fruits occur on end branches

STEMS: Ground runners

HABITAT: Meadow and forest edges

OTHER: Mat forming, dense groundcover, spreads by underground stems and roots

Japanese Pachysandra
Pachysandra terminalis

Japanese Pachysandra
Pachysandra terminalis

Control Methods

MANUAL: Hand pull anytime.

CHEMICAL: Apply herbicide after plant has emerged.

Native Plant Look-Alikes

Virginia creeper (*Parthenocissus quinquefolia*) – Leaves are made up of 5 elongated leaflets with a point on the end all around a central stem. Bright red fall color.

Allegheny spurge (*Pachysandra procumbens*) – Clump forming rather than mat forming, leaves 2 – 4 inches long and 2 – 3 inches wide, lacks shine of Japanese pachysandra leaves

PHOTOGRAPHY
Jil Swearingen, USDI National Park Service, Bugwood.org
John Ruter, University of Georgia, Bugwood.org
Rob Routledge, Sault College, Bugwood.org

ID Features

MATURE HEIGHT: 1 – 3 feet

LEAVES: Narrow, elongated, center silver stripe, 1 – 3 inches long

FLOWERS: White, tiny flowers

FLOWERING PERIOD: August – September

SEEDS: Seeds produced in Fall

STEMS: Slender stems

HABITAT: Widely adaptable, moist soils, forests, wetlands, fields, roadsides

OTHER: Spreads through prolific seeds, easily transferred accidentally on equipment, annual, forms dense thatch when it dies off that can smother vegetation

Japanese Stiltgrass

Microstegium vimineum

Japanese Stiltgrass
Microstegium vimineum

Control Methods

MANUAL: Hand pull anytime

CHEMICAL: Late summer herbicide application

MECHANICAL: Mow just before flowering

Native Plant Look-Alikes

Virginia cutgrass (*Leersia virginica*) – Japanese stiltgrass has a silvery stripe down the center of the leaf, while Virginia cutgrass does not. Virginia cutgrass stays green in the fall while Japanese stiltgrass changes to brown.

Smartweeds (*Persicaria* spp.) – Smartweeds have a dark blotch on the leaves and pink flowers.

PHOTOGRAPHY
Leslie J. Mehrhoff, University of Connecticut, Bugwood.org
Natural Lands

ID Features

MATURE HEIGHT: 20 – 30 feet long

LEAVES: Alternate; triangular; 1 – 3 inches wide; undersides are barbed; smaller, round, leaf-like structures surround stem along length of plant (called ocreae)

FLOWERS: Small, inconspicuous, white

FLOWERING PERIOD: Early summer

SEEDS: Fruits start green then turn metallic blue; first form in mid-July

STEMS: Trailing vine; recurved barbs; forms dense, large, intertwined mats

HABITAT: Sun, moist soils, wetlands, streambanks, roadsides, hedgerows

OTHER: Can grow 6 inches a day; forms dense, smothering mats; primarily spreads by seeds

Mile-a-Minute
Persicaria perfoliata

Mile-a-Minute
Persicaria perfoliata

Control Methods

MANUAL: Hand pull small infestations prior to flowering

CHEMICAL: Summer herbicide applications

MECHANICAL: Mow prior to flowering

Native Plant Look-Alikes

halbard-leaved tearthumb (*Polygonum arifolium*) – Lacks barbs and ocreae.

climbing false buckwheat (*Polygonum scadens*) – Lacks barbs and ocreae. Has a purplish-red stem and leaves are rounder.

PHOTOGRAPHY

Leslie J. Mehrhoff, University of Connecticut, Bugwood.org

Richard Gardner, Bugwood.org

ID Features

MATURE HEIGHT: 10 – 50 feet

LEAVES: Alternate, each leaf has leaflets along a central stem, 5 – 10 inches long, resemble ferns

FLOWERS: Pink, fluffy-appearing, 1 – 2 inches long

FLOWERING PERIOD: May – July

SEEDS: Flat pod, 6 inches long

STEMS: Thin, brown, nearly smooth

HABITAT: Full sun, forest edges, disturbed areas, streambanks

OTHER: Spreads vegetatively and by seed

Mimosa

Albizia julibrissin

Mimosa
Albizia julibrissin

Control Methods

MANUAL: Hand pull small plants

CHEMICAL: Cut stump treatment in the fall

MECHANICAL: Girdle trunks

Native Plant Look-Alikes

staghorn sumac (*Rhus typhina*) – Mimosa has smaller leaflets and pink, fluffy flowers compared to the upright flower stalk of staghorn sumac with yellow-greenish flowers followed by deep red fruit.

PHOTOGRAPHY

Charles T. Bryson, USDA Agricultural Research Service, Bugwood.org
John D. Byrd, Mississippi State University, Bugwood.org
Robert Vidéki, Doronicum Kft., Bugwood.org
Lesley Ingram, Bugwood.org

ID Features

MATURE HEIGHT: 24 – 63 inches

LEAVES: Alternate, lobed, papery

FLOWERS: Small, whitish-green flowers that turn to yellowish green as the plant ages

FLOWERING PERIOD: Late summer to early fall

SEEDS: Fruit with single seed, oblong with tiny bristles, August – October

STEMS: Purplish-brown, branched, short hairs

HABITAT: Meadows, forest edges, roadsides, diches

OTHER: Spreads by rhizomes, forms dense patches, has a distinctive herbal scent when crushed

Mugwort

Artemisia vulgaris

Mugwort
Artemisia vulgaris

Control Methods

CHEMICAL: Preemergent or post emergent herbicide.

Native Plant Look-Alikes

ragweed (*Ambrosia artemisiifolia*) – Lacks distinctive herbal scent.

PHOTOGRAPHY
Ansel Ooommen, Bugwood.org
Ohio State Weed Lab , The Ohio State University, Bugwood.org

ID Features

MATURE HEIGHT: 15 feet

LEAVES: 7 – 9 dark green leaflets on each leaf midrib off the main stems, toothed leaflets, at the base of each leaf is a fringed and small leaf-like structure (stipule)

FLOWERS: Clusters of small, white to pink flowers

FLOWERING PERIOD: May – June

SEEDS: Small, red rose hips in the summer through winter; extremely large amount of seeds that stay viable in the soil for up to 20 years

STEMS: Arching stems with curved thorns

HABITAT: Forms dense thickets in fields, riparian areas, woods, roadsides

OTHER: There have been some instances of rose rosette disease infecting and killing multiflora rose, particularly in sunny areas.

Multiflora Rose

Rosa multiflora

Multiflora Rose
Rosa multiflora

Control Methods

CHEMICAL: Basal bark or cut stump application during the dormant season, typically late December through early March.

Native Plant Look-Alikes

native roses, including pasture rose (*Rosa carolina*), swamp rose (*Rosa palustris*) wild rose (*Rosa virgniana*) – All native roses have pink flowers. All roses mentioned have a leaf-like structure at the base of leaves, called a stipule. Stipules for native roses are rounded and entire. Stipules for muliflora rose are fringed.

PHOTOGRAPHY
Chris Evans, University of Illinois, Bugwood.org
Nancy Dagley, USDI National Park Service, Bugwood.org
Rob Routledge, Sault College, Bugwood.org
Richard Gardner, Bugwood.org

ID Features

MATURE HEIGHT: 65 feet

LEAVES: Deciduous, dark green with 5 – 7 lobes, 5 inches long by 6 inches wide, long-lasting yellow fall color

BARK: Gray-brown and smooth

FLOWERING PERIOD: May – June

SEEDS: Flattened seed pods with papery wings

HABITAT: Forests, particularly in urban and suburban areas; also used a specimen tree in landscaping

OTHER: Key ID feature is that leaf stems ooze white, milky sap when pulled off branches. Spreads prolifically through wind-dispersed seeds.

PHOTOGRAPHY
David Stephens, Bugwood.org
Leslie J. Mohrhoff, University of Connecticut, Bugwood.org
Joseph OBrien, USDA Forest Service, Bugwood.org

Norway Maple
Acer platanoides

Norway Maple
Acer platanoides

Control Methods

MANUAL: Hand pull or dig out small saplings and seedlings.

CHEMICAL: Cut stump treatment in the late summer or fall, or a basal bark application can be used for trees that are 6 inches diameter at breast height or smaller in June – September.

MECHANICAL: Girdle

Native Plant Look-Alikes

sugar maple (*Acer saccharum*) – Sugar maple has sharp buds, while Norway maple buds are large and blunt. Only Norway maple has the distinct, milky-white sap when leaves are pulled off branches.

red maple (*Acer rubrum*) – Red maple has 3-lobed leaves, while Norway maple has 5-lobed leaves. Only Norway maple has the distinct, milky-white sap when leaves are pulled off branches.

ID Features

MATURE HEIGHT: 60 feet in length

LEAVES: Deciduous, alternate, light green, finely toothed, round to somewhat elliptical

FLOWERS: Flowers and fruits form at the base of leaves

SEEDS: Bright red fruit in fall and winter that are easily spread by birds

STEMS: Woody vines; rough, grayish-brown bark

HABITAT: Fields, forest edges, hedgerows, tolerates shade but prefers sun

OTHER: Wraps around trees and other vegetation as well as other bittersweet vines. Has bright orange roots.

Oriental Bittersweet

Celastrus orbiculatus

Oriental Bittersweet
Celastrus orbiculatus

Control Methods

CHEMICAL: Cut vines at ground level and 5 feet off the ground, apply herbicide to stump. Timing for herbicides depends on temperature ranges of herbicides used.

Native Plant Look-Alikes

American bittersweet (*Celastrus scandens*) – Flowers and berries form at the end of branches as opposed to at the base of leaves for Oriental bittersweet.

PHOTOGRAPHY
Leslie J. Mehrhoff, University of Connecticut, Bugwood.org
Chris Evans, University of Illinois, Bugwood.org

ID Features

MATURE HEIGHT: 6 – 20 feet depending on species

LEAVES: Elongate, opposite, some have a pointed tip

FLOWERS: White to yellow, tubular, fragrant

FLOWERING PERIOD: May – June

SEEDS: Red to yellow, small, abundant berries

STEMS: Have a hollow, brown pith

HABITAT: Shade-intolerant, wood edges, hedgerows, roadsides, fields

OTHER: Spreads both vegetatively and by seeds

PHOTOGRAPHY
Stacey Leicht, University of Connecticut, Bugwood.org
Richard Gardner, Bugwood.org

Shrub Honeysuckle
Lonicera sp.

Shrub Honeysuckle
Lonicera sp.

Control Methods

CHEMICAL: Basal bark application or cut stump treatment in the fall.

Native Plants Look-Alikes

native bush honeysuckle (*Diervilla lonicera*) – Native bush honeysuckle has a solid center of the stem (pith) when cut open. Invasive shrub honeysuckles have a hollow pith.

ID Features

MATURE HEIGHT: 80 feet

LEAVES: Long leaves with 10 – 41 leaflets along the midrib, smooth leaf margins, "thumb" at the bottom of each leaflet

FLOWERS: Large clusters of yellowish flowers

FLOWERING PERIOD: Early summer

SEEDS: Papery, tan to reddish seed pods with single wings (samaras), late fall

BARK: Brownish-green and smooth when younger, turning more gray and rougher with age

HABITAT: Forest edges, fields, roadsides

OTHER: Trees produce chemicals through roots that prohibit growth of other plants. Host plant for invasive spotted lanternfly. Spreads through extensive suckering. Has a distinctive rotten peanut butter smell when cut.

PHOTOGRAPHY
Natural Lands
Chuck Bargeron, University of Georgia, Bugwood.org
Chris Evans, University of Illinois, Bugwood.org
Richard Gardner, Bugwood.org

Tree-of-Heaven
Ailanthus altissima

Tree-of-Heaven
Ailanthus altissima

Control Methods

MANUAL: Small seedlings can be hand pulled, making sure to remove root system.

CHEMICAL: Carry out herbicide applications between July and the change of leaf color. Options include a basal bark application for trees 6 inches diameter at breast height or smaller, foliar application, or hack and treat. Applications will have to be repeated for at least a second year due to extensive suckering.

Native Plant Look-Alikes

black walnut (*Juglans nigra*) – Leaflets have a serrated edge. Leaves end with one leaflet at the tip while tree of heaven leaves end with two leaflets. Black walnut has a large, green, round fruit.

staghorn sumac (*Acer rubrum*) – Leaflets have serrated edges. Lacks distinctive rancid peanut butter scent of tree of heaven. Staghorn sumac has a large, deep red seed head at the top of each trunk during the fall.

ID Features

MATURE HEIGHT: 9 feet

LEAVES: Each leaf consists of 3 heart-shaped leaflets on a central stem with toothed edges. Leaves are alternate. Leaflets are green on top and white and hairy underneath.

FLOWERS: Clusters of small, 5-leafed, white flowers.

FLOWERING PERIOD: May

SEEDS: Fruit produced in June through August; clusters of red, raspberry-shaped fruit

STEMS: Arching canes covered with small red hairs, giving all of the branches a distinctive red shade

HABITAT: Can form dense patches in moist, open fields, forest edges, and roadsides

OTHER: Spreads through wildlife dispersing seeds, suckering from branches, and shoots from root nodes.

PHOTOGRAPHY

John M. Randall, The Nature Conservancy, Bugwood.org
Leslie J. Mehrhoff, University of Connecticut, Bugwood.org
Richard Gardner, Bugwood.org

Wineberry

Rubus phoenicolasius

Wineberry
Rubus phoenicolasius

Control Methods

CHEMICAL: Basal bark application or cut-stump treatment in the fall.

Native Plant Look-Alikes

common blackberry (*Rubus allegheniensis*) and flowering raspberry (*Rubus odoratus*) – Both species lack the distinctive red hairs on the branches.

ID Features

MATURE HEIGHT: 12 – 15 feet

LEAVES: Long, narrow leaves with a silvery vein down the middle

FLOWERS: Not noticeable

FLOWERING PERIOD: Not noticeable

SEEDS: Small, fluffy seeds on dense, feathery seed heads

STEMS: Long stems with seeds plumes at end, can reach 15 feet tall

HABITAT: Tall, bushy grass that typically grows in clumps

OTHER: Spreads predominantly by rhizomes and roots.

Chinese silvergrass
Miscanthus sinensis

Chinese silvergrass
Miscanthus sinensis

Control Methods

CHEMICAL: Spot treatments with herbicides in the late spring or fall. Manual removal through digging out is not recommended as it will readily resprout through rhizomes.

Native Plant Look-Alikes

broom sedge (*Andropogon virgnicus*) – This native grass has a tan-burnt orange tint in the fall. The seed heads are located along the flower stalk instead of clustered at the top like Chinese silvergrass.

big bluestem (*Andropogon gerardii*) – A native tall, bushy grass, this plant has a bluish tint. Additionally, the seeds stalks are three-pronged as opposed to the dense, bushy seed heads of Chinese silvergrass.

PHOTOGRAPHY
John M. Randall, The Nature Conservancy, Bugwood.org
Leslie J. Mehrhoff, University of Connecticut, Bugwood.org
Richard Gardner, Bugwood.org

ID Features

MATURE HEIGHT: 3 feet

LEAVES: Relatively long stems with rows of opposite leaflets

FLOWERS: Pea-like white to purple flowers

FLOWERING PERIOD: Summer

SEEDS: Small, round to oblong seeds

STEMS: 2 – 6 feet long green stems with multiple flowers and leaves along its length

HABITAT: Sprawling, vine-like herbaceous plant that forms dense mats which can smother other plants

OTHER: Spreads through seeds and rhizomes.

PHOTOGRAPHY
John M. Randall, The Nature Conservancy, Bugwood.org
Leslie J. Mehrhoff, University of Connecticut, Bugwood.org
Richard Gardner, Bugwood.org

Crown vetch
Coronilla varia

Crown vetch
Coronilla varia

Control Methods

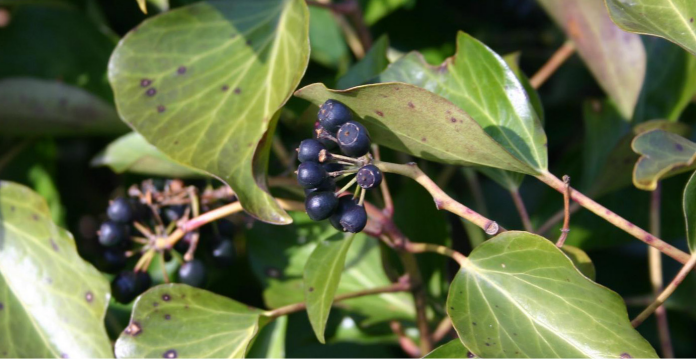
MANUAL: Smaller populations can be hand pulled, being sure to remove rhizomes.

MOWING: Mow starting in the late spring and continuing multiple times during the growing season. Repeat for multiple consecutive years.

CHEMICAL: Herbicides can be used for a foliar application. Alternatively, herbicide can be applied after the crown-vetch is mown.

Native Plant Look-Alikes

partridge pea (*Chamaecrista fasciculata*) – This native plant has yellow flowers and finer foliage compared to crown vetch.



ID Features

MATURE HEIGHT: 90 feet

LEAVES: Three-lobed, green leaves with white veins

FLOWERS: Clusters of yellow to green flowers

FLOWERING PERIOD: Fall

FRUIT: Clusters of small, dark purple fruit

STEMS: Green to brown stems when mature with aerial roots

HABITAT: Vine that readily climbs tree, attaching along its length with aerial roots. Also acts as a ground cover.

OTHER: Dense growth can add weight to trees, causing them to be more susceptible to breakage, and can smother other plants when growing as a ground cover.

English ivy
Hedera helix

English ivy
Hedera helix

Control Methods

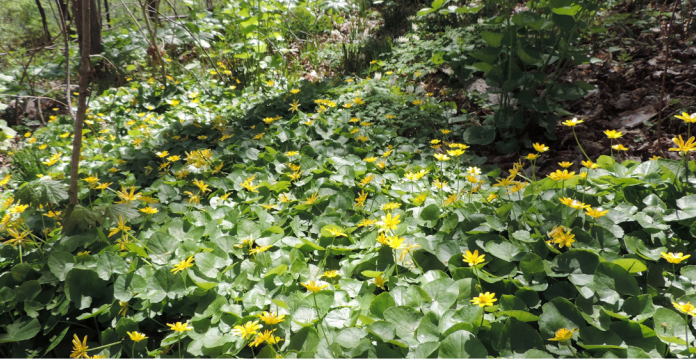
PHYSICAL: Ground cover vines can be hand pulled. Alternatively, ground cover vines can be smothered with mulch over multiple seasons. Climbing vines can be cut and roots pulled.

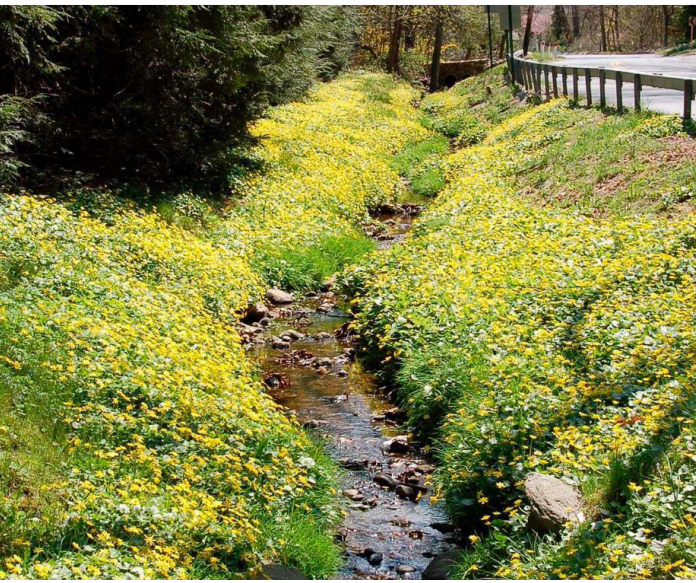
CHEMICAL: Herbicides can be applied as a foliar application or to cut stumps.

Native Plant Look-Alikes

Poison ivy (*Toxicodendron radicans*) – A native vine that also climbs tees and has aerial roots. The leaves of poison ivy have more distinctive leaflets as opposed to the more gently lobed leaf of English ivy. Additionally, poison ivy lacks the white mid-vein.

PHOTOGRAPHY
John M. Randall, The Nature Conservancy, Bugwood.org
Leslie J. Mehrhoff, University of Connecticut, Bugwood.org
Richard Gardner, Bugwood.org





ID Features

MATURE HEIGHT: 1 feet

LEAVES: Dark green, kidney to blunt heart shape

FLOWERS: Bright yellow with 8 – 12 petals

FLOWERING PERIOD: Early spring

HABITAT: Dense thickets, primarily in moist areas

OTHER: Spreads readily by tubers and bulblets. Dies back by early summer.

Lesser celandine

Ranunculus ficaria

Lesser celandine
Ranunculus ficaria

Control Methods

PHYSICAL: Small populations can be dug out, taking care to remove all tubers and bulblets. Repeat removal will likely be necessary, especially as it is difficult to remove all tubers and bulblets. These will readily regrow in the disturbed soil.

CHEMICAL: Herbicides can be applied in the late winter to early spring once plants have leafed out. However, herbicide application needs to be carefully applied to avoid impacting other early spring plants, amphibians, and water sources.

Native Plant Look-Alikes

Marsh marigold (*Caltha palustris*) – Very similar in appearance, however marsh marigold only has 5 – 9 petals. Additionally, marsh marigold will not form large, dense mats and lack tubers and bulblets.

PHOTOGRAPHY
John M. Randall, The Nature Conservancy, Bugwood.org
Leslie J. Mehrhoff, University of Connecticut, Bugwood.org
Richard Gardner, Bugwood.org

ID Features

MATURE HEIGHT: 20 feet

LEAVES: Branches of opposite, elliptical-shaped leaves

FLOWERS: Clusters of small, white flowers

FLOWERING PERIOD: April – June

FRUIT: Green to purple fruits in July to March

STEMS: Opposite or whorled, brown to gray with a rough bark

HABITAT: Forms dense thickets

OTHER: Spreads mainly through seeds. Resprouts from roots and stumps.

PHOTOGRAPHY

John M. Randall, The Nature Conservancy, Bugwood.org
Leslie J. Mehrhoff, University of Connecticut, Bugwood.org
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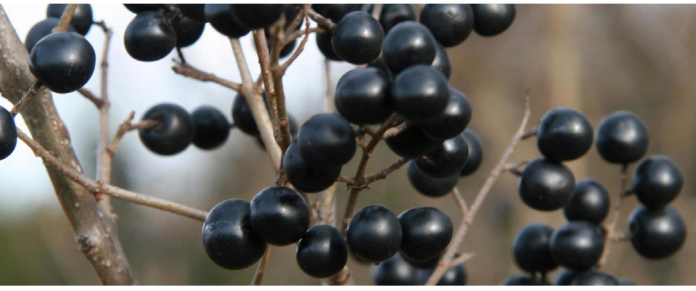
Privet

Ligustrum sp.

Privet
Ligustrum sp.



Control Methods

PHYSICAL: Hand removal for smaller populations. Any remaining roots or stumps may resprout.

CHEMICAL: Cut stump herbicide treatments in late summer to fall or foliar herbicide treatment.

Native Plant Look-Alikes

spicebush (*Lindera benzoin*) – Spicebush has lenticels on the stems, red fruit, and a distinctive herbal smell when the leaves are crushed.

ID Features

MATURE HEIGHT: 3 – 6 feet

LEAVES: Small, oval to rounded leaves that cluster along the stems. Green leaves turn red in the fall.

FLOWERS: Dull yellow flowers that hang below the branch

FLOWERING PERIOD: Mid-spring to early summer

FRUIT: Bright red fruit that hang below the branch

STEMS: Arching brown stems with sharp spines

HABITAT: Relatively low growing, arching shrub. Can form thickets.

OTHER: Spreads primarily through seeds. Can also sprout where branches touch the ground.

PHOTOGRAPHY
John M. Randall, The Nature Conservancy, Bugwood.org
Leslie J. Mehrhoff, University of Connecticut, Bugwood.org
Richard Gardner, Bugwood.org

Barberry
Berberis sp.

Barberry
Berberis sp.

Control Methods

PHYSICAL: Small plants can be pulled while larger plants can be dug out. Roots and fruit should be fully removed.

CHEMICAL: Basal bark or cut stump herbicide applications in the late summer or fall.

ID Features

MATURE HEIGHT: 20 feet

LEAVES: Elongated, elliptical green leaves with a silvery underside

FLOWERS: Clusters of small white or yellow flowers

FLOWERING PERIOD: Spring

FRUIT: Red berries in the late summer and fall

STEMS: Young stems have a silver hue

HABITAT: Multi-stemmed shrub that can form large thickets in open areas

OTHER: Spreads through seeds

PHOTOGRAPHY

John M. Randall, The Nature Conservancy, Bugwood.org
Leslie J. Mehrhoff, University of Connecticut, Bugwood.org
Richard Gardner, Bugwood.org

Autumn olive
Miscanthus sinensis

Autumn olive
Miscanthus sinensis

Control Methods

PHYSICAL: Young plants can be hand pulled. Large shrubs can be removed with a weed wrench, cut to ground level, or girdled. Cut plants are likely to resprout.

CHEMICAL: Basal bark or cut stump herbicide applications in the late summer or fall.

ID Features

MATURE HEIGHT: 3 – 5 feet

LEAVES: First year – dark green, kidney-shaped leaves cluster at the base of the plant, close to the ground. Second year – triangular to heart-shaped leaves with pointed lobes alternate along the length of the stem.

FLOWERS: Clusters of small white flowers at the top of the stalk

FLOWERING PERIOD: Early spring

SEEDS: Slender brown seed pods at top of plant

STEMS: Bright green

HABITAT: Commonly found in shady forests or woodlands. Can form dense patches.

OTHER: Spreads through seeds. Sends out chemicals from roots that inhibit growth of other plants.

PHOTOGRAPHY
John M. Randall, The Nature Conservancy, Bugwood.org
Leslie J. Mehrhoff, University of Connecticut, Bugwood.org
Richard Gardner, Bugwood.org

Garlic mustard
Miscanthus sinensis

Garlic mustard

Miscanthus sinensis

Control Methods

PHYSICAL: Hand pull before seed set. Remove all plant materials to prevent development and spread of seeds.

CHEMICAL: Herbicide application in the early spring or late fall.

Native Plant Look-Alikes

toothworth (*Dentaria* sp.) – A native, spring-flowering plant. Mature plants are typically only 12 inches tall. Flowers are on longer stems and have more of a trumpet shape. Leaves are more deeply lobed.

ID Features

MATURE HEIGHT: 30 feet

LEAVES: Long leaves, up to 1 feet, with pairs of leaflets running along the stem

FLOWERS: Drooping clusters of purple flowers. Chinese wisteria flower clusters are 6 – 12 inches long while Japanese wisteria flower clusters are 1 – 3 feet long.

FLOWERING PERIOD: Spring prior to leaf out

SEEDS: 4 – 6 inch long brownish-gold seed pods

STEMS: Woody vines

HABITAT: Grows in dense mats along the ground and over trees and other plants. Roots can also form dense, interlocking mats.

OTHER: Spreads through runners and seeds

PHOTOGRAPHY
John M. Randall, The Nature Conservancy, Bugwood.org
Leslie J. Mehrhoff, University of Connecticut, Bugwood.org
Richard Gardner, Bugwood.org

Chinese and Japanese wisteria

Wisteria sinensis and *Wisteria floribunda*

Chinese and Japanese wisteria

Wisteria sinensis and *Wisteria floribunda*

Control Methods

CHEMICAL: Cut the vines at ground level and then again 5 feet up the vine. Treat stumps with an herbicide.

Native Plants Look A-likes

American wisteria (*Wisteria frutescens*) – This native plant looks very similar. Flower clusters are smaller, typically 6 – 9 inches long. Additionally, the flowers grow on new wood and appear after the leaves. Vines are also less aggressive than the invasive species.