

Invasive Plants In Your Backyard!

A Guide to Their Identification and Control

2020 EXPANDED EDITION



Do you know what plants are growing in your yard?

Chances are very good that along with your favorite flowers and shrubs, there are non-native invasives on your property.

Non-native invasives are aggressive exotic plants introduced intentionally for their ornamental value, or accidentally by hitchhiking with people or products.



Invasive Morrow's honeysuckle (S. Leicht, University of Connecticut, bugwood.org)

They thrive in our growing conditions, and with no natural enemies have nothing to check their rapid spread.

The environmental costs of invasives are great – they crowd out native vegetation and reduce biological diversity, can change how entire ecosystems function, and pose a threat to endangered species.

Several organizations in Connecticut are hard at work preventing the spread of invasives, including the Invasive Plant Council, the Invasive Plant Working Group, and the Invasive Plant Atlas of New England. They maintain an official list of invasive and potentially invasive plants, promote invasives eradication, and have helped establish legislation restricting the sale of invasives.

Should I be concerned about invasives on my property?

Invasive plants can be a major nuisance right in your own backyard. They can kill your favorite trees, show up in your gardens, and overrun your lawn. And, because it can be costly to remove them, they can even lower the value of your property. What's more, invasive plants can escape to nearby parks, open spaces and natural areas.

What should I do if there are invasives on my property?

If you find invasive plants on your property they should be removed before the infestation worsens. Keep in mind that tangles or thickets of invasives may serve as bird nesting areas, so the best time to remove these is late fall/winter.

Replacing non-native invasives in your yard with native plant species makes a lot of sense. There are many excellent native alternatives to choose from. Select ones that are right for the conditions in your yard and they will flourish! By planting natives you will promote local biodiversity, provide native wildlife with sources of food and cover, and create a beautiful, healthy green space.

Photo on cover from bugwood.org (unless noted), clockwise from top left: *Oriental Bittersweet* and *Burning Bush*, J.H. Miller, USDA Forest Service; *Garlic Mustard*, G. Miller, OR DOA; *Common Reed*, N. Tabak, University of Connecticut, IPANE; *Japanese Honeysuckle*, S. Leicht, University of Connecticut, IPANE; *Purple Loosestrife*, L.J. Mehrhoff, University of Connecticut, IPANE; *Japanese Barberry*, Brian Chandler, imagination.org/sano/pics/b02937megi.jpg.

How can I control invasives on my property?

The number one rule of invasive plant control is DO NOT PLANT THEM in the first place! While this may seem obvious, some invasives in this guide can still be purchased. Second, it is critical to take action as soon as you detect invasive plants. Once invasives are established they can be extremely difficult to remove.

There are three basic approaches that can be used to control invasive plants: mechanical, chemical and biological. The best strategy will depend on the type of invasive and the extent of the infestation.

Mechanical controls, including pulling, digging, cutting, mowing and shading, should be used as a first line of defense. They are excellent for new or small infestations, cause minimal environmental impact, and for the most part only require basic gardening tools.

In general, plants are either pulled (best when ground is moist), or cut or mowed to ground level, then the roots are dug up. Be sure to bag all plant material and put it in the trash as many invasives can regrow from pieces and parts. In areas with direct sunlight, black plastic can be anchored over the cut plants to prevent resprouting and help kill the roots. For best results, leave the plastic in place for 4 to 6 weeks while the weather is hot. Invasives that spread by seed are best cut, pulled, mowed or shaded during flowering or before seeds are set.

Chemical control entails the use of herbicides applied to foliage, cut stumps, or basal bark. Herbicides can be very effective for large infestations. However, they do pose potential health and environmental risks, and are best applied by licensed professionals. In some cases applying herbicides can require a permit, for example if used over or near water.



Clearing invasive Japanese knotweed
(T. Heutte, USDA Forest Service, bugwood.org)



Though still a threat in wetlands, purple loosestrife is no longer featured in this guide to make room for other invasives of greater concern.

(L.J. Mehrhoff, University of Connecticut, IPANE)

Biological control, or the use of natural enemies, may be the best choice in the future. As of 2020, purple loosestrife and mile-a-minute weed are the only two invasives with viable biocontrols being used successfully here in Connecticut (www.purpleloosestrife.uconn.edu; www.mam.uconn.edu/biological-control).

For more information on control methods for individual plants visit the "Control Information" page at www.cipwg.uconn.edu

BURNING BUSH

Euonymus alatus



Deciduous Shrub

Fruits: August to January

Burning bush, also known as winged euonymus, is a deciduous shrub that has been planted widely in landscapes and along roadways for its bright red fall color. Spreading occurs when wildlife eat its fruits, resulting in the dispersal of seeds to new areas. It tolerates a wide variety of soil and moisture conditions, and grows in sun or shade.

IDENTIFICATION

- Large shrub, 5 to 10 feet tall
- Corky, wing-like ridges on stems
- Opposite, oval to tear-drop shaped finely toothed leaves
- Bright red fall foliage
- Showy red-purple fruits split open to reveal bright red-orange fleshy seeds

MECHANICAL CONTROL

Pull or dig young plants, making sure to remove the entire root. Large plants can be cut at ground level but will resprout from the base, so repeated cutting is necessary.

CHEMICAL CONTROL

For plants too large to pull or dig, foliage can be sprayed with glyphosate or triclopyr. Or, glyphosate or triclopyr can be applied to freshly cut stumps, most effective late in the growing season, in fall, when nutrients are being sent to the roots.

Native Alternatives

Arrowwood • Bayberry •
Chokeberry • Gray Dogwood •
Highbush Blueberry • Smooth
Sumac • Winged Sumac •
Witchhazel (fall blooming)

Photos: top - oregonstate.edu/dept/ldplants;
mid - L.J. Mehrhoff, IPANE; bottom - L.J. Mehrhoff,
University of Connecticut, bugwood.org.

JAPANESE BARBERRY

Berberis thunbergii

Deciduous Shrub

Flowers: April to May

Fruits: Late Summer

Japanese barberry is a spiny shrub with a dense twiggy form. It is dispersed to new areas by birds who eat the bright red fruits. Tolerant of a broad range of soil moisture and light conditions, it grows in various habitats, from open fields to shaded woodlands to wetlands.

IDENTIFICATION

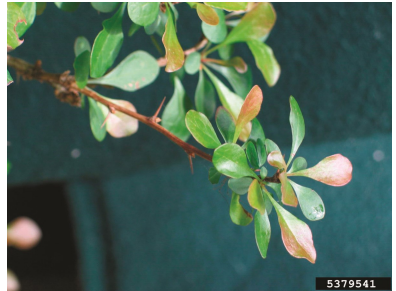
- Small shrub, 2 to 5 feet tall
- Thin, single thorns on stems
- Alternate, teardrop shaped leaves that develop before trees leaf out
- Pale yellow flowers in clusters on the underside of branches
- Bright red berries that often persist into winter

MECHANICAL CONTROL

Hand pull seedlings and dig larger plants. Roots are shallow so infestations are fairly easy to control by physical removal.

CHEMICAL CONTROL

If mechanical removal is not possible, in early spring, foliage can be sprayed with triclopyr, or mid-summer to fall, triclopyr or glyphosate. For plants too large to dig, triclopyr or glyphosate can be applied to freshly cut stumps, most effective in fall when nutrients are being sent to the roots.



Native Alternatives

Bayberry • Inkberry • New Jersey Tea • Silky Dogwood • Summersweet • Smooth Hydrangea • Winterberry

Photos from bugwood.org; top/bottom - L.J. Mehrhoff, University of Connecticut; mid - J.H. Miller, USDA Forest Service.

MULTIFLORA ROSE

Rosa multiflora



Native Alternatives

Chokeberry • Highbush
Blueberry • Raspberry (Red,
Black or Thimbleberry) •
Summersweet • Swamp Rose •
Virginia Rose • Winterberry

Photos from bugwood.org: top/mid - J.H. Miller, USDA Forest Service; bottom - C. Evens, River to River CWMA.

Deciduous Shrub

Flowers: May to June

Fruits: September to October

Multiflora rose is a thorny shrub that can both climb like a vine and form dense thickets. It spreads by root suckering and tip layering, and when wildlife disperse seeds after eating the fruit. It is often found growing in old fields, along roads, on streambanks, and in forest gaps.

IDENTIFICATION

- Shrub with long, slender arching branches and sharp, curved thorns
- Compound leaves composed of oval to lance-shaped leaflets
- Feathery, deeply fringed stipule at base of each leaf (bottom photo)
- Clusters of fragrant white flowers
- Small, smooth, reddish rosehips persist into early winter

MECHANICAL CONTROL

Hand pull small plants, or dig and pull large plants removing all of the roots since fragments can resprout. Repeated mowing can also control growth, but will probably not result in eradication.

CHEMICAL CONTROL

Foliage can be sprayed with triclopyr before or during flowering, or glyphosate after flowering. Glyphosate or triclopyr can be applied to cut stems anytime, but herbicides are more effective in the fall when nutrients are being sent to the roots.

WINEBERRY

Rubus phoenicolasius

Deciduous Shrub

Flowers: Mid-Summer

Fruits: June and July

Wineberry is a spiny shrub that forms dense shady thickets and significantly alters habitat structure. It spreads by seeds eaten by birds and mammals (including humans); and also spreads vegetatively, when new plants sprout from the tips of canes that touch the ground, and from root buds. It grows along forest, field, stream and wetland edges and in open woods, preferring moist habitats and sunlight.

IDENTIFICATION

- Multi-stemmed shrub with upright, arching stems up to 9 feet, spiny and covered with distinctive reddish hairs
- Leaves consist of three heart-shaped, serrated leaflets with purplish veins and white undersides
- Small greenish flowers have white petals and reddish hairs
- Bright red berries

MECHANICAL CONTROL

Hand pull plants or use a spading fork, most effective when the soil is moist and roots and cane fragments are removed. Cutting or mowing canes to the ground repeatedly can also be effective. Branches with berries should be bagged.

CHEMICAL CONTROL

Cut or mowed canes can be treated with glyphosate or triclopyr.



Native Alternatives

Native Blackberry • Raspberry
(Red, Black, Thimbleberry)

Photos from bugwood.org: top/mid- L.J. Mehrhoff, University of Connecticut; bottom- J.M. Randall, The Nature Conservancy.

AUTUMN OLIVE

Elaeagnus umbellata



Native Alternatives
American Cranberrybush •
Bayberry • Beach Plum •
Chokeberry • Inkberry •
Winterberry

Photos from bugwood.org: top - Pennsylvania DCNR, Forestry Archive; mid - N. Lowenstein, Auburn University; bottom - C. Evens, River to River CWMA.

Deciduous Shrub or Tree

Flowers: April to May

Fruits: September to November

Autumn olive is a fast growing woody shrub or tree that produces abundant, fleshy fruits. It disperses to new areas after wildlife eat the seed-filled fruits. Tolerant of shade, and preferring dry conditions over wet, it often grows in disturbed areas, clearings, open fields, and forest margins.

IDENTIFICATION

- Large shrub or small tree, to 20 feet tall
- Alternate, oval dark gray-green leaves with silvery scales underneath
- Fragrant, cream to light yellow flowers
- Fall fruits start brown then turn a dark red speckled with small silver dots

MECHANICAL CONTROL

Pull or dig young plants, making sure to remove the entire root. Cut larger plants at ground level when in flower to prevent seed production. Plants will resprout from the base, so repeated cutting is necessary.

CHEMICAL CONTROL

For small plants, foliage can be sprayed with either glyphosate or triclopyr. For larger plants, glyphosate or triclopyr can be applied to freshly cut stumps, or trees can be girdled with an axe and herbicides applied to the cut area. Herbicides may be most effective when used late in the growing season.

GLOSSY BUCKTHORN

Frangula alnus

Deciduous Shrub or Tree
Flowers: May to September
Fruits: July to September

Glossy buckthorn is a fast growing shrub, that forms dense thickets, shading and displacing native understory plants, shrubs and tree seedlings. A prolific seed producer, with seeds dispersed by birds, mice and sometimes by water. It invades a variety of habitats, including wetlands and woodlands, and is most invasive at wetland margins and in limey soil. Prefers plenty of light and disturbed soil.

IDENTIFICATION

- Large shrub or small tree, to 30 feet
- Bark is gray to brown with raised white bumps; stems cinnamon colored
- Shiny, dark green, primarily alternate leaves, with clearly defined veins in a fishbone pattern; yellow color in Fall
- Inconspicuous, pale greenish-yellow to yellow flowers in clusters at leaf axis
- Fleshy fruit ripens from red to dark purple to black; flowers near stem tips develop last

MECHANICAL CONTROL

Hand pull or dig up young plants and mow repeatedly in spring/summer. Cut down mature plants and remove roots, or girdle with a 2-3 cm wide saw.

CHEMICAL CONTROL

For mature plants, cut stumps can be treated with triclopyr or glyphosate in the fall.



Native Alternatives

Alternate-leaf Dogwood •
Highbush Blueberry • North-
ern Spicebush • Withe-rod
Viburnum

Photos from bugwood.org: top - R. Routledge, Sault College; mid - L.J. Mehrhoff, University of Connecticut.; bottom - C. Evans, University of IL

NORWAY MAPLE

Acer platanoides



Native Alternatives
Sugar Maple • Red Maple

Photos from bugwood.org: top/mid - L.J. Mehrhoff, University of Connecticut.; bottom - P. Wray, Iowa State University.

Deciduous Tree

Flowers: April to May

Fruits: Summer

Norway maple is a large tree that spreads by numerous, rapidly germinating seeds, and can dominate forest stands and create dense shade. Prefers full sun and tolerates hot dry conditions and extremes in soil conditions (e.g., sand, clay, acid). It is found in forests, open disturbed areas, roadsides, vacant lots, yards and gardens.

IDENTIFICATION

- Tree, up to 100 feet tall
- Opposite, five-lobed, hand-shaped leaves, with long pointed tips
- Regularly grooved bark
- Upright, flat-topped bright yellow-green flower clusters
- Fruits mature into wide-spreading wings that look like helicopter blades
- Foliage turns yellow in fall
- Milky white sap in leaves and stems

MECHANICAL CONTROL

Pull seedlings when soil is moist. Dig out larger plants with roots. Cut down large trees, and grind out stumps or clip off re-growth. Girdle trees in the spring.

CHEMICAL CONTROL

Late in the growing season, in early fall, cut stumps can be treated with glyphosate or triclopyr; or bark sprayed around the base of the tree with triclopyr.

PRINCESS TREE

Paulownia tomentosa

Deciduous Tree

Flowers: Early Spring

Fruits: Summer

Princess-tree is a fast growing tree that spreads by abundant tiny winged seeds, released in fall and carried long distances by wind and water. Invades roadsides and disturbed natural areas, including stream-banks and forests. Tolerant of infertile and acid soils, drought and pollution, and adapts to a wide variety of habitats. Is commonly mistaken for native Northern catalpa, but easily distinguished by its flowers, fruit, and opposite leaves.

IDENTIFICATION

- Small to medium tree, to 30-60 feet
- Grey-brown, rough bark, often with lighter colored vertical fissures; stems are olive-brown to dark-brown
- Large, broadly oval to heart-shaped leaves (three-lobed at times), opposite and hairy on both surfaces
- Large, pendant, fragrant, light violet-pink flowers, in showy upright clusters
- Egg-shaped fruit capsules with four inner seed compartments turn from light green to dark brown in winter, persisting until spring

MECHANICAL CONTROL

Pull young plants by hand, removing roots.

CHEMICAL CONTROL

For larger trees, glyphosate or triclopyr can be applied to bark or cut stumps.



Native Alternatives

American Holly • Flowering Dogwood • Redbud • Red Mulberry • Sassafras • Serviceberry

Photos from bugwood.org: top/mid - L.J. Mehrhoff, University of Connecticut.; bottom - J.H. Miller, USDA Forest Service.

PRIVETS

Ligustrum spp.



Native Alternatives
American Arborvitae • Black Chokeberry • Red Chokeberry
• Viburnums

Photos from bugwood.org: top/mid - L.J. Mehrhoff, University of Connecticut.; bottom - M. Frey, The Presidio Trust.

Deciduous Shrub or Tree

Flowers: June to July

Fruits: September to October

Privets are large shrubs or small trees that escape cultivation, forming dense thickets and shading out native understory plants. They grow readily from root or stump sprouts, or seeds spread by birds. Prefer abundant sun but tolerate a range of conditions, invading areas of disturbed soil, like fields, forest edges, and roadsides. Border Privet, California Privet, and European Privet are listed as potentially invasive in CT, and Chinese Privet is also of concern.

IDENTIFICATION

- Shrub or tree, up to 30 feet tall & wide
- Whitish-tan to gray, smooth bark
- Dark green leaves are opposite, elliptical to oblong, thick; red-purple in Fall
- Small tubular white flowers in dense clusters almost always at tips of twigs
- Stems are slender and grey-green
- Foliage, flowers have unpleasant odor
- Berry-like small fruits are blue or blue-black, often clustered like tiny grapes

MECHANICAL CONTROL

Pull seedlings when soil is moist. Remove larger stems (to 2.5") with roots. Mow or cut repeatedly at least once per growing season as close to ground as possible.

CHEMICAL CONTROL

Glyphosate or triclopyr can be applied to cut stumps, or triclopyr used on basal bark.

TREE OF HEAVEN

Ailanthus altissima

Deciduous Tree

Flowers: June to July

Fruits: Fall

Tree of Heaven is a rapidly growing tree that spreads by wind dispersed seeds and root suckering. Because it tolerates poor soils and pollution it was planted in urban areas. It is now mostly found in open sites, disturbed areas and forest edges.

IDENTIFICATION

- Tree, up to 80 feet tall
- Large, alternate compound leaves have pointed leaflets with a single notched tooth at the base
- Smooth stems with pale gray bark
- Large clusters of yellow flowers
- Red-brown seeds with papery wings are retained through fall into winter
- Unpleasant odor when the leaves, flowers or stems are crushed

MECHANICAL CONTROL

Hand pull young plants when the soil is wet or cut larger plants repeatedly at ground level to exhaust root reserves. To prevent seed production, cut plants before or while they are in flower.

CHEMICAL CONTROL

Foliage can be sprayed with triclopyr or glyphosate, or fresh cut stumps or basal bark treated with triclopyr. As for any woody plant, applying herbicides late in the growing season when nutrients are being sent to the roots is most effective.



Native Alternatives

Eastern Redbud • Flowering Dogwood • Shadblow • Smooth Sumac • Staghorn Sumac

Photos from bugwood.org: top - P. Wray, Iowa State University; mid - L.J. Mehrhoff, University of Connecticut. Bottom photo - US Forest Service, www.fs.fed.us.

JAPANESE HOP

Humulus japonicus



Native Alternatives

Fox Grape • Virginia Creeper • Trumpet Honeysuckle

Photos from bugwood.org; top - C. Evans, University of Illinois; mid/bottom - L.J. Mehrhoff, University of Connecticut.

Annual Vine

Flowers: July to August

Fruits: Summer

Japanese hop grows rapidly in summer, covering large areas of open ground or low vegetation, and forming dense mats and blocking light. It spreads by seeds dispersed by animals (including people), machinery and floodwaters. It thrives with plentiful sunlight and moisture, in rich exposed soil. It is most commonly found along stream banks and floodplains, and also in disturbed areas, including roadsides, old fields and forest edges.

IDENTIFICATION

- Herbaceous twining vine
- Simple, opposite hand-shaped leaves, with 5-7 lobes, and toothed leaf edges
- Rough-textured stems, with short, sharp, downward pointing prickles
- Flowers are pale green, drooping, and cone-like, with overlapping scales

MECHANICAL CONTROL

Hand-pull vines with roots early in growing season (April-May), repeating monthly until eradicated. Or, cut or mow vines close to the ground and repeat often until plants die back in fall. Avoid skin contact.

CHEMICAL CONTROL

Plants can be sprayed with glyphosate after seeds germinate (April to May) and before vines take off or seeds form (Aug.).

MILE-A-MINUTE WEED

Persicaria perfoliata

Annual Vine

Flowers: Mid-Summer

Fruits: Late Summer to Fall

Mile-a-minute weed is a trailing vine that can grow 6 inches/day, smothering other vegetation. Seed persists in soil up to six years, and is dispersed by birds, mammals and water. It is shade-tolerant, and found in open disturbed areas like fields, forest edges, roadsides, and stream banks.

IDENTIFICATION

- Highly branched, reddish stems are covered with small curved spines
- Alternate triangle-shaped leaves have barbs on the undersurface
- Flowers are small and white
- Deep blue fruits in terminal clusters

MECHANICAL CONTROL

Hand pull plants and roots before fruiting. Repeated mowing or weed-whacking of low growing infestations reduces reserves and prevents or decreases flowering.

CHEMICAL CONTROL

For extensive infestations, a pre-emergent herbicide can be used to kill germinating plants, followed by spot treatment with triclopyr or glyphosate. Use with surfactant due to waxy leaf coating.

BIOLOGICAL CONTROL

Beneficial weevils that only feed on mile-a-minute are being used in CT (more info. at www.mam.uconn.edu/biological-control/).



Native Alternatives

None are known

Photos from bugwood.org: top/mid/bottom: L.J. Mehrhoff, University of Connecticut.

BLACK SWALLOW-WORT

Cynanchum louiseae



5452234



5452215



5452078

Native Alternatives

American Wisteria •
Dutchman's Pipe • Trumpet
Honeysuckle • Honeyvine •
Virginia Creeper

Photos from bugwood.org: top/mid/bottom -
L.J. Mehrhoff, University of Connecticut.

Deciduous Vine

Flowers: June and July

Fruit: July to September

Black swallow-wort is a perennial twining vine that can form extensive patches. It spreads through rhizomes and dispersal of seeds by wind. It is found in upland areas such as old fields, and forest floors, and is tolerant of a wide range of light and moisture. It is a threat to monarch butterflies, which lay eggs on swallow-wort, but larvae do not survive. Pale swallow-wort, distinguished by creamy pink to reddish brown flowers, is also a concern.

IDENTIFICATION

- Herbaceous, twining, unbranched vine up to 6 ½ feet in length
- Oval shaped leaves with pointed tips occur in pairs along the stem
- Clusters of small five-petaled star-like flowers, dark purple with white hairs
- Fruits are slender tapered green pods that turn light brown as they mature

MECHANICAL CONTROL

For small populations, dig up the large root masses, and bag and dispose of roots along with any pod-bearing plants.

CHEMICAL CONTROL

Plants can be clipped or mown intensively, then sprayed with glyphosate. Mowing must be frequent to be effective, and plants should be cut low and any pieces with pods bagged and disposed of.

ORIENTAL BITTERSWEET

Celastrus orbiculatus

Deciduous Vine

Fruits: Late Summer to Early Fall

Oriental bittersweet, also known as Asiatic bittersweet, is an aggressive vine that can quickly smother other vegetation. It has twining stems that strangle shrub and tree limbs, and its weight can cause uprooting and toppling. Spreading occurs by root suckering, and when birds eat the very distinctive red fruits. It is shade tolerant, can grow in a variety of habitats, and is quick to invade any newly disturbed area.

IDENTIFICATION

- Woody twining vine
- Alternate, nearly round, finely toothed glossy leaves that spiral evenly around the stem
- Fruits have a conspicuous yellow casing that opens to reveal a bright red fleshy interior
- Roots are orange colored

MECHANICAL CONTROL

Pull small plants including the entire root system. Cut larger vines close to the ground every couple of weeks to prevent resprouting and to deplete the root system.

CHEMICAL CONTROL

Low, dense patches can be cut to ground level, allowed to regrow, then foliage sprayed with triclopyr. For taller patches fresh cut stumps can be treated with either triclopyr or glyphosate in late summer.



Native Alternatives

- Trumpet Honeysuckle
- Fox Grape
- Virginia Creeper
- Virgin's Bower

Photos from bugwood.org; top - L.J. Mehrhoff, University of Connecticut; mid - C. Evens, River to River CWMA; bottom - N. Lowenstein, Auburn University.

PORCELAINBERRY

Ampelopsis glandulosa var. *brevipedunculata*



Native Alternatives
American Wisteria • Trumpet
Honeysuckle • Virginia
Creepier

Photos from bugwood.org: top/mid - L.J. Mehrhoff, University of Connecticut; bottom - S. Manning, Invasive Plant Control.

Deciduous Vine

Flowers: Mid-Summer

Fruits: Late Summer to Fall

Porcelainberry is a vigorous climbing vine resembling native grape. It forms thick mats in tree crowns that can cover and shade out native vegetation. It spreads by prolific growth and seeds eaten by birds and other animals. It prefers moist, rich soils; invades streambanks, pond margins, forest edges and disturbed areas; and thrives in a wide range of light conditions.

IDENTIFICATION

- Woody branched tendril-bearing vine
- Alternate heart-shaped leaves have coarse teeth, and vary from slightly lobed to deeply-dissected
- Green to white, inconspicuous flowers develop in small clusters
- Speckled fruits are shades of pink, purple and blue, in loose clusters

MECHANICAL CONTROL

Hand pull vines in the fall or spring. Cut vines too large to pull out near the ground and cut regrowth as needed.

CHEMICAL CONTROL

For small infestations, vines can be cut to the ground in late summer and treated with glyphosate concentrate. For dense thickets, stems can be cut to the ground, allowed to re-sprout, then spot-sprayed with glyphosate.

GOUTWEED

Aegopodium podagraria

Perennial Herb

Flowers: June

Goutweed is an aggressive perennial ground cover that spreads vegetatively by rhizomes and forms dense patches. It is found in gardens and flowerbeds, around shrubs and other plantings, and in disturbed habitats such as felled forests, abandoned fields, and pastures. It thrives in moist soil and part shade, but is also shade-tolerant and capable of invading closed-canopy forests. Flowering shoots are uncommon in densely shaded areas.

IDENTIFICATION

- Perennial ground cover
- Leaves, in three groups of three leaflets, are green or variegated, and toothed or irregularly lobed
- Small, white, five-petaled flowers are arranged in flat-topped clusters, held above on a leafy stem up to 3 feet tall
- Seeds are small and elongate, similar to carrot seeds, and ripen late summer

MECHANICAL CONTROL

Cover with black plastic when leaves emerge through summer; pull or dig up entire plants with rhizomes; or cut plants using a mower, scythe, or weed-whacker, and cover the area with black plastic.

CHEMICAL CONTROL

Large patches can be treated with glyphosate.



Native Alternatives

Golden Alexanders • Canada Anemone

Photos from bugwood.org: top/mid/bottom - L.J. Mehrhoff, University of Connecticut.

JAPANESE KNOTWEED

Reynoutria japonica, aka *Polygonum cuspidatum*



Native Alternatives

Boneset • Buttonbush •
Elderberry • Pussy Willow •
Silky Willow • Spicebush

Photos from bugwood.org: top/mid/bottom -
T. Heutte, USDA Forest Service.

Perennial Herb

Flowers: Late Summer

Japanese knotweed is a shrub-like, upright herbaceous perennial. It forms dense stands that spread vegetatively from long, stout rhizomes, and produces winged fruits that carry seeds to new areas.

Though fairly tolerant of most soil and light conditions, it is often found in wet and sunny locations such as wetlands, roadsides and streambanks.

IDENTIFICATION

- Hollow, bamboo-like stems, up to 10 feet tall
- Alternate, large, oval leaves with square bases and pointed tips
- Small green-white flower clusters
- Plants turn brown and die back with the onset of frost

MECHANICAL CONTROL

Dig small plants removing all shoots, roots and rhizomes; bag and dispose of as trash. For large infestations, cut plants 3 times/year for several years at ground level to starve roots and rhizomes. Do not mow; it stimulates lateral growth and resprouts.

CHEMICAL CONTROL

Can be cut once in May, leaving 2-inch stalks, then when in bloom (August), regrown foliage sprayed with glyphosate. Follow-up spot treatment can be done Sept. to frost. In August or Sept., stems can be injected with glyphosate concentrate.

LESSER CELANDINE

Ficaria verna, aka *Ranunculus ficaria*

Perennial Herb

Flowers: March to April

Fruit: Late Summer to Fall

Lesser celandine is a low-growing spring ephemeral that grows vigorously, creating dense mats that exclude other vegetation. Spreads primarily by bulblets and underground tubers. It invades moist forested areas and is a threat to native forest spring ephemerals, including bloodroot and wild ginger. Commonly mistaken for the native Marsh marigold.

IDENTIFICATION

- Short perennial ground cover, to 12 in.
- Dark green, shiny, kidney or heart-shaped basal leaves that vary in size
- Showy bright yellow, eight-petal flowers (to 3 in.) on stalks above leaves
- Cream-colored bulblets are attached to leafstalks and dislodge easily
- Mass of small gray, fingerlike tuberous roots underlies each plant

MECHANICAL CONTROL

Hand pull or dig up clumps, removing entire plants and as many tubers and bulblets as possible. Bag and dispose of all material in a landfill or incinerator. Prompt action and annual follow-up are crucial.

CHEMICAL CONTROL

For large infestations, glyphosate can be applied to foliage when it emerges, before flowering; stop in March due to risk to native wildflowers and amphibians.



Native Alternatives
Marsh Marigold • Wood Poppy

Photos from bugwood.org: top/mid/bottom - L.J. Mehrhoff, University of Connecticut.

MUGWORT

Artemisia vulgaris



Native Alternatives

Beebalm • Blue Giant Hyssop •
Purple Coneflower • Joe-pye
Weed • Swamp Milkweed

Photos from bugwood.org: top/mid - Ohio State
Weed Lab, Ohio State University; bottom - R.
Vidéckí, Doronicum Kft.

Perennial Herb

Flowers: July to Late September

Fruits: August to October

Mugwort is a perennial weed that spreads aggressively through extensive rhizomes and readily forms large, mono-specific stands. Silvery plume-like colonies can be seen along sidewalks, backyards, parking lots, forest edges and roadways where the earth is disturbed. It thrives in sunny, well-drained soil, but also tolerates part-shade.

IDENTIFICATION

- Grows 2-5 feet tall
- Aromatic leaves are deeply lobed with pointed ends, and undersides are light grey-green with silvery hairs
- Spike-like clusters of small, greenish-yellow flowers form at stem terminal
- Stems are vertically grooved, round or square, and branched and become reddish and woody with maturity
- Fruits are dry and one-seeded

MECHANICAL CONTROL

Mow or cut to ground every 2-3 weeks for 2 years. Full shade inhibits regeneration, so hand cut small colonies to not disturb nearby vegetation. Pulling may result in more plants because it can regenerate from its extensive rhizomes. Cut to prevent seedheads, as it can also spread by seed.

CHEMICAL CONTROL

Extensive infestations can be treated with glyphosate two years in a row.

GARLIC MUSTARD

Alliaria petiolata

Biennial Herb

Flowers: April to June

Garlic mustard is a cool season biennial herb that starts growing before trees leaf out, then dies back to dry, pale brown stalks by mid-summer. Each plant can produce a large number of long-lived seeds that are able to take advantage of newly disturbed areas. It tolerates partial shade and prefers moist, well-drained soils. Dense invasions are often found along upland and floodplain forest edges, streamsides, trail edges and roadsides.

IDENTIFICATION

- First year plant is a low growing rosette of heart-shaped, coarsely toothed leaves
- Second year plant is upright, 1 to 3 feet tall, with alternate, strongly toothed triangular leaves
- Cluster of small, white four-petal flowers on second year plants
- Leaves and stems give off an odor of garlic when crushed

MECHANICAL CONTROL

Hand pull small infestations when the soil is moist and before plants have set seed, or cut larger infestations at ground level when flowering begins.

CHEMICAL CONTROL

Glyphosate can be applied to heavy infestations prior to flowering in the spring.



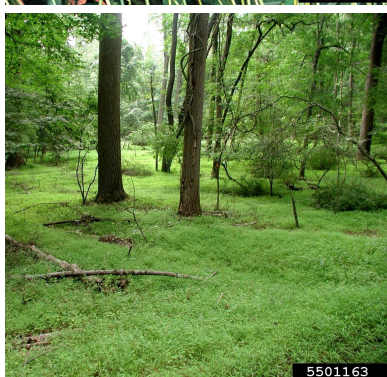
Native Alternatives

Creeping Phlox • Foam Flower •
Lady Fern • Wild Ginger

Photos from bugwood.org; top - C. Evans, River to River CWMA; mid - T. Heutte, USDA Forest Service; bottom - L.J. Mehrhoff, University of Connecticut.

JAPANESE STILTGRASS

Microstegium vimineum



Native Alternatives

Virginia Cutgrass

Photos from bugwood.org: top/bottom - L.J. Mehrhoff, University of Connecticut; mid - J.H. Miller & T. Bodner, Southern Weed Science Society.

Annual Grass

Flowers: Late Summer

Fruits: Late Summer to Fall

Japanese stiltgrass is a delicate annual grass that forms dense stands. It spreads by seed and by rooting at joints along the stem. A single plant can produce 100-1,000 seeds that remain viable in the soil for at least three years, and seeds germinate readily following soil disturbance. Seeds can also be transported by water, in soil and gravel, in nursery grown plants, and tracked by animals. It is very shade tolerant, and found most commonly in forested floodplains, and also in ditches, forest edges, fields and trails.

IDENTIFICATION

- 1-3 feet tall bamboo-like grass with drooping stems
- Leaves are pale green, lance-shaped, asymmetrical, with a shiny midrib
- Flower stalks develop in axils of the leaves or at the top of the stems
- Fruits are bristly (awned)

MECHANICAL CONTROL

Can be pulled by hand at any time due to its shallow roots. If flowering, cut plants back using a mower, weed-whacker or other device to prevent seed production.

CHEMICAL CONTROL

Extensive infestations can be treated with a systemic herbicide such as glyphosate.

COMMON REED

Phragmites australis

Perennial Grass

Flowers: July to September

Common reed is a perennial grass that forms remarkably dense stands, spreading through aggressive rhizomes and by wind or water dispersed seeds. It thrives in sunny, moist habitats and grows in fresh or brackish water. Most prevalent in disturbed or polluted soils, it is often found along roadsides, lakeshores and riverbanks, as well as in wetlands and coastal marshes.

IDENTIFICATION

- A stout perennial grass that can easily grow to 12 feet tall
- Long, lance-shaped, gray-green leaves
- Purple-brown plume-like flowers
- Stalks and plumes turn tan in the fall and remain throughout the winter

MECHANICAL CONTROL

Cut, pull or mow at the end of July, and dispose of all shoots and root material. Repeat annually until control is achieved. Heavy black plastic placed over cut stalks may help kill plants in full sun.

CHEMICAL CONTROL

Glyphosate* can be applied to foliage or cut stems once plants have flowered. Follow-up treatments will likely be necessary for this method to be successful.

*A state permit is required to use herbicides in aquatic habitats (over/near water).



Native Alternatives

Big Bluestem • Broom Sedge •
Pussy Willow • Smooth
Cordgrass • Switchgrass

Photos from bugwood.org: mid - L.J. Mehrhoff, University of Connecticut; bottom - J.M. Randall, The Nature Conservancy. Top photo: CRCCD.

OTHER NOTABLE INVASIVES

Trees

Amur Cork Tree
Black Locust

Shrubs

Callery Pear
Common Buckthorn
Exotic Honeysuckles

Vines

Japanese Honeysuckle

Herbaceous Perennials

Canada Thistle
Dame's Rocket
Giant Hogweed
Narrowleaf Bittercress
Purple Loosestrife
Reed Canary Grass
Spotted Knapweed



Invasive Canada thistle
(L.J. Mehrhoff, UConn, bugwood.org)

USE OF HERBICIDES TO CONTROL INVASIVES

Two herbicides used commonly to control invasives, glyphosate and triclopyr, are included as options in this guide. *While it has been standard practice for professionals to use herbicides to control invasive plants, some groups no longer recommend herbicide use due to studies indicating harmful health effects.*

Herbicides are best applied by licensed professionals. If you apply them yourself, read the entire label; follow the mixing and application instructions; wear protective gear and clothing; and keep people and pets out of the area.

Glyphosate is a non-selective, broad spectrum herbicide that is most effective late in the growing season. It is sold under several brand names (Accord®, Rodeo®, Roundup Pro®) and in different concentrations. Rodeo® is made for use in or near water, and requires a permit from the CT Department of Energy & Environmental Protection (for info. call the Pesticide Program, 860-424-3369).

Triclopyr is a selective herbicide that will not harm grasses or conifers. When used to control woody plants it is most effective early in the growing season. It is sold as Garlon® and Release® for woody plants, and as Weed-B-Gone®, Brush-B-Gone® and Turflon® for broadleaf weeds.

If you use herbicides to control invasives be sure to follow the guidelines on when to use them (time of year), methods of application, and the appropriate dilution for each species.

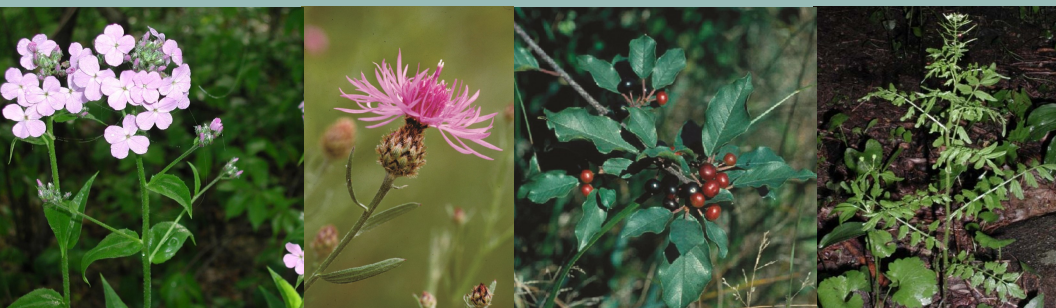


Spraying potentially invasive giant hogweed
(T. English, USDA APHIS PPQ, bugwood.org)

For information on specific requirements, restrictions and recommendations for the use of herbicides visit the CT Department of Energy & Environmental Protection website at www.ct.gov/deep.

Please note: mention of a specific product in this publication is not an endorsement.

This guide was developed to help landowners identify and control non-native invasive plants in their yards. Invasive plants thrive outside their natural range, threatening the health of our native plant and animal communities. Controlling invasives is a challenge, but the benefits are great! By replacing invasives with natives your yard will be naturally beautiful and a place for you – and native wildlife – to enjoy year-round.



Photos (left to right): Dame's Rocket, L.J. Mehrhoff, University of Connecticut, bugwood.org; Spotted Knapweed, J. Cardina, The Ohio State University, bugwood.org; Common Buckthorn, L.J. Mehrhoff, University of Connecticut, IPANE; Narrowleaf Bittercress, L.J. Mehrhoff, University of Connecticut, bugwood.org.

Why Invasives are Invasive

They are quick to establish, especially in disturbed areas

They grow very rapidly once established

They are long flowering and produce many seeds and fruits

They spread very effectively to new areas

They are aggressive competitors, free of the enemies that keep them in check in their natural range

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Connecticut
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