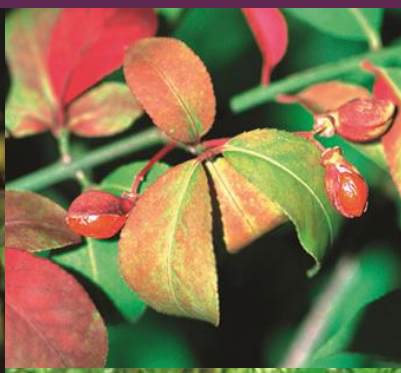
Invasive Plants In Your Backyard!

A Guide to Their Identification and Control

NEW 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.

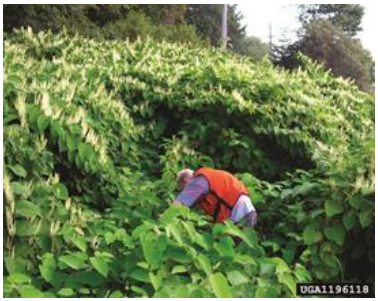
Photo on cover from bugwood.org (unless noted), clockwise from top left: *Oriental Bittersweet* and *Burning Bush*, J.H. Miller, USDA Forest Service; *Garlic Mustard*, G. Miller, OR DOA; *Common Reed*, N. Tabak, University of Connecticut, IPANE; *Japanese Honeysuckle*, S. Leicht, University of Connecticut,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



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

In general, plants are 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, but it is essential to apply them as directed. It is also very important to inform yourself about the potential health and environmental risks of herbicides prior to their use. In some cases applying herbicides can require a permit, for example if used over or near water.

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 2016, 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

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.

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

Spray foliage of small plants with either glyphosate or triclopyr. For larger plants apply glyphosate or triclopyr to freshly cut stumps.

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

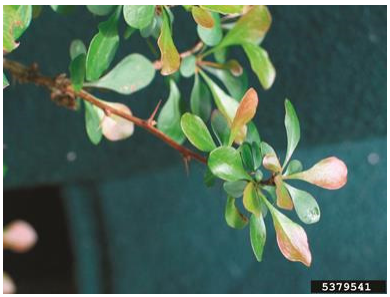
- Small shrub, 2 to 5 feet tall
- Thin, single thorns on stems
- Alternate, teardrop shaped leaves that develop before trees leaf out
- Pale yellow flowers in clusters on the underside of branches
- Bright red berries that often persist into winter

MECHANICAL CONTROL

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

CHEMICAL CONTROL

Only use herbicides if mechanical removal is not possible. In early spring spray foliage with triclopyr, or from mid-summer to fall use either tricolopyr or glyphosate. For larger plants, apply either triclopyr or glyphosate to freshly cut stumps.



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

Spray foliage with triclopyr before and during flowering, or use glyphosate after flowering. Apply glyphosate or triclopyr to cut stems anytime, although 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 the roots and any cane fragments are removed. Cutting canes to the ground repeatedly can also be effective. Branches with berries should be bagged.

CHEMICAL CONTROL

Treat canes with glyphosate or triclopyr.

Native Alternatives

Native Blackberries

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 spray foliage with either glyphosate or triclopyr. For larger plants apply glyphosate or triclopyr to freshly cut stumps, or girdle tree with an axe and apply herbicide to the cut area. Herbicides may be most effective when used late in the growing season.

NORWAY MAPLE
Acer platanoides

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, forested wetlands, 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.

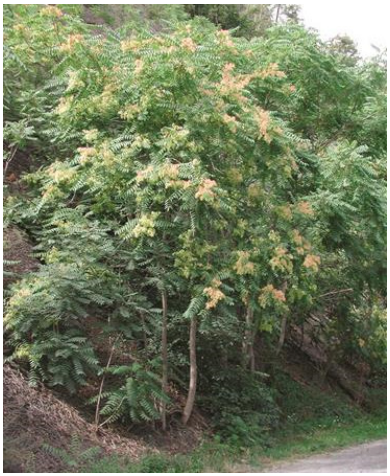
CHEMICAL CONTROL

Treat cut stumps with glyphosate or tricolpyr; or spray bark around the base of the tree with triclopyr.

Native Alternatives
Sugar Maple • Red Maple

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

TREE OF HEAVEN
Ailanthus altissima



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.

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

Spray foliage with triclopyr or glyphosate, or treat fresh cut stumps or basal bark with triclopyr. Applying herbicides late in the growing season when nutrients are being sent to the roots is most effective.

JAPANESE HOP
Humulus japonicus

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

Spray plants with glyphosate after most seeds germinate (April to May) and before vines take off or seeds form (August).

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.

MILE-A-MINUTE WEED
Persicaria perfoliata

Native Alternatives
None are known

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

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, treat with a pre-emergent to kill germinating plants, then spot treat with triclopyr or glyphosate. Use with surfactant due to waxy leaf coating.

BIOLOGICAL CONTROL

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

BLACK SWALLOW-WORT
Cynanchum louiseae

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

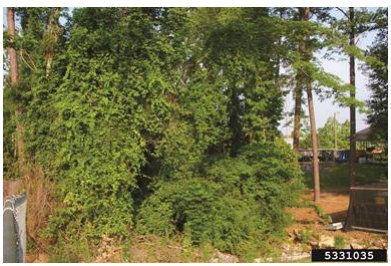
Clip or intensively mow, and spray with glyphosate. Mowing must be frequent to be effective, and plants should be cut low and any pieces with pods bagged and disposed of.

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.

ORIENTAL BITTERSWEET
Celastrus orbiculatus



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.

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

For low, dense patches cut all vegetation to ground level, allow to regrow, then spray foliage with triclopyr. For taller patches treat fresh cut stumps with either triclopyr or glyphosate in late summer.

PORCELAINBERRY
Ampelopsis brevipedunculata

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

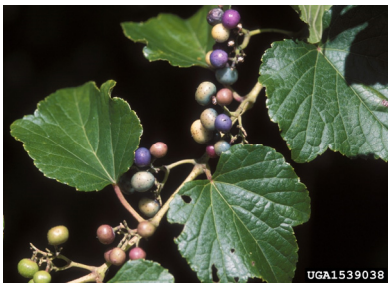
- Woody branched tendril-bearing vine
- Alternate heart-shaped leaves have coarse teeth, and vary from slightly lobed to deeply-dissected
- Green to white, inconspicuous flowers develop in small clusters
- Speckled fruits are shades of pink, purple and blue, in loose clusters

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, cut vines to ground in late summer and treat with glyphosate concentrate. For dense thickets, cut stems to the ground, allow to re-sprout, then spot-spray with glyphosate.



Native Alternatives
American Wisteria • Trumpet Honeysuckle • Virginia Creeper

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

GOUTWEED
Aegopodium podagraria

Native Alternatives
Golden Alexanders • Canada Anemone

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

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 begin to 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 plastic.

CHEMICAL CONTROL

Treat large patches with glyphosate.

JAPANESE KNOTWEED
Polygonum cuspidatum

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

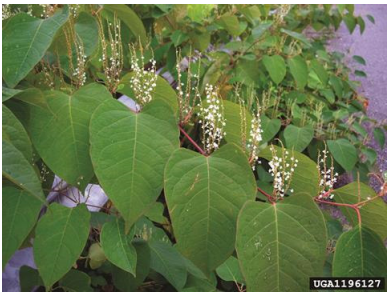
- Hollow, bamboo-like stems, up to 10 feet tall
- Alternate, large, oval leaves with square bases and pointed tips
- Small green-white flower clusters
- Plants turn brown and die back with the onset of frost

MECHANICAL CONTROL

Pull or dig small plants removing all shoots, roots and rhizomes. For larger infestations, cut plants repeatedly (three times per year) at ground level to starve roots and rhizomes.

CHEMICAL CONTROL

Cut stems two inches above ground level and apply glyphosate, or cut and allow plants to begin regrowing before spraying foliage with glyphosate. Herbicides are most effective in late summer or early fall when plants are sending nutrients to the roots and rhizomes.



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

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

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. Vidécki, 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

For extensive infestations, treat 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

Apply glyphosate 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.

COMMON REED
Phragmites australis

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.

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

Apply glyphosate* 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).

JAPANESE STILTGRASS
Microstegium vimineum

Biennial Herb
Flowers: April to June

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

For extensive infestations, treat with a systemic herbicide such as glyphosate.

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.

OTHER NOTABLE INVASIVES

Trees
- Black Locust
- Princess Tree

Shrubs
- California, Border & European Privet
- Common & Glossy Buckthorn
- Exotic Honeysuckles

Vines
- Japanese Honeysuckle

Herbaceous Perennials
- Dame's Rocket
- Giant Hogweed
- Narrowleaf Bittercress
- Purple Loosestrife
- Reed Canary Grass
- Spotted Knapweed

Invasive princess tree sapling
(L.J. Mehrhoff, UConn, bugwood.org)

USE OF HERBICIDES TO CONTROL INVASIVES

Two herbicides used commonly to control invasives, glyphosate and triclopyr, are recommended in this guide. Keep in mind that herbicides can pose a human and environmental health risk. If you choose to use them, always take care.

Use herbicides wisely: read the entire label; follow the mixing and application instructions; wear protective gear and clothing; and keep people and pets out of the application 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.

RESOURCES

For more information on non-native invasives:

CT Invasive Plant Working Group (CIPWG): *www.hort.uconn.edu/cipwg*

CT Natural Resources Conservation Service: *www.ct.nrcs.usda.gov*

Invasive.org: *www.invasive.org/index.cfm*

Invasive Plant Atlas of New England (IPANE): *www.eddmaps.org/ipane/*

US Forest Service Invasive Species Program: *www.fs.fed.us/invasivespecies*

Weeds Gone Wild: *www.nps.gov/plants/alien*

WeedUS/Invasive Plant Atlas of the US: *www.invasiveplantatlas.org/about.html*

For information on aquatic invasives:

CT Agricultural Experiment Station Invasive Aquatic Plant Program (IAPP): *www.ct.gov/caes*, click on *"Invasive Aquatic Plant..."* (left side bar navigation link)

For information on native alternatives:

PlantWise: *www.wildflower.org/plantwise*

"Native Alternatives for Invasive Ornamental Plant Species" brochure: *www.ct.gov/caes*, click on *"Publications"* (top line navigation link)

DEFINITIONS

Alternate...leaves in an alternating or ascending spiral pattern on the stem

Opposite...leaves in pairs on opposite sides of the stem

Compound...leaves that are divided into separate leaflets, each with its own stalk

Rhizome...an underground stem that produces new roots and shoots

Alternate **Opposite** **Compound**

(from www.okplanttrees.org/okplantid/guides/leaves.html)

Tip layering...buried stem tips that form new roots

Suckering...a new shoot rising from a basal or subterranean stem or root

Deciduous...a plant that loses foliage at the end of the growing season

Biennial...plants that live two years

Perennial...plants that live three years or longer

Herbaceous...a plant lacking a permanent woody stem

Leaf shape...definitions online at *en.wikipedia.org/wiki/Leaf_shape*

A number of references were used to develop this guide. In particular we would like to acknowledge the following sources: CIPWG, Invasive.org, IPANE, PlantWise, US Forest Service, Virginia DCR, Weeds Gone Wild.

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): *California Privet*, 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

1. They are quick to establish, especially in disturbed areas
2. They grow very rapidly once established
3. They are long flowering and produce many seeds and fruits
4. They spread very effectively to new areas
5. They are aggressive competitors, free of the enemies that keep them in check in their natural range

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