Simsbury Invasive Plant Guide Book

SIMSBURY LAND TRUST

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The Lower Farmington River and Salmon Brook Wild & Scenic Committee (LFSWS) shares Simsbury Land Trust's goal of protecting and enhancing the waterways' biological diversity through the management of land invasive plants and the avoidance of their spread. LFSWS is proud to support their efforts to inform the public.

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Simsbury Pollinator Pathway — Creating a Pollinator-Friendly Community

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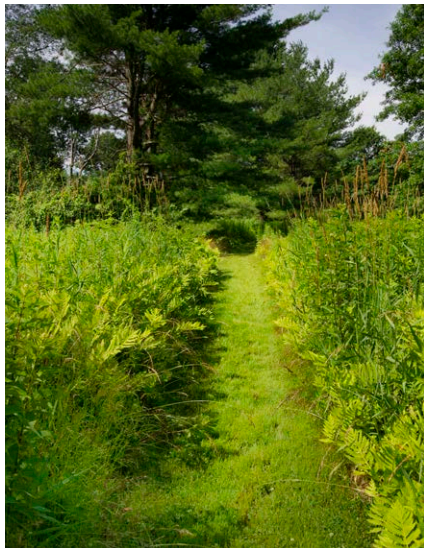
Nature Knows No Boundaries

Simsbury Land Trust protects over 1,100 acres. Each preserve has a boundary, but that is on the map alone.

Nature — including invasive plants — has no boundaries. That is why what you do in your yard affects what happens in all of the open spaces in town. Invasive plants are a threat to all of our properties, and we are asking for your help.

We encourage you to use this booklet to help identify and remove these plants from your yard, and to volunteer to help us remove these plants from our wild areas.



About the Simsbury Land Trust

Simsbury Land Trust is a non-profit conservation organization that protects the rich natural diversity of Simsbury through the ownership of land and conservation easements. Founded in 1976, our mission is to protect, in its natural state, land that has special conservation, scenic or historic value. By preserving the beauty and environmental vitality of our town we create a legacy for the next generation.

- More than 800 Simsbury households support the SLT and its operations through their annual membership donations.
- Dozens of volunteers give of their time, skills and effort and serve as trustees, committee members, stewards, teachers, speakers and guides. And many local businesses and professionals have donated countless products and services.
- Because of the Simsbury Land Trust, Rosedale Farms, Tulmeadow Farm and the George Hall/Pharos Farm are now permanently protected, the Western Ridge and much of the wetlands at its base are protected wildlife corridors, and bobolinks and woodcock are now nesting in the meadows east of the river.

We urge you to visit the trails we maintain on many of our preserves and to watch for activities, events and publications that we sponsor. We know you will enjoy the chance to get outdoors, to learn more about the exceptional natural environment here in Simsbury, and to meet other people who share your interests. Visit our website to learn of these and other opportunities. We hope you will become a member and support the Simsbury Land Trust with an annual membership donation.

We need your help!

Invasive plant removal takes a lot of time and money, and there is much work to do. Join us for a morning (or two or three) of invasive plant removal, along with a little education, camaraderie, and habitat restoration. We will teach you how to identify and manage invasive plants in your own backyard while you help us control and remove these harmful plants on the SLT preserves.

If you are interested in joining the invasive removal team and helping on workdays, please email director@simsburylandtrust.org.

What is an invasive plant?

An invasive plant is a plant that is not native to a particular ecosystem, whose introduction does or is likely to cause great ecological harm.

How do these plants reach our landscape?

In many cases, invasive species were imported for use as attractive ornamental plants. Others were once planted by conservation agencies or were accidently introduced.

Why are invasive plants so successful in our landscape?

Invasive plant species often lack natural predators, diseases, and herbivores that keep them in check in their native habitats. They have competitive adaptations including early leaf-out, aggressive reproductive strategies, and efficient seed dispersal methods.

Why should you care?

Invasive plants are a direct threat to the health of Simsbury's open space habitats. The aggressive growth of invasive plants can affect forest regeneration, the habitat value of grassland areas, impact our health, threaten our recreational areas, and potentially decrease property values.

Invasive species are the second-greatest threat to global biodiversity after loss of habitat. Invading plants outcompete native species and change animal habitat by eliminating native wildlife food sources, altering cover, and destroying nesting opportunities.

What can you do to help?

The health of our natural ecosystems depends on our landscaping choices. When buying plants or moving them from place to place consider whether the plants are likely to escape. Plants advertised as fast growing, prolific, and tolerant of many growing conditions are often the ones that become invasive.

- Remove invasive plants from your yard.
- Replace invasive plants in your garden with native alternatives.
- Ask your local garden supplier to offer more native species.
- Don't allow non-native garden plants to spread into the wild.
- Volunteer to help remove invasive plants from Town open spaces and parks, Simsbury Land Trust properties, and other areas.
- Help educate others about the problem.

Environmentally Conscious Ways to Control / Eradicate Invasive Plants

1. **Solarization:** Small areas of herbaceous plants can be covered with clear or black plastic sheeting, or plant material can be placed in
plastic bags to cook for several month in the summer sun.
2. **Hand Pulling:** Works best when plants are small, the soil is wet and soft, and before plant has set seed.
3. **Spot Mowing:** When invasives are too numerous, spot-mowing can be used to reduce the chance of the plant being able to set more seed. Mowing is timed after the plant begins its growth to produce a flower but before it has gone to seed. Mowing should be repeated after the plant begins to regrow to further weaken the plant.
4. **Cut and Paint:** Immediately after cutting woody stems, apply a small amount of herbicide (triclopyr or glyphosate) to cut area using an applicator such as a **Buckthorn Blaster ™**. Do not cut and paint if rain is forecasted in the following two days to ensure that the herbicide is completely taken up by the plant and is not washed off the cut stump.
5. **Foliar Spraying:** Herbicide is sprayed on the leaves of invasive plant. Timing of the application is the most critical for this method. **Proper herbicide procedures must be followed.**

Several plant ID iphone apps can help with identification:

iNaturalist	**PictureThis**
PlantSnap	**Plantix.org**
Planta	**Plant.id**
Leafsnap	
Pl@ntNet	

To learn more about invasive plants, and what to plant in their place, scan QR codes or go to links.

Invasive Plants
www.cipwg.org

Native Plants
http://tinyurl.com/yc8uys6w

Burning Bush or Winged Euonymus

Euonymus alatus

This handsome shrub was first introduced into North America the 1860s for ornamental purposes. Unfortunately, it is still sold today. It can invade a variety of habitats including forest edges, old fields, roadsides and undisturbed forests. Once established, it can form dense thickets, displacing native vegetation. Birds and other wildlife eat and disperse the fruit. This shrub does not support native insects or nestling songbirds.

Older stems may have four corky ridges or wings

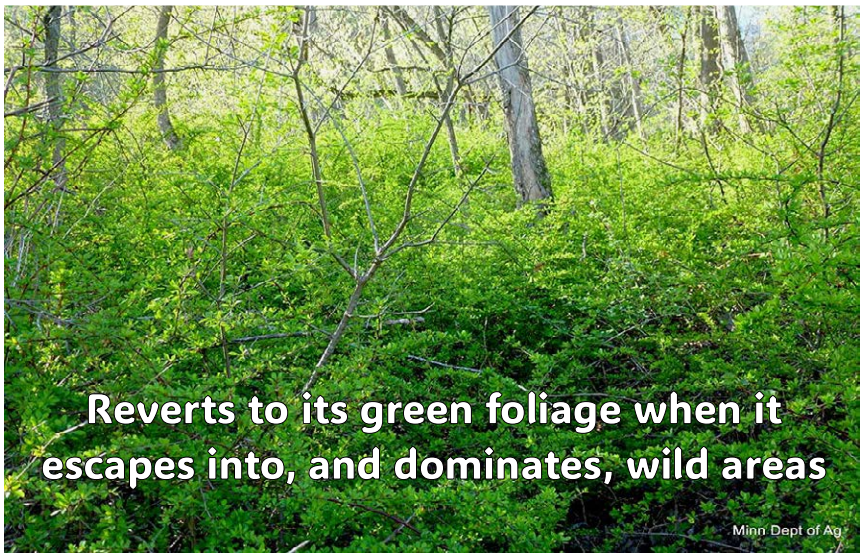
Yes, it is beautiful in the fall, but please remove it!

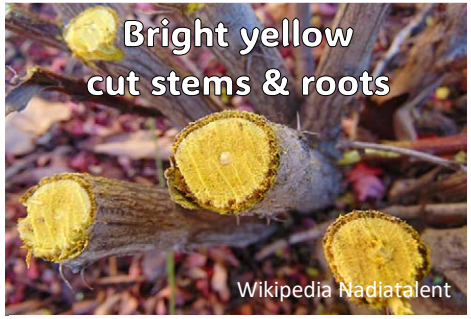
- Hand pull or dig out small burning bush.
- Cut down large burning bush and trim new growth repeatedly as needed or treat cut stems with herbicide. Cutting and pulling can be done at any time during the year but preferably before or during flowering (April-June).
- If the shrub is pulled in the fall while in fruit, the berries should be bagged and disposed of in a landfill – do not compost.

Japanese Barberry

Berberis thunbergii

Japanese barberry forms dense stands in a wide variety of natural habitats where it alters soil pH, nitrogen levels, and biological activity in the soil. Once established, barberry can form extensive thickets that displace native plants and reduce wildlife habitat and forage. Areas with extensive barberry have been found to have more deer ticks and more Lyme disease.





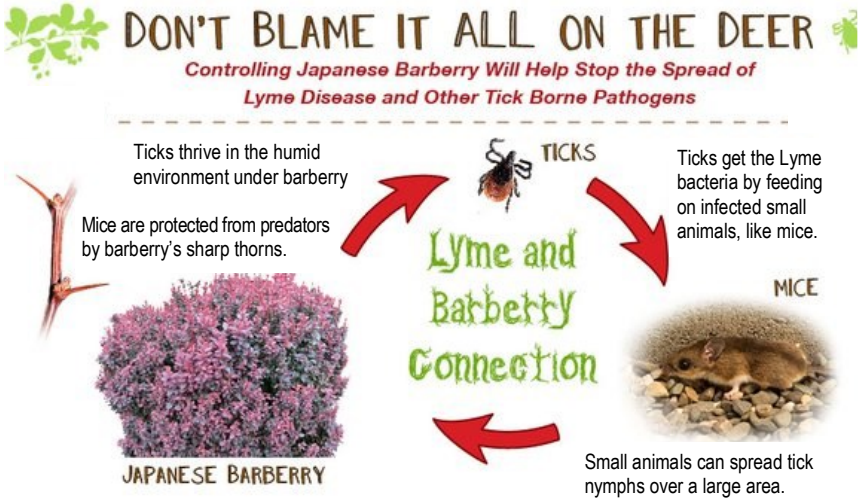


Figure: NY Dept of Environmental Conservation

- Dig out Japanese barberry—be careful of the thorns!
- If you cannot dig it out, in March—June cut the multiple stems to 6 to 12 inches from the ground and let it sprout. Cut the resprouted plant July—early September to one inch from the ground and paint cut stems with glyphosate herbicide.

Autumn Olive

Elaeagnus umbellate

A medium-to-large deciduous tree or shrub, it can grow up to 20 feet in height. It has sharp thorns, fragrant flowers, and edible red berries. Inside the fruits are thousands of tiny seeds that are dispersed by birds and small mammals. It out-competes native species and interferes with plant succession.

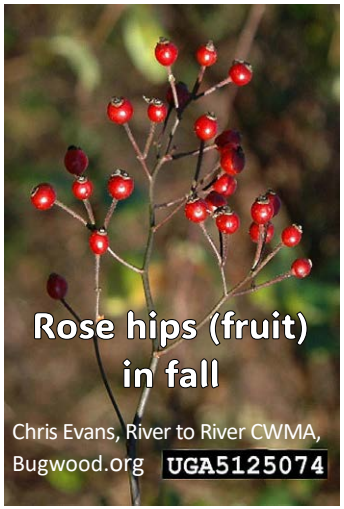
Autumn olive has a lighter, gray-green appearance than other shrubs in the landscape.

- Small plants and seedlings may be pulled up by the roots when soil is moist; the entire root system must be removed to prevent resprouting.
- Larger plants can be cut, but it will resprout. Persistent cutting of the root crown multiple times during the growing season over several years may kill the plant, but diligence is required.
- Mowing can prevent seedlings from establishing in fields.
- Cut and paint herbicide (glyphosate or triclopyr) on cut stem immediately after cutting (except in early spring before full leaf out).
- Foliar spraying with herbicides (glyphosate or triclopyr) when in leaf. **Always follow the label on the herbicide container and wear proper protective gear.**
- **Remove plants before fruit production to minimize spread.**

Multiflora Rose

Rosa multiflora

US Forest Service ranked this thorny perennial shrub among the top forest invasive plant species for the Northeast US. Its arching thorn-covered stems or canes can reach 15 feet in height. Its compound leaves have two-inch long leaflets that are oval and toothed. Clusters of showy, white to pink, fragrant flowers bloom between May and June. The small, bright red rose hips, develop in the summer and remain on the bush through the winter.



Each large cane could potentially produce up to 17,500 seeds. Seeds can remain viable for a number of years.

Beware of the thorns!

- Individual small plants can be dug up or hand pulled. Larger shrubs can be pulled using a chain or cable and a tractor. Remove all of the roots to avoid resprouting. Continue to monitor areas where plants have been removed in the event regrowth occurs.
- Cutting and painting of canes is most effective when done in early summer through winter.
- Multiflora rose leafs out earlier than other native plants in the spring, at which time foliar herbicide applications can be made with little risk of damaging other plants. **Always follow the label on the herbicide container and wear proper protective gear.**
- In natural communities, cutting of individual plants is preferred to site mowing to minimize habitat disturbance.

Invasive Plant Management Calendar

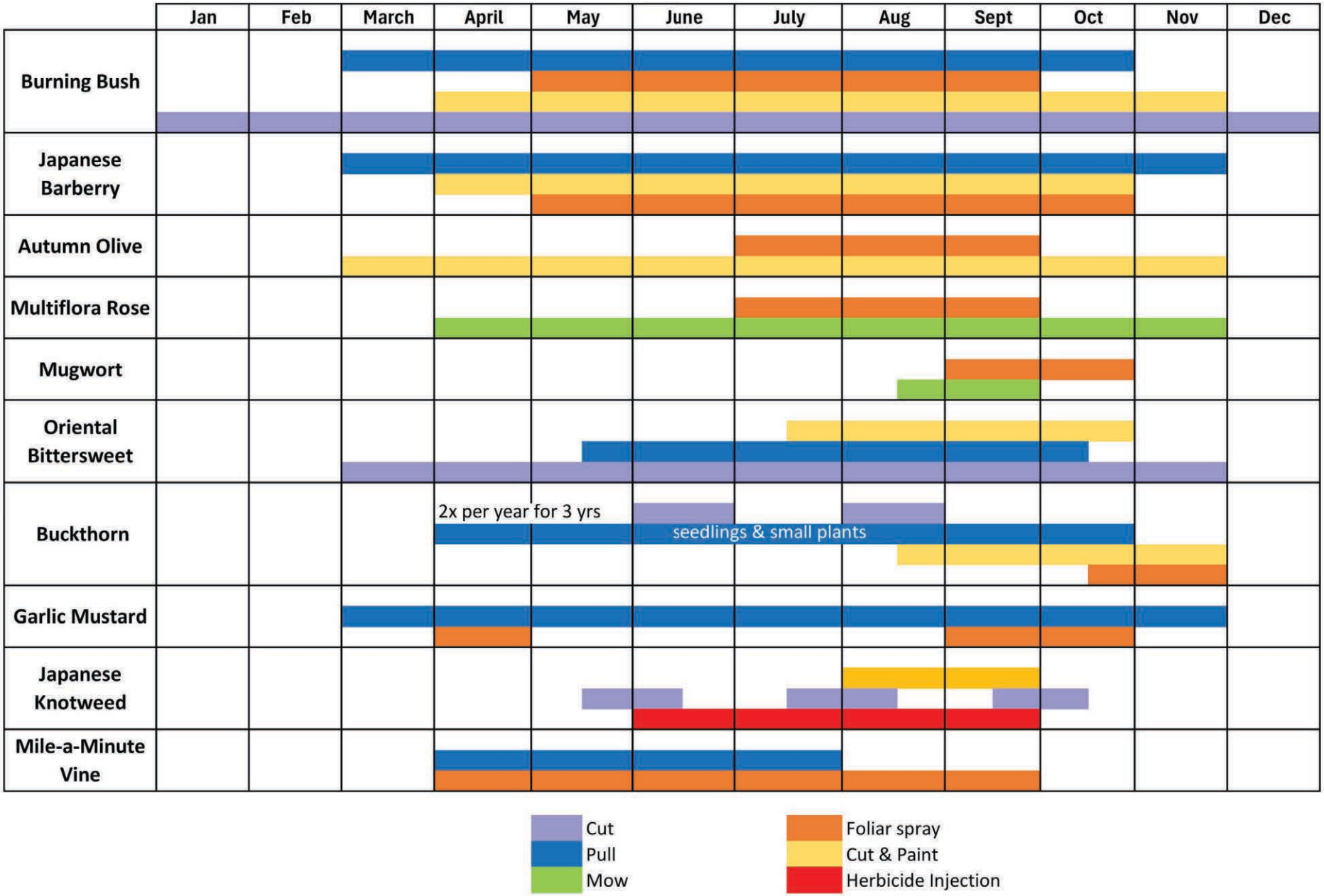


Chart adapted from CIPWG Invasive Plant Management Calendar and information from Penn State Extension

Mugwort

Artemisia vulgaris

Mugwort is a 2-to-3 foot tall, vigorous perennial with an extensive, aggressive rhizome root system. Shoots emerge during the spring, and flowering occurs from July to late September. Although a single plant may produce up to 200,000 seeds, it is mostly spread by rhizomes.

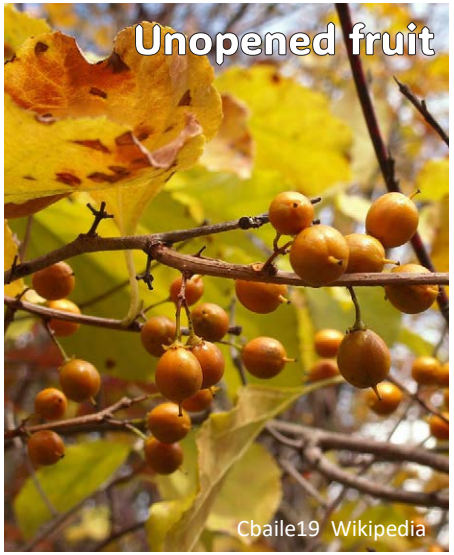
This one is tricky

- Mow from early summer to mid-September to prevent seed dispersal. Mugwort tolerates mowing, and even sustained mowing over two years will not fully eradicate mugwort stands.
- Hand pull very young plants in spring or early summer before formation of rhizomes. Mugwort can regrow from any residual rhizome fragments in the soil. Scouting and prompt removal is essential.
- In late May, mow mugwort and cover with plastic sheeting until fall to solarize (cook) it.
- Reseed bare soil on roadsides with a grass cover to reduce establishment of mugwort whose seeds germinate on bare soil.
- **Control of mugwort with herbicides may require the use of certain herbicides. Consultation with, or hiring of, licensed pesticide professionals is recommended.**

Asiatic (Oriental) Bittersweet

Celastrus orbiculatus

This vigorously growing, sprawling woody vine produces dense shade that weakens and kills shrubs and trees. The twining vines wrap around tree trunks, girdling the bark and killing the tree. The excessive weight of the vines can break and uproot trees. Bittersweet produces an abundance of orange fruits, that are spread by birds and other animals to new locations.



Because non-native bittersweet retains its leaves longer than most native species, its yellow leaves are easy to spot in late fall.

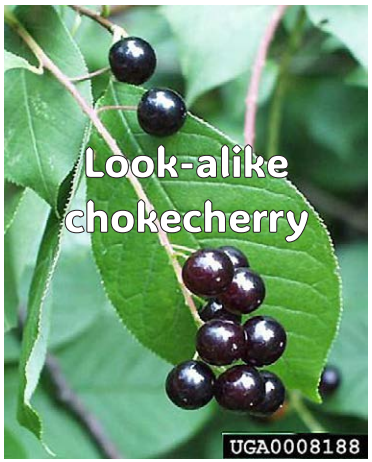
- Hand pull small plants and seedlings when soil is moist. Be sure to remove the entire root. Solarize the pulled plant material—do **not** put in compost.
- In late summer or early fall, cut mature vines close to the ground and immediately paint the lower cut surface with a herbicide for woody plants (i.e., triclopyr) to prevent resprouting. Also cut larger vines at chest height to prevent new vines climbing up old ones. Leave vines to die in the canopy; pulling the vines from the trees can cause damage to tree and injury to you.
- Cutting stems multiple times (6x per year) during the growing season over three years may kill the plant, but diligence is needed.
- For dense, very large infestations, cut or bush hog all vines in mid-summer, then foliar spray triclopyr solution the following summer before flowering when plant height is lower and less herbicide is needed. **Always follow the label on the herbicide container and wear proper protective gear.**

Common (European) Buckthorn

Rhamnus cathartica

Large shrubs or tall trees, buckthorn has taken over the understories of many forests and wetlands. Unlike other invasives, buckthorn does not require soil disturbance to take root and and can become established almost anywhere that has enough moisture. A similar invasive is Glossy buckthorn (*Frangula alnus*).

Fall is the best time to look for invasive shrubs, as their leaves stay green longer than native trees and shrubs.



NOTE:

There are several native plants that can be confused with buckthorn such as native chokecherry, alder-leaved buckthorn, and dogwoods.

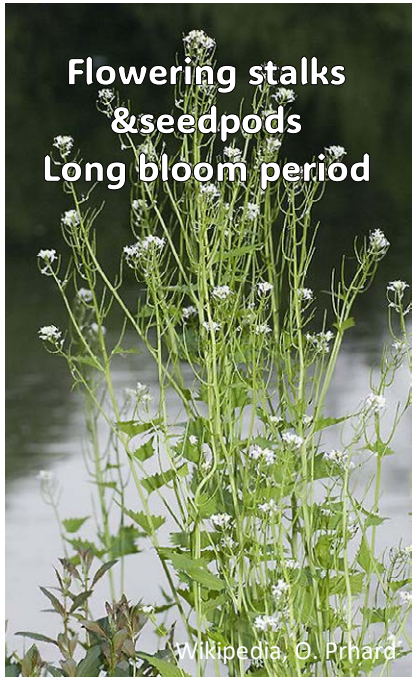
- Cut stems at least twice in one season (June and August) to reduce plant size and stem density. However, buckthorns will vigorously resprout and treatments must be repeated for 2 or 3 successive years. Regular mowing of open areas can prevent seedling establishment.
- In mid-late fall, cut stumps below the last branch as close to the ground as possible and paint cut surface with herbicide (triclopyr may be more effective) to prevent resprouting. **Always follow the label on the herbicide container and wear proper protective gear.**
- Small seedlings can be hand pulled or dug out of the ground, taking care to also remove the roots.

Garlic Mustard

Alliaria petiolata

In many Eastern US forests and floodplains, garlic mustard has become the dominant under-story species. The roots of garlic mustard produce a toxin that kills the soil mycorrhizal fungi that many native plants depend on, allowing garlic mustard to out-compete native plants. It is also toxic to some native insects and, because white-tailed deer rarely feed on garlic mustard, large deer populations may help to increase its population densities by consuming competing native plants.

Garlic mustard **takes two years to mature and produce seeds**. Seeds germinate in February to early March of the first year and grow into a short rosette by the middle of the summer. In the second year, a stalk develops, flowers, sets seed and dies by June.



Individual plants produce from **350 to 7,900** seeds and grow to 3 - 4 feet in height. Seeds can germinate up to five years or more after being produced. Long-term removal is required to deplete the soil seed bank and to allow recovery of the soil mycorrhizae fungi.

Easiest Invasive to Hand Pull!

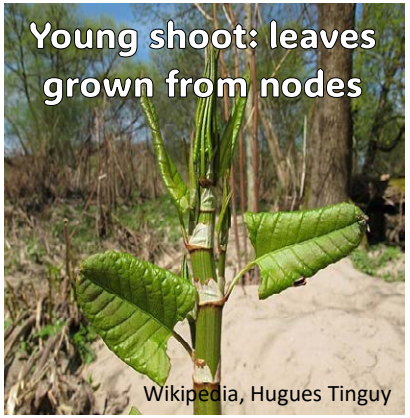
- One of the few invasive plant species that can be controlled by hand pulling. Plants should be pulled before seed pods develop. Bag and solarize pulled plants as even early pulling treatments probably include some plants that have viable seed.
- Treating during basal rosettes with spot foliar spray can be done anytime the aboveground temperature is above freezing. Applying in the late fall through winter and early spring of the basal year avoids accidental overspray on native species. **Always follow the label on the herbicide container and wear proper protective gear.**

Persistence and a long-term approach is necessary to control this invasive.

Japanese Knotweed

Reynoutria japonica

Listed by the World Conservation Union as one of the world's worst invasive species, Japanese knotweed is an herbaceous perennial that forms large, dense, rapidly growing colonies of erect, arching up to 10-foot tall stems that resemble bamboo. New infestations of Japanese knotweed often occur when soil contaminated with rhizomes is transported or when rhizomes or seeds are washed downstream during flooding. In addition to shading out native plants, knotweed produces chemicals that inhibit the growth of surrounding vegetation.



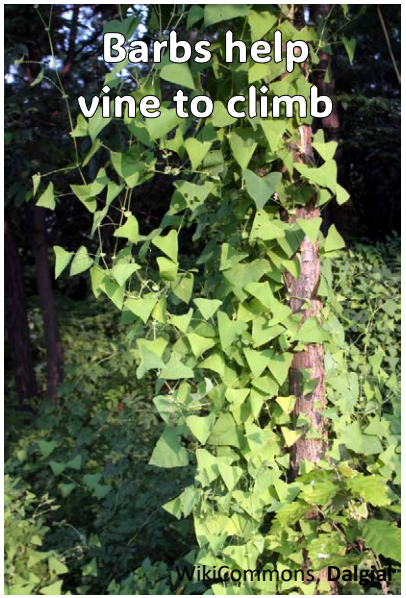
A Difficult Plant to Kill

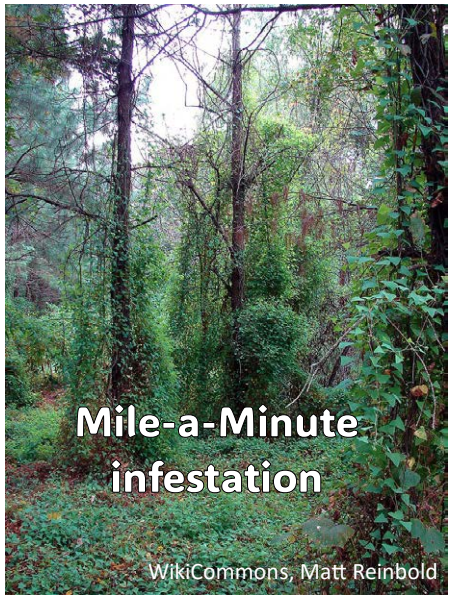
- Hand pull or dig up young plants/small patches when soil is soft. Remove as much of the root crown and rhizomes as possible as any rhizomes remaining in the soil will produce new plants. Eradication may be possible with the repeated and persistent cutting of the plants. **Properly dispose of or solarize plant debris; even small fragments can resprout.**
- **For more information on how to smother knotweed visit:** https://rb.gy/uvqzgb or scan this QR code:
- Foliar herbicide treatment can be effective in controlling stands of knotweed. For more details, visit: http://rb.gy/8epnn0 or scan this QR code:
- Search the web for "**Nix the Knotweed**" videos to learn other ways to control this plant.

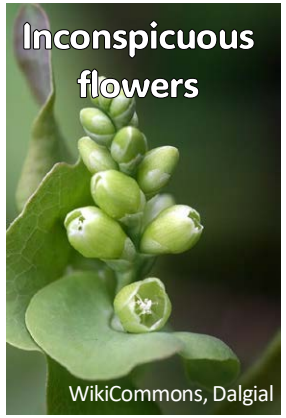
Mile-a-Minute Vine (Asian Tear Thumb)

Persicaria perfoliata

This herbaceous, barbed annual vine forms dense, tangled mats that smothers and eventually kills other herbaceous plants, shrubs and trees, replacing native plants and reducing habitat value for wildlife.







Above: Single black seed inside fruit.
Photo: WikiCommons, Douglas Goldman

This vine can flower and produce prolific numbers of seeds from June through October. Seeds can be viable in the soil for up to six years and can germinate at staggered intervals. Vines are killed by frost and the seeds overwinter in the soil. **Reduction of the seedbank will require at least 3-5 years of effort and ongoing monitoring for new seedlings.**

- Hand pull or mow small populations. Once vines are noticeable in spring, pull vines every three weeks from June to frost to prevent flowering and fruiting. **Wear long-sleeved shirts and leather gloves for protection.** Repeatedly cut to ground-level to limit growth and prevent fruit set. If seeds are present, thoroughly check and clean equipment after use to avoid seed dispersal to new locations.
- For large mile-a-minute populations, or where hand-pulling or mowing are difficult, chemical control (pre- or post-emergent herbicide) should be considered. **Consult with a licensed pesticide applicator.** For more information visit Penn State Extension web-site: https://extension.psu.edu/mile-a-minute or the Connecticut Invasive Plant Working Group website: https://cipwg.uconn.edu/

Special reporting and disposal instructions exist for this invasive plant.
To report mile-a-minute vine, send an email to mileaminute@uconn.edu

Disposal of Invasive Plant Material

Removal of invasives may generate large amounts of plant material that must be appropriately disposed of to prevent further spread. Plant debris should be checked for the presence of flowers and seeds before deciding on a disposal option. Plants controlled by herbicides should be left on site.

Each invasive species has unique disposal requirements.

For detailed information on invasive plant disposal please scan this QR code or visit:
https://tinyurl.com/n6zr9pxz

Visit the website of the Connecticut Invasive Plant Working Group (www.cipwg.uconn.edu), use other resources, or ask a gardening or landscape professional for advice and information on controlling invasive plants on your property.

Herbaceous (non-woody) Disposal

Air Dry **Prior to flowering**

Pulled material can be exposed to dry out, then left on site or composted once it is fully dead and dried.

Construct Brush Piles **Prior to flowering**

Make sure all material is fully dead and dried and pile in one location. If during or after flowering, place plastic under the pile top prevent resprouting and cover with plastic to reduce seed dispersal by birds.

Brush piles for wildlife

Bag, Solarize and Dispose **During or after flowering**

DO NOT COMPOST. Bag all material and **solarize** (cook) in sunny location for several weeks or throughout the summer months, then dispose of in trash. If volume of material is too large to bag, remove all flowering heads, place in plastic bag and solarize, then dispose of in trash. **Ideally, control remaining invasive plants before flowering.**

Trees, Shrubs, and Woody Vines Disposal

Ideally, dispose of invasives before plants flower and set seed. Once flowers, fruits, or seeds develop, minimize movement of the plants to prevent unnecessary dispersal — **DO NOT compost** and do not bring/send to transfer station.

Air Dry **Prior to flowering**

Small seedlings can be pulled and left with roots exposed to dry out. Leave on site or compost once plant is fully dead and dried.

Chip and Compost **Prior to flowering**.

Chip and use as mulch on site, or add to compost once fully dead and dried. If during or after flowering, chip but do not compost. Leave on site and monitor. Do not send to a commercial or municipal compost site.

Construct Brush Piles **Prior to flowering**

Use larger woody plants to construct brush piles for wildlife habitat.

Use as Firewood **During or after flowering**

Use as firewood locally. (Visit www.dontmovefirewood.org)

Composting Exceptions

Although many invasive plants can be composted once fully dead and dried, a few species have rhizomes or other parts that may survive in compost. Do not compost invasive plant material with seeds or flowers. Do not put these plants in brush piles unless a plastic or other barrier is added under the pile to prevent the plants from seeding or re-rooting. Solarize these plants or use an alternate method of disposal.

For more information on invasive plants, visit:
ww.cipwg.uconn.edu www.tinyurl.com/5n8ypyz3

Problem Plants

Drive around Simsbury and you will see trees strangled by non-native vines and understories dominated by invasive plants. The spread of these habitat-destructive plants will only get worse if actions are not taken now to address this problem.

This booklet covers a few of the many invasive plants that threaten the ecological health of our local open space habitats. Each year removal of these plants from Simsbury Land Trust preserves and town properties becomes increasingly expensive, time consuming, and ecologically necessary. **These efforts are futile if these plants remain on privately held properties. Please help us by removing these plants from your yard.**

SIMSBURY LAND TRUST

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