

The Connecticut
Agricultural
Experiment
Station

Windsor, CT



March 2009
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Field Guide, Plant Management Calendar

**and Top Ten Poster
of**

**Selected Invasive
Terrestrial Plants
Found in
Connecticut**

Rose Hiskes

WHAT ARE INVASIVE PLANTS?

Invasive plants are non-native plants that are disruptive in a way that causes environmental or economic harm, or harm to human health.

In minimally-managed areas, invasive plants crowd out native plants.

WHY ARE PLANTS INVASIVE?

- ✓ they are able to establish new plants and grow rapidly under a wide variety of site conditions
- ✓ they have a high reproductive rate
- ✓ they are able to disperse over wide distances, often by the spreading of vegetative fragments as well as seeds
- ✓ they lack any natural controls on growth and reproduction that would be found where the invader is native.

WHEN YOU PLANT, PLEASE SELECT NATIVE OR NON-NATIVE, but NON-INVASIVE PLANTS.

CONNECTICUT INVASIVE PLANT WORKING GROUP (CIPWG)
www.hort.uconn.edu/cipwg, (860)-486-6448

Thanks to the INVASIVE PLANT ATLAS of NEW ENGLAND (IPANE) for allowing us to use images from their website.
www.ipane.org

The author thanks Todd Mervosh and Michelle Salvas for their assistance.

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Bishop's Weed, Goutweed

Aegopodium podagraria

Herbaceous Perennial

Origin: native to Europe.

Leaves: compound toothed leaves, lower ones have petioles, those on flowering stalk do not.

Flowers: white clusters held above foliage in June.

Size: groundcover, species can get to 3' tall.

Reproduction & Dispersal: via stolons.



Photo credits: IPANE





Garlic Mustard

Alliaria petiolata
Herbaceous Biennial

Origin: native to Europe.

Leaves: basal rosette with rounded leaves up to 4 in. across. Venation is palmate and margins are toothed. When crushed they give off a garlic odor. Leaves on flower stalk are triangular and smaller.

Flowers: White flowers with four petals in May to June held above the foliage.

Size: grows to 3' the flowering year.

Reproduction & Dispersal: seed.



Photo credits: IPANE; Chris Evans, Bugwood





Narrowleaf Bittercress

Cardamine impatiens

Herbaceous Annual or Biennial

Origin: native to Europe.

Leaves: basal rosette, pinnate with 3 – 11 lobed leaflets.

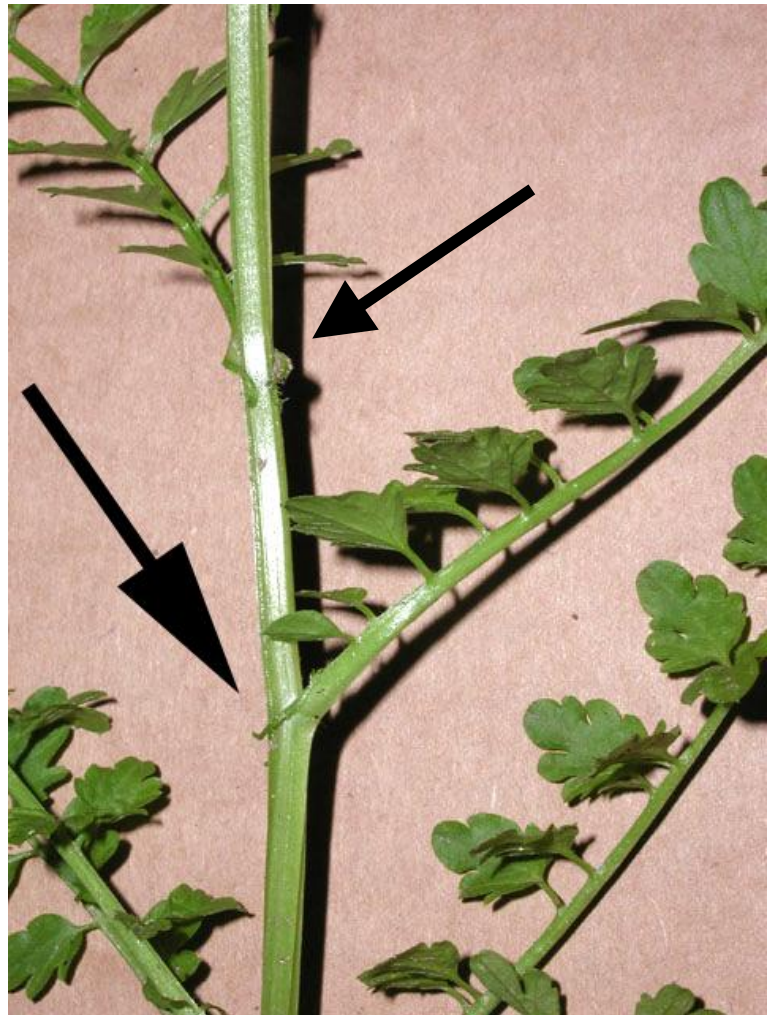
Flowers: white flowers from May through August develop into a thin, narrow capsule, called a silique that explodes when seeds are mature.

Stem: succulent, second year flowering stalk has longitudinal ridges and a clasping auricle at the base of each leaf.

Size: grows to 2' tall.

Reproduction & Dispersal: seed carried on mammals, people, and birds.

Photo credits: IPANE





Cypress Spurge

Euphorbia cyparissias

Herbaceous to Semi-woody Perennial

Origin: found from England to Siberia, though the actual native range of this plant in Eurasia is not known.

Flowers: actually bracts, develop in May and can be showy through August.

Sap: exudes white latex that can be irritating to the skin.

Size: 6" – 12" tall.

Reproduction & Dispersal: some seeds, mostly rhizomes. Some populations are sterile.



Photo credits: IPANE





Giant Hogweed

Heracleum mantegazzianum

Herbaceous Monocarpic Perennial

Origin: native to Caucasus Mountains, southwest Asia.

Leaves: palmately compound with deeply lobed leaflets, up to 5' across.

Flowers: white clusters in June – July, flower heads up to 2.5' across.

Stems: hollow, with stiff white hairs, green with burgundy red stripping.

Size: can grow up to 20' tall.

Reproduction & Dispersal: seed, gardeners sharing plants.

WARNING: sap of this plant is TOXIC.

Photo credits: IPANE; CAES, Rose Hiskes



Giant Hogweed

Cow Parsnip





Japanese Knotweed

Polygonum cuspidatum, *Fallopia japonica*

Herbaceous Perennial



Origin: native to Asia.

Leaves: alternate, egg-shaped, up to 6" long with a pointed tip.

Stems: hollow between nodes. Bamboo-like.

Flowers: white, in mid-late summer.

Size: grows to 10' or more in an ever expanding clump that dies in the center with age.

Reproduction & Dispersal: mainly rhizomes, plant fragments in soil, some seed.

Photo credit: Jenn Forman Orth





Garden Heliotrope

Valeriana officinalis

Herbaceous Perennial

Origin: native to most of Europe, as well as parts of Western Asia, Japan, Korea and China.

Leaves: Both the basal and the stem leaves are oppositely arranged and pinnately divided into 11-21 lanceolate segments.

Stems: hairy, especially at the nodes.

Flowers: white (pink in bud), fragrant, umbel-like inflorescence, blooms from June through August.

Size: 1.5' – 4' tall.

Reproduction & Dispersal: wind dispersed seed, aerial stolons.



Photo credits: IPANE





Mile a Minute Vine

Polygonum perfoliatum, *Persicaria perfoliata*

Herbaceous Annual Vine

Origin: native to Eastern Asia.

Leaves: alternate, up to 3" equilateral triangle, pale green, recurved barbs on lower midrib, petiole attaches on the backside of the blade (as in nasturtium leaves). A skirt-like structure, ocrea, encircles the stem at each node.

Stems: wiry, thin, weakly rooted, white to green in color with tinges of red. Recurved barbs allow the plant to climb up and over shrubs and trees.



Fruit: white terminal flowers begin in June and mature to bright blue fruits July through November. The ripe fruit cluster resembles grape hyacinth.

Size: can grow up to 26' in one season.

Reproduction & Dispersal: birds eat the fruit and disperse the seeds when they defecate.



Photo credits: IPANE





Japanese Honeysuckle

Lonicera japonica

Deciduous to Semi-evergreen Vine

Origin: native to China, Japan and Korea.

Leaves: opposite leaves, entire, some young leaves are lobed.

Flowers: very fragrant, white to yellow, paired in leaf axils.

Fruits: black spheres, in pairs.

Size: vine, to 30'.

Reproduction & Dispersal:
birds eat the fruit and disperse the seed when they defecate, runners will root.



Photo credits: IPANE; James Miller, Bugwood





Oriental Bittersweet, Asiatic Bittersweet

Celastrus orbiculatus

Deciduous Woody Vine

Origin: native to Eastern Asia: Japan, Korea and China

Leaves: alternate, toothed, spiral evenly around the stem, ovate to round.

Fruits: dioecious, so female plants develop fruits in axils all along the stem. The yellow ovary wall encases 3 fleshy, red arils. The fruits split open at maturity revealing the arils that contain the seeds.

Stems: twining stems of this botanical python have dark brown to brown striated, almost corky, bark with many lenticels.

Size: Vines can grow up to 60' tall and 4" in diameter.

Reproduction & Dispersal: fruit is eaten by birds and dispersed when they defecate.



Photo credits: IPANE; CAES Rose Hiskes

Japanese Barberry

Berberis thunbergii

Deciduous Shrub



Origin: native to Asia: introduced from Japan via Russia in the 1870's.

Leaves: clusters of 2 - 5 spatulate, entire, up to 1.25" long leaves alternate on the stem. Color can be green, burgundy, yellow, or variegated burgundy & white.

Flowers & Fruits: pale yellow, perfect, clustered flowers in May develop into bright red, oblong berries 1/3" long in October.

Stems: reddish brown, ridged stems have a single spine at each node. Inner stem is bright yellow. Roots also bright yellow.

Size: straight species can get 6' - 8' tall by 7' - 15' wide.

Reproduction & Dispersal: by seed. Wild turkeys and other birds eat the fruits and disperse seed throughout forested and disturbed areas.

CAUTION: Deer ticks are present in high numbers in the humid environment found in Japanese barberry thickets.



European barberry, also present in forests, can cross with Japanese barberry to form a hybrid.



Russian Olive

Elaeagnus angustifolia

Deciduous Shrub

Origin: native Southern Europe through the Himalayas.

Leaves: alternate leaves silvery, hairy on both surfaces, lance-shaped.

Flowers: fragrant, yellow in May to June in leaf axils.

Berries: yellow with silver scales, edible.

Bark: darker than autumn olive, younger stems have thorns.

Size: up to 35' tall and 20' spread.

Reproduction & Dispersal: birds eat the fruit and disperse the seeds when they defecate.



Photo credits: IPANE





Autumn Olive

Elaeagnus umbellata
Deciduous Shrub



Origin: Eastern Asia.

Leaves: simple, elliptical to oval, yellow-green leaves are silvery underneath.

Flowers: creamy white, fragrant flowers in May attract bees.

Fruit: red, speckled fruit, high in lycopene, with a pit, ripen in September.

Stems: young stems are rusty red, older stems silver-brown with large thorns.

Size: up to 20' – 30' tall and wide, forming thick stands.

Reproduction & Dispersal: This plant fixes nitrogen and can produce berries prolifically. Birds eat the berries and defecate the seed wherever they happen to be perched.





Burning Bush

Euonymus alatus
Deciduous Shrub



Origin: Eastern Asia.

Leaves: opposite to subopposite, simple, 1" – 3" long, yellow green leaves are oval, tapered to the base and coming to a point at the tip.

Stem: straight species has green to brown stems with 4 longitudinal corky wings on one year wood. Cultivars may have faint lines in place of corky wings.

Flowers & Fruits: four petaled, creamy white, perfect flowers in May are nondescript. Clusters of red, oblong, 1/3" long fruits ripen in September.

Reproduction & Dispersal: birds eat the berries and disperse seeds when they defecate.

Size: can get 15' – 20' tall and wide.



Photo credits:
IPANE; CAES, Rose
Hiskes



Border Privet

Ligustrum obtusifolium
Deciduous Shrub

Origin: native to Japan.

Leaves: opposite, dark green leaves are up to 2" long by 1" wide.

Flowers: clustered white, in June, fragrant or smelly to some, attract bees.

Berries: black, ripen in fall.

Size: up to 10' tall.

Reproduction & Dispersal: birds eat berries and disperse seeds when they defecate.

There are three privets on the Connecticut invasive plant list. Border privet is the only one that is prohibited. Identification of the different privets is very difficult, even when in flower. Chinese privet is very problematic south of Connecticut.

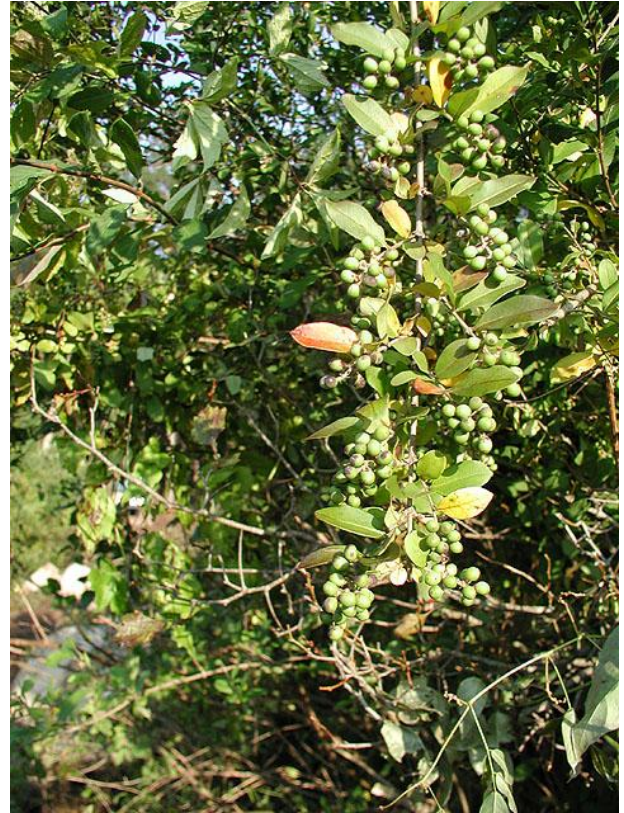


Photo credits: IPANE



Shrub Honeysuckles

Lonicera spp.

Deciduous Shrub

Origin:

morrowii native to Japan, *tatarica* Central Asia and Southern Russia.

Leaves:

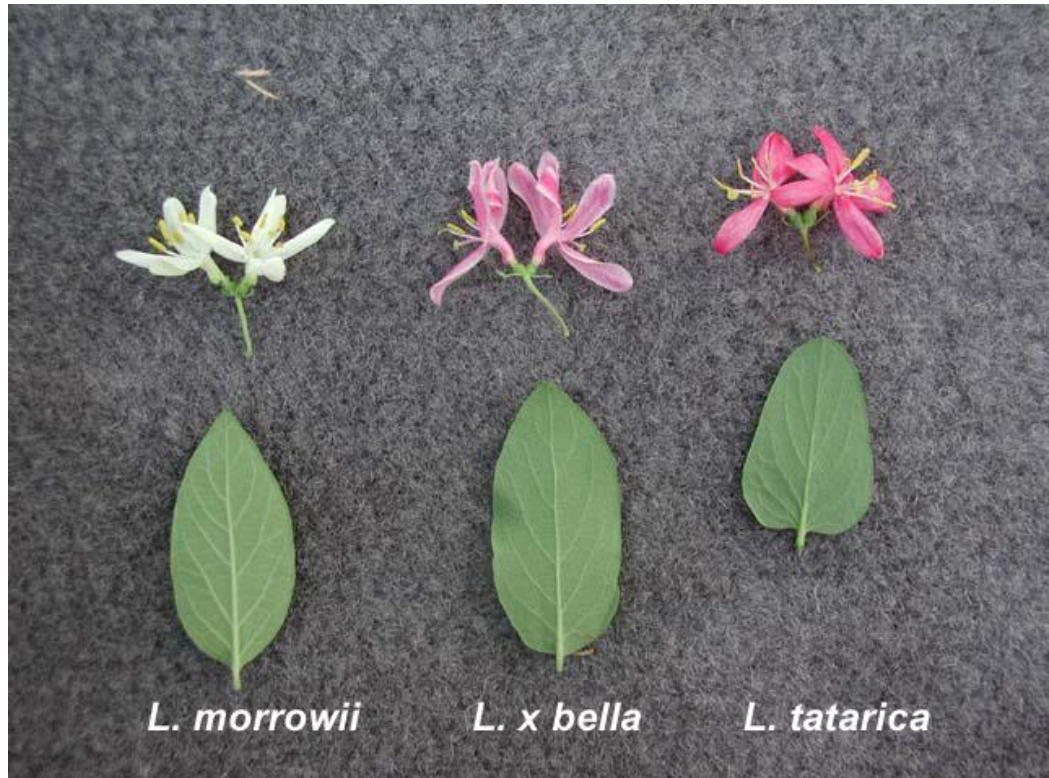
opposite, up to 2.25" long.

Stems: pith is hollow, natives have filled pith, bark exfoliates in vertical strips.

Fruits: red spheres, borne in pairs in leaf axils.

Size: grows 8' to 10' tall.

Reproduction & Dispersal: fruit is eaten by birds and seeds are dispersed when they defecate.



L. x bella is a hybrid of *L. morrowii* and *L. tatarica*.





Amur & Dwarf Honeysuckle

Lonicera maackii, *xylosteum*

Deciduous Shrub

Origin: *maackii* native to China, Korea and Japan; *xylosteum* native to Europe

Leaves: *maackii* opposite, tapered at the tip, up to 3 in. long; *xylosteum* opposite, obovate, up to 3 in. long.

Stems: *maackii* & *xylosteum* pith is hollow, natives have filled pith, bark exfoliates in vertical strips.

Flowers: *maackii* white, late May to early June; *xylosteum* yellow to white in May and June paired in leaf axils.



Amur honeysuckle, *L. maackii*

Fruit: paired, dark red spheres that ripen in late fall.

Size: *maackii* grows to 16 ft. tall; *xylosteum* to 7 ft. tall.

Reproduction & Dispersal: fruit is eaten and dispersed by birds and possibly small mammals.

Dwarf Honeysuckle, *Lonicera xylosteum*



Photo credits:
Bark: Will Cook,
Flowers: Steven Baskauf





Multiflora Rose

Rosa multiflora

Deciduous Shrub



Origin: Eastern Asia. Introduced in late 1700s as an ornamental, living fence.

Leaves: alternate, pinnately compound, toothed leaves with 9 – 11 leaflets. Stipule margins fringed with hair-like, glandular tipped segments.

Flowers: One inch, lightly fragrant, single perfect white flowers in clusters in June

Fruit: Red, egg shaped hips color in August and last through winter. Viable for up to 20 years in soil.

Stems: Smooth, green, arching canes have paired spines.

Size: Can grow up to 15' tall by 15' wide. Quickly invades abandoned pastures and fields.

Reproduction & Dispersal: Mammals and birds eat the hips and disperse the seeds when they defecate.

Photo credits: IPANE; CAES Rose Hiskes





Norway Maple

Acer platanoides

Deciduous Tree



Photo credits: CAES, Rose Hiskes

Origin: Continental Europe.

Leaves: opposite, simple, 5 lobed, dark green leaves are 4" -7" wide and long. Petiole with milky sap is 3" – 4" long. Leaves emerge before those of sugar maple.

Flowers: clusters yellow-green, perfect flowers as leaves open in April as leaves emerge.

Fruit: Large numbers of horizontally paired, winged, 1.5" – 2" long samaras mature in September to October.

Stems: smooth, shiny, olive-green stems have many lenticels.

Size: can grow up to 80' tall by 70' wide.

Reproduction & Dispersal: Wind carries large numbers of samaras to landscape beds and forest edges where they grow without cultivation.





Sycamore Maple

Acer pseudoplatanus

Deciduous Tree

Origin: Europe, Western Asia.

Leaves: opposite, up to 6" across, toothed with 3 large lobes, leathery. Fall foliage brown to some yellow.

Seeds: samara that ripens and falls in September and October.

Size: grows to 60' tall by 60' wide.

Reproduction & Dispersal: Seed.



There are three maples on the invasive plant list. Only sycamore maple is prohibited.



Photo credits: IPANE



Tree of Heaven

Ailanthus altissima

Deciduous Tree



Top leaf is Tree of Heaven, bottom leaf is sumac.

Origin: native to China. Introduced in 1784, now naturalized in most of the US.

Leaves: alternate, pinnate up to 48" long leaves have 11 – 41 elongate dark green leaflets with one lobe near the short petiole. Smell of rotten peanut butter when crushed.

Stems: thick, yellowish, downy stems also smell when crushed.

Flowers & Seeds: dioecious, female trees have whitish upright panicles of small flowers in June. Seed is a single winged 1 ½" long samara that turns reddish late summer.

Reproduction & Dispersal: spreading underground rhizomes usually result in a thicket of trees. Wind dispersal of seed from female plants allows seedlings to establish in landscapes, wooded edges and disturbed areas.

Photo credits: CAES, Rose Hiskes



A new invasive insect, **spotted lanternfly** adults congregate on Tree of Heaven in fall.



Black Locust

Robinia pseudoacacia
Deciduous Tree



Origin: native to the Southeast and north to PA, WV, s. IN, IA and OK. Invasive in the Northeast.

Leaves: alternate, pinnately compound 6" – 14" long, with 7 – 19 elliptical leaflets, 1" – 2" long each.

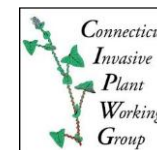
Stems: slender brittle, green to brown, ridged stems have two spines at each node.

Flowers & Fruits: legume shaped white flowers in drooping clusters in June. Fragrant. Nectar source for bees. Brown pods up to 4" long with up to 10 seeds each mature in fall.

Size: can grow up to 70' tall by 50' wide.

Reproduction & Dispersal: spreading underground rhizomes create thickets. Seed coat impermeable.





Connecticut Invasive Plant Management Calendar

Created by Emmett Varricchio and members of The Connecticut Invasive Plant Working Group

These species were the Top 10 species of concern as identified by attendees of the 2016 CIPWG Symposium

	January	February	March	April	May	June	July	August	September	October	November	December
Japanese Knotweed (<i>Polygonum cuspidatum</i>)												
Oriental Bittersweet (<i>Celastrus orbiculatus</i>)												
Japanese barberry (<i>Berberis thunbergii</i>)												
Multiflora Rose (<i>Rosa multiflora</i>)												
Mugwort (<i>Artemisia vulgaris</i>)												
Garlic Mustard (<i>Alliaria petiolata</i>)												
Autumn Olive (<i>Elaeagnus umbellata</i>)												
Common Reed (<i>Phragmites australis</i>)												
Mile-a-Minute (<i>Persicaria perfoliata</i>)												
Swallow-wort (<i>Cynanchum louiseae</i>)												

Flowering Period Chemical: Foliar Cut/Paint Injection Mechanical: Cut Pull Mow

Note this calendar serves as a working draft of best management practices for managing invasive plants in Connecticut.

Please use proper safety practices when working with herbicides and equipment.

Japanese Knotweed, *Polygonum cuspidatum*



	February	March	April	May	June	July	August	September	October	November
Flowering										
Foliar chem										
Root plants										
Cut plants										
Inject chem										

Oriental Bittersweet, *Celastrus orbiculatus*



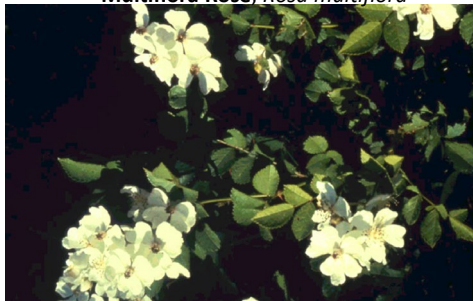
	February	March	April	May	June	July	August	September	October	November
Flowering										
Foliar chem										
Root plants										
Cut plants										

Japanese Barberry, *Berberis thunbergii*

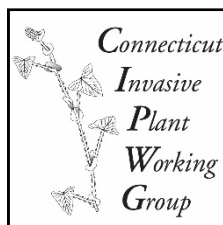


	February	March	April	May	June	July	August	September	October	November
Flowering										
Foliar chem										
Root plants										
Cut plants										
Inject chem										

Multiflora Rose, *Rosa multiflora*



	March	April	May	June	July	August	September	October	November
Flowering									
Foliar chem									
Root plants									
Mow plants									



Connecticut's TOP TEN INVASIVE PLANTS with management options

Mugwort, *Artemisia vulgaris*



	June	July	August	September	October	November
Flowering						
Foliar chem						
Mow plants						

Garlic Mustard, *Alliaria petiolata*



	March	April	May	June	July	August	September	October	November
Flowering									
Foliar chem									
Root plants									
Mow plants									



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Autumn Olive, *Elaeagnus umbellata*



	March	April	May	June	July	August	September	October	November
Flowering									
Foliar chem									
Root plants									
Inject chem									

Common Reed, *Phragmites australis*



	April	May	June	July	August	September	October	November
Flowering								
Foliar chem								
Root plants								
Mow plants								

Mile-a-Minute, *Persicaria perfoliata*



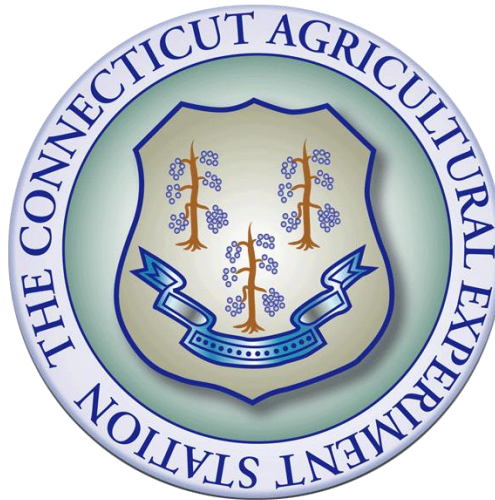
	March	April	May	June	July	August	September	October
Flowering								
Foliar chem								
Root plants								
Inject chem								

Black Swallow-wort, *Cynanchum louiseae*



	March	April	May	June	July	August	September	October
Flowering								
Foliar chem								
Root plants								
Inject chem								

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