

Invasive Species Quick Guide

Terrestrial Invasive Plants

Lower Hudson Valley



Updated, June 2017



Jetbead, *Rhodotypos scandens*



54

3 Photos: Leslie J. Mehrhoff, University of Connecticut, Bugwood.org



5447366

OPP

5'  Shrub



5447355

Leaves have long pointed tip, and are paler on the under-side

Hints: •Leaves have ribbed veins with long tips, almost look pleated. White flowers in April to early June. Fruits come in fours; dark reddish at first and then black as they mature (Sept-Dec)

Look-alikes: Arrowwood viburnum leaves are more deeply toothed and dark blue fruits in clusters. Linden viburnum leaves are fuzzy and shallowly toothed, and berries are bright red. Neither have the pronounced, tapered leaf tips.

How this booklet works:

Vines

Vines: Plants climb, sprawl, or twine using other plants for support. Can be Woody or Herbaceous (annual or perennial)

Tree/Shrub & height

Woody Trees and Shrubs: plants have stiff woody portions that have bark. Trees generally have 1 main stem or trunk, shrubs many. Woody plant parts—branches, trunks, twigs—persist through the winter

Herbaceous

Herbaceous Plants: emerge from ground with no bark or wood, may be short or tall. This group includes grasses, ferns, and flowers that may be annual or perennial. These plants die down to the ground in the fall/winter. Dead stems may persist through winter, but new growth starts at base.



Multiflora Rose, *Rosa multiflora*

Rob Routledge, Sault College, Bugwood.org



Shrub  12'

White fragrant flowers in June followed by small rose "hips" in summer and fall



Chris Evans, University of Illinois, Bugwood.org



ALT

Chris Evans, University of Illinois, Bugwood.org

Above: Fringed base of leaves

Left: Compound leaves commonly with 7 leaflets

Hints: Compound leaves with toothed edges and backward hooked thorns; flowers are white and fragrant, May to June. Fringed 'stipules' at base of leaf. Often forms a mound of arching leafy branches

Look-alikes: Carolina Rose and Virginia Rose do not have fringed stipules. Both have pink flowers (May to late June). Stems have prickles rather than stout thorns



Common and *Binomial* names

Preferred Habitat Icons



Full sun, Out in the open



Part sun, Wood's edge



Shade, Under tree canopy



Open Meadows



Wet Areas



Roadsides and Disturbed Areas

But remember, most invasive plants are very adaptable, so these are only suggestions.

ALT

Vines

Branching Pattern foliage and side branches emerge from the plant stem in either an alternating (ALT) or opposite each other (OPP) pattern. This is one of the first diagnostic features, useful even in winter

Hints: look here for distinguishing features that set these plants apart from others

Look-alikes: There may be native or non-invasive alien plants that look very similar. We'll list them here and give you some notable differences. Use your smart phone for more pictures.



Wineberry, *Rubus phoenicolasius*

ALT

6'



Shrub



Leaflets are whitish and fuzzy on underside

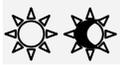


3 Photos: Leslie J. Mehrhoff, University of Connecticut, Bugwood.org



Hints: Compound leaf with 3 leaflets that are white and fuzzy beneath. Dense bristles along the stem. Fruit and fruit clusters are sticky to the touch. Fruit is delicious.

Look-alikes: Check thorns for color and abundance. Check leaves for color. Color of wineberry fruits sets it apart from blackberry and black raspberries



Hardy Kiwi and *Actinidia arguta*

ALT

Photo: Sten Porse, Bugwood.org

Vines



Climbs by twining, produces edible fruits 1-2 inches

Leaves are elliptical
Flowers white



Photo: Q Qwert, Bugwood.org

Photo: Sten Porse, Bugwood.org



Sturdy foliage, with fine, sharp serration on edge

Hints: climbs by twining. Has stiff woody stems, fruits are grape sized or larger.

Look-alikes: May be confused with oriental bittersweet (CEOR) which has a rounder leaf that comes to more of a point. Mature bark of hardy kiwi is flaky and exfoliates, whereas bittersweet bark is rough but does not shed.



Linden Viburnum, *Viburnum dilatatum*

OPP

Shrub  10'

Below; Doug Manning, National Park Service, Bugwood.org



Above and Right: University of Connecticut Plant Database, <http://hort.uconn.edu/plants>, Mark H. Brand, Department of Plant Science and Landscape Architecture, Storrs, CT 06269-4067 USA



Scalloped leaf margins
Red fruit in autumn
White flowers summer

Hints: Oval leaves with scalloped edges and softly hairy surface; vary in size and thickness. Fruit is a red berry, borne in flat-topped clusters, ripening in Sept.

Look-alikes: Arrowwood viburnum has long straight branches arching over with age. V-shaped growth form. Leaves more deeply toothed, teeth pointed (not scalloped). dark purple fruits
Leaves and/or stems on mature shrubs can be rough hairy, or smooth.



Oriental Bittersweet, *Celastrus orbiculatus*

ALT

Vines



Ripe fruit in autumn



Sturdy foliage, with wavy edges and strong vines or canes. Fruit green in mid summer borne along stem

Climbs by twining

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

Hints: Roots are bright orange even on very young seedlings.

Look-alikes: Leaves are rounder than Hardy Kiwi (ACAR) with a wavy, gently serrated edge. Native bittersweet will have similar fruit and flower clusters but on the tips of branches, not along the stem. However, there are reports of hybridization between the two.



Seibold's Viburnum, *Viburnum seiboldii*

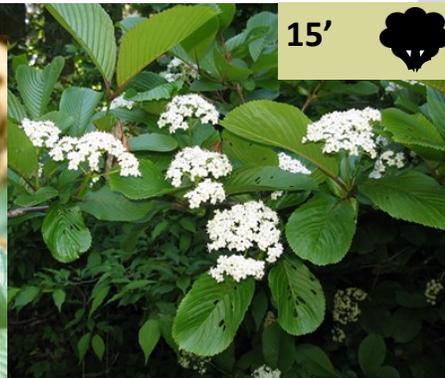
OPP

University of Connecticut Plant Database, <http://hort.uconn.edu/plants>, Mark H. Brand, Department of Plant Science and Landscape Architecture, Storrs, CT 06269-4067 USA.

15'



Shrubs



Richard Webb, Bugwood.org

Qwert1234. *Viburnum seiboldii* var. *obovatifolium*, Aizu area, Fukushima pref., Japan. 6 June 2010. Wikimedia. Web. Retrieved June 27, 2016. https://commons.wikimedia.org/wiki/File:Viburnum_seiboldii_var._obovatifolium

Hints: Opposite foliage, leathery. Foul odor when crushed. Coarsely toothed, deep veins

Look-alikes: Leatherleaf viburnum (Non-native shrub, •potentially invasive) Evergreen. Twigs, leaves & stems are hairy. Untoothed leaves. Very wrinkled leaf surface Flowers are similar to Seibold viburnum. Not foul scented when crushed



Black swallowwort, *Cynanchum louiseae*

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

OPP

Vines



Five-petaled flowers borne in summer, are firm to the touch. May be brown, burgundy or tan



Seed pods about 2-3" long. Split apart when ripe and have downy fluff with seed



Climbs by twining

Hints: Rank, sour odor when crushed. Can be found in meadows or roadsides or gardens. Will twine up grasses in meadows.

Look-alikes: Native milkweeds may have similar firm, five-petaled flowers. But they will not be a climbing vine.



Bishops weed, Gout Weed, *Aegopodium podagraria*

4 Photos: Leslie J. Mehrhoff, University of Connecticut, Bugwood.org

Herbaceous



1-3 feet high in flower



Hints: Underground rhizomes, flat-topped flowers like Queen Anne's lace, Compound leaves can be either all green or variegated green & white. Prefers shady places

Look-alikes: Queen Anne's lace has carrot-like foliage flowers have a small black "bee" in center Golden Alexanders has yellow umbels, blooming a bit earlier than goutweed; foliage is smaller and airier



Japanese Hops, *Humulus japonicus*

OPP

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

Vines



White flowers, prickly stems. Mid to late summer



Leaves 5 or 7 lobed



Clustered green seed heads

Hints: leaves are rough and five-lobed, stems prickly, triangular bract at the base of leaves. Climbs by twining. Prefers full sun

Look-alikes: Five species of hops in the may be native or non-invasive alien plants that look very similar. Look for these five (or-more) lobed leaves. Escaped agricultural hops will have papery and smoother seed heads. Climbs by twining. Virginia creeper, a native has five leaflets rather than lobes and climbs with a attaching tendril



Chinese lespedeza, *Lespedeza cuneata*

Herbaceous

Flowers white or purple



Photo by Dalgial, Under Creative Commons lic.



Chris Evans, University of Illinois, Bugwood.org



Bruce Ackley, The Ohio State University, Bugwood.org

Hints: Herbaceous perennial Alternate branching. Leaflets come in pairs of three; short bristles on tips with silvery hairs on the underside. White/purple flowers in leaf axils, blooming July-Oct.

Look-alikes: Slender bush clover leaves lack the bristle tip; dense clusters of purple flowers in upper leaf axils. Hairy lespedeza has rounder leaves than Chinese lespedeza. Korean clover foliage is much rounder; flowers are pink-white.



Mile-a-minute vine, *Persicaria perfoliata*

ALT

Vines

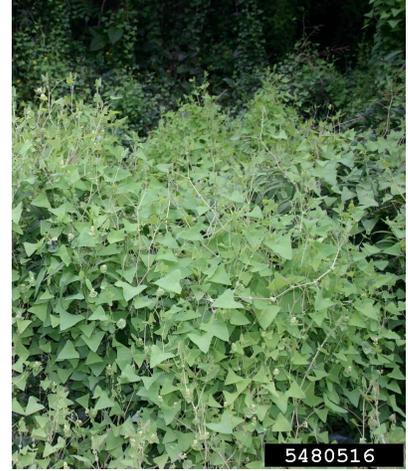
Leslie J. Mehrhoff, University of Connecticut, Bugwood.org



Round leaf, called **Ocreae**, clasps fruit and stems. Fruit starts green. Turns pink and blue



Leaves are **triangular** (equilateral)



Numerous plants drape over surrounding vegetation

Hints: Triangular leaves on stiff stems with pricklers. Climbs by sprawling over other plants

Look-alikes: There are other native plants in this family but none with perfectly triangular leaves and ocreae. May grow side by side and many have pricklers as well. Climbing false buckwheat has heart-shaped leaves and no pricklers.



Wild Parsnip, *Pastinaca sativa*

Herbaceous



Hints: Don't touch! Sap can burn the skin when exposed to sun. 2-5' tall with hollow stems. Alternate, pinnately compound leaves with 5-15 leaflets; dentate margins. Flower is compound, flat umbel made up of clusters of yellow 5-petaled flowers.

Look-alikes: Poison hemlock has purple spots on stem and flower is white. Queen Anne's lace has carrot-like foliage and a white flower. Golden Alexander is much smaller with "airier" foliage



Kudzu *Pueraria montana*

ALT

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

Vines



Three leaflets

Stiff stems/or canes with

Flowers highly fragrant showy flowers late summer

Hints: Compound leaves, may resemble poison ivy at first glance, but lobes are rounded and have hairy margins. Fragrant showy flower in late summer

Look-alikes: May be confused with wisteria in winter, but three leaflets in summer distinguish it from any wisteria (which have compound leaves with many leaflets)

Herbaceous



Yellowflag iris, *Iris pseudoacorus*



Seed capsule is 2-3" and splits open to reveal flattened seeds within



3 Photos: Leslie J. Mehrhoff, University of Connecticut, Bugwood.org

Hints: Broad, sword-shaped leaves coming from a central base, 3-4' tall; often found in wetlands; pink roots. Yellow, 3-petaled flowers, often in multiples, late April to June

Fruits are 6-angled capsules that open into 3 segments with ~120 seeds (mature in July-Aug)

Look-alikes: Our native blueflag Iris has purple-blue flower with yellow patches on the falls; blooms in May-June. Fruits remain closed after maturity



Tree of Heaven, *Ailanthus altissima*

ALT

Tree  30'

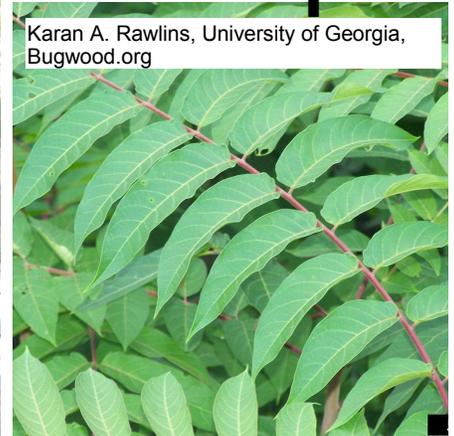
Coarse branches with large leaf scars



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



UGA2188027



Karan A. Rawlins, University of Georgia, Bugwood.org

Compound leaves with 16-20 leaflets per leaf. Thumb like protrusion at the base of each leaflet w/gland.

Papery Seeds

Bark relatively smooth with shallow grooves



5495408

T. Davis Sydner, The Ohio State University, Bugwood.org

Hints: Coarse, clunky branches with large leaf scars. Leaves and stems smell bad when cut or crushed. Pinnately compound leaf with 20 or more leaflets. Fruit is papery with a seed inside.

Look-alikes: May be mistaken for native sumacs. Tree of heaven has nearly smooth leaflet margins and glands on the underside. Sumac margins are toothed and there is a terminal leaflet. Some sumac leaves will be fuzzy



Small Carpetgrass, *Arthraxon hispidus*

Grass



Leaf blade clasps stem.

Visible hairs on leaf margins

Likes wet areas

Stems 1-2 feet tall



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

Above and Right: Bill Harms, Patuxent Research Refuge Plant inventory Project, Laurel, MD

Hints: Alternate, oval to lance-shaped foliage; 1-3" long and 1.5" wide with heart shaped bases clasping the stem; margins have visible hairs. Flowers in early fall; 1-3" long spikes Seeds are small and yellowish

Look-alikes: Deer-tongue panic grass is taller than small carpetgrass (can be up to 4 feet) Leaves are longer with no marginal hairs on the leaves



Black Alder, European Alder, *Alnus glutinosa*



ALT

20' Tree



Leaf tips are notched

Young leaves are sticky to the touch.

Catkins and small cones are visible most of year

May appear as a tree or shrub

Hints: Cones and Catkins are easiest ID. Prefers wet areas. Upright spreading canopy shape. Develops into a tree with age. Young leaves are sticky to the touch.

Look-alikes: Similar to native alders except: black alder has a notched or rounded tip, our natives taper to a gentle point, and black alder grows into a 60 foot tree, our natives up to 20'



Japanese stilt grass, *Microstegium vimineum*

Grass



Shiny stripe down upper surface of leaf

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

Forms dense "lawns" in woods



Jen Stengle, Cornell Cooperative Extension

Chris Evans, University of Illinois, Bugwood.org

Hints: light green grass. Shiny, silvery stripe down leaf axis. Weak-stemmed. Forms dense lawns and patches in shaded woodlands and margins. Grass is an annual with stiff roots at base that prop it up as if on "stilts"

Look-alikes: White grass has no silvery stripe in midvein, and edges of leaf are rough and catch at your skin if you run your fingers along them. Perennial so it has a strong root system; tuft of hairs at node



Japanese Angelica Tree, *Aralia elata*

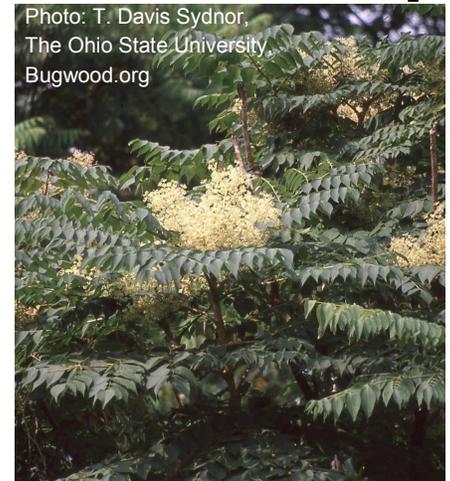
Photo: T. Davis Sydnor,
The Ohio State University,
Bugwood.org



Prickly, thorny stems



Bi-pinnately compound leaf



Puffy flower head in summer

ALT

Tree 20'



Hints: Strong upright stems with stiff thorns. Bi-pinnately compound leaves (the leaflets have leaflets) Leaves have spines on mid-vein **Look-alikes:** Prickly ash (*Zanthoxylum americanum*) has prickles paired along stem and leaf axils, and singly compound leaves. Black locust (*Robinia pseudoacacia*) grows in colonies, with suckers. Has similar thorny stem but fewer thorns (and stouter) singly compound leaves with rounded leaflets.



Chinese Silver Grass, *Miscanthus sinensis*

Grass



Plume-like seed heads in fall

Leaf blades may have a silvery stripe down midveins. Blade margin sharp

Lauren Quinn, Bugwood.org



James H. Miller, USDA Forest Service,
Bugwood.org

Above and Right: Chris
Evans, University of Illi-
nois, Bugwood.org



Hints: Tall clumps forming grass may escape from managed landscapes. Foliage is 3-6' long, often with silvery stripe; edges are very rough (fine serration). Seed heads are very showy in autumn and winter.

Look-alikes: Big bluestem seed heads look like a turkey foot (3 stems per seed head) plant is 4-8' tall, with red-tinged foliage in summer. Eastern gamagrass flowers are not showy and flower in July-August; grass can be up to 10' tall or higher with white well-defined midrib on leaves.



Amur Cork Tree, *Phellodendron amurense*

OPP

50'



Tree



Photo: Ansel Oommen, Bugwood.org



Photo: Troy Kimoto, Canadian Food Inspection Agency, Bugwood.org

Rough corky bark with furrows, generally found in full sun locations

Mature tree



Photo: Richard Webb, Bugwood.org

Compound leaf, fruit in late summer

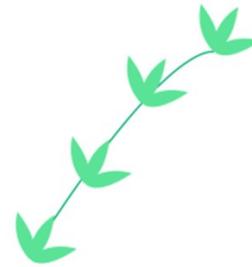
Hints: Compound leaves with 5-13 leaflets. Rough corky bark. Fruit a berry with 5 seeds persist into the winter. Grows into a large tree with spreading canopy.

Look-alikes: Compound leaves may resemble native Ash or nut trees. Fruit clusters are very different (citrus family). Old fruits may be found beneath the tree or still clinging in branches. You may also seed lots of seedlings beneath the tree (they may look like a groundcover).

- 1. Apex
- 2. Midvein (Primary vein)
- 3. Secondary vein.
- 4. Lamina.
- 5. Leaf margin
- 6. Petiole
- 7. Bud
- 8. Stem



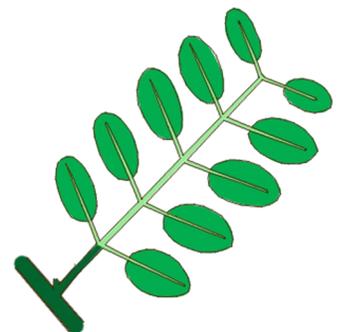
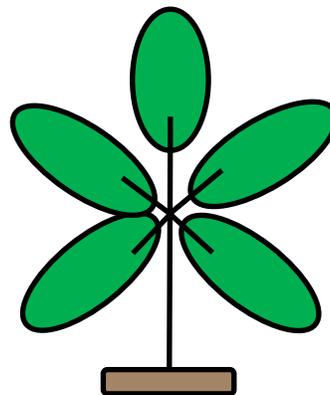
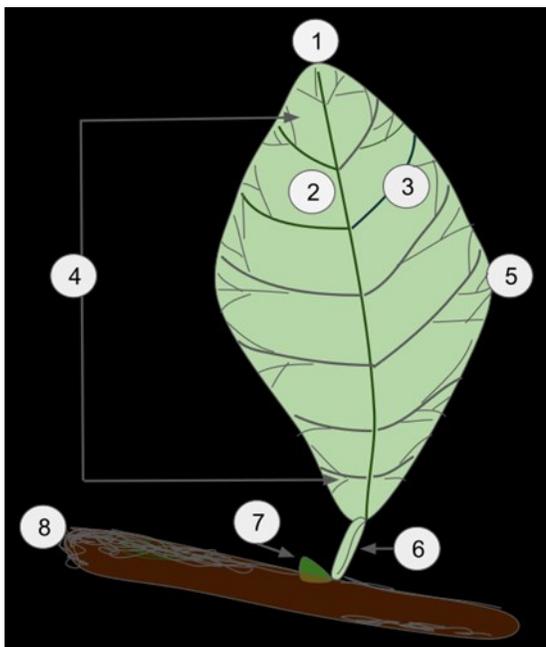
Alternate branching



Whorled branching



Opposite branching



Compound leaf



Japanese Barberry, *Berberis thunbergii*

ALT

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

Shrub  7'



Flower are yellow to pink in spring



Fall foliage is red to pink, creating a haze of color in the woods

Stems have many sharp thin thorns.

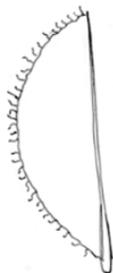
Red berries in fall



Hints: Sharp, fine but stiff thorns on the branches. Leaves in groupings on stem. Red fruit (drupe) hangs from branches. Shrub to 8'

Look-alikes: Some wild roses have thorns and red berries, but their leaves are compound and leaf margins are serrated or toothed. Barberry leaves are simple with an entire margin. No serrations.

Leaf blade margin



Ciliate
Fine hairs



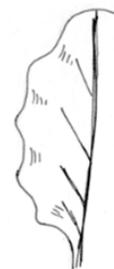
Crenate
Rounded teeth



Entire
Smooth



Lobate
Indented/lobed



Undulate
Widely wavy



Dentate
Symmetrical angular teeth



Denticulate
Fine teeth angular teeth



Serrate
Coarse teeth curved forward



Serrulate
Fine teeth curved forward



Sinuate
Wave-like indentations



Scotch Broom, *Cytisus scoparius*

Nisa Karimi, Wisconsin Department of Natural Resources, Bugwood.org

Robert Vidéki, Doronicum Kft., Bugwood.org

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

ALT

Shrub  5'



Pea-like flower can be yellow, rusty, or white



Green, ridged stems even in winter



Pea-like seed pods are green in summer, brown or black in winter

Hints: Woody shrub with numerous, thin green branches . Pea-like flowers and seed pods

Look-alikes: May resemble some herbaceous perennials, but scotch broom will have a woody base and persistent woody stems. Thin branches are green, even in winter

Site Selection

- Data collection reveals degree to which the spp. are spreading to natural areas and penetrating them and also absence
- Three types of sites to be surveyed; at least 1 of each per block
 1. HPA (Highly Probable Area): Typically highly disturbed, where focal spp. most likely to occur. E.g., roadsides, powerlines, lot edges. Also have high connectivity (e.g., roads, powerlines, tracks) enabling them to be easily colonized and to be sources of spread, i.e., *corridors*
 2. Natural area: the most “natural” site in your block. Need not be pristine. Data reveals already-present threats.
 3. Parking lot/trailhead (of natural area): For each natural area, associated parking lot/trailhead also surveyed. Data reveals threats “on the doorstep”. (If there’s no formal parking area, just use roadside adjacent to trailhead)
- Also can file “Opportunistic” data to report focal species that might otherwise be overlooked in your block or another block.



Winged Euonymous, *Euonymus alatus*

OPP

Shrubs  10'



Right and Below: Chris Evans, University of Illinois, Bugwood.org



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



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Hints: Look for corky ridges on branches. Flowers in summer are green and inconspicuous but numerous and may litter ground beneath shrub. Older bark may have white lines in it. Bright red foliage in fall and red /pink fruits

Look-alikes: Viburnums may look similar but no paired “bunny ear” leaves at the end of the stems. No corky ridges on branches.

Habitat Codes

- FM field meadow
- SH shrubland
- WT wetland
- WD woodland
- IF infrastructure bldgs

Adjacent Habitat Codes

- FM field meadow
- SH shrubland
- WT wetland
- WD woodland
- IF infrastructure bldgs

Trail Codes

- FP foot bike path
- NT no trail – bushwacking
- RD road
- TV trail shared with vehicles

HPA : High Probability Areas

- AA abandoned agricultural land
- AL abandoned lot
- RR area adjacent to RR
- PL parking lot (not at a trailhead)
- RS Roadside
- UT utility right of way



Common Buckthorn, *Rhamnus cathartica*

OPP/ALT

Shrub  18'

3 Photos: Leslie J. Mehrhoff, University of Connecticut, Bugwood.org



Thorn-like branch tip



Chris Evans, University of Illinois, Bugwood.org

Hints: Foliage glossy and almost leathery to touch, with three pairs of veins and finely serrated margins. Branch tips have offset buds with small thorn-like projection. Bark has corky bumps on it (lenticels). Black fruits in autumn. **Look-alikes:** Glossy buckthorn has hairy leaves, entire leaf margin and no spines Dog-wood flowers are large, white and showy + no spines + non-serrated leaf margins.

Abundance codes:

- 1 - One to three plants
- 2 - Scattered plants or one large patch
- 3 - Scattered dense patches
- 4 - Predominant cover in area

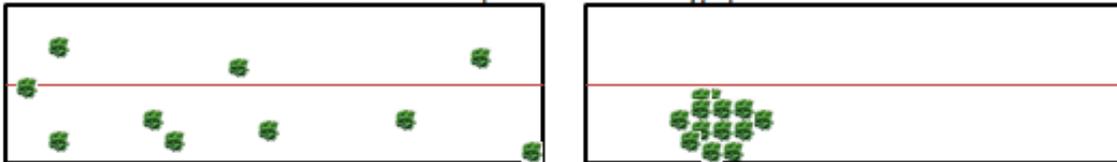
One survey segment



1 - One to three plants



2 - Scattered plants or one large patch



3 - Scattered dense patches



4 - Predominant cover in area





Oriental Photinia, *Photinia villosa*

ALT

15'  Shrubs



Mark H. Brand, University of Connecticut, Bugwood.org



Porse, Sten. *Photinia villosa: Flowers and foliage*. 6 October 2006. Wikimedia. Web. Retrieved 22 June, 2016. <https://commons.wikimedia.org/wiki/File:Photinia-villosa-flowers.JPG>



Photo courtesy of Shelby Timm. *Photinia villosa*. 2016.

Simple leaf with finely serrated margin

Hints: Leaves typically stemless attaching directly to branches. White flower, followed by green fruits then red fruits in Fall. **Look-alikes:** Chokeberries (*Aronia*) and Juneberries (*Amelanchier*) have red fruit, but their leaves have stalks, or petioles, that attach to branches.

Species Code	Focal Species Name	Group One	Group Two
Vines			
ACAR10	hardy kiwi (<i>Actinidia arguta</i>)		2
CEOR7	oriental bittersweet (<i>Celastrus orbiculatus</i>)	1	
CYLO11	black swallowwort (<i>Cynanchum louiseae</i>)		2
HUJA	Japanese hops (<i>Humulus japonicus</i>)		2
POPE10	mile-a-minute vine (<i>Polygonum perfoliatum</i>)		2
PUMO	kudzu (<i>Pueraria montana</i>)		2
Trees			
AIAL	tree-of-heaven (<i>Ailanthus altissima</i>)	1	
ALGL2	European alder (<i>Alnus glutinosa</i>)		2
AREL8	Japanese angelica tree (<i>Aralia elata</i>)		2
PHAM2	amur cork-tree (<i>Phellodendron amurense</i>)		2
Shrubs			
BETH	Japanese barberry (<i>Berberis thunbergii</i>)	1	
CYSC4	Scotch broom (<i>Cytisus scoparius</i>)		2
EUAL13	winged euonymus / burning bush (<i>Euonymus alatus</i>)	1	
PHVI81	oriental photinia / oriental redbud (<i>Photinia villosa</i>)		2
RHCA3	common buckthorn (<i>Rhamnus cathartica</i>)	1	
RHSC3	black jetbead (<i>Rhodotypos scandens</i>)		2
ROMU	multiflora rose (<i>Rosa multiflora</i>)	1	
RUPH	wineberry (<i>Rubus phoenicolasius</i>)	1	
VIDI80	linden viburnum (<i>Viburnum dilatatum</i>)		2
VISI	siebold's viburnum (<i>Viburnum sieboldii</i>)		2

Species Code	Focal Species Name	Group One	Group Two
Herbaceous plants			
AEPO	bishops goutweed (<i>Aegopodium podagraria</i>)		2
LECU	Chinese bush-clover / lespedeza (<i>Lespedeza cuneata</i>)		2
PASA2	wild parsnip (<i>Pastinaca sativa</i>)	1	
IRPS	yellow iris (<i>Iris pseudacorus</i>)	1	
Grasses			
ARHI3	small carpetgrass (<i>Arthraxon hispidus</i>)		2
MIVI	Japanese stiltgrass (<i>Microstegium vimineum</i>)	1	
MISI	Chinese silver grass (<i>Miscanthus sinensis</i>)		2