# Invasive Exotic Shrub Honeysuckles

## Major Threats to Midwestern Woodlands

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Additional honeysuckle bulletins are available from your county Extension office. Pub. HT2004

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## Printed References

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## Websites

**http://www.nps.gov/plants/alien/fact/lonil.htm**
Plant Conservation Alliance Alien Plant Working Group fact sheets on alien plant invaders of natural areas, including honeysuckle

**http://www.ipaw.org/invaders/honeysuckle/index.htm**
Invasive Plants Association of Wisconsin summary on invasive honeysuckles

**http://plants.usda.gov/cgi_bin/topics.cgi?earl =noxious.cgi**
U.S.D.A. Natural Resources Conservation Service summary of United States invasive weeds

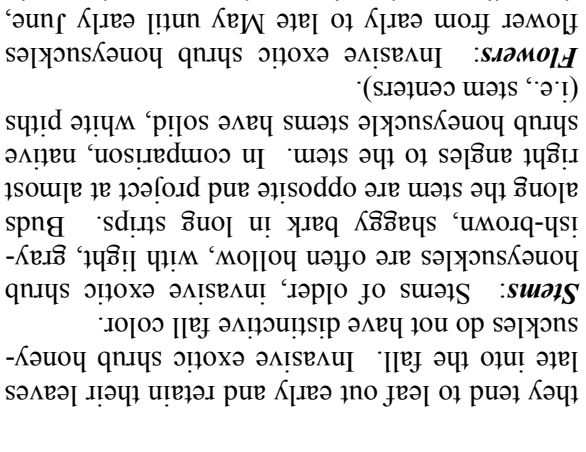
**http://www.dnr.state.mn.us/woodyplants/exotichoneysuckles.html**
Minnesota Dept. of Nat. Res. summary of honeysuckles

**http://www.cws-scf.ec.gc.ca/publications/inv/cont_e.cfm**
Environment Canada, Canadian Wildlife Service publication of invasive plants of natural habitats in Canada

**http://www.botany.wisc.edu/wisflora**
University of Wisconsin-Madison Herbarium checklist of the vascular plants of Wisconsin

**http://www.dnr.state.wi.us/org/land/er/invasive/**
Wisconsin Dept. of Natural Resources Endangered Resources

Invasive honeysuckles produce white, pink or red flowers that are less than 1 in. long, tubular, two-lipped, five-lobed, and contain five stamens.



Leaves of invasive honeysuckles are simple, opposite, oval to oblong, with entire margins and short petioles.

## Identification

***Growth***: Invasive exotic shrub honeysuckles are medium to large-sized, deciduous, multi-stemmed shrubs growing six to 15 ft. tall and six to 12 ft. wide. They have dense, upright, vase-shaped to rounded forms. Amur honeysuckle (*Lonicera maackii*) and Bell's honeysuckle (*L.* × *bella*), usually grow slightly taller than Morrow's honeysuckle (*L. morrowii*) and Tatarian honeysuckle (*L. tatarica*). Honeysuckles are fast growing and shallow rooted, forming dense colonies when they invade woods.

***Leaves***: Leaves of invasive exotic shrub honeysuckles are simple, opposite, oval to oblong, with entire margins and short petioles. They typically measure 1 to 2½ in. long and 1 to 1½ in. wide. Amur honeysuckle has larger leaves (2 to 3 in. long) that taper to a distinct, long, slender point at the tip and are slightly hairy. Morrow's honeysuckle has hairy, gray-green leaves, while Tatarian honeysuckle has smooth, hairless, bluish-green leaves. Bell's honeysuckle, a hybrid between Tatarian and Morrow's honeysuckle, has leaves that are slightly hairy on the undersides. Invasive exotic shrub honeysuckles are easy to find in early spring and late fall, as they tend to leaf out early and retain their leaves late into the fall. Invasive exotic shrub honeysuckles do not have distinctive fall color.

***Stems***: Stems of older, invasive exotic shrub honeysuckles are often hollow, with light, grayish-brown, shaggy bark in long strips. Buds along the stem are opposite and project at almost right angles to the stem. In comparison, native shrub honeysuckle stems have solid, white piths (i.e., stem centers).

***Flowers***: Invasive exotic shrub honeysuckles flower from early to late May until early June, depending on location. Flowers are borne in pairs at the nodes along the stem (i.e., in the leaf axils). Flowers are less than 1 in. long, fragrant, tubular, two-lipped and five-lobed, with five stamens (i.e., male floral parts). Nectar collects at the base of the flower tube and is attractive to both insect and hummingbird pollinators.

Amur honeysuckle produces white flowers that fade to yellow with age. Morrow's honeysuckle also has white flowers that fade to yellow, but its flowers are hairy and are borne on hairy peduncles (i.e., flower stems). Tatarian honeysuckle produces smooth flowers that are white, pink or crimson-red (especially on cultivars) and do not yellow with age. Bell's honeysuckle has white to pink flowers, fading to yellow, on slightly hairy stems. *Lonicera* 'Freedom' and *L.* 'Honeyrose', two cultivars that are the result of a complex hybrid of several honeysuckle species, produce pink-tinged white flowers and rosy-red flowers respectively.

***Fruit and Seed***: Honeysuckle fruits range from red to orange-yellow, depending on species and cultivar, and ripen in mid-summer (Morrow's, Tatarian, Bell's, Freedom, and Honeyrose honeysuckles) or early to mid fall (Amur honeysuckle). The fleshy, ¼ in. diameter berries contain many seeds. Seeds are less than ⅛ in. long oval, flattened, and yellow. Every year, invasive exotic shrub honeysuckles produce large quantities of viable seed that are readily dispersed by birds. The seeds require a cold, moist period to break dormancy, which occurs in the soil during winter. The germination rate of honeysuckle seeds is high under a wide range of environmental conditions. However, germination is highest on open ground or where understory development is sparse. Honeysuckle seeds remain viable in soil for two or more years.

## Threats

Invasive exotic shrub honeysuckles
- displace native understory vegetation;
- form an impenetrable understory layer;
- degrade wildlife habitat;
- cause long-term decline of forests by shading out other woody and herbaceous plants;
- compete with native plants for pollinators, reducing seed set of native plants;
- may not serve as a source of high-fat, nutrient-rich fruits for migrating birds.

## History

Invasive exotic honeysuckles are native to Asia and Western Europe. They were introduced into North America as ornamentals in the mid-18th and 19th centuries, due to their showy flowers and fruit. They were also used for wildlife food and cover, and soil erosion control. Bell's honeysuckle (*L.* × *bella*), a hybrid of Tatarian honeysuckle (*L. tatarica*) and Morrow's honeysuckle (*L. morrowii*), has quickly become as invasive as its parents. Unfortunately, some invasive exotic honeysuckles, especially the Tatarian honeysuckle cultivars 'Arnold Red' and 'Zabelii', as well as Freedom and Honeyrose honeysuckles, are still sold due to their ornamental characteristics and form, but should be considered invasive and should not be planted.

## Distribution and Habitat

Invasive exotic honeysuckles range from southern New England south into North Carolina, west to the Great Plains and north into the Midwest. They can occur along lakeshores, forest edges, abandoned fields, pastures, roadsides, and other open, upland habitats. They often invade woodlands, especially those that are grazed or disturbed. Morrow's and Bell's honeysuckle can also invade sand plains, bogs and fens. These honeysuckles can live under a broad range of light and moisture conditions, as well as in many different plant communities. However, they do not perform as well in shady environments. Large, urban areas are often invaded by honeysuckles. However, rural infestations have occurred where honeysuckles have been introduced to provide wildlife cover and food.

## Similar Species

Other exotic honeysuckles may look like their invasive cousins, but they are not considered invasive plants. These include Clavey's Dwarf and Mini Globe honeysuckles (*L.* × *xylosteoides* 'Clavey's Dwarf' and 'Mini Globe'), and Emerald Mound honeysuckle (*L. xylosteum* 'Emerald Mound'). Other native, rarely seen shrub honeysuckles include American fly honeysuckle (*L. canadensis*), bearberry honeysuckle (*L. involucrata*), swamp fly honeysuckle (*L. oblongifolia*), and mountain fly honeysuckle (*L. villosa*). Except for the swamp fly honeysuckle, exotic shrub honeysuckles have hairy styles (i.e., female reproductive structures). Bush honeysuckle (*Diervilla lonicera*), is not a true honeysuckle, but is related, and has small, yellow flowers at the tips of branches in summer, and dry, brown capsules in late summer.

Some honeysuckles are twining, woody vines, rather than shrubs. Native examples include the grape honeysuckle (*L. reticulata*, formerly *L. prolifera*); hairy honeysuckle, (*L. hirsuta*), and limber honeysuckle (*L. dioica*). Non-native, vine honeysuckles, such as Dropmore Scarlet honeysuckle (*L.* × *brownii* 'Dropmore Scarlet'), yellow honeysuckle (*L. flava*), goldflame honeysuckle (*L.* × *heckrottii*), Mandarin honeysuckle (*L.* 'Mandarin'), woodbine honeysuckle (*L. periclymenum*), and trumpet honeysuckle (*L. sempervirens*), are not considered invasive. However, the non-native vining Japanese honeysuckle (*L. japonica*), is highly invasive and readily grows in native areas, especially woodlands. This honeysuckle has fragrant, white flowers that turn yellow with age, and produces black fruit. This species is very invasive in the southern Midwest.

## Spread and Impact

Invasive exotic honeysuckles rapidly take over areas, and can form dense shrub layers in the forest understory. These honeysuckles produce large numbers of fruit that are highly attractive to birds. Thus birds commonly move honeysuckle seeds across the landscape. In the eastern United States, over twenty species of birds feed on honeysuckle fruit. Invasive exotic honeysuckle seedlings grow in areas with sparse vegetation, especially under tall trees and shrubs. They also spread vegetatively by producing suckers and sprouts at the base of the plant, especially after severe pruning. Because of this, invasive exotic honeysuckles tend to persist in an area once they have become established.

Invasive exotic honeysuckles crowd and shade out many native trees, shrubs, groundcovers, and spring ephemerals. In addition, they compete for pollinators, reducing fruit formation and seed set of native species. Invasive exotic honeysuckles also have a negative impact on wildlife. American robins (*Turdus migratorius*) nesting in invasive shrub honeysuckles experience higher predation than those nesting in native species, due to lower nest heights, a lack of protective thorns, and a more conducive branch structure for predator movement. Finally, honeysuckle fruit, while plentiful, may not offer migrating birds the high-fat, nutrient-rich food source they need for long flights.

## Control Methods

Control of invasive exotic honeysuckles is best achieved with early identification, and removal of isolated plants before they begin to produce seed. Once established, honeysuckles soon shade out existing vegetation and prevent establishment of the native understory. In large infestations of honeysuckle, larger, seed-producing plants should be removed first.

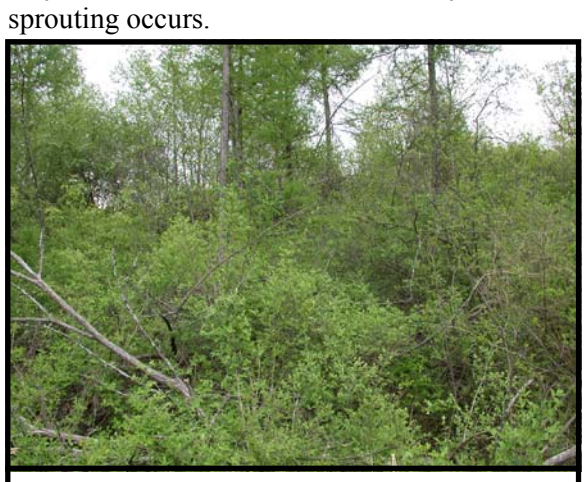
***Hand pulling**:* Honeysuckle plants with a stem diameter of ½ in. or less can be easily removed by hand pulling when soil is moist in spring and fall. Because honeysuckles have shallow roots, larger plants can be dug or pulled. All roots must be removed as the shrubs can resprout from any remaining roots. Digging will disturb the soil, which can lead to honeysuckle reinvasions. Be sure to revisit the site the following summer to remove newly emerged plants.

Invasive exotic honeysuckles have been used as a hedge shrub due to their ornamental characteristics and form, but should not be used due to their invasiveness.

***Fire:*** Prescribed burning shows promise in controlling invasive honeysuckle seedlings growing in open habitats, but kills only the tops of older shrubs which can easily resprout. Fire works best on seedlings in fire-adapted plant communities (e.g., prairies and pine forests), and should not be used where native plant communities might be adversely affected. Burn areas prior to seed dispersal in late summer or early autumn to minimize reinvasion of treated areas. Repeated burning every one to two years may be necessary. When burning, be sure to follow all local ordinances and state fire codes, and obtain local permits as needed.

***Cutting**:* Larger plants that are hard to remove by hand pulling should be cut at the base with a lopper or hand saw. Shrubs can readily resprout from cut stumps or from the root systems if not treated with herbicides. Repeated basal pruning during the growing season may eventually weaken the plant resulting in reduced sprouting.

***Herbicides**:* The effectiveness of cutting can be improved by immediately painting or spraying cut stumps with a non-selective herbicide such as glyphosate. This active ingredient (a.i.) is found in products such as Roundup Pro®, Touchdown®, or Rodeo® (for use near waterways). Use a 20-25% (by volume) solution to ensure death of the plant and to prevent resprouting. Apply glyphosate to stumps immediately after cutting using a low-pressure hand sprayer, spray bottle, or sponge applicator. Products containing triclopyr (e.g., Ortho® Brush-B-Gon®) can also be used. Herbicide applications to stumps should be directed to the vascular (i.e., water-conducting) tissue located just inside of the bark. Follow-up treatments may be needed for the next several years if resprouting occurs.



Invasive exotic honeysuckles invade forest understories, crowding out native shrubs, groundcovers, and spring ephemerals.

For younger shrubs, a basal bark application of a 12.5% (by volume) oil-formulated triclopyr solution (Garlon 4®) may be used to control honeysuckle in fall without the need for cutting. Oil formulations of tricolopyr are much more effective than triclopyr formulations diluted in water. Triclopyr is a selective and only kills broad-leaved plants. It does not harm most grasses. This herbicide is volatile and should not be used at temperatures above 80°F.

Foliar applications of herbicides to seedlings and larger plants can also be effective. However, this technique is best reserved for treating areas with large numbers of honeysuckle seedlings, as non-target vegetation can be easily damaged or killed. Herbicide concentrations of tricolopyr or glyphosate are generally lower for foliar sprays (1 to 3% by volume) than for stump applications. Dyes can be added to the herbicide formulation to help identify treated areas. As with any pesticide, read the label prior to use to verify that the rates listed here are consistent with those legally allowed for on the label, and to read about proper safety precautions.

Because invasive honeysuckles retain their leaves and continue to grow into late fall, the best time to treat honeysuckles is in mid to late autumn when non-target plants are going dormant and are least likely to be damaged. In addition, in fall, honeysuckle shrubs are transporting nutrients to its roots and thus uptake of herbicides is best at this time resulting in the highest mortality. Winter applications are also very successful on fresh cut stumps, decreasing the risk of damaging non-target species. However, if shrubs are cut in winter and herbicide treatments are not applied, vigorous resprouting occurs in spring. Spring cut-stump applications of triclopyr after budbreak, can effectively control honeysuckles, but may damage other species.

Repetition of mechanical and chemical control methods may be necessary for at least three to five years in order to deplete honeysuckle seeds. Replant areas that were infested with invasive species with native species tolerant to existing environmental conditions. This can help prevent reinvasion of invasive species.

***Biological Control**:* At this time, biological control agents are not available to control any of the exotic shrub honeysuckles.

***Education**:* One of the best honeysuckle control methods is education. Tell your neighbors about invasive honeysuckles. A neighbors' honeysuckle can produce large amounts of fruit and seed that can be disseminated into your backyard and the surrounding neighborhood by birds. Encourage your neighbors to remove their invasive honeysuckles and monitor their yards for seedlings.

**NOTE:** References to pesticide and other products in this publication are for your convenience and are not an endorsement or criticism of one product over similar products. You are responsible for using pesticides according to the manufacturer's current label directions. Follow directions exactly to protect the environment and people from pesticide exposure. Failure to do so violates the law.