

HOW TO: Identify Common Woody Invasives



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Buckthorn (Common & Glossy)

Rhamnus cathartica & *Frangula alnus*

Common Buckthorn (pictured)

-Shrub/small tree with finely toothed leaves with 3-5 leaf veins, branches may have small thorn at the tip between terminal buds, ripe berries are purplish black in color

Glossy Buckthorn

-Shrub/small tree with toothless leaves with 8-9 leaf veins, ripe berries may be red to dark purple in color



Autumn Olive

Elaeagnus umbellata

-Shrub/small tree with narrow, oval leaves with finely pointed tips, leaf undersides are silver in color, ripe berries are speckled red

-**RESTRICTED SPECIES** in Michigan, meaning it is unlawful to possess, introduce, import, sell or offer that species for sale as a live organism



Honeysuckles

Lonicera spp.

-Shrubs with simple opposite leaves, some species have strongly pointed ends or "drip tips", ripe berries are commonly bright red, sometimes orange, in color and paired, branches are often hollow

-Native honeysuckles can be distinguished from invasive species by the second-year stems; with non-native, the stems are hollow between the nodes. Native honeysuckles are also less robust



Oriental Bittersweet

Celastrus orbiculatus

-Woody vine with alternate, round, finely toothed leaves, ripe berries are yellow or orange and clustered, stems wind around trees and other vegetation, can be up to 4 in. in diameter

-Cutting bittersweet vines at the base will kill the remainder of the vine above the cut, in the trees



HOW TO: Treat Woody Invasives



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Chemical Treatments

Cut-stump Treatment

1. **Cut the trunk of the woody invasive to expose the entire inner bark surface (it is critical that height of the cut is 3" or less from the ground)**
2. **Apply herbicide to the entire outer ring of the cut stump, within a few minutes of making the cut, to ensure the herbicide is affective in soaking into the cambium layer of the tree/shrub, which will effectively bring the herbicide to the roots of the plant**
 - Cut-stump treatment should **not** be done in Spring, as the plant will push the herbicide out and will be ineffective
 - Do not apply herbicide treatment if rain is expected within 6 hours of application

Basal Bark Treatment

1. **Apply herbicide, with an oil carrier, to the entire circumference of the bark of the tree, from the ground to 15 inches high, with a backpack or handheld pressurized sprayer**
 - Should **not** be applied in Spring, trees should be less than 6 inches in diameter, or any size if the tree has thin bark
 - Do not cut down trees that have been treated with this method until at least 6 months after treatment to ensure all herbicide has translocated to the roots

Foliar Spray Treatment

1. **Apply herbicide using a backpack sprayer to coat all leaves to the point of run-off**
 - Most effective midsummer to late fall, do not apply if rain is expected

When using chemical treatment methods, always follow manufacturer instructions and labels, use appropriate personal protective equipment, and check for permitting requirements (especially if treating invasive species near bodies of water).

Non-chemical Treatments

1. Cutting stumps: will inhibit growth, but will not kill woody invasives
2. Cutting stumps and black-bagging them: completely covering stumps with thick black bags has the potential to kill the plant (see: <http://buckthornbaggie.com/>)
3. Mowing: can inhibit growth and potentially kill small woody invasive seedlings if done multiple times throughout the season
4. Prescribed burns: can kill small seedlings and encourage native plants to grow

More About Chemical Treatments



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Commonly Used Herbicides for Woody Invasive Control

1. **Glyphosate:** a *non-selective, systemic herbicide* (is absorbed into target plant tissue and transported throughout the plant) that targets broad-leaf plants, grassy weeds and brush
 - Herbicide brand-names with glyphosate as the active ingredient: Rodeo, Roundup, Eraser, and many more.
2. **Triclopyr:** a *selective, systemic herbicide* that targets broadleaf and woody plants
 - Two basic formulations: salt/amine (triethylamine salt- soluble in water) and ester (butoxyethyl ester- non water-soluble, may be extremely toxic to fish and aquatic invertebrates)
 - Herbicide brand-names with triclopyr as the active ingredient: Access[®], Bonide, Remedy[®], Garlon[®] 4, and many more.

What percentage of herbicide should I use?

The amount of herbicide used depends on a number of factors including the method of treatment.

- For **cut-stump treatments**, a small amount of concentrated herbicide is applied to a targeted area (the cut-stump surface)
 - There are ready-to-use products (no mixing required) such as Stump Stop (ready-to-use, 13.6% triclopyr)
 - To use a concentrated glyphosate product, look for a product with an active ingredient of glyphosate ~41%, then dilute in a 50/50 solution with water
 - A bingo dabber for herbicide such as Buckthorn Blaster™ makes it easy to apply
- Mix blue dye into the solution so that you can see where you treated
- For **foliar spray and basal bark**, check out this best practices document:
https://www.michigan.gov/documents/dnr/Common_Buckthorn_389115_7.pdf

Additional information:

1. Always check permitting requirements before using any herbicide treatment. If the treatment takes place in or near standing water, a permit may be required.
2. You can only treat on your own property unless permission has been obtained.
3. Always read the label before using herbicide. **The label is the law!** It can tell you things like:
 - Safety information & what personal protection equipment is required
 - What plants the herbicide controls and recommended percentages to use
 - Whether it is safe for aquatic use or not