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December 2023

Winter Control of Invasive Plants

by Mark Peterson, PhD Weed Scientist (retired)

Oh the weather outside is frightful, but killing invasive plants is so delightful!

Many of us hunker down for the winter months, but this can be a prime opportunity to get ahead of invasive plant problems. Most herbaceous weeds and brush are going dormant right now, yet they are still susceptible to various methods of removal and treatment. How you go about it depends on what your target is.

Woody Brush

By late November the time for foliar brush treatments with herbicides has passed. Most of these species have lost their leaves and won't take up the spray very well. Even though honeysuckle (*Lonicera* spp.) hangs on to its leaves into early winter, they have usually turned yellow and are not that active at absorbing herbicides. Removal by pulling can be effective as long as the ground isn't frozen, and you can get the roots out. This can be useful for very small honeysuckle and helps keep previously cleared areas clean. However, I've personally found that some other

species, such as burning bush (*Euonymus alatus*), don't pull out well, even when small.

One winter option is basal bark application. This method requires the use of herbicides that are more "oily" and able to penetrate bark. Look for ester formulations and mix them with diesel fuel or basal oil. Basal oil is nicer to work with (not as smelly) but diesel is obviously easier to come by. Triclopyr ester formulations (e.g. Garlon® 4) are the most recommended herbicides for this application. Mix to a 1-5%, volume to volume solution (I prefer the higher concentration) of triclopyr product in diesel or basal oil. Apply with a backpack sprayer or other low-pressure (20-40 psi) sprayer. Conventional basal applications require that the stems be thoroughly wetted 12-15 inches from the ground. This means that treatment will be less effective if snow is covering the base of the tree or shrub. There should be some visible runoff from the stem. Low volume basal, as the name suggests, uses less spray on the stem and does not require treatment to the ground. However, higher concentrations of herbicide are needed (20-30%). Mixing triclopyr with aminopyralid (Milestone®) can increase effectiveness but preparing the mixtures can be tricky and requires the use of compatibility agents to get the oil-based triclopyr and the water-based aminopyralid to combine. See the individual product labels for further instructions if you want to try this combination. Glyphosate is not a good candidate for basal applications since it's not great at penetrating bark. Some research reports moderate success with basal treatments for honeysuckle but in one case I've read anecdotal evidence that they work better in late winter, say March, rather than December or January. This technique is limited to stems less than 6 inches and ensure that all stems on an individual plant are treated.



Example of a basal-bark application. (Photo credit: Penn State Extension)

Hack and squirt (sometimes called “frill”) applications can work well on woody brush. A hand axe or other sharp tool is used to make horizontal cuts to the stems and a herbicide solution is applied to the fresh cuts. Water-based herbicides such as glyphosate or triclopyr amine will work for these applications since you’ve opened up the bark. The use of basal oil is not recommended in this situation, and you should try not to overfill the hack. About 1-2 ml of undiluted product per hack is sufficient. This method works well year-round, but it’s best to avoid late winter/early spring when sap is running in woody species as it may ooze and push the herbicide out of the cut.



Hack and squirt method. Making the cut followed by herbicide application. (Photo credit: Stephen Enloe, University of Florida)

The above techniques are fine if you don't mind having dead trees and brush standing in the treated areas. Otherwise, you can cut off the plant at the base and use a cut-stump treatment on the freshly cut surface. A 25% solution of triclopyr ester in water or diesel/basal oil, a 50-100% solution of triclopyr amine, or a 50-100% solution of glyphosate will work well for cut-stump applications. Be sure to apply right away after cutting or the herbicide will not penetrate well. As with hack and squirt, cut-stump treatments are best avoided in late-winter/early-spring when sap is running.

As you can tell from the photos, many times applicators use a spray dye in their treatments. This helps you to know what stems or stumps you might have missed. It can be purchased at your local farm store or found at online vendors.



Cut-stump application. Larger stumps only require treatment of the outer edge. (Photo credit: Penn State Extension)

Mechanical treatments can be useful in the winter. Forestry mowers that chew up invasive brush and shatter the crowns will beat back serious infestations but follow up treatments of spring regrowth are required. Unfortunately, most of us don't have access to these specialized machines that are most often used by companies that work on land clearing of larger areas.



A forestry mower levels all vegetation, making follow up treatments easier. (Photo credit: Penn State Extension)

Herbaceous Winter Annuals and Biennials

Winter annuals germinate and establish in the fall, resume growth in the spring, and set seed in late spring or early summer. Non-native examples include yellow rocket (*Barbarea vulgaris*), purple deadnettle (*Lamium purpureum*), and common chickweed (*Stellaria media*). Biennials usually germinate in the spring, produce a low-growing rosette the first season, overwinter in that form, and then shoot up a flowering stalk in the second spring. This growth form includes garlic mustard (*Alliaria petiolata*), poison hemlock (*Conium maculatum*), and many invasive thistles.



Overwintering rosettes of garlic mustard. (Photo credit: Penn State Extension)

Sometimes during the winter months, we have short periods of milder weather that may present opportunities for foliar applications of herbicides on these species that are not completely dormant. Late winter probably has the most potential for temperatures warm enough to melt snow cover and allow leaf uptake. Make sure the forecast includes a string of warmer days to give the applications time to work. You can pull or dig out plants in small areas, but make sure the roots are pulled out. Foliar applications of glyphosate, 2,4-D, or triclopyr+2,4-D premixes using hand sprayers can be effective. Spray to wet and use a 1-5% solution of glyphosate, 1% solution of 2,4-D (I prefer ester formulations in cold weather), or 1-1.5% solution of a triclopyr+2,4-D premix, such as Crossbow®. Glyphosate treatments will benefit by mixing in ammonium sulfate (AMS). Your local farm store will have AMS products that provide instructions for mixing. Research in Ohio (1) has shown that applications of 1% glyphosate + AMS can be effective against garlic mustard when daytime air temperatures are down to around freezing. Additionally, the researchers found that the herbicide application at this time had little effect on non-target herbaceous species present.

A recently updated fact sheet from Penn State Extension (2) provides some excellent information on winter invasive plant control and I recommend you look it up if interested. Several of the photos in this article have been borrowed from this publication.

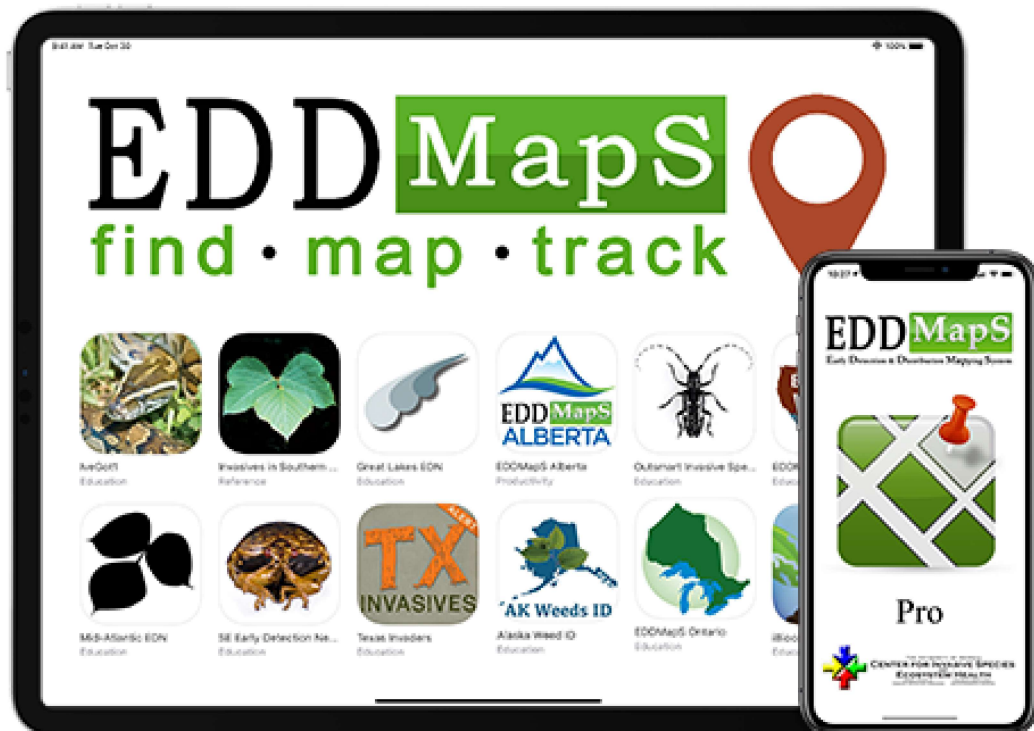
Winter really is a great opportunity to clear out invasive species. Many treatments work well, it's easier to maneuver through the woods, and you don't have to worry as much about those nasty ticks! Best of luck in your control efforts.

References

- (1) Frey, M.N., C.P. Herms, and J. Cardina. 2007. Cold Weather Application of Glyphosate for Garlic Mustard (*Alliaria petiolata*) Control. *Weed Technology*, 21:656-660.
- (2) Gover, A. 2023. 'Tis The Season – Winter Invasive Plant Control. Pennsylvania State University Extension. <https://extension.psu.edu/tis-the-season-winter-invasive-plant-control>

Invasive Species Reporting Update

by Nick Harby, TICT Reporting Committee Lead



Here is a report on the invasive species that have so far been reported for Tippecanoe County on EDDMapS. I searched EDDMapS for the species listed in the Indiana Invasive Plant List here: [Indiana Invasive Plant List](#)

These are the species that someone has reported, the number of reports on EDDMapS, and a list of the people making a report on that species.

- Amur cork tree (*Phellodendron amurense*) 1 report, Tom Swinford
- Amur honeysuckle (*Lonicera maackii*) 30 reports, Jordan Young, Nature Conservancy, Greg Shaner, Nick Harby, Richard Smith's, SM, Jennifer Strohl
- Asian bittersweet (*Celastrus orbiculatus*) 8 reports, Jordan, Angie Miller, Zach Musser
- Autumn olive (*Eleagnus umbellata*) 10 reports, Jordan
- Bull thistle (*Cirsium vulgare*) 10 reports, Jordan
- Burning bush (*Euonymus alatus*) 14 reports, Jordan, Patty Jones, Will Gertz, Zach Musser, Nick Harby, Greg Shaner, Angie Miller, Beverly Shaw
- Bush honeysuckle not reported to species level (*Lonicera* sp.) 2 reports, Angie Miller, Whitney Belaski
- Callery pear (*Pyrus calleryana*) 50 reports, Jordan, SM, Angie Miller, Zach Musser, Stewart Orr, Dan McGuckin, Nick Harby, Ellen Jacquart, Beverly Shaw
- Canada thistle (*Cirsium arvense*) 15 reports, Jordan, Elizabeth Barton
- Chinese Maiden Grass (*Miscanthus sinensis*) 8 reports, Jordan, Angie Miller
- Chinese privet (*Ligustrum sinense*) 1 report, Zach Musser
- Common reed (*Phragmites communis*) 31 reports, Jordan, Angie Miller
- Common teasel (*Dipsacus fullonum*) 6 reports, Jordan, Richard Landon
- Cut-leaved teasel (*Dipsacus laciniatum*) 4 reports, Jordan, Mickey Penrod
- Crown vetch (*Coronilla hederacea*) 13 reports (now *Securigera varia*), Jordan
- Dame's rocket (*Hesperis matronalis*) 6 reports, Greg Shaner
- English ivy (*Hedera helix*) 5 reports, Jordan
- European cranberry-bush (*Viburnum opulus*) 1 report, Jordan
- Garlic mustard (*Allaria petiolata*) 9 reports, Jordan, Sam Leming, Whitney Belaski
- Japanese hedge parsley (*Torilis japonica*) 5 reports, Jordan
- Japanese honeysuckle (*Lonicera japonica*) 14 reports, Jordan, Patty Jones, Sam Leming, Whitney Belaski, Zach Musser, Nick Harby, Angie Miller
- Japanese hops (*Humulus japonicas*) 13 reports, Jordan, Amy Krzton-Presson, Ben Weigleitner, Angie Miller
- Japanese knotweed (*Reynoutria japonica*) 9 reports Jordan, Angie Miller
- Japanese Stiltgrass (*Microstegium vimineum*) 17 reports, Zach Neff, Bob Easter, Justin Harmeson, Aaron Patton, Nature Conservancy, Susan Ulrich, Greg Shaner, Dan Carlson
- Jetbead (*Rhodotypos scandens*) 2 reports, Jordan, Nick Harby
- Johnson grass (*Sorghum halepense*) 2 reports, Jordan
- Korean lespedeza (*Kummerowia stipulata*) 1 report, Angie Miller
- Lesser celandine (*Ficaria verna*) 3 reports, Dan Childs, Nick Harby
- Moneywort (*Lysimachia nummularia*) 6 reports, Jordan

- Morrow's honeysuckle (*Lonicera morrowii*) 2 reports, Jordan
- Multiflora rose (*Rosa multiflora*) 7 reports, Jordan
- Musk thistle (*Carduus nutans*) 7 reports, Jordan, Nature Conservancy
- Periwinkle (*Vinca minor*) 9 reports, Jordan
- Poison hemlock (*Conium maculatum*) 14 reports, Jordan, Brent Melton, Yazmin Marros-Quintana
- Princess tree (*Paulownia tomentosa*) 1 report, Eric Summerfield
- Purple Loosestrife (*Lythrum salicaria*) 11 reports, Jordan, Angie Miller, Ben Weigleitner, Nancy Marshall, Bob Easter, Nick Harby
- Queen Anne's Lace (*Daucus carota*) 17 reports, Jordan
- Ravenna grass (*Saccharum ravenna*) 2 reports, Angie Miller
- Reed canary grass (*Phalaris arundinacea*) 19 reports, Jordan, Angie Miller
- Sericea lespedeza (*Lespedeza cuneata*) 1 report, Nick Harby
- Siberian elm (*Ulmus pumila*) 10 reports, Jordan, Sam Leming
- Spreading hedge parsley (*Torilis arvensis*) 3 reports, Zack Poynter
- St. John's Wort (*Hypericum perforatum*) 6 reports, Jordan
- Tartarian honeysuckle (*Lonicera tartarica*) 3 reports, Jordan, Nick Harby
- Tree of heaven (*Ailanthus altissima*) 17 reports, Jordan, Angie Miller, Zach Musser, Annalyse Ewing
- White mulberry (*Morus alba*) 5 reports, Jordan
- White sweet clover (*Melilotus alba*) 11 reports, Jordan
- Wild parsnip (*Pastinaca sativa*) 5 reports, Jordan
- Wintercreeper (*Euonymus fortunei*) 19 reports, Jordan, Nick Harby, Greg Shaner, Zach Musser, Nick Hardebeck, Sara Huffer
- Yellow sweet clover (*Melilotus officinalis*) 5 reports, Jordan

You might be aware that there are more invasive species present in Tippecanoe County. For example, barberry, knapweed, buckthorn, pampas grass Nobody has reported any on EDDMapS yet. If you know of any more invasive plant species that have been reported on EDDMapS for the county but are not listed above, let me know.

Nick Harby

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2023 - Year in review



**JAN - Honeysuckle
Workday**



**at WREC property near
Shamrock Park**



**With Purdue Alpha Phi
Omega**



**FEB - Honeysuckle
Workday**



**along the Wabash
Heritage Trail**



**with volunteers, Laf
Renew & Parks Dept!**



MAY - Native Plant Fest

JUNE - Invasive Swap Program

JULY - TICT booth at Riverfest

OCT - Prophetstown State Park Trail of Scarecrows

NOV - TICT Reboot Conference



TICT's 2023 Year in Review

Here's a glimpse of what we've accomplished together this year:

- January's honeysuckle workday at WREC property near Shamrock Park with Purdue Alpha Phi Omega.
- February's honeysuckle workday along the Wabash Heritage Trail with the help of community volunteers, Lafayette Renew, and Lafayette Parks Department.
- May's Native Plant Fest at Ross Camp.
- June's invasive swap program.
- July's TICT booth at Wabash Riverfest.
- October's Honeysuckle Haunting at Prophetstown State Park's Trail of Scarecrows.
- November's TICT Reboot Conference.

Thanks for making this year great. We are excited for all that 2024 holds!

West Lafayette Parks - AmeriCorps Update



City of West Lafayette's AmeriCorps members are working hard to accomplish their mission of "Getting Things Done." Recently, they organized a pop-up event for Leaf Scrapbooking at Happy Hollow Park. The event was a great success and attracted a total of 34 participants from all age groups. Each participant started a leaf booklet of their own to take home to continue working on their collection.

To learn more about AmeriCorps, contact [Rachel Bingaman](#), Grant Administrator.

Volunteer Opportunities



Honeysuckle Workday - Wabash Heritage Trail

WREC is planning a workday in January. Be on the lookout for more information coming soon!

WREC's Tool Library

tool
library



<http://www.wabashriver.net/tool-library/>

Did you know Wabash River Enhancement Corporation (WREC) has a free tool library? You can borrow some tools to help remove your invasive plants! Check out their shiny, new website by clicking the button below.

WREC's Tool Library

SWCD's Tool Library



Through Tippecanoe County Soil and Water Conservation (SWCD), you can reserve tools by using their program called myTurn. To use myTurn, you have to create an account and put in a credit card to view inventory and check things out.

SWCD's myTurn

Volunteer Groups



TICT is looking for businesses, organizations, clubs, and other groups to volunteer for invasive removal projects in our community! No experience necessary—all tools provided! It's a great opportunity for team-building. Contact us at TICTaboutinvasives@gmail.com to learn more.

Upcoming Events



We hope to see you at the TICT Annual Meeting on **Monday, January 8 at 1 pm** at the Lilly Nature Center. Let's dream up what we can do in 2024 together!

[Learn more](#)



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