

Invasive Plants—A Problem for our Local Ecosystems

You may have heard about invasive plant species or noticed people at local parks cutting down or pulling out certain type of plants. But do you know what makes a plant an “invasive”? Can you recognize some of the worst offenders that we have in East Central Indiana? Do you know how invasive plants can disrupt the life cycles of birds and other wildlife? And, do you know what conservationists are trying to do about them? Well, read on to find some answers to these questions and what you can do to help.

What is an invasive plant?

As soon as humans started traveling any distance from where they were living, they began introducing plants from their homelands into new environments, sometimes intentionally and sometimes not. Once travel became global, with people sailing all over the world, this practice really took off. Exotic plants were fascinating to the early explorers, who brought them home to introduce into their gardens, parks, and farms. And colonizers took familiar plants with them to where they were settling, as food, as medicine, for other uses, or because they reminded them of the homes they were leaving behind.

Such plants are termed “introduced” or “exotic.” In the 19th and 20th centuries, the horticultural trade made a business of finding and selling foreign plants to an eager gardening public for their beauty and usefulness. And in doing so, they inadvertently introduced even more species—those who hitchhiked along in soil or packing materials.

If the climate is right, an introduced plant often thrives very well in a new habitat. The parasites and predators that have evolved to take advantage of it in its homeland are missing, and the insects, rusts, herbivores, etc. that are present are not adapted to make use of it. Resistance to disease and predators becomes a selling point.

The trouble is that some of these plants become “invasive” in their new homes. They adapt so well, spread so widely, and out-compete native species so effectively that they disrupt local ecosystems. With fewer native plants, insects and animals—including birds—that depend on them are not able to thrive.



Bush Honeysuckle
Image by James H. Miller



Garlic Mustard
Image by Thomas Cobb



Autumn Olive
Image by James H. Miller

A Few of Our Worst Offenders

East Central Indiana has plenty of examples of introduced species that have become invasive. They range from forbs to woody plants to vines. Here are a few of the most common.

Garlic Mustard

Garlic Mustard (*Alliaria petiolate*) is an herbaceous biennial that was introduced to the U.S. in the 19th century for food and medicine. The leaves have a garlicky smell and the plant is edible. In the first year, the plant puts up basal rosettes of rounded green leaves. The following year, it puts out heart-shaped,



Garlic Mustard—first year basal leaves
Silknight via Wikimedia Commons, [CC BY-SA 4.0](#)

toothed leaves and bolts to create a stem of white, four-petaled flowers that mature into long seedpods. These shatter to release thousands of tiny seeds that are light enough to be wind-blown, although they are also spread by water and soil movement. They can remain viable in the ground for five years or more.



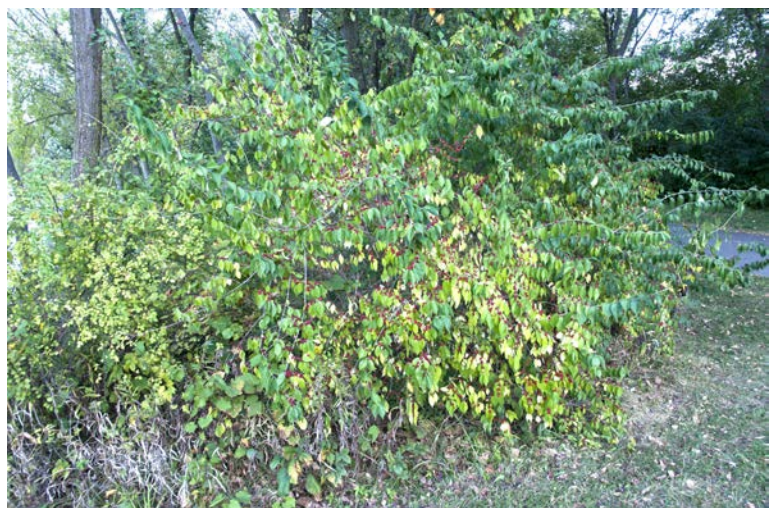
Garlic Mustard in bloom
Katja Schulz via Wikimedia Commons, [CC BY 2.0](#)

Pulling the plant up with its taproot before the seed heads have formed is an effective means of control. Plants with flowers should ideally be bagged and removed as the emerging seed heads can ripen after being uprooted. For more information on identification and removal, see this article posted by the PennState Extension:

<https://extension.psu.edu/garlic-mustard>

Asian Bush Honeysuckle

Asian bush honeysuckle, a term that takes in a number of *Lonicera* species, is a bush with smooth, arching stems, opposite leaves, white spring flowers, and red berries in the fall. It is particularly easy to identify in early spring, as it is one of the very first things to leaf out. The solid green masses you see in



Morrow's Honeysuckle (*Lonicera morowii*) in late September at Turtle Pond in Columbus, Ohio
Sixflashphoto via Wikimedia Commons, [CC BY-SA 4.0](#)



Bush Honeysuckle, leaves and berries
 Slknight via Wikimedia Commons,
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our central Indiana woods in springtime are typically monocultures of bush honeysuckles. In the fall, they are among the ones that are still green after our native shrubs have dropped their leaves. The plant is one of the fastest spreading, most ecologically damaging we have and is no longer longer legal to sell here. However, before its invasive qualities were recognized, it was widely sold in the nursery trade and even promoted by the Indiana Department of Natural Resources as a good plant to hold off erosion.

Honeysuckle removal is a matter of persistence.

Honeysuckle sprouts can be hand pulled. Young plants are shallow-rooted and can often be pulled or rooted out with a shovel or mattock. Older plants can be cut and the stumps treated with an herbicide to prevent resprouting. With a well established bush, though, it may take multiple seasons to kill the entire plant. An Indiana Invasive Plant Species Assessment Working Group fact sheet on the bush honeysuckles includes additional information on control methods:

https://www.in.gov/dnr/files/Bush_Honeysuckle.pdf

Bradford or Callery Pear

Bradford Pear, a cultivar of the Callery Pear (*Pyrus calleryana*), was introduced in the U.S. in the 1950s as a fast growing, decorative street-tree. With its compact, pyramidal shape, plentiful white early spring blossoms, and attractive glossy leaves that color in the fall, it quickly became a popular choice of homeowners and developers. The original cultivar produced sterile fruits, which prevented spreading. But additional cultivars were soon introduced, and cross-pollination resulted in viable fruit—small, hard, and inedible for humans, but consumed and spread by wildlife. (They are a favorite of European Starlings, another introduced species.) Bradford Pears and their kin have now invaded our forests and secondary growth habitats. They are one of the first trees to flower in the spring and it is easy to see hillsides of them in bloom along our roadways in March and early April. Removing Bradford Pears on your property is straightforward and not



Callery Pear in bloom
 C. E. Price, public domain, via
 Wikimedia Commons



difficult, except for the cleanup. Simply cut the trunk horizontally near the ground. A good, native replacement is the serviceberry, which also sports a lovely, early-spring array of white blossoms. More information and additional links are available in an article posted by the Purdue University Extension:

<https://www.purdue.edu/fnr/extension/invasive-bradford-callery-pear-why-it-is-so-detrimental/>

Callery Pear leaves are glossy with wavy margins
Gelmaraghy via Wikimedia Commons, [CC BY-SA 3.0](#)

Burning Bush

Burning Bush (*Euonymus alata*) gets its name from the fiery red color that its leaves turn in the fall. This has made it an extremely popular landscaping plant, one that



The corky ridges along the stems are diagnostic for Burning Bush
Salicyna via Wikimedia Commons, [CC BY-SA 4.0](#)

is still widely sold. But its bright red berries are spread by birds, and once it gets established in

our native woods, it poses a real threat, especially to our old growth forests. The bush is an easy one to

recognize in all seasons by the two to four corky ridges or wings running along the stems. The

leaves are opposite, oval, and finely toothed, and it has small, green flowers in the spring. Removal methods are similar to those for bush honeysuckle.

Ailanthus (Tree of Heaven)

Ailanthus or Tree of Heaven (*Ailanthus altissima*) is a tree that is easy to dislike. It spreads rapidly, forms big thickets, and is allelopathic (i.e., it puts out chemicals that discourage the growth of other plants). And it stinks. It was introduced to the U.S. in the 1700s and planted in eastern cities for its rapid growth and adaptability to poor growing conditions. It has now spread to become invasive in urban, agricultural, and forested areas across the



Burning Bush hedge in autumn in New Jersey
Famartin via Wikimedia Commons, [CC BY-SA 4.0](#)



Ailanthus leaves showing the bumps at the bottoms of the leaflets

Solijon Solayev via Wikimedia Commons, [CC BY-SA 4.0](#)

country. Since the first detection of the Spotted Lanternfly to the U.S., in 2014, Ailanthus has yet one more tick against it. It is a preferred host of these destructive insects, which get some of the nasty taste that helps them avoid predators from consuming Ailanthus leaves. (A fact sheet about lanternflies from Indiana DNR is here: <https://www.in.gov/dnr/entomology/pests-of-concern/spotted-lanternfly/>)

All good reasons to get rid of Ailanthus. It turns out that is hard, but can be done.

Cutting it alone just encourages more suckering growth from its extensive network of underground roots; chemical applications at specific times of the year are required. The tree is identified by its large, compound leaves (one to four feet long) each with 10 to 40 leaflets arranged on either side of the leaf stem. The leaves are long and pointed with smooth edges and one or two small bumps at each base. Native walnut and sumac have similar leaf structure, and sumac is also a thicket-forming species. Crushing a leaf and checking for the smell is a good diagnostic. PennState Extension has an information sheet about identification and removal of Tree of Heaven here:

<https://extension.psu.edu/tree-of-heaven>

Numerous others

It is hard to know when to stop this list. Introduced vines used in landscaping for ground cover have often proved invasive, with Purple Wintercreeper being one of the worst, outdoing even English Ivy and Periwinkle. Groundcover vines are very difficult to remove once they get out, and they smother our beautiful spring ephemerals. Invasive forbs include Dames Rocket and Purple Loosestrife. Autumn Olive and White Mulberry trees, both invasive, abound in our woods where, in the understory, invasive buckthorns and Jetbead compete with honeysuckle for domination. And on and on. The Indiana Invasive Species Council, established by the state legislature, maintains a list of Indiana invasive species ([Official IISC Invasive Plant List](#)) and a state-wide rule ([Terrestrial Plant Rule](#)) bans the sale of some of them, including bush



Ailanthus suckering from its root system
Krzysztof Ziarnik via Wikimedia Commons, [CC BY-SA 4.0](#)

honeysuckle and wintercreeper. Unfortunately, Bradford Pear and Burning Bush have yet to be banned but they will be considered the next time the rule is revised, an effort we should all support.

How do invasive plants disrupt ecosystems?

By crowding out native plants, invasives can disrupt an entire food chain. Insects such as moths and butterflies lay their eggs on specific natives, such as oak trees and spicebush, that their caterpillars are adapted to feeding on. The soft-bodied caterpillars then provide a host of nutrients to the nestlings and fledglings of our native birds, who all come equipped with seemingly endless appetites. Carolina Chickadees, for example, may feed their hatchlings more than 5,000 caterpillars ([National Wildlife Federation, 2016](#)) before they are ready to be on their own and start foraging for seeds. Without plentiful prey, nest failure rates rise.

And some invasives introduce new hazards into the ecosystem. For example, some plants, such as Common Burdock, can entangle small birds and bats in their sticky burrs ([SICIM, 2022](#)), resulting in death from exposure or starvation.

What can we do about invasives?

First and foremost, we can avoid planting new ones.

Next, if we have invasives growing on our property, we can do our best to get rid of them. And once we have removed invasives, we can choose native plants to replace them. The Indiana Native Plant Society has an extensive website that includes suggestions about native replacements for commonly planted invasives: (<https://indiananativeplants.org/garden-invasives-native-alternatives/>)

Our parks and other public spaces are not staffed to contend with the problem of combatting invasives. Volunteer groups such as regional Cooperative Invasive Species Management Areas (CISMAs) organize Weed Wrangles and other removal activities to help out. The East Central Indiana counties all have either active or planned CISMAs, and they would love to have you join in for one of their events. This is a great way to hone your identification skills and



Members of RCAS at Mounds State Park after a service trip to remove Burning Bush and Honeysuckle

learn what sorts of techniques work best on which species. RCAS also sponsors service trips each year, at Mounds State Park and Dutro-Ernst Woods. Look for announcements on our website, Facebook page, and in our newsletter. Participating in a service day is a great way to contribute and it is so rewarding to return to a spot where we worked last year and see the difference as our native species start to regenerate and flourish.



Removing invasives gives our natives a chance!
Bluebells, toadshade, and Dutchmen's breeches growing
together along the banks of the Potomac River in Virginia
Ivy Main via Wikimedia Commons, [CC BY-SA 3.0](#)