

# Plant survey finds dozens of nonnative invasive species thriving in southwest Ohio

December 1 2023, by Michael Miller

---



Kate Nordyke, the former herbarium specialist at Spring Grove Cemetery & Arboretum, stands in front of a 400-year-old white oak tree at the cemetery. Credit: Denis Conover

Botanist Denis Conover does not have to go far to study the growing problem of invasive plants.

During an autumn stroll outside his office at the University of Cincinnati, the biology professor pointed out numerous examples of nonnative, invasive [species](#) in campus landscaping.

"This is winged euonymus, otherwise known as burning bush. And here is Chinese silver grass. It's a popular ornamental, but the seeds are dispersed by the wind," he said.

And there were many others: English ivy, wintercreeper, Callery pear.

For his latest study [published in the journal \*Ecological Restoration\*](#), he and his students examined the impact that nonnative, invasive plants are having on forests. He found that plants at arboretums and public gardens inadvertently can seed wild areas with nonnative plants.

"The nonnative, invasive species are very detrimental to native ecosystems," Conover said. "Once they get going in the [natural areas](#), they can take over and exclude the native plants and the animals that depend on them."

The example he used was the arboretum at Cincinnati's Spring Grove Cemetery, which has recorded more than 1,200 species of trees, shrubs, vines, and other plants over its 178-year history. The arboretum is home to 26 noteworthy, [mature trees](#) known as "champions" for being the largest or best representation of their species, including a national champion September elm tree and an Ohio champion American yellowwood.

Conover said the arboretum is home to many beautiful native plants, including an enormous white oak that was a sapling when the Mayflower

dropped anchor in Plymouth Colony. But Conover said some exotic plants at the arboretum are bearing fruit and seeds that are being carried by birds or the wind to neighboring woods.

Some exotic plants introduced to people's yards and gardens will never pose a problem. But others can become invasive.

"You don't know. It may take decades before they show any signs of being invasive, like the Callery pear tree," Conover said.

UC has documented thousands of native and nonnative plant specimens at Spring Grove in surveys by people such as Kate Nordyke, the cemetery's former herbarium specialist. Conover now serves in that role as a volunteer, documenting plants to create a record that future scientists can use to study changes in the region's biodiversity over time.

"Despite its proximity to the city center, there is a substantial amount of intact greenspace at Spring Grove and the surrounding community," Nordyke said. "This, in turn, supports a surprising diversity of plants and animals,"

Nordyke said she was alarmed by how easily some cultivated plants have spread to natural areas.

"Seeing this brought to light even more the importance of making informed choices about what we plant in our own yards and gardens," she said.

## **Invasives at city parks**

Conservation technician Drew Goebel at Cincinnati City Parks said one example is the cemetery's beautiful Amur cork tree, a state-record tree. Its seeds are sprouting in a park adjacent to the cemetery, Parker Woods

Nature Preserve.

"There, we found a population of 25 mature Amur cork trees. We took [core samples](#) and found that the oldest of them was 60 years old. The oldest six trees are male, but then a female tree sprouted there, and they began to take off," Goebel said.

And nine years ago, volunteers cleared acres of nonnative, invasive Amur honeysuckle from Cincinnati Park's Buttercup Valley Nature Preserve, creating fertile ground for another invasive species, Higan cherry, to take hold, he said.

"We found a big stand of them—50 or 60 that we pulled out all at once," he said.

"The reason we don't have more of these other invasives showing up is because another dominant invasive, Amur honeysuckle, was introduced in greater numbers and has already taken over that niche," Goebel said.

Conover said Spring Grove has several large Higan cherry trees native to Asia.

"The trees have attractive flowers in the spring, but the fruits are eaten by birds that disperse the seeds into the natural areas," he said.

David Gressley, director of horticulture at Spring Grove, said the cemetery is taking important steps to address the spread of invasive species. The cemetery stopped planting English ivy and wintercreeper, two common invasive species and began replacing them with native ground covers.

"This is the first full season where I had a crew dedicated to invasive plant control," Gressley said.

They were able to remove English ivy that covered most of a champion bald cypress tree. And they began removing porcelain berry, a vine from Asia known for its pretty blue and purple berries.

"We definitely put a dent in it," he said. "It's a continuous battle."

## **Educating consumers**

Why does it matter?

"People who are trying to protect natural areas and preserve native plants and animals are spending huge amounts of time and money to eradicate nonnative, [invasive plants](#)," Conover said. "The overuse of herbicides and mechanical equipment results in collateral damage to [native plants](#) and animals and to people."

Meanwhile, Conover said, people continue to buy and plant invasive trees, shrubs, and flowers for their yards instead of native alternatives, which benefit insects, birds, and other wildlife.

Study co-author and UC graduate Olivia Canterbury said she thinks more should be done to educate people about invasive species, particularly emerging ones that could present a problem. Her father, ornithologist Ronald Canterbury, teaches in UC's biology department.

"I was taken aback by the number of nonnative species I saw in Cincinnati's wooded areas," she said. "I think our best solution is to keep bringing awareness to the issue and encouraging planting native species."

City Parks' Goebel said forests dominated by invasive species become degraded over time in more ways than one. Amur honeysuckle shades out and kills native ground-hugging plants and vines, he said. These forests don't retain as much water or soil and provide far less wildlife

habitat than native forests with their large variety of species.

"It's not providing the same benefits to us, either, that a native forest would," Goebel said. "It's not going to sequester the same amount of carbon. It's not going to mitigate stormwater runoff like it normally would. It weakens the whole system when it's reduced to just a few species."

But Goebel said there's still time to do something about it.

"The good news is we're at the beginning of the problem. If we can convince people to act when the problem is small, that's the best time to intervene," he said. "When it gets to the stage where it's out of control like honeysuckle, you get to a breaking point where it's just infeasible to deal with it."

## **A national problem**

Co-author Samantha Al-Bayer, a UC graduate, is now working in Guam, a U.S. territory in the Pacific Ocean that has a long history of dealing with invasive species such as brown tree snakes that wiped out native birds.

"Invasive species hit a lot harder and faster on islands," Al-Bayer said. "This is due to the island's isolation and the lack of natural predators to control foreign species."

When the birds disappeared, many of the plants lost their best or only ways of dispersing seeds. On Guam, officials are vigilant to prevent brown tree snakes from reaching other nearby islands stowed away on airplanes or boats, she said.

"This is especially important for cargo being shipped to any of the other

Marianas islands since those islands are still free of brown tree snakes and still have beautiful endemic birds," al-Bayer said.

Conover said homeowners can do something about [invasive species](#), first by removing any on their properties. And they can choose to replace them with native trees, shrubs and flowers, he said.

"A ginkgo tree supports virtually none of our native insects or birds," he said. "But if you plant a white oak, there will be several hundred species of insects eating its leaves and providing food for birds along with its acorns.

"So plant an oak," he said.

**More information:** Denis G. Conover et al, Evidence for an Arboretum as a Point Source of Exotic Invasive Plants in Cincinnati, Ohio, *Ecological Restoration* (2023). [DOI: 10.3368/er.41.4.160](https://doi.org/10.3368/er.41.4.160)

Provided by University of Cincinnati

Citation: Plant survey finds dozens of nonnative invasive species thriving in southwest Ohio (2023, December 1) retrieved 29 April 2024 from <https://phys.org/news/2023-12-survey-dozens-nonnative-invasive-species.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.