

# Nonnative pear trees are showing up in US forests

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University of Cincinnati biology professor Theresa Culley is finding more Callery pear trees growing wild in Ohio forests. Some states like Ohio are phasing out the sale of the trees. Credit: Joseph Fuqua II/UC Creative Services

A popular imported tree that became a neighborhood favorite in the

1990s now threatens to crowd out native trees in some Eastern forests.

University of Cincinnati biologist Theresa Culley warns that for some parts of Ohio, it might be too late to stop the spread of the Callery pear. But she is urging other states to be vigilant before the invasive trees begin taking over their forests, too.

Culley presented her findings to botanists from around the world during the Society of Economic Botany conference this year hosted at UC's McMicken College of Arts and Sciences.

Like a lot of invasive species, the Callery pear, also known as the Bradford pear, was a problem of our own making, she said. Named for China historian Joseph-Marie Callery, who sent samples back to Europe in the 1800s, the tree captured the interest of American botanists a century later.

"At one point it was named urban street tree of the year," she said. "In the mid-1990s they started to show up in the wild. Now people have recognized they're starting to spread and it's a problem."

The original strain of pear tree was "self-incompatible," incapable of reproducing with other trees of its kind. They became a best-seller because they grew quickly, regardless of climate or soil conditions. The trees bloom pretty white flowers in the spring and have leaves that turn a vibrant purple in the autumn.

For years, the pears were a welcome addition to tree-lined streets.

"I call them the lollipop tree because they have this perfect shape," Culley said.

But homeowners soon learned the mature trees had weak trunks that split

easily and toppled in [heavy snow](#) or strong winds.

"The Bradford pear was a beautiful tree with a service life of about 15 years," said David Listerman, an Ohio landscaping broker and consultant. "But the canopy would get so heavy that in a windstorm, it would break in half."

The solution for growers was to introduce sturdier varieties. But besides their sturdy trunks, the replacement trees had something else: genetic diversity. Suddenly, the old pear trees could now cross-pollinate with the new varieties. Their fertilized flowers began producing fruit that birds carried off into the forest. A monster was born.

Today, Listerman says the wild newcomers represent an existential threat to [native trees](#). Their fallen leaves leach chemicals into the ground that can kill native rivals.

"Most invasives tend to have advantages over [native plants](#). The Callery pear holds its leaves late into the fall—right up to Christmas. It grows another month to two months longer, outcompeting native species that go dormant in October," he said. "They encroach along interstates where they need to have visual clearance. So highway departments wind up having to do more mowing or treating."

And while some birds will eat their fruit, pear trees don't provide as much benefit to wildlife as many [native species](#), he said.

Listerman serves with UC's Culley on the Ohio Invasive Plants Council, which helps the Ohio Department of Agriculture identify potentially harmful invasive species.



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Listerman said pear trees aren't just popping up along roadsides. Forest surveys are finding them in unexpected places far from the nearest subdivision. The wild pears grow in thick stands with unpleasant spur-like thorns.

On a recent field trip, Culley picked her way through the woods at the Harris Benedict Nature Preserve to show how resilient pear trees have become. UC owns the forested preserve about 15 miles north of the Uptown campus and uses it for some of its biological sciences programs and research. It's adjacent to the Johnson Preserve in Montgomery, Ohio.

The trail is lined with several memorials to victims of a 1999 F4 tornado that killed four people and destroyed nearly 130 nearby homes and businesses. The storm cut a 10-mile long swath of destruction that toppled hundreds of trees across two counties.

Where many of the stately older trees fell during the storm, Callery pears now thrive. Culley stopped under the canopy of their leafy, green foliage. The understory was covered in Amur honeysuckle, another invasive plant from Asia that has exploded in Eastern forests.

UC conducts plant surveys in the preserve every three years. The ongoing study suggests the pear trees may be replacing many of the ash trees that were killed by emerald ash borers, another invasive species.

"In the past, pears would be found along forest edges like along highways. We're now seeing pears invading the center of forests," Culley said. "Once they're established, it's really difficult to remove them. Their roots are deep so you have to cut them and spray them with glyphosate. A lot of land managers simply can't afford to get rid of them."

Invasive species are a huge problem around the world. The United States spends more than \$260 million fighting aquatic invaders alone, according to the Government Accountability Office. Nearly 1 in 3 species protected under the federal Endangered Species Act are at risk to invasive species, according to the U.S. Fish and Wildlife Service. Competition and predation from invasives is a leading cause of species extinction.

"A lot of states are concerned about losing the economic benefit of the Callery pear," Culley said. "So how do we reconcile the economic value of the Callery pear and its expense as an invasive?"

Ohio's Department of Agriculture is working with nursery growers to

phase out the Callery pear in the Buckeye State. Ohio lawmakers in 2018 passed a bill banning the sale or distribution of Callery pears by 2023 to give growers a chance to plant alternatives.

Ohio grower Kyle Natorp of Natorp's Nursery in Mason said homeowners have many alternatives to the pear. Fewer customers are asking for pear trees these days, he said.

"There are dogwoods, crabapples and cherry trees. As a business, we try to grow what the customer wants rather than try to build a market from scratch," Natorp said.

His nursery encourages planting a diversity of trees instead of the same kind, which some builders prefer for consistency.

"They're all the same shape and color and flower. It looks nice but it's not a good horticultural practice," he said. "One disease can take them all out."

Culley said foresters should be vigilant about the proliferation of [pear](#) trees before they become established.

"We're warning people in the northern part of the state that they're spreading," she said. "These [trees](#) were introduced with the best of intentions. They've sort of gone crazy now and we need to deal with it and learn from our mistakes."

Provided by University of Cincinnati

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