

Spotted lanternflies are hatching again. But how far do they spread each year?

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[Spotted lanternfly in Brooklyn Botanic Garden](#). Credit: Wikimedia Commons/Rhododendrites, [CC BY-SA 4.0](#)

Black-and-white spotted lanternfly nymphs about a quarter-inch long are starting to hatch in the region, hopping across decks, patios, and trees before they morph over the summer into flying Technicolor adults.

If you haven't seen them in your yard yet, it could only be a matter of time.

The [invasive pests](#) are turning out to be pretty mobile, either through hopping, flying, or hitching rides, according to a recent study in which Pennsylvania served as ground zero. One of the more unknown aspects of the spotted lanternfly has been how nimble it's been since being discovered in the U.S. in 2014 in Berks County.

Rachel Cook, an environmental analyst who was earning her master's degree at Purdue University in Indiana, released a study late last year on the movement of the spotted lanternfly. She had learned about the insect while spending a lot of time in Philly where her sister lives. It hadn't invaded Indiana—yet.

"I love the city; it's a great place to be," said Cook, who has since graduated and works in forestry. "That coupled with my interest in invasive species in general, in particular invasive insects, made the spotted lanternfly seem like a good place to start."

She and her coauthors sought to measure the annual movement of the insect, either on its own or by hitching rides on cars, trains or anything that moves. The team analyzed known locations of spotted lanternfly from 2014 to 2020, starting with Berks County. They pulled from 241,366 survey locations.

The information could be important to a vineyard owner watching nervously as the pest continues to establish itself in location after location.

The team published a research paper in December in *NeoBiota*, a peer-reviewed [online journal](#), that calculated the rate spotted lanternfly spread.

"We estimated a radial spread rate of around 40 kilometers (25 miles) per year," Cook said. "So that could be a whole county."

The numbers do not reflect how far a single bug can travel in a year but refers to the mobility of the species in establishing itself.

It's fast enough, coincidentally, that spotted lanternflies are now present in Indiana. And it helps account for how the pest has spread from Berks County to nine states altogether.

Pennsylvania lists 45 out of 67 counties under quarantine—meaning it's prohibited to transport the pest through landscaping or construction waste, firewood, grapevines, packing materials, recreational vehicles, and tarps. Eleven of those counties were added to the list this year.

Cook's research found that the species had made one "jump" of up to 355 kilometers (220 miles) into Mercer County in northwest Pennsylvania and could leap over whole counties, indicating that it moved that far most likely by attaching to vehicles or rail cars. Those types of long-distance jumps appear to be increasing, the researchers noted.

Spotted lanternflies also can spread rapidly because they will lay eggs almost anywhere and feed on up to 70 species of plants.

Brian Walsh, a spotted lanternfly expert at Penn State, was out in the field recently counting spotted lanternfly instars, the newly hatched bugs. Known as plant hoppers because of their ability to jump, spotted lanternflies are also proving to be good fliers when conditions are right,

especially in the fall when they are fully mature, Walsh said.

"I've seen them fly over a quarry pit and come across the other side," Walsh said. "And that was about four-tenths of a mile ... When they get good updrafts in the fall, they can ride on the thermals and get quite a bit farther. They fly, but they are clumsy fliers. They're not agile like a dragonfly."

Walsh said that "even if it's only 1,000 yards at a time, that adds up."

The pest, originally from China and Southeastern Asia, goes through various life stages, and colors, before emerging fully as a 1-inch long adult with wings in the summer.

Experts originally feared it could kill ornamental trees on a large scale, but that hasn't proved to be the case, though it does stress them by oozing sap. When they feed, spotted lanternflies excrete a sugary substance called honeydew that can encourage mold to grow that can damage plants.

However, it has proven to be deadly to its preferred host, *Ailanthus altissima*, known as the tree of heaven, and especially to grape vines. Tree of heaven is an [invasive species](#), so experts are not as concerned as they are with vineyards.

"I would say that the [grape growers](#) have gotten much better about how to manage it," Walsh said. "Because of that, we're not seeing entire vineyards lost like we had been worried about early on. But the growers have a higher cost in managing it."

Walsh says insecticides are an option for residents with infestations but cautions them to call a registered pest control person. Residents should be wary of using homemade concoctions they find recipes for on the

internet, though Penn State Extension does recommend use of a circle trap, a screen that creates a tunnel the bugs walk into.

"I know people think they can do everything naturally and on their own, but they can't," Walsh said. "It's troubling some of the things I've seen. And people don't understand the difference between insecticide and herbicide." (Insecticide kills bugs; herbicide kills plants.)

Pennsylvania has a spraying program, with the active ingredient of the insecticide, bifenthrin, which is highly toxic to fish and bees. So state officials are cautious in their approach.

Walsh said residents' indiscriminate use of insecticides could kill beneficial insects. And using homemade products could actually harm trees.

"Technically, homemade remedies are illegal in the state of Pennsylvania," Walsh said. "Some of them might seem benign. But they're not tested against the plants they're being used. Sometimes they can have unintended consequences."

More information: Rachel T. Cook et al, Spatial dynamics of spotted lanternfly, *Lycorma delicatula*, invasion of the Northeastern United States, *NeoBiota* (2021). [DOI: 10.3897/neobiota.70.67950](https://doi.org/10.3897/neobiota.70.67950)

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