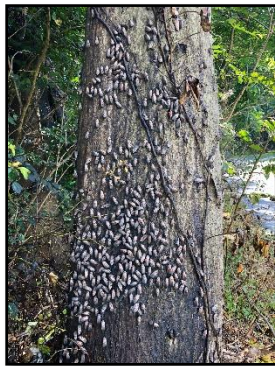


Spotted Lanternfly: Beat that Bug!



In 2014, an unusual, but beautiful insect was discovered in Berks County, Pennsylvania, and it wasn't long before residents of neighboring counties began to see the same bright flashes of red and spotted wings in their yards and parks. This insect, the **spotted lanternfly** (or SLF), *Lycorma delicatula*, is an invasive species of planthopper that was accidentally introduced to Pennsylvania from Asia and is rapidly spreading throughout PA's neighboring states: New York, Massachusetts, Connecticut, New

Jersey, Delaware, Maryland, Virginia, North Carolina, and West Virginia (see an updated map on the next page). It only took 5 years for the destructive pests to cross the Delaware River and make it all the way here to Duke Farms; a handful of individual adults were found in summer 2019. We hope that this lesson plan will allow you to learn not just the facts about these insects, but also how you can help us to protect our native environment!



Black mold on a tree trunk swarmed with SLF

So, why is SLF such a problem? Well, SLF are *not directly* dangerous to humans or animals, but they use their piercing and sucking mouthparts to feed on the sap of over 70 species of native hardwood and fruit trees (such as maple, black walnut, birch, and more) along with agricultural

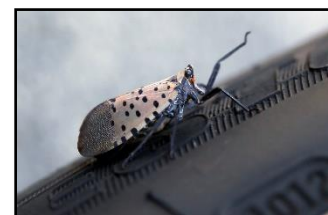


SLF swarming grape vines in a vineyard

crops such as grape vines, peach, and apple trees. They are known to swarm these trees and vines, consuming nearly all of their sap, but that's not all: as they feed, they secrete a sugary liquid, called honeydew, that falls onto the trunk and base of the tree, on which black sooty mold develops, killing the

tree. [Penn State University](#) estimates that, if not contained, SLF can destroy about **\$324 million of PA's economy alone**...that's not including what it does in neighboring states!

SLF are **planthoppers** that don't fly very well, but they are very good hitchhikers! They normally leap from plant to plant, but they will happily catch a ride on anything moving past them, such as a car or truck, which is how they've managed to spread so far so fast! They cling to commercially transported items such as stones, logs, building materials, and even residential items like camping equipment, bikes, or trailers. [Some affected states have recommended checklists](#) to use if traveling between **quarantined** areas and areas with fewer or no SLF, to avoid further spreading!



It only takes a few moments to check all around your car for hitchhikers!

In the early fall, they lay their highly camouflaged **egg masses** on anything they can cling to, such as tree trunks, boulders, inside wheel wells on cars, fence posts, etc. When these egg masses hatch in the

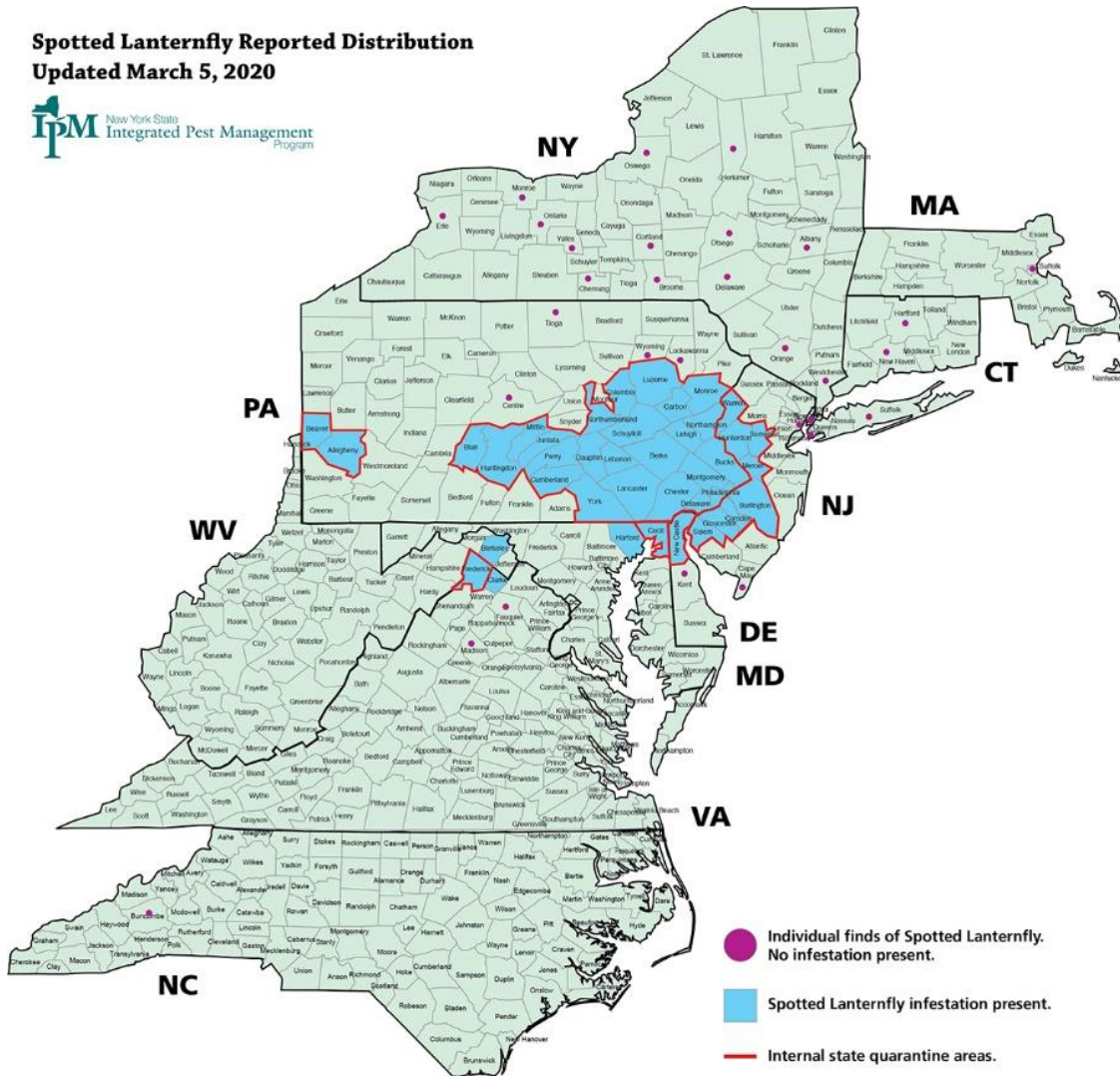


(right to left) Adult laying an egg mass, an egg mass camouflaged on a tree, black first stage nymph and red late stage nymph.

following May, the black and white spotted **nymphs** start feeding on whatever plant life is nearby. As they mature through the summer, they become red and white spotted, *so be careful to not confuse them with a harmless ladybug!*

Finally, they become **adults**

in late summer, continuing their attack on the forest and field crops, until they lay their own egg masses and the terrible cycle continues.



"Quarantine areas" separate high infestation areas from where only a few individual SLF have been found. It's not a hard line of separation, but these areas do require certain inspections of commercial transport, etc.



You can use anything to destroy the egg masses!

A lot of research is being done around the country about controlling SLF, but the good news is that **there are so many ways you can help from home**, especially during this time of self-isolating and reduced travel! Above all, it's important to document (with a photo if you can) and report any sightings of these bad bugs, so check out this [list of phone numbers and emails to contact](#)! If you're finding this packet during the spring/early summer, go on a scavenger hunt and start searching for the egg masses! You can destroy these by scraping them off and into a container with hand sanitizer or alcohol, then disposing of them. **DO NOT** just scrape them onto the ground, this will not kill the eggs! During mid to late

summer, why not try [building this do-it-yourself trap](#) and seeing how many nymphs and adults you can snag? (*Disclaimer: this trap was not created by Duke Farms and is not a method used on Duke Farms property, this link is to the Penn State Extension*) **That being said, PLEASE BE CAREFUL to avoid harming any of our other insect friends! Luckily for us, SLF are rather flashy and distinct, so we hope you take care to leave our native insects be!**

Spotted Lanternfly Question + Answer

1. Where is the spotted lanternfly originally from?

Answer: Asia.

2. Where was the spotted lanternfly first found in the USA?

Answer: Berks County, Pennsylvania.

3. Are spotted lanternflies directly dangerous to humans?

Answer: No, they do not bite or sting.

4. Why are spotted lanternflies such a terrible pest?

Answer: They destroy local forests by killing hard wood and fruit trees and cause millions of dollars of damage to agricultural fields, such as vineyards.

5. Why are their sugary secretions dangerous for trees?

Answer: Since it is sugary, when it coats a tree trunk it allows mold to grow and can harm or kill the tree.

6. True or False: spotted lanternflies' large wings make them great fliers.

Answer: False: They are known as planthoppers and jump very far to reach new trees.

7. What types of trees are susceptible to SLF?

Answer: Hardwood and fruit trees, including but not limited to birch, apple, peach, black walnut, maple, etc.

8. If you find a SLF egg mass, what should you do?

Answer: Report the sighting. Scrape it off with a card (or something similar) into a container of hand sanitizer or alcohol and dispose of it.

Extensions

[PA Dept. of Ag. Spotted Lanternfly Fun Activity Book](#) is a downloadable and printer-friendly activity book for kids to reinforce their knowledge of SLF and ways they can help prevent its spread. It includes activities such as coloring sheets, a word search, a maze, a small board game, and more!



Learn About the Tree of Heaven

An important factor in the SLF infestation is the fact that an invasive *plant* species happens to be SLF's native food source; [the Tree of Heaven](#), or *Ailanthus altissima*, was brought to the USA from Asia in the 1700's as decoration, but because it grows so quickly and has no predators, it easily overwhelms many of our native tree species. You may recognize its large, seemingly tropical leaves blowing in the wind along the side of highways and other disturbed areas.



Researchers are hoping to use controlled destruction of *Ailanthus* to also target SLF: almost all of the *Ailanthus* in a specific area are killed, and the remaining one or two trees are selectively treated with insecticide, so that when SLF inevitably feed on those remaining trees, they are killed.

Can you find *Ailanthus* in your neighborhood? How about some maples or black walnuts? If you do, take a look to see if you can find any signs of SLF and then do your part to report it and destroy it!