

Prevent the Spread of...

Spotted Lanternfly and Emerald Ash Borer

Spotted Lanternfly



actual size

What is it?

The spotted lanternfly (SLF) is an introduced, invasive pest that feeds on over 70 plants, including important forest species, community trees, and agricultural crops. The name lanternfly is misleading; SLF have little in common with any type of fly. Also, adults with their wings spread are often misidentified as moths. SLF are planthoppers (true bugs), and are closely related to cicadas, brown marmorated stink bugs, aphids and leafhoppers. SLF is native to Asia. It was first found in North America in 2014, in Pennsylvania. It is believed to have arrived on shipments of stone from China. Since then, SLF infestations have been detected in several states surrounding Pennsylvania.



adult with wings closed

SLF are invasive and can spread rapidly when introduced to new areas. While the insect can walk, jump using their powerful hind legs, or fly short distances, its long-distance spread is facilitated by people who unknowingly move items that contain egg masses, such as firewood. SLF also spreads through nymphs and adults hitchhiking on clothes, gear, or vehicles. If allowed to continue to spread in the United States, this pest could damage the country's grape, orchard, and logging industries.

Life Cycle and Damage

Adult female SLF lay their eggs on smooth surfaces such as bricks, stones, plants, and outdoor furniture. Egg masses are yellowish-brown in color and covered with a gray, waxy coating. Each egg mass can contain up to 60 eggs. Nymphs hatch in Spring and early Summer. Nymphs are black with white spots in their early stages of development and then turn red just before becoming adults. Adult SLF have a wingspan of about 2 inches. The forewings are pinkish-tan with black spots and the hindwings are red with black spots. When at rest, adults are approximately 1 inch long and 1/2 inch wide.



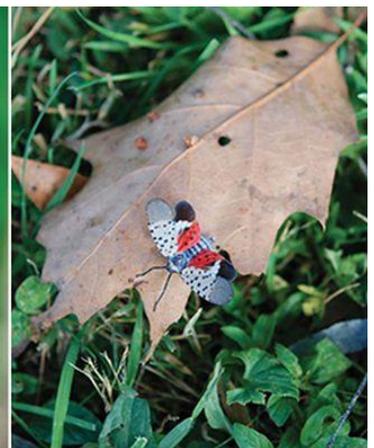
egg mass



early nymph



late nymph



adult

SLF adults and nymphs all have piercing-sucking mouthparts which allow them to drill into the phloem (living tissue) of a plant to feed directly on the sugary sap. This can reduce photosynthesis, weaken the plant, and eventually contribute to the plant's death. As the adults feed, they excrete sticky, sugar-rich fluid (honeydew) which has a fermented odor. This fluid can build up on plants and on the ground underneath infested plants, causing sooty mold to form. SLF can weaken trees and make them susceptible to other pests and diseases.

Signs and Symptoms

SLF adults and nymphs can be seen gathering in clusters on plants and trees. Other signs of SLF infestation include oozing sap, mold growth from honeydew, wilting, leaf curling and plant dieback.



cluster of adults



mold growth



leaf wilting & curling

Prevention

- Do not transport firewood.
- Spotted lanternfly is a hitchhiker. Be sure to inspect for the pest on clothing, backpacks, outdoor furniture and vehicles for hitchhiking nymphs and adults.
- Regularly inspect your trees, plants, and smooth surfaces in your yard for signs of this pest. Kill any nymphs and adults and scrape and dispose of egg masses.



oozing sap



plant dieback



Emerald Ash Borer



What is it?



EAB adult

Some campers think that it is easier to bring their own firewood to a campsite rather than collect local wood. It may be easier but it can have major effects on the local forest. One particular insect transported by firewood is a small insect called the emerald ash borer, also known as EAB. EAB is responsible for the death of millions of ash trees in North America. EAB is an introduced species of beetle that is native to Asia. It is thought that EAB arrived in the United States on solid wood packing material carried on cargo ships or planes. It was first found in the United States in 2002 in Michigan and has since been found in several states including Pennsylvania where it was first detected in 2007. EAB is known to infest all species of ash trees in North America



actual size

Life Cycle and Damage



“S” galleries

Adult EAB feed on the trees' leaves but do very little damage to the trees. The primary source of damage is EAB larvae. The adults lay their eggs between layers of bark or in crevices in the bark. The larvae hatch in about one week and bore into the tree where they feed on the inner bark, disrupting the trees ability to transport water and nutrients. As the larvae feed they create “S” shaped galleries. The larvae dig a pupal chamber in the fall where they over winter. Pupation occurs in late spring and the adults emerge through “D” shaped exit holes in May and early June. Adults remain active through the end of summer.



“D” exit holes

Signs and Symptoms

New EAB infestations are difficult to detect and may not be seen for up to three years. Symptoms of an infestation include upper crown dieback, yellow leaves or sprouts that come directly out of the trunk, and vertical bark slits. EAB infestations can cause girdling and death of branches and entire trees. Girdling is damage to the tissues that carry food and water the entire way around the tree. Signs of an infestation can be recognized by identifying adult beetles or “D” shaped holes on the outside of the bark. Adult EAB are bright metallic green in color, approximately ½ inch long, and have flattened backs and purple abdominal segments beneath their wing covers. Infestations can also be detected by identifying larvae or “S” shaped galleries beneath the bark. EAB larvae are creamy white and legless. Another sign of a potential infestation is excessive woodpecker activity. Several species of woodpeckers feed on EAB larvae and pupa, so finding an ash tree with large size or large quantities of woodpecker holes could mean that it is infested with EAB.



crown dieback



trunk sprouts



bark slits



woodpecker damage

Prevention

- **Leave firewood at home!** Don't bring it with you when camping or traveling.
- Buy firewood near your destination, buy only what you need, and burn it completely before leaving.
- Do not take wood collected in the forest home with you.
- If you have already brought wood with you, burn it all before leaving. Do not take it home and do not leave it for the next person.

