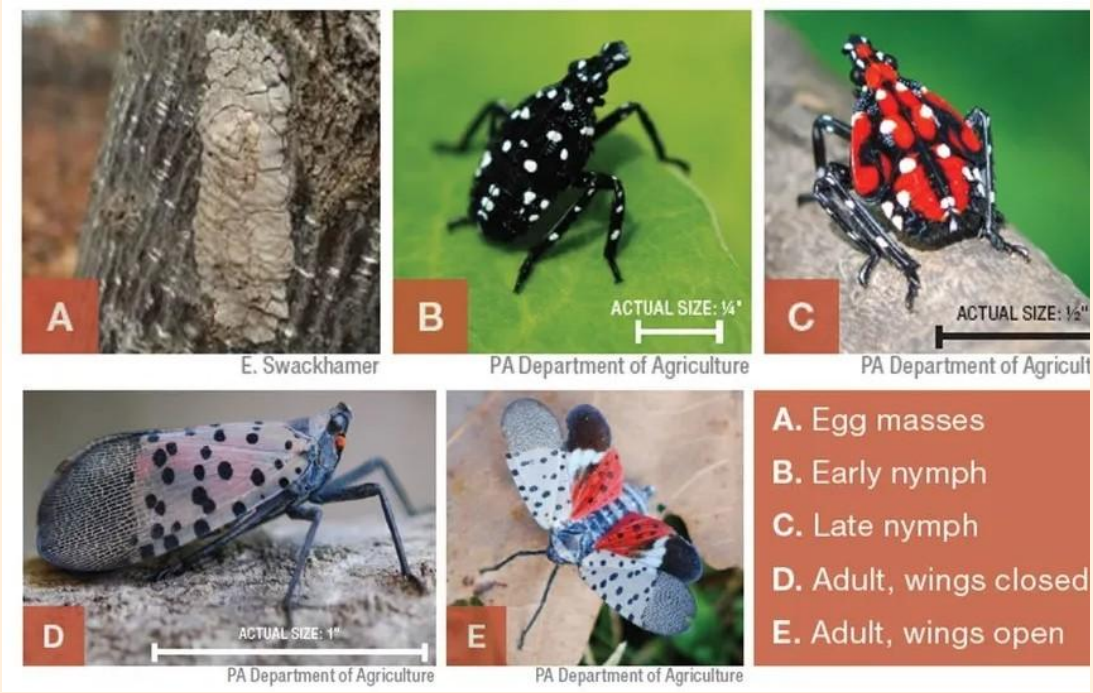
Garden Foe:

The Spotted Lanternfly

By Greg Ose,
Entomologist

Lycorma delicatula, the spotted lanternfly (SLF), is an invasive hemipteran (“true bug”) insect native to Asia. First detected in the United States in Pennsylvania (2014), SLFs have spent the last decade slowly spreading across the east coast, with more reports of activity emerging in the Washington, DC area. As with most introduced species, SLFs have been accidentally transported via shipping routes. Efforts to quarantine them became necessary given their threats to agriculture; especially grapevines, fruit trees, and hardwood trees.

We continue to receive numerous reports of spotted lanternfly activity and questions related to their life histories and management. Eventually, SLFs will endure as locally established pests that recur annually, hopefully in fewer numbers as predators and diseases adapt to their presence. Until then, here is some information to help understand this newly invasive species.



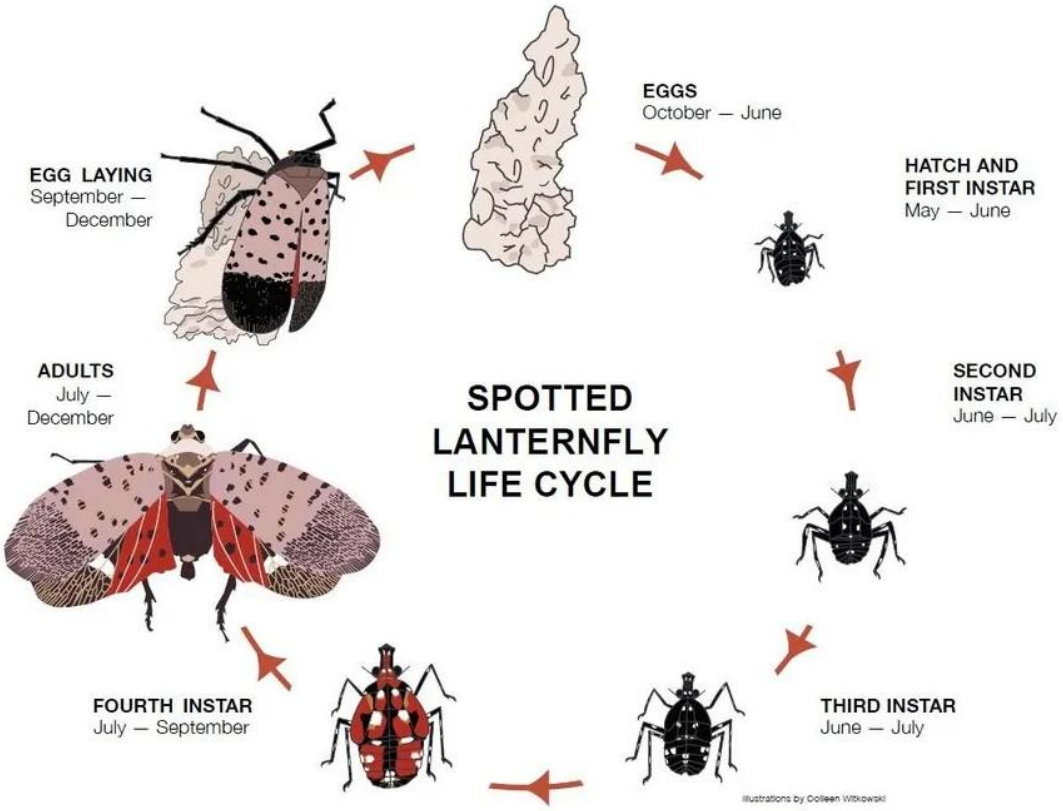
Familiarize yourself with the various stages of spotted lanternfly for accurate identification.

Image courtesy: Penn State Extension

- **Identification:** Adult lanternflies have distinctively spotted red and black wing colorations and black and white abdomens, making identification easy. While the adult stage is very recognizable given their wings spots, early-stage nymphs are similarly vividly colored black with bright white spots. Later nymphal stages turn bright red with white spots before maturing into adults.
- **Life Cycle:** SLFs undergo gradual metamorphosis with three stages of growth, developing from egg (egg mass) to nymphs to adult. SLFs undergo four different nymphal stages and color alterations before molting into adults.
- **Feeding:** As with other hemipterans, sap-sucking lanternflies feed using piercing-sucking mouthparts. All stages of nymphal and adult SLFs feed on plant and tree sap. SLFs then excrete excess liquid called honeydew, covering surfaces of leaves and bark in a layer of the sticky excretion. Honeydew promotes the growth of sooty mold, a black velvety fungus that interferes with plant photosynthesis and eventually cultivation. This sap-

feeding behavior weakens the plants, potentially leading to reduced yields in crops, stunted growth, and sometimes plant death.

- **Spread:** SLFs continue to spread rapidly across the northeastern United States and parts of the mid-Atlantic. SLFs often hitch rides on shipped items (e.g., plants, firewood) as nymphs, adults, and egg masses, but SLF dispersal benefits from any form of transportation, such as vehicles, trains, planes, and boats. While not easily containable, SLFs are treatable and in severe cases, select treatments are warranted.
- **Control Efforts:** Various methods are utilized to help monitor and manage lanternflies, including public education campaigns related to identification and non-chemical removal, and occasional insecticidal treatments (both topical and systemic). "Trap planting" has been attempted using Ailanthus spp., relying on one of SLF's preferred host plants to attract them to specific areas for easier removal.
- **Economic Impact:** The spotted lanternfly impacts industries including agriculture, forestry, and wine production, causing economic losses in those sectors.



Now is the time to look for and remove egg cases from trees, patio furniture, sheds, bricks and stones, or potentially any other smooth surfaces around your home.

Image courtesy: PSU Extension

What can you do?

Spotted lanternflies will eventually drift into obscurity and become merely annual nuisances, so generally, doing nothing is the recommended option. Despite the economic impacts that have occurred to various industries, they have not caused significant damage to ornamental plants in a garden setting.

Trees that contain spotted lanternflies do not need to be replaced merely due to the presence of these insects. While the spotted lanternfly is an invasive species that feeds on the sap of various trees and plants, it usually does not kill mature trees outright. While SLFs can cause stress to a tree by weakening it over time, in many cases trees can recover from this damage, especially given proper management and control measures (e.g., watering, fertilizing, selective pruning) that are used to reduce local lanternfly populations. Replacing trees is unnecessary unless damage is severe and beyond recovery.

- **Regular Inspections:** Preventing transportation of these insects can help, although is sometimes unrealistic given SLF's current geographic spread. However, it's still recommended to check your car for insects or egg cases, and certainly check any plant material, if you are traveling out of your county or state. More simply, inspect your trees and plants for signs of this pest, particularly at dusk and at night when the insects tend to gather in large groups on trunks and stems, so you know if they are present in your home garden.
- **Preventative:** Start by checking your garden or property for tree-of-heaven (Ailanthus altissima), the host tree for SLF, and remove it. Tree-of-heaven does look similar to other trees, such as Sumac, so be sure to double check you are identifying the correct species. If you have any desirable plants that you do not want to be harmed, place a fine-mesh netting over the plant, ensuring the sides and bottom are tightly secured.

- **Destroy Eggs and Adults:** Look for egg masses on your trees, on bark, brick, and stone walls, and generally smooth surfaces. This insect overwinters in the egg stage, so if you find eggs, physically smash them and scrape them into a bag or container filled with hand sanitizer or rubbing alcohol. A bucket of soapy water will also work. Use sealable bags or tie bags securely, then dispose of them in the trash. For adults, squish or swat any that you see on the ground or hanging out on your plants. They can also be sprayed off with a jet of water.
- **Treatment:** Currently, most recommendations are to not treat for SLF. Many natural predators are beginning to help control these pests, and as stated previously, they are mostly just a nuisance pest in most home gardens. Though there are topical and systemic pesticides that treat SLF, most of them will also kill other insects, including beneficial pollinators and predators. The risk of harming those insects is not worth it to treat a nuisance pest. When in doubt, reach out to your local extension agency for advice before reaching for the spray bottle.

Use a stiff card to scrape off egg cases into a plastic bag filled with

a little hand sanitizer or rubbing alcohol. Then throw the bag in the trash.

Image courtesy: University of Maryland Extension

What is Smithsonian Gardens doing?

Though agencies are still asking for locals to report sightings to record population spread, SFL presence has been well documented in the area, so we are no longer reporting. When adults are spotted in the gardens, our horticulturists try to kill them.

Egg cases have been spotted on a few trees, so we will also be making attempts to remove the eggs before they hatch in the spring. At this time, we are not treating with any pesticides in an effort to protect all the beneficial insects that are also living in our gardens.

While the presence of spotted lanternfly should not be ignored, it is no longer cause for widespread alarm. However it is still useful to help stop their spread whenever possible (stomping on adults and scraping eggs cases), just keep the spray bottle on the shelf. For the latest information and protocols, check with your local extension agency.

Spotted lanternfly egg cases on sumac tree branches in one of our gardens. Egg cases can be difficult to spot since they often blend in with the surface they're attached to or just look like patches of mud.