



Spotted Lanternfly: A Potential Threat to Forests and Agriculture in Georgia

Elizabeth McCarty¹ and Lynne Womack²

¹Warnell School of Forestry and Natural Resources, University of Georgia

²Georgia Forestry Commission

WHAT IS THE SPOTTED LANTERNFLY?

The spotted lanternfly (SLF) (*Lycorma delicatula*) (Figure 1) is a planthopper that is native to Asia and has a broad plant host range of over 100 species. SLF can impact many different habitats ranging from agricultural lands to forests to residential areas. Despite the name, SLF is not a “fly” but is a “true bug” and more closely related to a stink bug than a fly. SLF was first detected in the United States in Pennsylvania in 2014 and has now spread to many states in the United States.



Figure 1: *Spotted lanternfly adult*

Photo credit: Elizabeth McCarty, University of Georgia

WHY IS SLF A PROBLEM?

This invasive species feeds on the sap from the stems and leaves of plants. Its feeding can weaken plants, making them more susceptible to other stressors. SLF also feeds on many economically important plants like grapevines and apple, peach, and plum trees. It also feeds on many other native tree species, such as beech, birch, black gum, maples, oaks, and sycamore. Tree of heaven (*Ailanthus altissima*) (Figure 2) is an invasive plant that is the most preferred SLF host, and it is distributed throughout much of the United States, including Georgia.

In addition to plant damage, SLF can also be a problem for homeowners, the general public, and the nursery industry. SLF excretes honeydew, a sugary waste fluid, that falls onto plant parts and the ground. A black mold called sooty mold then grows on the honeydew which is visually unpleasant for homeowners and difficult to remove. Large numbers or swarms of SLF on ornamental plants, trees, and buildings (Figure 3) can be unsightly and although SLF do not bite or sting, the public can be distressed by their presence, egg masses, and clumsy flight behavior. In addition, the nursery industry faces added insecticide and labor costs from removing SLF life stages before selling or transporting plant materials.

WHERE IS SLF IN THE UNITED STATES?

SLF range in the United States has expanded to several states since it was first detected in Pennsylvania in 2014. Southern states include Virginia, West Virginia, and most recently, North Carolina, which confirmed its first SLF infestation in June 2022. SLF is not currently in Georgia, but we must be on the lookout to detect SLF populations early. Early detection is important to managing the size and spread of SLF populations.

SLF can be moved as immatures, adults, and most often as egg masses attached to plants and plant material, firewood, vehicles, agricultural products, and other materials. It is important to check outdoor materials before moving them from one location to another.

WHAT IS THE SLF LIFECYCLE?

SLF spends most of its lifecycle in the egg stage; it overwinters in egg masses. Young nymphs emerge from egg masses in the spring. There are four nymphal (immature) life stages, or instars, before SLF develop into adults in mid-summer. SLF spends over 4 months as adults and begins laying eggs during the fall. Females lay egg masses on surfaces like tree bark, stone, shipping pallets, cars, outdoor furniture, etc. Egg masses laid on items that can be moved makes it easier for humans to spread SLF more quickly than it would naturally disperse on its own. In addition, tree of heaven is common along roads and other corridors increasing the likelihood of successful population establishment for SLF as it spreads.



Figure 2: Tree of heaven
Photo credit: Richard Gardner, Bugwood.org



Figure 3: Adult SLF aggregated on a tree trunk
Photo credit: Richard Gardner, Bugwood.org

WHAT DOES SLF LOOK LIKE?

The young SLF nymphs (1st – 3rd instars) are up to ¼ inch long and have black bodies with white spots (Figure 4). Older SLF nymphs (4th instar) are up to ½ inch long. They still have a generally black body with white spots, but there is distinct red coloration on their back (Figure 5). Adult SLF are 1 inch long and ½ inch wide with their wings closed. The front wings are generally grayish-brown with black spots, and the back wings have brown, red, and light-colored patches (Figure 1). Recently laid egg masses appear whiteish, but they will turn to a grayish muddy appearance as they age (Figure 6).

HOW ARE SLF POPULATIONS MANAGED?

Quarantines restrict movement of any SLF life stages, packing materials, construction debris, and other items that could possibly spread SLF. SLF quarantines have been put in place by some state Departments of Agriculture and restrictions may vary among states. There is currently no federal or Georgia state SLF quarantine. However, moving SLF infested items into the state increases the likelihood of SLF becoming established in Georgia.

Some SLF management programs include tactics such as SLF surveys, scraping egg masses, sanitation (chipping/incinerating waste), tree banding, insecticide treatment, and herbicide use for tree of heaven. These management tactics are used to monitor, reduce, or slow the spread of SLF populations.

Insecticide management using contact insecticides can be effective for some edible crops, however SLF can often quickly repopulate treated plants. This requires SLF pest management programs in vineyards to make frequent late-season contact insecticide applications, increasing the pest management costs for farmers. Systemic insecticides can be used to protect tree species and some crops. As SLF is not currently in Georgia, there is no need to consider insecticide options yet. The Georgia Department of Agriculture in cooperation with the Georgia Forestry Commission and University of Georgia will provide SLF management guidance should SLF populations become established in Georgia.

WHAT CAN I DO IF I SUSPECT A SLF POPULATION?

Please contact your local UGA Extension Office if you suspect a SLF population in your area (<https://extension.uga.edu/county-offices.html>). Identifying a SLF population early is critical to reducing SLF impacts in Georgia.



Figure 4: *Early instar SLF nymphs*

Photo credit: Lawrence Barringer, Pennsylvania Department of Agriculture, Bugwood.org



Figure 5: *Fourth instar spotted lanternfly nymph*

Photo credit: Elizabeth McCarty, University of Georgia



Figure 6: *Spotted lanternfly egg mass*

Photo credit: Lawrence Barringer, Pennsylvania Department of Agriculture, Bugwood.org



Header created by Cassandra Waldrop, University of Georgia.

LITERATURE CITED

- Cornell University. 2023. Spotted Lanternfly. New York State Integrated Pest Management Website. <https://cals.cornell.edu/new-york-state-integrated-pest-management/outreach-education/whats-bugging-you/spotted-lanternfly> (accessed 9 January 2023)
- Leach, H., D. J. Biddinger, G. Krawczyk, E. Smyers, and J.M. Urban. 2019. Evaluation of insecticides for control of the spotted lanternfly, *Lycorma delicatula*, (Hemiptera: Fulgoridae), a new pest of fruit in the Northeastern U.S. Crop Protection 124: 104833.
- Oten, K. 2022. Spotted lanternfly confirmed in North Carolina. North Carolina Cooperative Extension. North Carolina State University. <https://forestry.ces.ncsu.edu/2022/06/spotted-lanternfly-confirmed-in-north-carolina/> (accessed 9 January 2023)
- Urban, J.M. 2020. Perspective: Shedding light on spotted lanternfly impacts in the USA. Pest Management Science 76: 10 – 17.
- Urban, J.M., D. Calvin, and J. Hills-Stevenson. 2021. Early Response (2018–2020) to the threat of spotted lanternfly, *Lycorma delicatula* (Hemiptera: Fulgoridae) in Pennsylvania. Annals of the Entomological Society of America 114: 709 – 718.

SUGGESTED CITATION:

McCarty, E. and L. Womack. 2023. Spotted Lanternfly: A Potential Threat to Forests and Agriculture in Georgia. Georgia Forestry Commission and University of Georgia Warnell School of Forestry and Natural Resources, WSF-NR-23-7A. 4 Pages

The University of Georgia Warnell School of Forestry and Natural Resources offers educational programs, assistance, and materials to all people without regard to race, color, national origin, age, gender, or disability.

The University of Georgia is committed to principles of equal opportunity and affirmative action.