



# Forest Facts:

## Spotted lanternfly (*Lycorma delicatula*)

### Overview

- Spotted lanternfly (SLF) is an emerging invasive species that was first detected in the eastern United States in 2014 and is spreading rapidly through trade and travel. The risk of SLF becoming established in the Pacific Northwest is very high.
- SLF feeds upon a variety of host plants with significant damage to grapes, hops, black walnut seedlings and nursery crops. It has the potential to become a major pest of cherry and apple trees.
- SLF feeding contributes to plant stress by wounding trees and shrubs, making them susceptible to other pests and diseases.
- SLF feeding produces sticky droppings which can attract additional pests and promote the growth of mold under infested plants. SLF is a nuisance pest in urban and residential areas.
- Although dead SLF adults and egg masses have been observed in cargo and goods shipped to Oregon, no populations are known to occur in the state. Report suspect SLF to the state's invasive species hotline: <https://oregoninvasiveshotline.org/>



Credit: SLF adult by Emelie Swackhamer, Penn State University

### Background

Spotted lanternfly (SLF) is an invasive insect pest that has emerged in the eastern United States, feeding and causing damage on a wide variety of plant species. SLF is native to Asia and was first detected in Pennsylvania in 2014. As of 2025, it has spread long distances to 18 eastern states and the District of Columbia. SLF lays egg masses on goods and vehicles which are transported long distances through human activity. In the U.S. and South Korea, it has caused significant economic damage to grapes, hops and apples and is a nuisance pest in residential areas. It has affected timber and agricultural industries

through various quarantine measures that aim to prevent the spread of hitchhiking egg masses to new areas.

### Host range

Over 60 species of plants have been documented as host plants for SLF. Plant mortality from feeding has been observed in tree-of-heaven, grapes, and black walnut seedlings. As the insects grow and develop, different plants species become favored for feeding by SLF. For instance, grapes are particularly attractive to certain immature stages while various broadleaf trees are preferred by adults. Additional plant species are likely to be added to the host list as SLF expands its range in North America.



Major groups of trees and shrubs that are associated with SLF:

Plants fed upon by SLF	Notes
Tree-of-heaven ( <i>Ailanthus altissima</i> ) (exotic weed)	Highly preferred host plant for egg-laying and all nymphal stages. Highly preferred by congregating adults in the fall.
Birch ( <i>Betula</i> sp.)	Preferred for egg-laying, 4 <sup>th</sup> nymph stage & adults
Cherry, plum ( <i>Prunus</i> sp.)	Preferred for egg-laying
Dogwood ( <i>Cornus</i> sp.)	Favored by 1 <sup>st</sup> nymph stage
Roses ( <i>Rosa</i> sp.)	Favored by 1 <sup>st</sup> & 2 <sup>nd</sup> nymph stages
Grapes ( <i>Vitis</i> sp.)	Favored by 2 <sup>nd</sup> & 3 <sup>rd</sup> nymph stages
Walnut ( <i>Juglans</i> sp.)	Favored by 4 <sup>th</sup> nymph stage
Willow ( <i>Salix</i> sp.)	Frequently fed upon by 4 <sup>th</sup> nymph stage and adults
Maple ( <i>Acer</i> sp.)	Frequently fed upon by adults
Alder ( <i>Alnus</i> sp.)	
Oak ( <i>Quercus</i> sp.)	
Ash ( <i>Fraxinus</i> sp.)	
Poplar ( <i>Populus</i> sp.)	
Elm ( <i>Ulmus</i> sp.)	
Apple ( <i>Malus</i> sp.)	
Pear ( <i>Pyrus</i> sp.)	
Hops ( <i>Humulus lupulus</i> )	
Blackberry ( <i>Rubus</i> sp.)	

### Description and life cycle

Adult SLF are large (1" or 2 cm) and have very distinct markings on the wings and bodies. When folded, only the beige and black mottled forewings are visible, while hindwings have red patches. Adults are more likely to walk than fly and can jump to avoid predators.

Sticky brown egg masses are laid in the fall on the surfaces of trees, buildings, vehicles, outdoor items and other miscellaneous materials that can unknowingly be transported to new locations.



Credit: Spotted lanternfly adult by Lawrence Barringer, Pennsylvania Department of Agriculture

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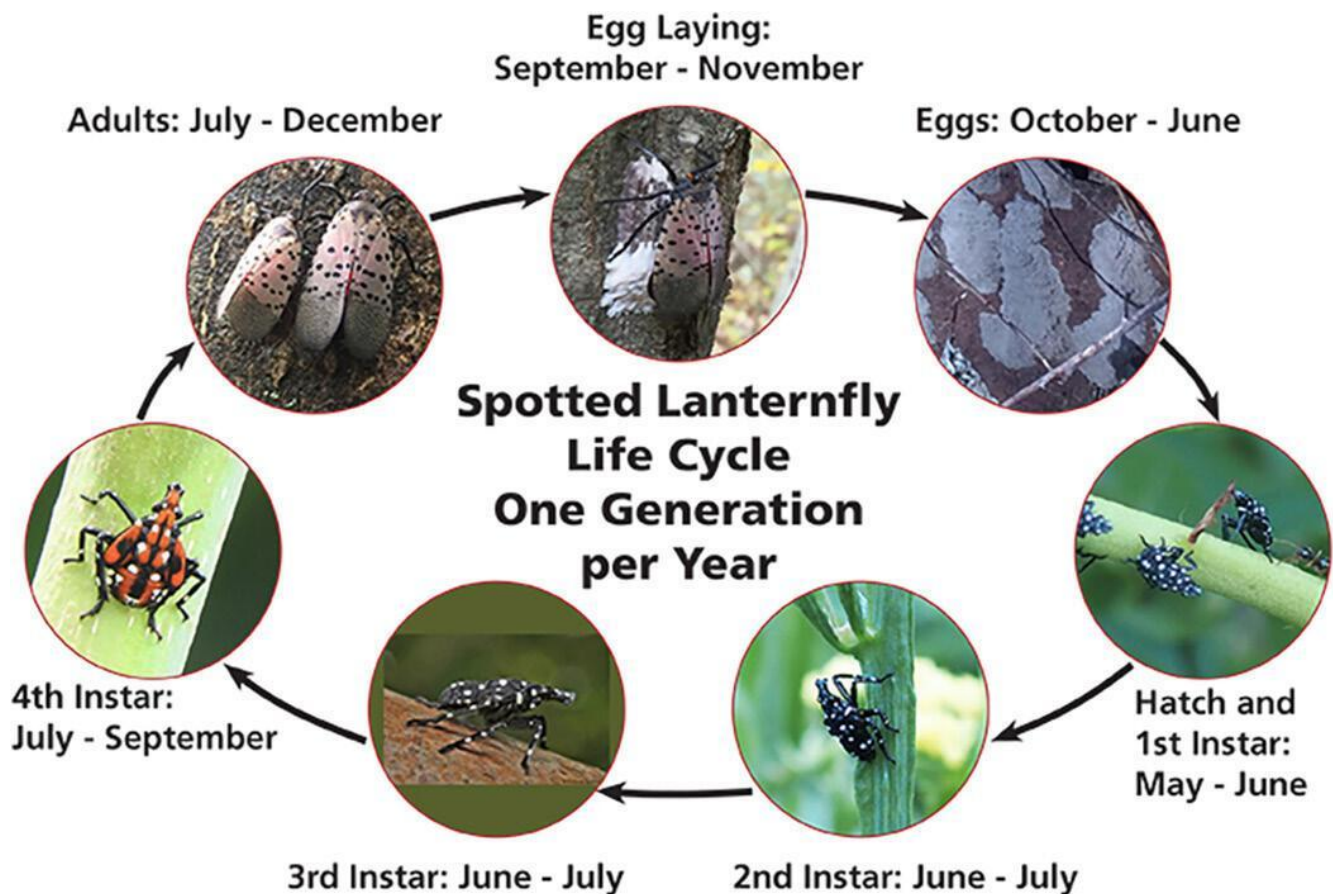




Credit: Spotted lanternfly egg mass by Kenneth R. Law, USDA-APHIS

In the eastern United States, eggs hatch beginning in May. SLF undergoes four stages of nymphs before becoming an adult. The 1<sup>st</sup> stage nymphs are small (1/8" or 3 mm). By the time nymphs reach the 4<sup>th</sup> stage, they are 1/2" (1 cm) long. Younger nymph stages are black with white spots while the 4<sup>th</sup> and last nymph stage is red with black and white markings. Adults are present July through December.

SLF is a planthopper in the Family Fulgoridae. Like all planthoppers, adults and all nymph stages of SLF use their piercing mouth parts to feed on sap of various trees, shrubs, and herbaceous plants. SLF individuals change their preferences for plant species as they develop from nymphs to adults. SLF individuals begin to form large groups in later life stages with adults and 4<sup>th</sup> instars seeming to choose a single tree where they gather and feed in large numbers for several weeks in the fall and early winter. SLF cannot bite or sting.



Credit: Egg laying, hatch, adults, 1st and 2nd instar by Emelie Swackhamer, Penn State University; eggs by Lawrence Barringer, Pennsylvania Department of Agriculture; 3rd instar by Dalton Ludwick, USDA-ARS/Virginia Tech; 4th instar by Richard Gardner



Large numbers of nymphs or adults can cause plant mortality in grapevines, tree-of-heaven and black walnut seedlings. SLF feeding can cause significant damage to various perennials and annuals. Although SLF does not kill mature trees, high levels of feeding cause wounds where plant disease and other insect pests can attack, leading to increased plant stress and decline.

SLF is a nuisance pest in residential areas because it produces “honeydew” – a sticky, sugary excrement that constantly rains down onto plants and other surfaces, like decks, patios and vehicles. The honeydew promotes the growth of sooty mold and attracts other insects like ants and wasps, which can become nuisance pests on their own. High levels of sooty mold can kill understory plants by blocking sunlight and stopping photosynthesis. For some people, sooty mold can trigger allergic reactions including sneezing, coughing, and watery eyes.

## Management

### Reporting

SLF is not known to occur in Oregon or the PNW but confirmed reports of dead insects and a single egg mass have been received by Oregon officials. Become familiar with SLF features and make a report on the state’s invasive species hotline for suspected discoveries of any life stage of SLF. With one or two good photos of SLF nymphs, adults or egg masses, entomologists can make a positive identification of SLF. Report suspected SLF to Oregon’s Invasive Species Hotline: <https://oregoninvasiveshotline.org/>

### Survey and monitoring

Survey and monitoring for SLF include observing preferred host plants for eggs, nymphs and adults. Specialized “circle” traps can be used for monitoring and detecting SLF but these traps are only useful for monitoring trees and not shrubs. Circle traps are commercially available or can be made using common items (See <https://tinyurl.com/47h7apth>).

### Treatment

For established populations of SLF, management strategies include removing and destroying egg masses; removing preferred host plants (such as tree-of-heaven) and replanting with other, non-host plants; and chemical insecticides, which are not advised since SLF is not yet established in Oregon.

If SLF establishes in Oregon, contact insecticides with the active ingredients beta-cyfluthrin or bifenthrin are effective against both nymphs and adults, but they are not recommended because insects feed on multiple types of plants throughout the season and these products can also kill non-target natural enemies that help keep pest levels low. Nymphs are often located in tree canopies, which are hard to access.



Credit: Congregating adult SLF with weeping tree wounds and sooty mold growing on “honeydew” - insect excrement by Emelie Swackhamer, Penn State University





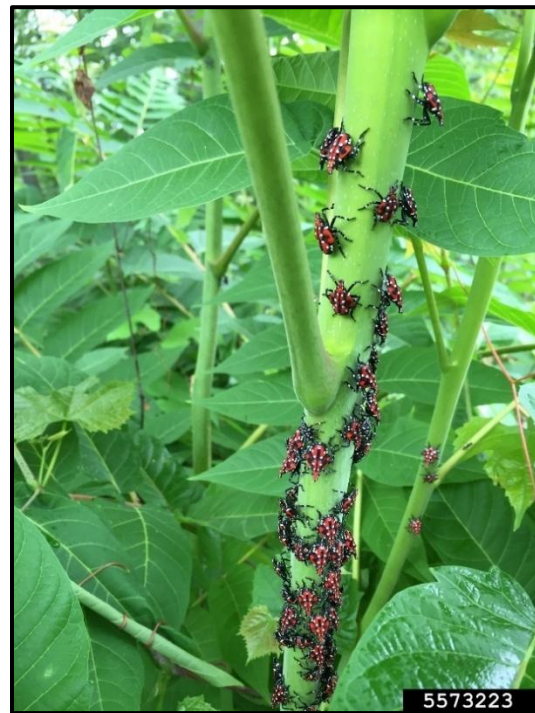
Systemic insecticides with the active ingredients dinotefuran or imidacloprid are effective at controlling 4<sup>th</sup> instar nymphs and adults for months at a time, if properly applied through soil drenches or direct trunk injections. Because systemic insecticides travel throughout the entire vascular system of plants that they are applied to, these pesticides can kill pollinators and other non-target insects that visit these same plants. For trees and shrubs that are pollinated by insects, applications of systemic insecticides should occur after the flowering period. Applicators must follow the directions on the insecticide product label.

### *Tree-of-heaven*

Management for SLF should include surveying and monitoring their primary host, tree-of-heaven (*Ailanthus altissima*), which is also an invasive species. In Oregon, tree-of-heaven (TOH) is a Class B noxious weed regulated by the Oregon Department of Agriculture. High populations of TOH occur in the Columbia River Gorge, throughout central Oregon, and in urban and rural areas of the Willamette Valley and southern Oregon. Because SLF congregates late in the year on TOH, applications of systemic insecticides with the active ingredient dinotefuran or imidacloprid can be made to selected TOH “trap trees” – effectively killing many SLF with a small application. TOH is an incredibly difficult weed to control. Effective management of TOH includes proper timing of herbicide applications with one or more years of follow-up. See the references below for more information on TOH treatments.



Credit: Tree-of-heaven (the preferred host of SLF) by Catherine Herms, The Ohio State University.



Credit: 4<sup>th</sup> instar SLF nymphs on tree-of-heaven by Emelie Swackhamer, Penn State University.

### Federal and state regulations

SLF has had impacts on forestry and agriculture in the eastern United States through quarantine measures. While there is no federal quarantine that restricts the interstate movement of infested



materials, several states have issued their own quarantines that prevent the movement of egg-infested logs, forest products, and plant nursery material. Currently there are no Oregon quarantines for SLF, but this could change if SLF becomes established in the state. The Oregon Department of Agriculture is responsible for issuing emergency quarantines to safeguard the state's natural resources. For a current list of quarantined pests and diseases in Oregon, visit the Oregon Department of Agriculture quarantine website: <https://www.oregon.gov/oda/ippm/Pages/quarantines.aspx>

## Summary

Although SLF is not yet known to occur in Oregon, the risk that it will arrive through interstate commerce and human travel is high. Impacts of SLF include damage to commercially important crops like grapes, hops, and others. When SLF populations are abundant, their feeding creates honeydew that attracts other insects like ants and wasps. Black sooty mold can grow on the honeydew excretions, smothering understory plants. Its arrival and establishment in Oregon would lead to localized plant stress of common trees and shrubs like maple and alder. It is also likely to become an additional nuisance pest of a variety of common trees and shrubs in residential areas, with associated increases in pesticide applications and misapplications. SLF highly prefers the noxious weed, tree-of-heaven. Management plans for SLF should include monitoring and control of their primary host, tree-of-heaven.

## More information

USDA Animal and Plant Health Inspection Service. Spotted lanternfly fact sheet.

<https://www.aphis.usda.gov/plant-pests-diseases/slf>

Oregon Department of Agriculture. Spotted lanternfly pest alert.

<https://www.oregon.gov/oda/Documents/Publications/IPPM/ODA%20Pest%20Alert%202025%20Spotted%20lanternfly.pdf>

Oregon State University Extension. EM 9312 Pest alert: Spotted lanternfly is an invasive insect that may impact Oregon. <https://extension.oregonstate.edu/catalog/em-9312-pest-alert-spotted-lanternfly-invasive-insect-may-impact-oregon>

PennState Extension. Spotted lanternfly management guide. <https://extension.psu.edu/spotted-lanternfly-management-guide>

Cornell University Spotted lanternfly distribution map. <https://cals.cornell.edu/integrated-pest-management/outreach-education/whats-bugging-you/spotted-lanternfly/spotted-lanternfly-reported-distribution-map>

Oregon Department of Agriculture. Tree-of-heaven species profile.

<https://www.oregon.gov/oda/Documents/Publications/Weeds/TreeOfHeavenProfile.pdf>

PennState Extension. Tree-of-heaven. <https://extension.psu.edu/tree-of-heaven>

