

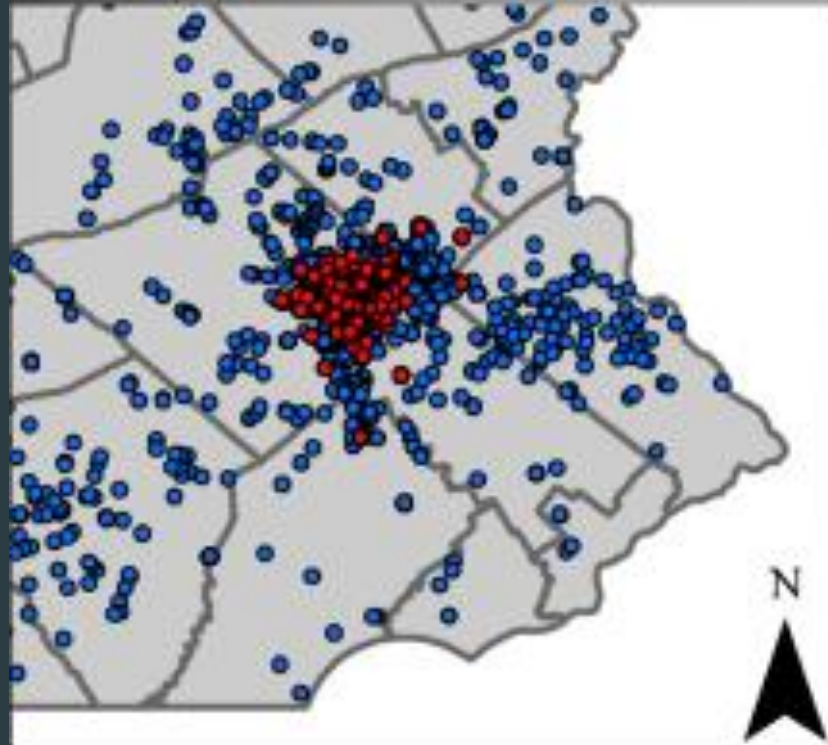
Spotted Lanternfly

Lyrcoma delicatula

What is been done?

Who is doing it?

Current U.S. SLF invasion



- PDA eradication efforts:
 - Tree banding
 - Egg scraping
 - TOH removal
 - Trap cropping (TOH)
 - Limited insecticide use



PDA

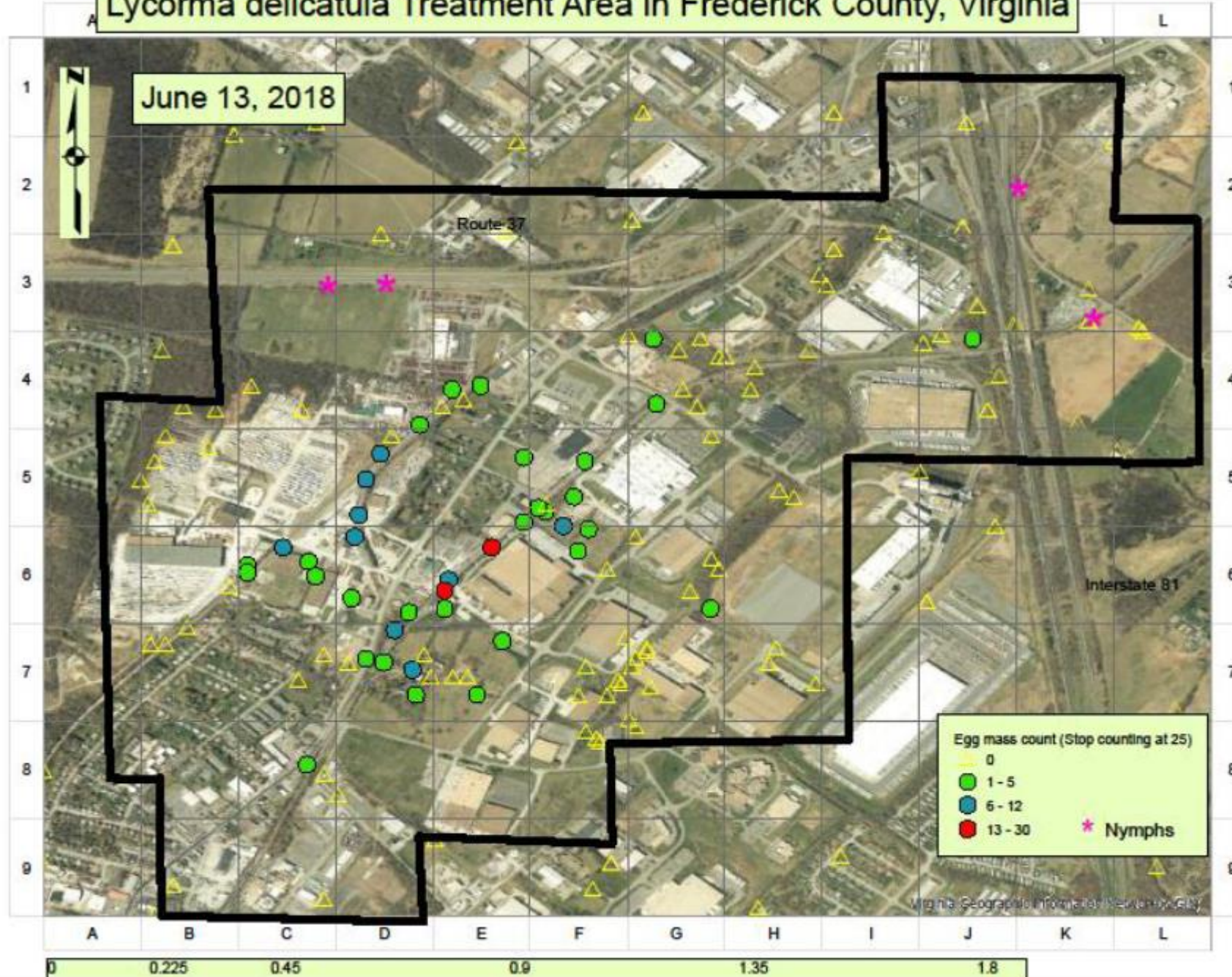
Frederick County and Winchester, Virginia

VDACS has conducted 358 egg mass surveys to delimit the generally infested area.

We started to remove egg masses and conducted outreach visits in the generally infested area.

We have developed a work plan for a Cooperative Agreement with USDA/APHIS for \$263,069.

Lycorma delicatula Treatment Area in Frederick County, Virginia



Work Plan

Survey

- Hire 4 wage employees June 2018- End of April 2019.
- Responsible for banding sites in a 20 mile radius in and around the generally infested area.
- VDACS inspectors banding at 2 or more high risk sites in their areas (30- 36 plus sites).
- Egg mass surveys in the fall and winter for all.

Work Plan

Treatments

Will be conducted by USDA/ APHIS contractor.

- Herbicide treatments will target trees 6 inches in diameter or less. The application method will be hack and squirt with Garlon (ai. Triclopyr) or other herbicide yet to be determined.
- Insecticide treatment will target trees 6 inches or more with Transtect (Dinotefuran) applied as a basal trunk spray.
- The USDA solicitation for bid for a treatment contractor has been released and they will be choosing a vendor soon.
- **Only Tree of Heaven will be treated.**



Michael Flessner
Weed Specialist
VA Tech

Garlon (triclopyr) applied either by cut-stump (stems greater than 6 inches in diameter) or basal bark application (stems less than 6 inches in diameter).

Remedy Ultra on grazing areas

Work Plan

Treatments

- Authorization for treatment, a treatment plan for each property and an OK from USDA for each plan, will be needed before treatments will be carried out.
- USDA and/or the contractor will develop a treatment plan for each property.
- Treatments could start in late June.
- **There is no quarantine so treatment will be voluntary.**

Work Plan

Outreach

- Notification procedures in treatment area has begun.
- 500 letters were mailed to property owners.
- Virginia Tech has done a wonderful job with info on their website.

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Spotted Lanternfly in Virginia



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EXISTING MATERIAL:

[HTTPS://EXT.VT.EDU/SPOTTED-LANTERNFLY](https://ext.vt.edu/spotted-lanternfly)

SPOTTEDLANTERNFLYVIRGINIA@GMAIL.COM

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Spotted Lanternfly in Virginia



Related Topics

- Commercial Horticulture
- Diagnostic and Laboratory Services
- Greenhouse, Nurseries and Landscapes

Events

- Agricultural Business, Finance & Marketing calendar
- Agricultural Business calendar
- Animal Agriculture calendar
- Career & Skills calendar
- Specialty Agriculture calendar

Contact

Eric Day
Insect Identification Lab
ed@day.edu

A potentially very serious pest of grapes, peaches, hops, and a variety of other crops, the spotted lanternfly (SLF), *Lycorma delicatula*, was detected in Frederick County, Virginia, on Jan. 10, 2018.


It is important to look for it and report any finds.

Spotted lanternfly has also been reported on a range of ornamentals around the home and in the landscape.

Spotted Lanternfly Lifecycle in Virginia

Prepared by Eric Day, Theresa Dellinger and Linda Melton

The Spotted Lanternfly (SLF) overwinters in an egg mass (gray bars) that starts out shiny gray and quickly turns to a dull brownish gray. The eggs hatch in late April or early May and the immatures or nymphs (red bars) are present until late July when the adults (yellow bars) emerge. Adults lay eggs in the fall. The life stages can overlap and depending on the time of year, multiple stages can be found at the same time.



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Ask a Question

Give your question a title

Question

A Normal text Bold Italic Underline Small

Spotted Lanternfly in Virginia, be sure to include name, address, and email contact information when submitting images for identification

About this group

This group is to enable Extension professionals to collect information about a new pest, the Spotted Lanternfly.

Email

Location and County (optional)

Virginia

County

Virginia Cooperative Extension
Virginia Tech • Virginia State University

Alerta de Plagas:

Moraca Lantana con Mancha (Lycorma delicatula)

La Moraca Lantana con Mancha (SLF, por sus siglas en inglés) es una plaga invasora de Virginia que se detectó por primera vez en el estado en enero de 2018. Se cree que esta plaga se originó en China y se ha extendido a otros países de América del Norte. Se ha detectado en Virginia en Frederick County y en otros lugares. Se ha detectado en otros países de América del Norte. Se ha detectado en otros países de América del Norte.



Se ha detectado en Virginia en Frederick County y en otros lugares. Se ha detectado en otros países de América del Norte. Se ha detectado en otros países de América del Norte.

Eric Day
Doug Pfeiffer,
Theresa Dellinger,
Beth Sastre,
Linda Melton
Phillip Sistre

Virginia Cooperative Extension
Virginia Tech • Virginia State University
www.ext.vt.edu

Spotted Lanternfly

Lycorma delicatula (White) (Hemiptera: Fulgoroidea)

By: Douglas G. Pfeiffer, Eric R. Day and Phillip A. Sisti, Virginia Tech Entomology

Origin & Distribution: The spotted lanternfly (SLF) has been detected in Virginia in Frederick County in the northern part of the state in January of 2018. The SLF originates from China where its presence has been documented in detail dating as far back as the 12th century. In modern times, it was first recorded from a sample collected in Nanjing, China. SLF is native to China, India, Japan, Korea, and Vietnam. In September 2014, the first detection of spotted lanternfly in the US was confirmed in eastern Pennsylvania. In 2017, the range expanded to 13 Pennsylvania counties and a single county in both Delaware and New York; the geographical range is likely to expand further. SLF is likely to have arrived from China up to two years earlier than first detected on shipping materials, pointing to its ability to overwinter successfully. It is highly invasive and can spread rapidly when introduced to new areas. This is attributed to its wide host range (more than 70 host plant species) and a lack of natural native enemies.



Description: The first stage nymph is wingless, black, and has white spots on the body and legs. The last nymphal instar develops red patches over the body while retaining the white-spot pattern.

Adult SLF has a wingspan of 1.2-1.5 inches and 1.5-2 inches in length. The body is

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Pest Alert:

Spotted Lanternfly *Lycorma delicatula*

The spotted lanternfly (SLF) was detected in Virginia in January 2018. It is an invasive planthopper that was discovered in Pennsylvania in 2014. In Pennsylvania and its native range, it is a pest of grapes, peaches, hops, and apples. It is commonly associated with tree-of-heaven, *Ailanthus altissima*. It has the potential to be a serious pest of agriculture and home gardens in Virginia.



Adult Spotted Lanternfly, USDA photo

Possible Spotted Lanternfly Egg Mass Look-alikes in Virginia

Theresa Dellinger and Eric Day, Dept. of Entomology, Virginia Tech

Egg masses of the spotted lantern fly, *Lycorma delicatula* (White), are usually covered with a smooth tan to gray colored coating when fresh. This coating may crack and fall off with age, exposing eggs laid in vertical rows underneath. Some egg masses are laid with only some or no covering at all. Here are a few other insect egg masses found in Virginia to help you recognize those of the spotted lantern fly. Sizes not to scale. Lichen photo by E. Day; all others from Bugwood.org.

Cankerworm eggs



Spotted lanternfly egg mass



Gypsy moth egg masses are covered with brown hairs.

Eastern tent caterpillar eggs



Spotted lanternfly eggs without covering.



Wheel bug eggs and nymphs



Buck moth eggs



Lichen on bark

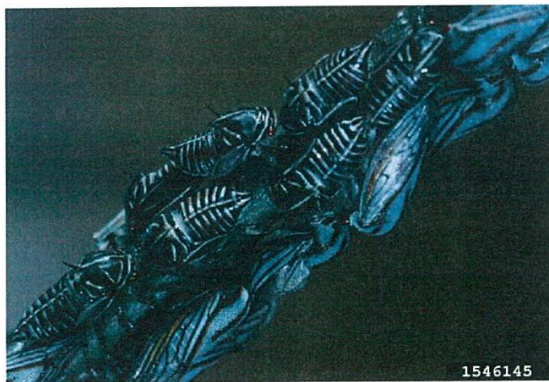
Possible Spotted Lanternfly Immature Look-alikes in Virginia

Theresa Dellinger and Eric Day, Department of Entomology, Virginia Tech

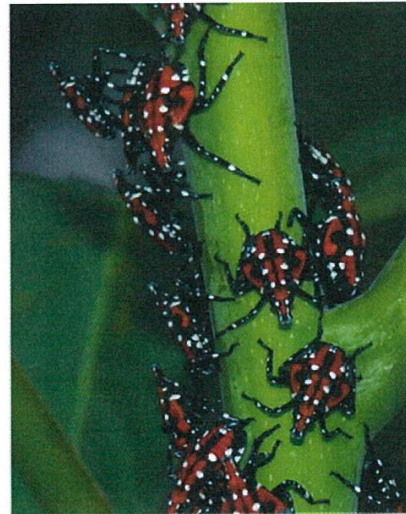
Immature spotted lanternfly, *Lycorma delicatula* (White), are black with white spots when young. They turn red and black with white spots when older. A few other insects in Virginia have similar color patterns, but a close look will show that immature spotted lanternflies are easily recognizable. Sizes not to scale.



Young spotted lanternfly nymph. Berks Co. Conversation Dist.



Oak treehopper nymphs.
Bugwood.org



Older spotted lanternfly nymphs. Eric Day



Wheel bug nymph. Bugwood.org



Assassin bug nymph.
Bugwood.org

Possible Spotted Lanternfly Adult Look-alikes in Virginia

Theresa Dellinger and Eric Day, Department of Entomology, Virginia Tech

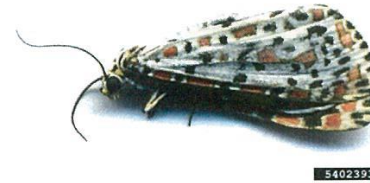
The adult spotted lanternfly, *Lycorma delicatula* (White), has a very distinctive appearance with black spots and bars on the upper wings and red, black, and white on the hindwings. Adults measure about 1" long and 0.5" wide. A few other insects in Virginia have similar color patterns, but a close look will show that spotted lanternfly is easily recognizable. Sizes not to scale. Upper left photo: Eric Day. All others: Bugwood.org



Spotted
lanternfly



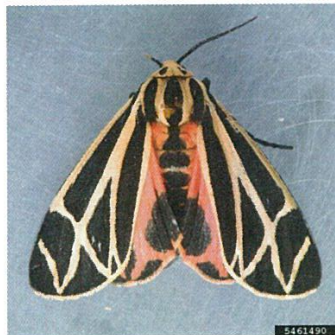
Spotted lanternfly,
wings extended



Ornate bella moth



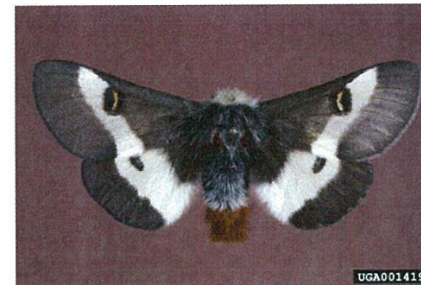
Ailanthus webworm



Tiger moth



Oak treehopper

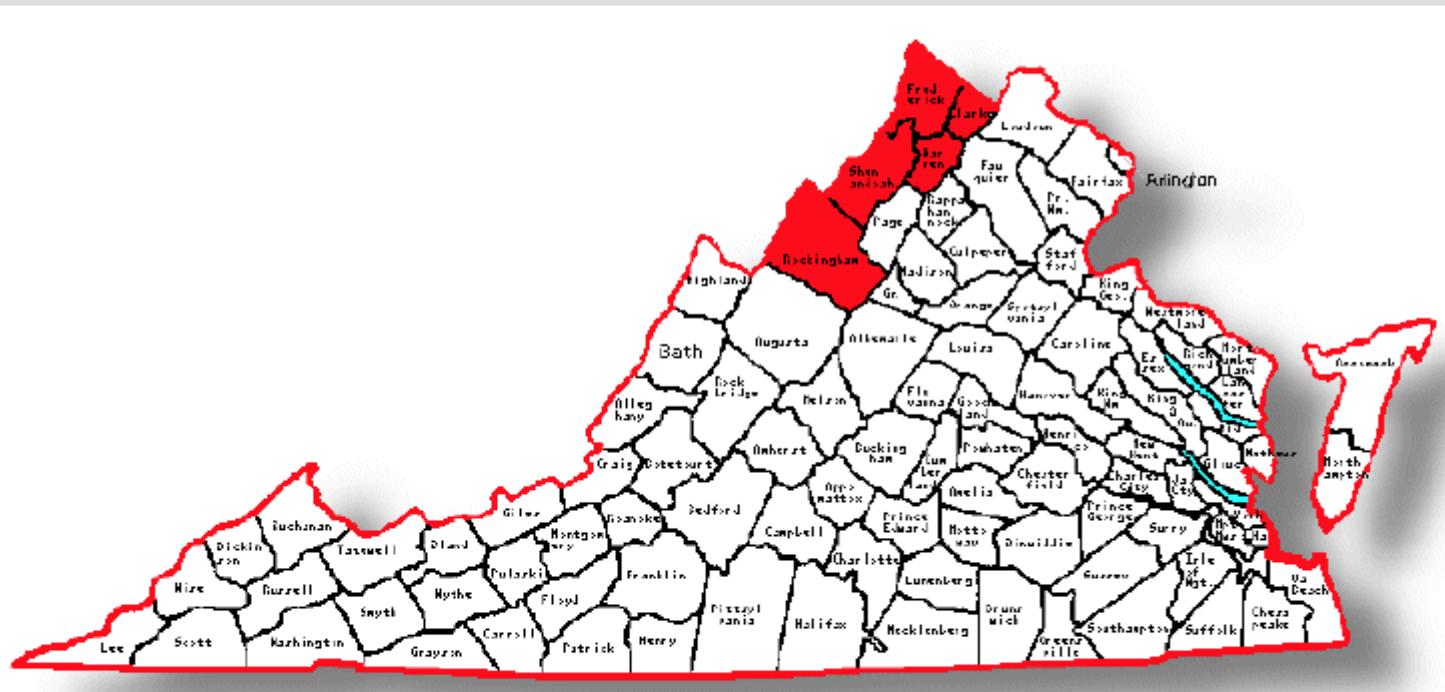


Buck moth



Leopard moth

SLF PILOT DETECTION PROGRAM MASTER GARDENERS AND EXTENSION EMPLOYEES



- 20+ volunteers
- 5 counties
 - Frederick
 - Clarke
 - Warren
 - Shenandoah
 - (Rockingham)
- Landowners with tree-of-heaven

VIRGINIA TECH EFFORTS

- Mark Sutphin Extension Agent, Frederick
 - Assisting VDACS compile a landowner contact list for properties within the treatment area.
 - Scouting the perimeter
 - Education, Education, Education
- Doug Pfeiffer
 - Phenology
 - Host range
 - Education, Education, Education
- Scott Salom, Rachel Brooks, Tom McAvoy, and Ashley Toland
 - Assessing whether SLF can vector *Verticillium nonalfalfae*
 - Attempting to rear this insect in quarantine.
- Tracy Leskey (USDA), Tom Kuhar. Andy Dechaine
 - Testing the suitability and preference of different hardwood species as hosts for SLF.
- Eric Day and Theresa Dellinger
 - Detection
 - Outreach
 - Extension publications

SPOTTED LANTERNFLY EMERGENCE 2018 COOPERATIVE RESEARCH

- Doug Pfeiffer
 - May 8, 2009 no hatch
- Egg hatch observed by Eric Day and Mark Sutphin
 - May 9, 2018
- Winchester, Virginia



PILOT DETECTION PROJECT
PILOT PROJECT
SUZANNE BOAG, MARK SUTPHIN AND
KRIS BEHREND

- A group of about 20 volunteer banders from our area Extension Master Gardener volunteers. Scouting the five-county region to see if we pick up SLF anywhere else in the area.
- First year limited to Northern Virginia
- Will expand to other counties if needed
- Special thanks to the Northern Shenandoah Valley Master Gardeners Association
- Devon Johnson, Dave Close, John Freeborn

BANDING PROJECTS: REQUIREMENTS

- Ailanthus, Tree-of-heaven
- Your property
- 5 inches in diameter or larger



SPOTTED LANTERNFLY VOLUNTEER BANDING PROGRAM

Tree Banding: Basic equipment



Photo and text
courtesy of
Pennsylvania
Cooperative
Extension

SPOTTED LANTERNFLY VOLUNTEER BANDING PROGRAM



[spotted-lanternfly-volunteer-banding-program](#)

TREE BANDING SITES

Two people is best
Attach or hold non-sticky side
against bark
Wrap around and overlap
Attach push pins
Attach label



Photo
courtesy of
Pennsylvania
Cooperative
Extension



TREE BANDING

- Place trap sticky side out
- 3-5 feet above ground
- Make sure band is tight against tree



TRAP PLACEMENT



TRAP PLACEMENT



Secure bands with push pins

Write trap number on label

Place label

When done, attach collection label, wrap band in clear plastic wrap and remove

TRAP SET UP

Use a unique and consistent number system

Example

Name-Date-Tree number

Lastname - 26April2018 - 1

After 2 weeks

Lastname - 10May2018 - 1



AFTER 2 WEEKS

- Wrap bands with plastic wrap
- Place collection label
- Remove from tree
- Count SLF nymphs and immatures
- Enter data positive or negative



SPOTTED LANTERNFLY VOLUNTEER BANDING PROGRAM

Tree Banding:

Trees should be 6" DBH or larger

DBH is the diameter of the trunk at breast height

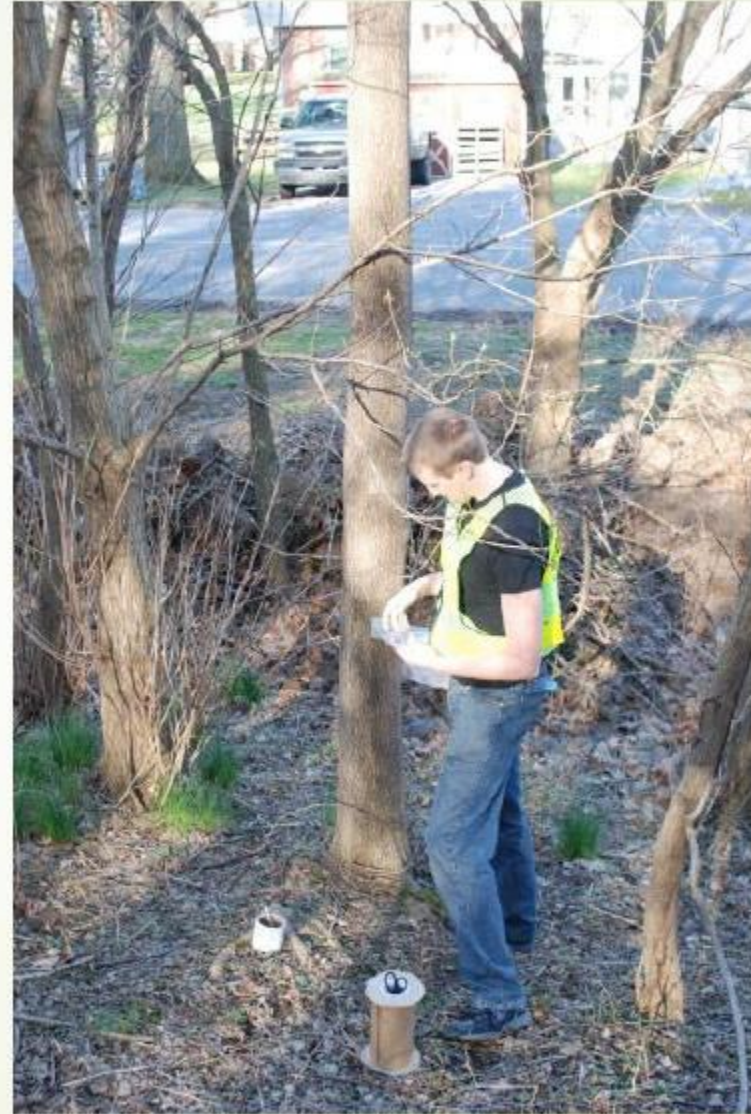


Photo and text
courtesy of
Pennsylvania
Cooperative
Extension

SPOTTED LANTERNFLY VOLUNTEER BANDING PROGRAM

- ▶ **Tree Banding:** Counting can be aided by the use of marking paint (Nail polish)
- ▶ After counting, bands must be disposed of in a sealed trash bag, and made ready for pick- up by a PDA crew





CIRCLE BAND TRAP

Staple to
tree
VT changing
to this trap
Plans to
have all
Master
Gardeners
switch




EVERY 2 WEEKS

- Count
- Report on Survey 123
- Replace band

Spotted Lantern Fly Survey

▼

Spotted Lantern Fly Survey



This survey documents activities associated with the Spotted Lantern Fly survey in Virginia.

▶

Surveyor Info

▶

Spotted Lantern Fly Questions

▶

Add Photos

▶

Location Notes

▶

Contact Info

Submit

6/14/2018

68

Identifying Tree-of-Heaven and Some Native Look-a-Likes



Photo: H. H. H. H. H.

Spotted Lanternfly
Control Program
March 16, 2018



Dave Jackson
Forest Resources Educator
Penn State Extension



Penn State **Extension**

[identifying-tree-of-heaven-and-some-native-look-a-likes](#)

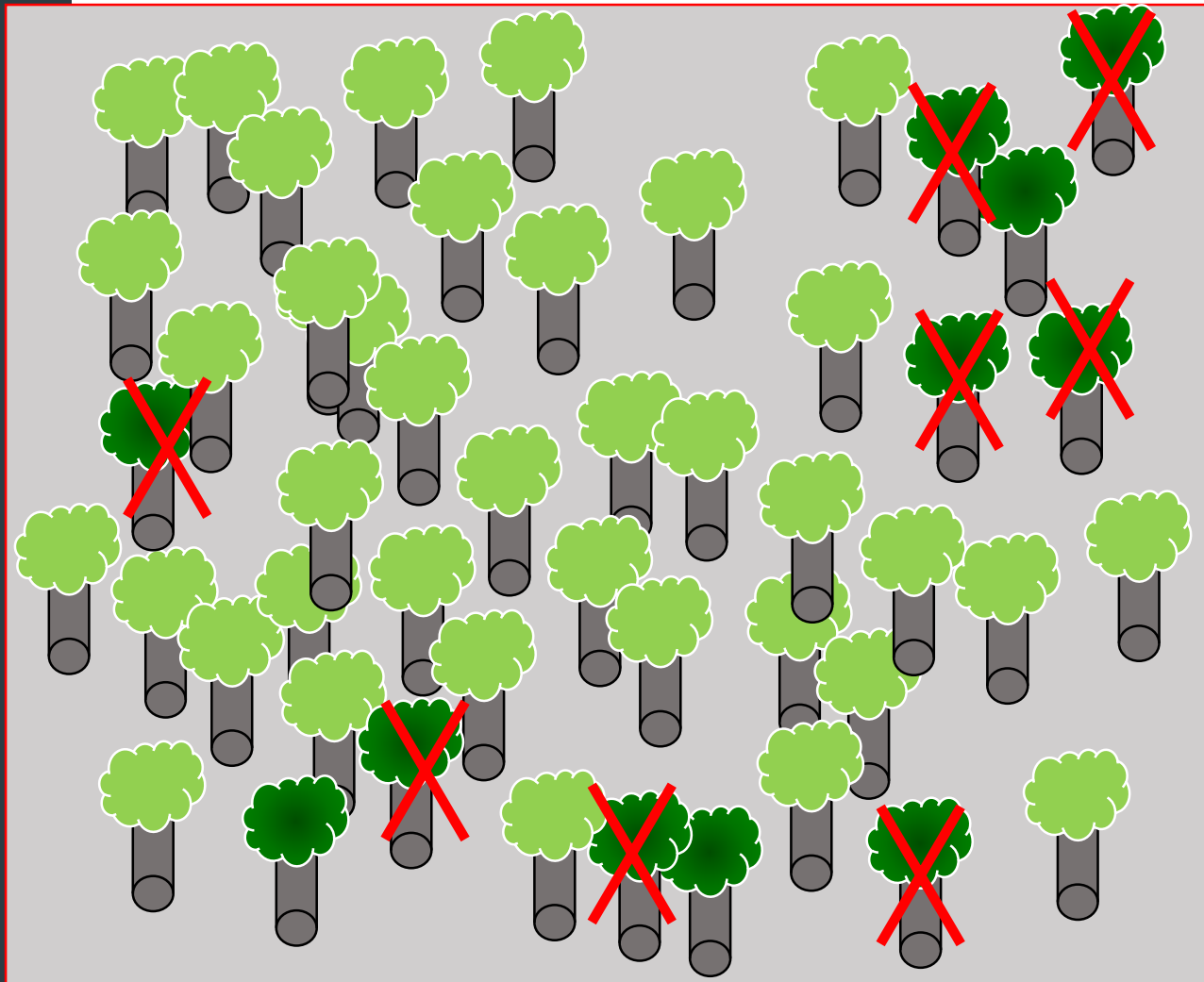
Spotted Lanternfly in Pennsylvania



Removal-Trap Tree Method
Most Ailanthus are removed or killed with herbicide
Incorporate in Vegetation Management Plans



Spotted Lanternfly in Pennsylvania

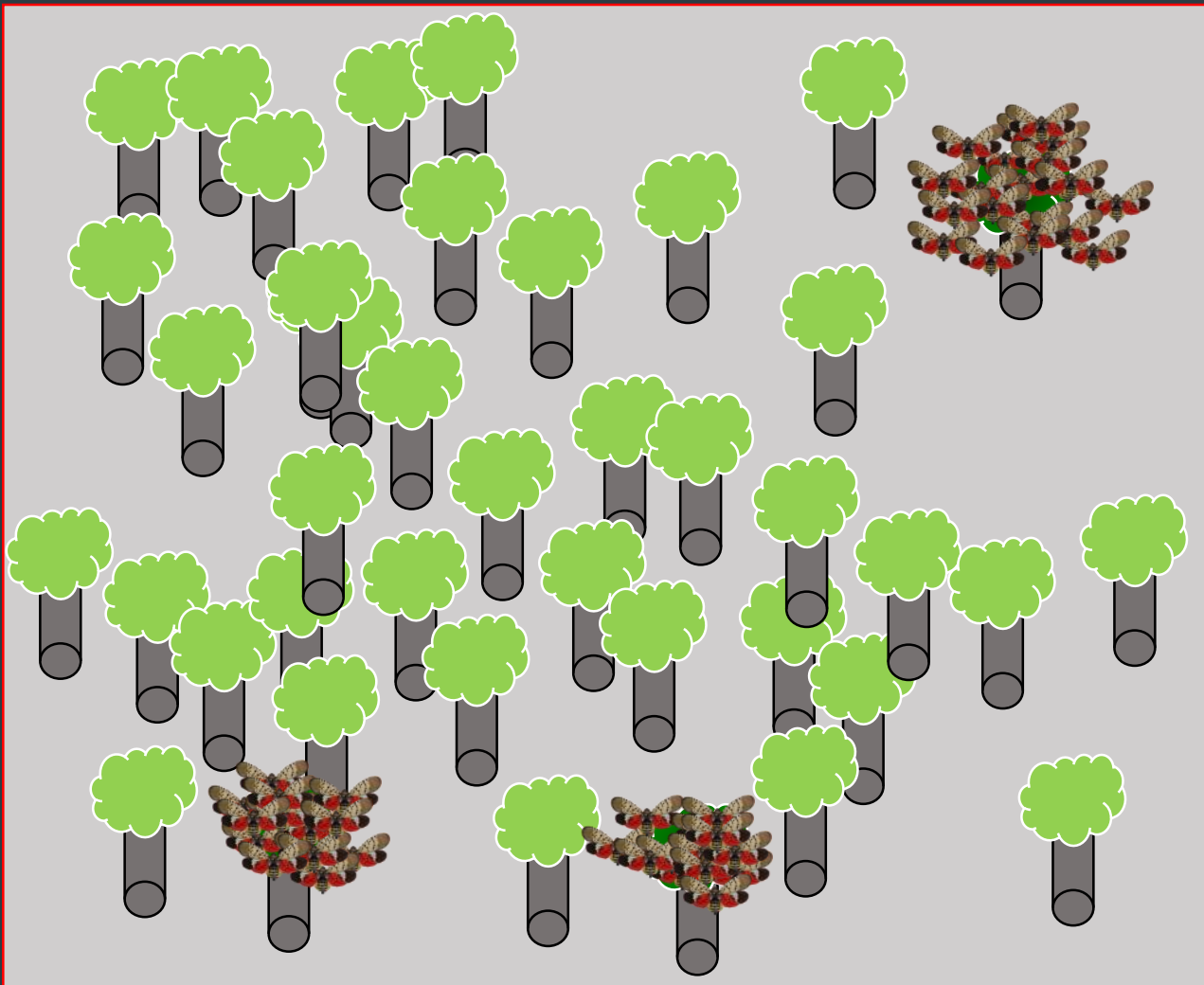


Host Reduction

**Remove Most
Ailanthus**

**Leave a few male
trees and treat
with systemic
insecticide**

Spotted Lanternfly in Pennsylvania



Trap trees

**July-September
4th Instar and
Adults**

**SLFs
concentrate to
feed on Tree of
Heaven with
insecticide and
die**

Hack and Squirt Technique for TOH Removal



Out Reach to Businesses

- We can provide training
- Phytosanitary Certificate
 - Limited use
- Permits
 - Working within the quarantined area in PA or other state
 - Lower risk
- Compliance Agreement
 - Moving in and out of the quarantine
 - Interstate/International businesses
 - Higher risk for movement

Who has to worry? EVERYONE!!

Fruit growers, Grape and wine producers, Small grains, hops growers

Nursery growers, Xmas tree growers

Homeowners, Livestock owners, Woodlot owners, firewood businesses

APHIS to manage perimeter while PDA focuses on core

We must work together to control

Integrated Pest Management

Educate the community: residents
and businesses



Everyone Can Help Contain Spotted Lanternfly





**Thanks to
Dana Rhodes**

[Agriculture](#) > [Plants, Land & Water](#) > [Plant Industry](#) > [Entomology](#) > [Spotted Lanternfly](#)

SPOTTED LANTERNFLY

The Spotted Lanternfly, *Lycorma delicatula* (White), an invasive planthopper, has been discovered in Berks County, Pennsylvania. It is native to China, India, Vietnam, and introduced to Korea where it has become a major pest. This insect has the potential to greatly impact

What we need to do?

- ▶ Educate community to learn the differences between Tree of Heaven and Sumac
- ▶ Help them to identify all life stages of SLF
- ▶ How to apply sticky bands and conduct visual surveys
- ▶ Insecticide and herbicide treatments available for the public