

Spot the Lanternfly

Wendy McFadden-Smith
OMAFRA
CCOVI, Brock University



Spotted Lanternfly Made the News!

Toronto

An invasive species threatens Ontario's wine and grape industry. Here's what you should know

The spotted lanternfly is known for its ability to damage grapevines and other plants.

 Tyler Cheese • CBC News • Posted

CANADA

Spotted lanternfly could threaten Ontario's wine and grape industry. Here's what to know

 By Saba Aziz • Global News
Posted June 23, 2023 1:25 pm • Updated

 CTV NEWS

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CLIMATE AND ENVIRONMENT | News

Spot a spotted lanternfly? Photograph, then kill it, Canadian Food Inspection Agency says

THE GLOBE AND MAIL

CANADA WORLD BUSINESS INVESTING WATCHLIST PERSONAL FINANCE OPINION POLITICS SPORTS LIFE

NEW YORK POST



92 Comments

Sex-crazed lanternfly invasion ramps up in NYC as insects look for mates

By Natalie O'Neill and Steven Vago

August 24, 2022 | 1:54pm | Updated

Canadian Food Inspection Agency raises alarm as spotted lanternfly pest nears border

SALE: Only \$

Newsletters

Canadian Food Inspection Agency raises alarm as spotted lanternfly pest nears border

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Canadian Food Inspection Agency raises alarm as spotted lanternfly pest nears border

Spotted lanternfly

A photograph of two men. The man on the left is wearing a large, vibrant pink feathered costume and large, white-rimmed sunglasses. He has a surprised or concerned expression. The man on the right is wearing a dark jacket and looking towards the first man. The background is an indoor setting, possibly a hallway or a stage.

**Other
invasive
species**

Spotted Lanternfly (SLF)

Photos: Lawrence Barringer, Pennsylvania Department of Agriculture

2.5 cm



5 cm



Photo: Heather Leach, Michigan State University

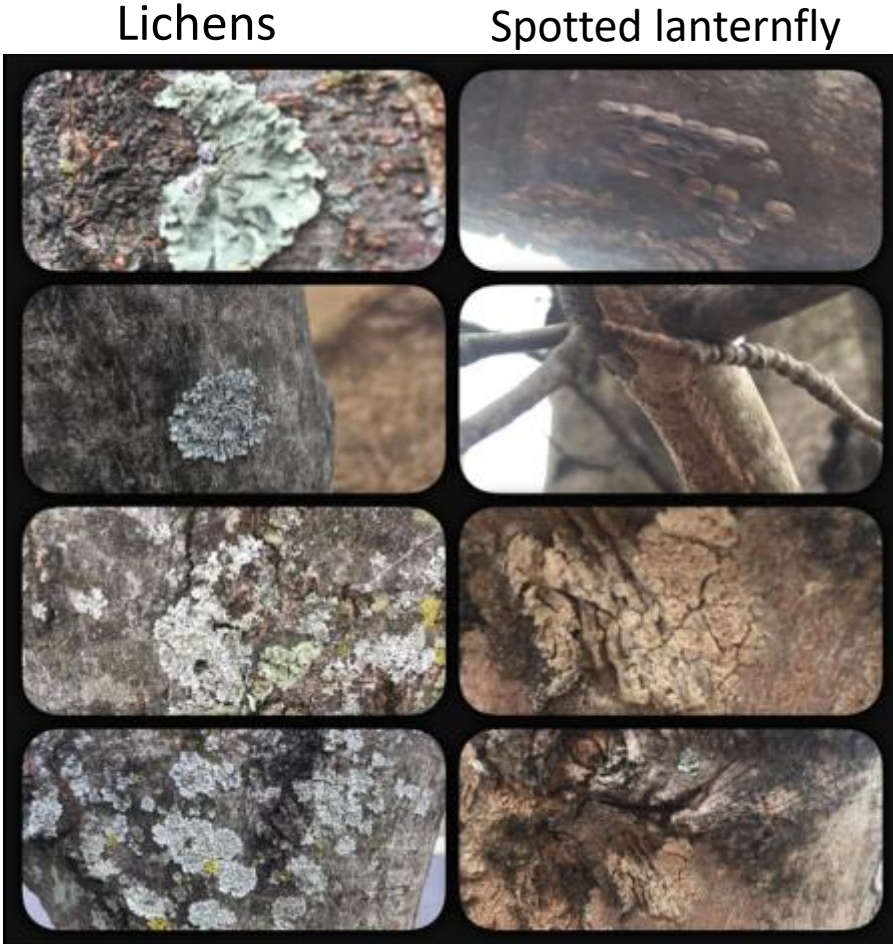
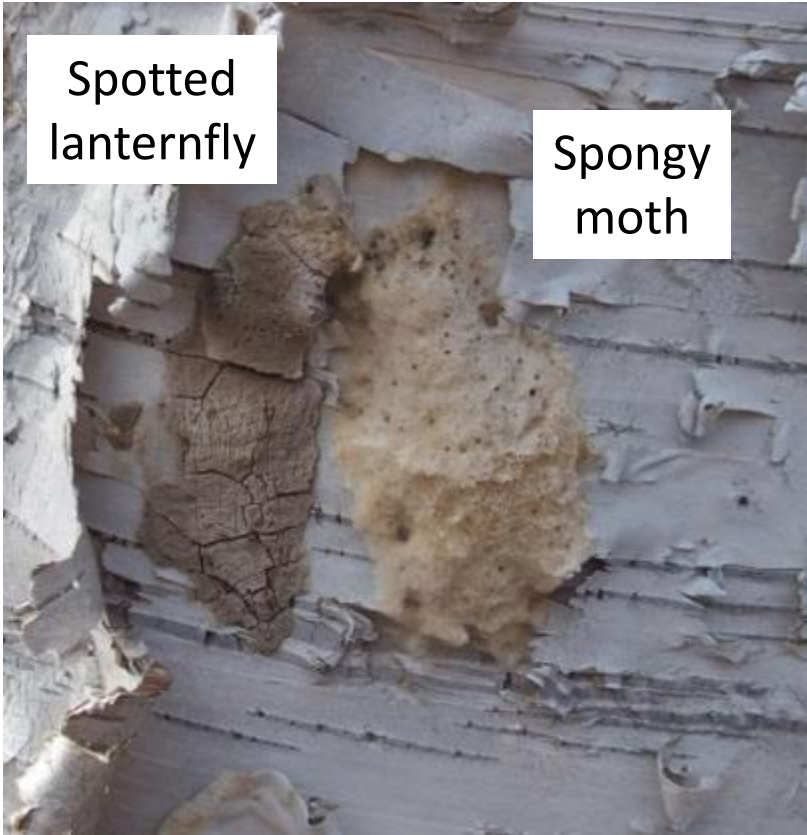
Lycorma delicatula

Planthopper - native to parts of China

Invasive in South Korea, Japan, and the northeastern United States, where it was first detected in 2014 in Pennsylvania

Weakens and kills plants through feeding behaviour and excretion of honeydew

Spotted Lanternfly “Imposters”



Spotted Lanternfly "Imposters"



Boxelder bug



Milkweed bug



Fire bug



Spotted Lanternfly “Imposters”



Tiger moth



Leopard moth



Ilia underwing
moth





Spotted lanternfly “Imposters”



Trump Nearly Fired Ivanka & Jared Via Tweet, Elon Musk Richest in U.S. & Lanternflies Invade NY
Press Esc to exit full screen

Eggs

- Very difficult to spot
- Laid on almost ANYTHING! (rocks, Christmas trees, BBQs, tree trunks etc.)



Egg laying
Sept-Nov



Sept-June

SLF Life Cycle

1st instar
May-June



2nd instar
June-July



3rd instar
June-July



4th instar
July-Sept



4th instars

- 1.3 cm
- Feed on woody tissues

1st to 3rd Instars

- 0.3-0.7 cm
- Difficult to spot
- Broad host range of herbaceous plants
- Capable of killing seedlings & limbs in full sized trees
- Incapable of flight, but sticky feet!



Adults

- 2-3 cm
- Easy to spot
- Climbers and strong hoppers
- Able to fly
- Biggest dispersal flights Aug-Sept



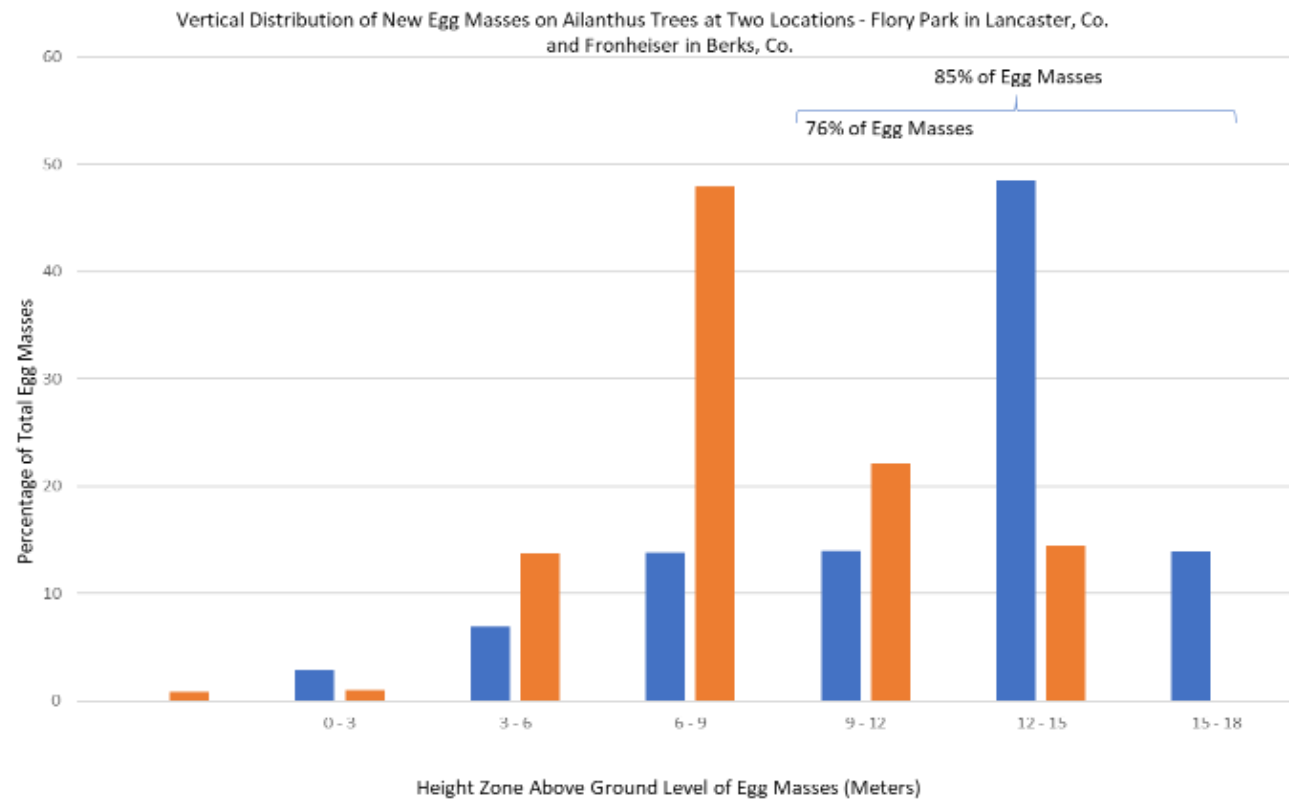
Adults
July-Nov



Spotted Lanternfly Eggs

- 30-50 eggs laid in rows, up to 4 cm long
- usually covered by a protective putty
- initially white, turns grey and cracks over time, exposing rows of individual eggs
- hatched eggs have small holes
- deposited on flat, rough surfaces
 - bark, rusty metal, wheel well / underside of vehicles, pots, landscaping stone, decks
- peak egg-laying = fall equinox (Sept 20-21)
- overwintering stage

Spotted Lanternfly Eggs



slide courtesy of Brian Walsh, Penn State University

Sap Feeders With Piercing/ Sucking Mouthpart



Brian Walsh



Julie Urban

Spotted Lanternfly Feeding



- Pierce through plant tissues and remove sap directly through phloem of leaves, stems, branches and trunks
 - Yield loss or quality reduction
 - Reduction of cold hardiness
 - Dieback, plant death
- Produce copious quantities of ***honeydew***

Spotted Lanternfly Produce Honeydew








Spotted Lanternfly Nymphs

- Nymphs have widest range of plant hosts – SLF begin to specialize as adults
- Nymphs have a behavioural pattern of falling off and re-ascending plant hosts
- Red colouration of fourth instar to ward off predators
- SLF does *not* rely on tree-of-heaven to life cycle!



Seasonality of Common Landscape Hosts*

Host	Nymphs			Adults		
	May	June	July	August	September	October
Roses (cultivated, multiflora, etc.)						
Perennials						
Grape (wild, cultivated)						
Tree of Heaven						
Black walnut, butternut						
River birch						
Willow						
Sumac						
Red/silver maple						

Spotted Lanternfly - Hosts

- Feeds on more than 170 plants, including:

Grape



Apple



Peach



Black Walnut



Maple



Tree of Heaven

Ailanthus



Photo by Patrick Mansell 2011

Sycamore



Staghorn Sumac



Hops



Vegetables



Blueberry



What about Tree-of-heaven?



- Preferred (but not obligate) host of SLF
- Invasive
 - establishes via root suckering and prolific production of wind-dispersed seeds
- Identification (CFIA factsheet)

<https://inspection.canada.ca/plant-health/invasive-species/invasive-plants/invasive-plants/tree-of-heaven/eng/1612898593817/1612898594354>



Identifying Tree-of-heaven



- Smooth margins
- Smell like burnt peanuts when crushed
- Glandular tooth at base of each leaflet



- Light brown to grey
- Thick, rough
- Resembles cantaloupe skin



- Heart-shaped leaf scars

Identifying Tree-of-heaven



- Small flowers growing in large clusters
- Pale yellow or green

- 1-2 inch long samaras
- Seeds encased in a papery wing

Is Tree of Heaven Necessary for SLF to Survive?

In a word: NO!

It Can Still
Be An
Important
Component
As A
Preferred
Host

There is a lot of bad information based on ZERO science that is still being floated as facts. SCIENCE shows us that, at most, feeding on Tree of Heaven MAY accelerate development, BUT the study was done with small, non-established trees and the insects were not given free choice in the environment.

Tree of Heaven is a **preferred** food source for SLF (particularly as 3rd and 4th instars and early adults) and should be used as such when developing a control program.

Environmental Entomology, 49(5), 2020, 1185–1190
doi: 10.1093/ee/tnaa083
Advance Access Publication Date: 29 July 2020
Research

Plant-Insect Interactions

Spotted Lanternfly (Hemiptera: Fulgoridae) Can Complete Development and Reproduce Without Access to the Preferred Host, *Ailanthus altissima*

Osariyekemwen Uyi,^{1,2,3,*} Joseph A. Keller,^{1,5} Anne Johnson,¹ David Long,¹ Brian Walsh,¹ and Kelli Hoover¹

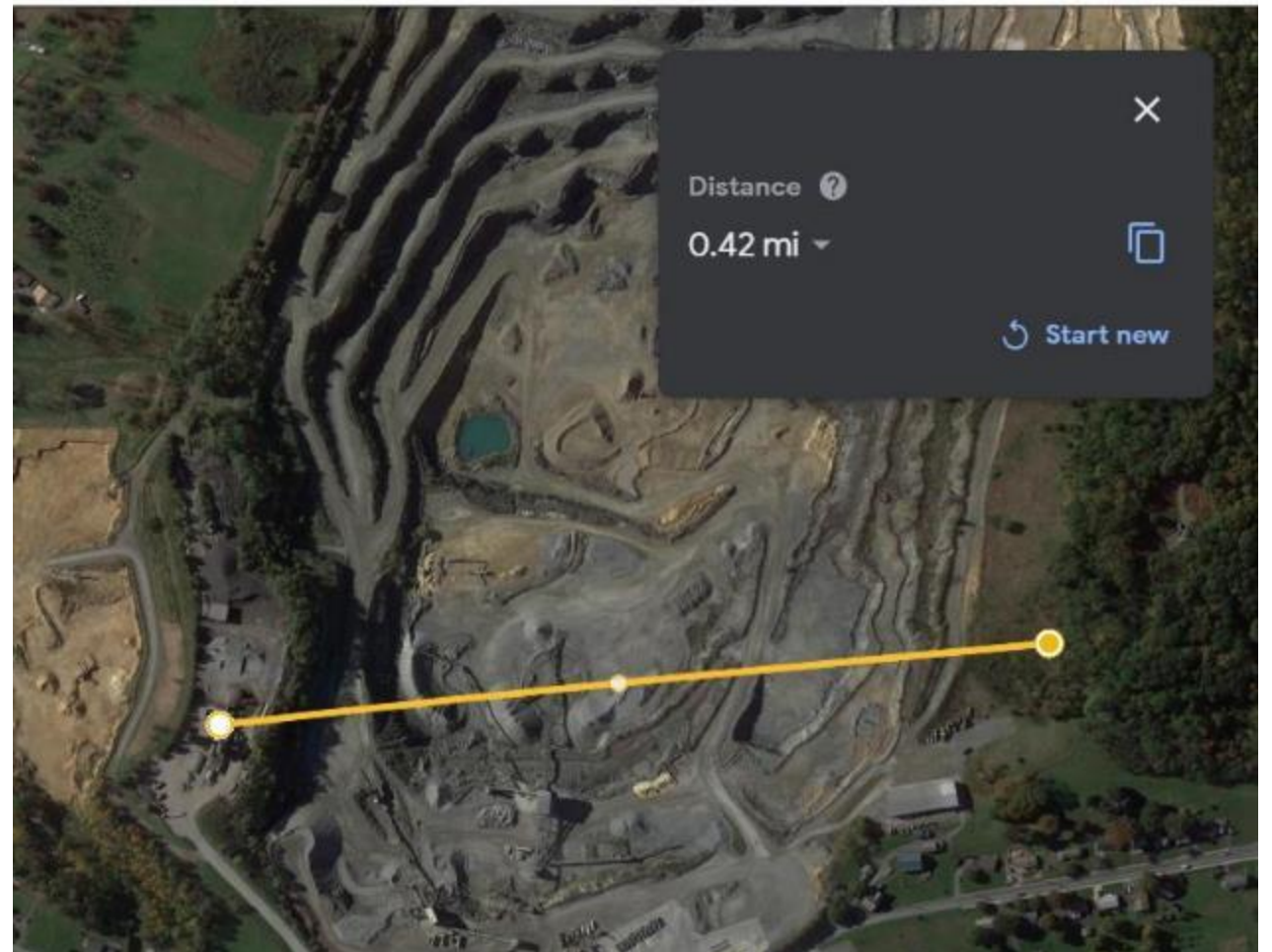
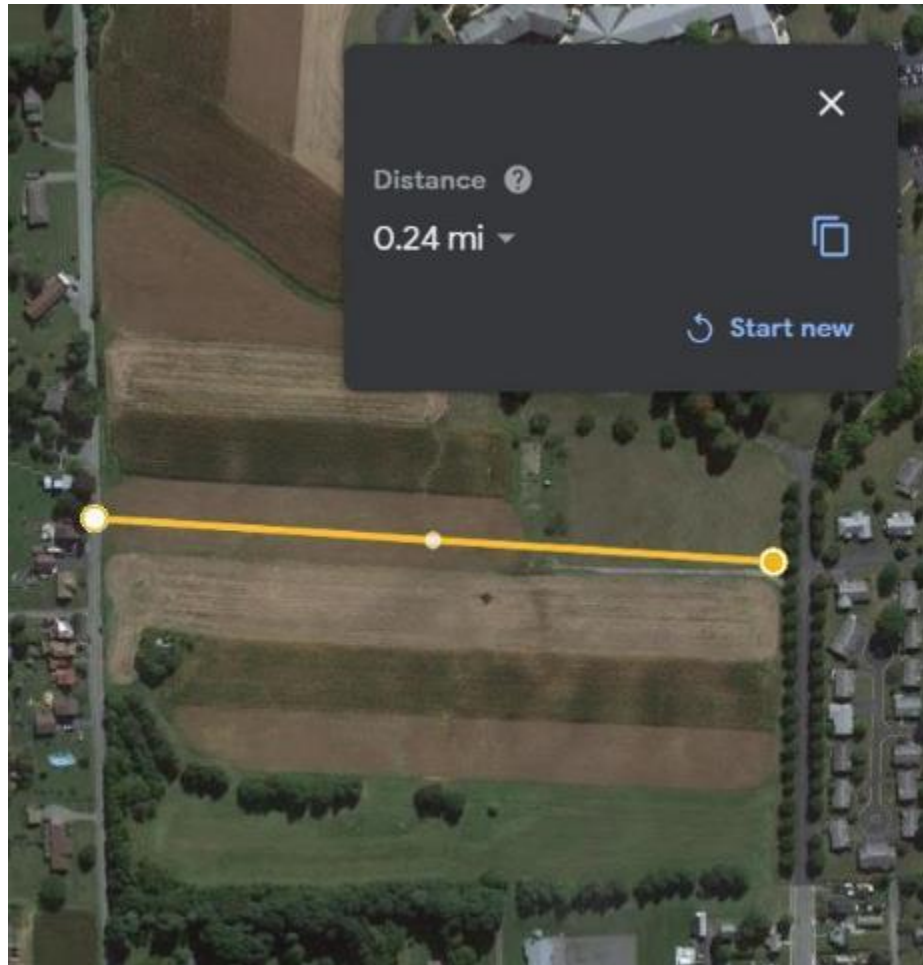
Spotted Lanternfly Dispersal

- Nymphs can walk up to 65 m
- Adults can fly up to 15 km in a year in short bouts of flight

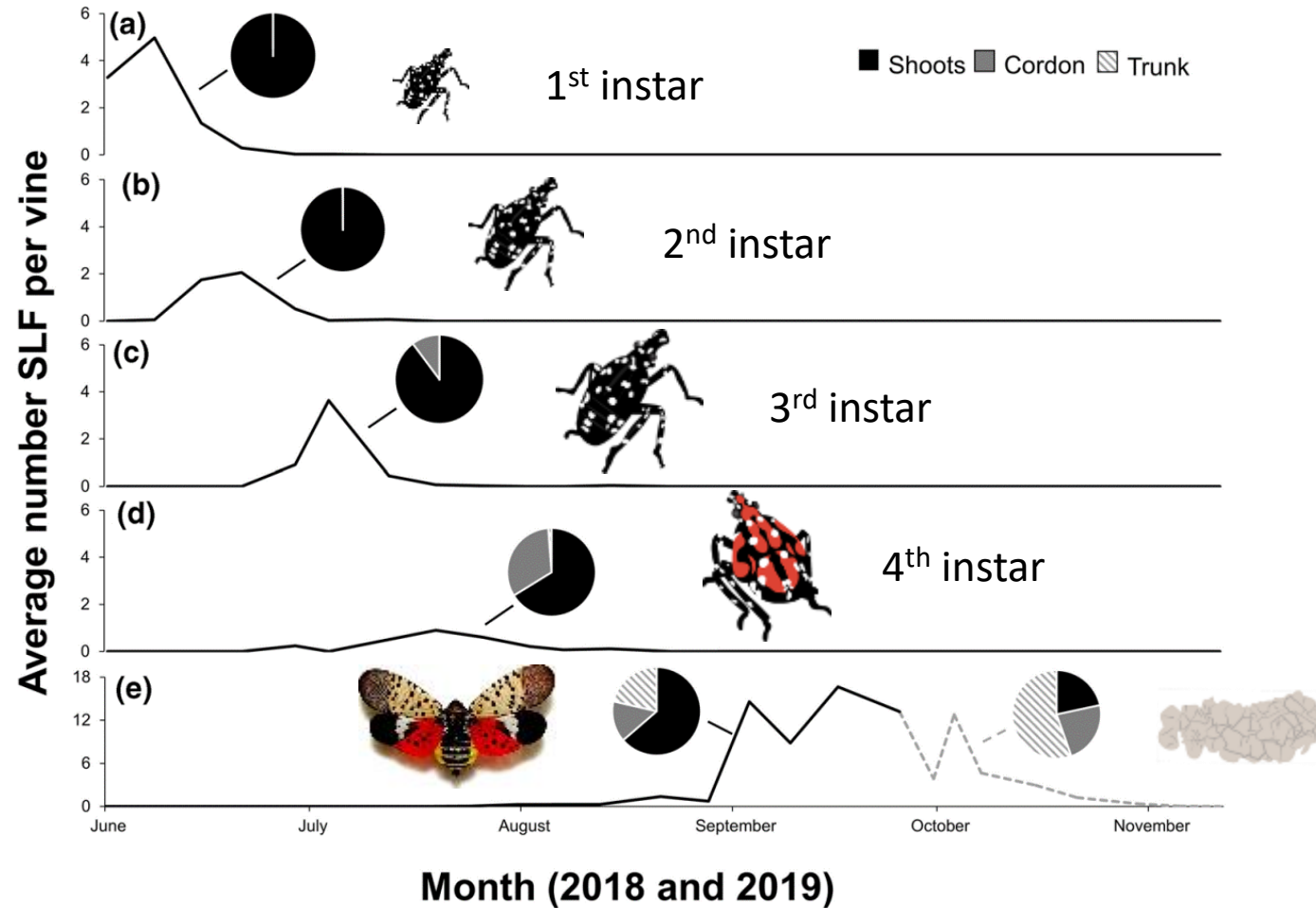


Courtesy of Brian Walsh, PSU

Are SLF Capable of Flying Long Distances?



SLF in Vineyards



Leach and Leach. Journal of Pest Science (2020) 93:1215–1224
<https://doi.org/10.1007/s10340-020-01233-7>

- Nymphs from OW eggs killed by insecticides for other pests
- Adults move into vineyards in the late summer and fall
- Border pest
 - 50-80% are found < 20 m from vineyard edge
- Insecticides:
 - short PHI pre-harvest
 - longer residual activity post-harvest

Impact to Pennsylvania Viticulture

- **2017:** 90% loss of crop yield in 40 acres (hot spot)
- **2018:** 100% loss of 1 Pinot Noir planting (dead vines)
- **2018-2019:** increased vineyard detections
- Increased insecticides, up from 4 to 14
- Increased costs (insecticides) %171%
- Social impacts:
 - 57% of growers said SLF changed outlook on farming (replanting, expanding industry, etc.)
 - 62% of growers said SLF contributes moderately or highly to their stress level

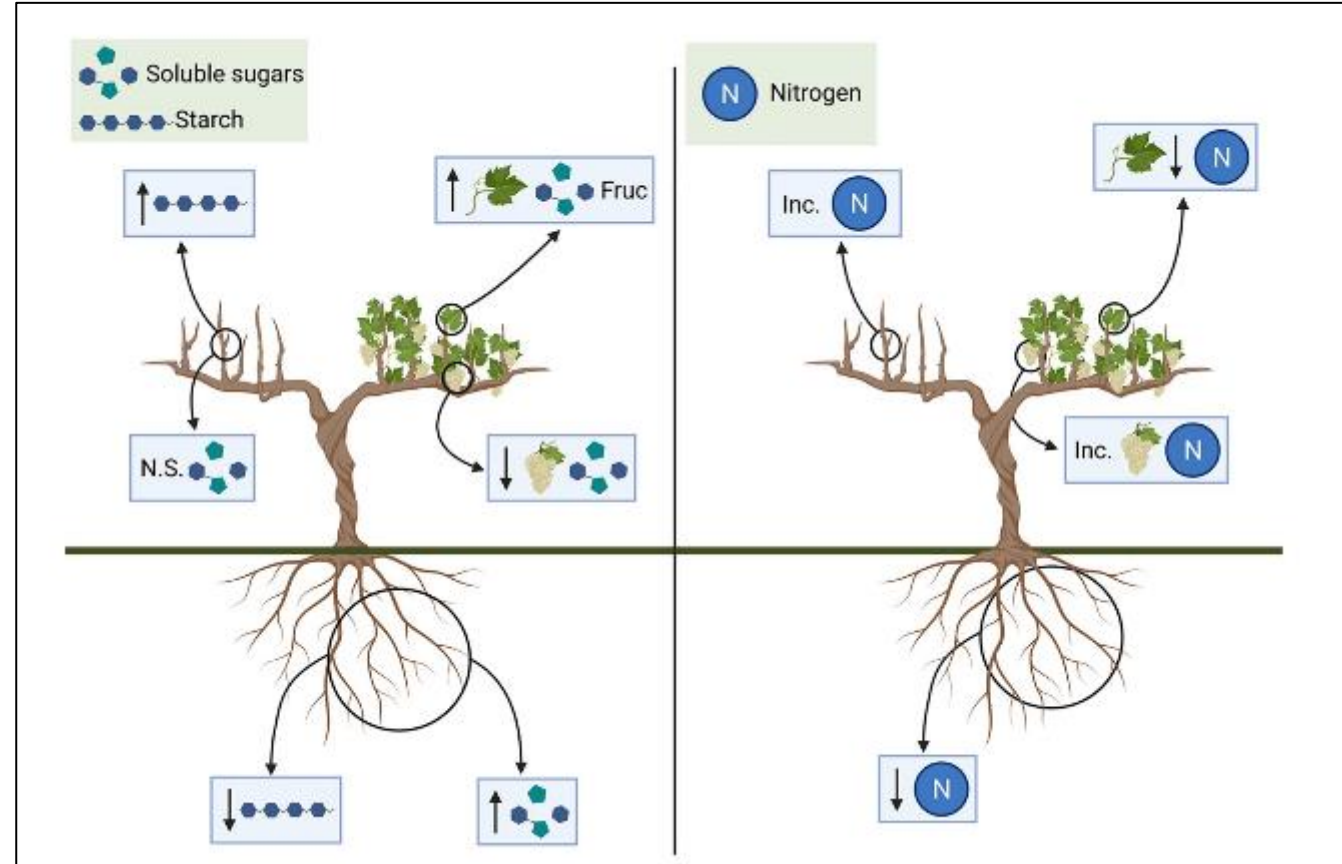


Impact on Grapevines

Prolonged phloem feeding by the spotted lanternfly, an invasive planthopper, alters resource allocation and inhibits gas exchange in grapevines

Andrew D. Harner¹ | Heather L. Leach² | Lauren Briggs¹ | Michela Centinari¹

“Intensive late season feeding by large adult SLF population densities (8+/shoot can induce C limitations with the potential for negative year-after effects in cases of severe belowground C depletion”





Chemical Management in Pennsylvania vineyards

- August – October
 - Adults move into vineyards from unmanaged areas, in repeated waves, feed & lay eggs
 - Frequent **insecticide applications** using products with short preharvest intervals, long residual products postharvest (grapes)
 - Thresholds under development (low)
 - Border treatment as effective as spraying entire vineyard

Chemical Control of SLF in Vineyards (Pennsylvania)



Active Ingredient	Trade Name(s) Tested	Class (IRAC Group)	Toxicity to Bees	Rate Per Acre	PHI (days)	REI (hours)	Target Life Stage Tested	Longevity of Product (days)*	Efficacy Rating
Bifenthrin	Brigade 2EC/ Bifenture EC**	Pyrethroid (3)	High	6.4 oz	30	12	Adults	7-14	Excellent
Beta-cyfluthrin	Baythroid	Pyrethroid (3)	High	3.2 oz	3	12	Adults	7-14	Excellent
Fenpropathrin	Danitol	Pyrethroid (3)	High	21.33 oz	21	24	Adults	21	Excellent
Zeta-cypermethrin	Mustang Maxx 0.8EC	Pyrethroid (3)	High	4 oz	1	12	Nymphs, adults	0 (knockdown only)	Excellent
Dinotefuran	Venom/ Scorpion	Neonicotinoid (4A)	High	3 oz/ 5 oz	1	12	Nymphs, adults	3-5	Excellent
Thiamethoxam	Actara	Neonicotinoid (4A)	High	3.5 oz	5	12	Nymphs, adults	3-5	Excellent
Carbaryl	Sevin XLR Plus/ Carbaryl 4L	Carbamate (1A)	High	2qt	7	12	Nymphs, adults	0 (knockdown only)	Good to excellent
Malathion	Malathion 8F	Organophosphate (1B)	High	1.88 pt	3	12	Nymphs, adults	0 (knockdown only)	Excellent
Chlorpyrifos	Lorsban Advanced	Organophosphate (1B)	High	1 qt	35	24	Eggs	—	Excellent
Paraffinic oil	JMS Stylet Oil	Mineral oil (n/a)	Low	3%	14	4	Eggs	—	Good

Proximity of
Niagara
Vineyards to
Escarpment



Common SLF hosts in the Niagara Escarpment

<i>Acer</i> spp.	maple
<i>Ailanthus altissima</i>	Tree-of-heaven
<i>Asimina triloba</i>	Pawpaw
<i>Betula</i> spp.	birch
<i>Carya ovata</i>	Shag-bark Hickory
<i>Cornus</i> spp.	Dogwood
<i>Corylus americana</i>	American Hazelnut
<i>Fraxinus</i> spp.	Ash
<i>Juglans nigra</i>	Black Walnut
<i>Malus</i> spp.	Sweet Crab-apple
<i>Parthenocissus</i> spp.	Virginia Creeper

<i>Prunus</i> spp.	Wild plum/cherry
<i>Quercus</i> spp	Oak
<i>Rhus typhina</i>	Staghorn Sumac
<i>Rubus</i> spp.	Blackberry
<i>Salix</i> spp.	Willow
<i>Sassafras albidum</i>	Sassafras
<i>Thuja occidentalis</i>	Eastern White Cedar
<i>Tilia americana</i>	American Basswood
<i>Tsuga canadensis</i>	Eastern Hemlock
<i>Ulmus</i> spp.	Elm
<i>Vitis riparia</i>	Riverbank Grape

Spotted Lanternfly Ecological Impact

- Feeding causes plants stress, even if it does not result in the plant's mortality
- Weakens plant, making it less resilient to other insects and pathogens and stresses caused by climate change and land use change
- Excretion of honeydew forms sticky spots that foster mold growth
- Reduces photosynthetic capability of host plant
- Blocks growth of understory plants



Honeydew Shower



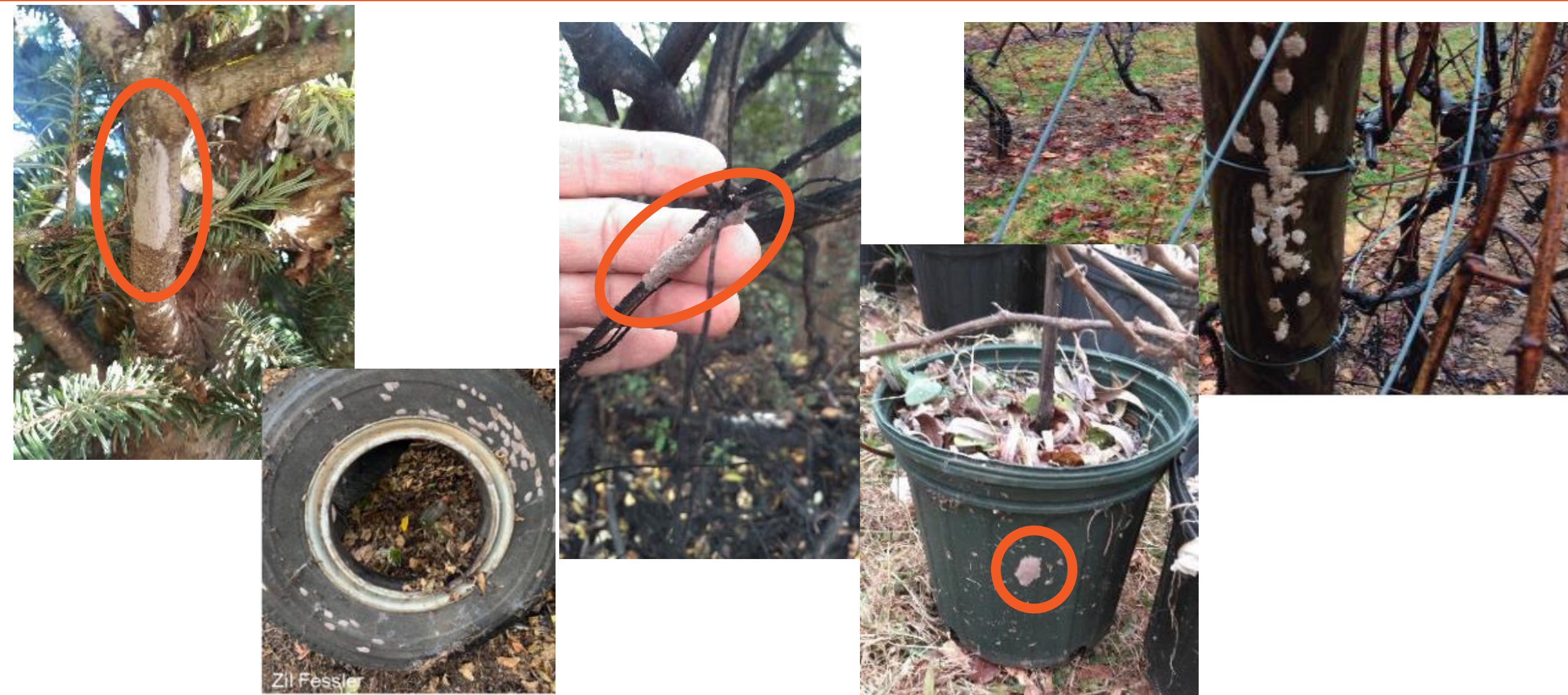
Slide courtesy of Brian Walsh, Penn State University

Spotted Lanternfly Social Impact



Honeydew attracts stinging insects

Spotted Lanternfly Long Distance Dispersal



Slide courtesy of Brian Walsh, Penn State University

SLF Is A Great Hitchhiker



Brian Walsh

Adult SLF are capable of hanging on to moving vehicles with arolium pads (suction cups) and tarsal claws.

Eggs are often deposited on materials inadvertently moved by humans.

SLF are great at hiding in nursery stock.

SLF Is A Great Hitchhiker

A NOVEL APPROACH TO ASSESSING HUMAN-MEDIATED INSECT DISPERSAL ON VEHICLES

USDA Agricultural Research Service | John H. Garmon, Scott H. Havel, Amy E. Havel, Tracy L. Lewis | USDA ARS, Agricultural Field Research Station, Kearneysville, WV

Research Question: At what wind speed are spotted lanternfly dislodged from the surface of a vehicle?

HOOD: 2.0% dislodged at 90 kph

WELL: 51.0% dislodged at 90 kph

WINDSHIELD: 24.0% dislodged at 90 kph

WIPER BLADE: 22.0% dislodged at 90 kph

SIDE PANEL: 2.0% dislodged at 90 kph

TAKE AWAYS

- Over 80% insects in the well region withstood the maximum wind speed without dislodgement
- 1st instar nymphs and early adults withstood significantly higher wind speeds than other life stages
- No sex-based differences were observed
- SLF on painted metal (hood, side panel) withstood significantly lower wind speeds than on other materials (rubber, plastic) (wiper blades, well, windshield)
- It took only 30 seconds to remove insects from vehicles traveling up to 95 kph

METHODS

1st instar nymphs, 2nd instar nymphs, 3rd instar nymphs, 4th instar nymphs, 5th instar nymphs, 1st instar adults, 2nd instar adults, 3rd instar adults, 4th instar adults, 5th instar adults

Results: we used a laminar flow wind machine to generate wind speeds up to 95 kph. We tested 6 life stages on the following areas of the car: 1) hood 2) windshield 3) wiper blades 4) well beneath windshield 5) vertical side panel 6) 30 knock panel to surge and traction

A pilot assessment revealed we required adjustment to the starting position of the insect. We recorded the speed at which each insect was dislodged or the maximum wind speed that was the most

SCAN TO WATCH DEMO ON YOUTUBE

Adult or nymph
1st instar nymph
3rd instar nymph

- Laminar flow wind machine
- Windspeed up to 95 kph
- Life stages on hood, windshield, wiper blade, well beneath windshield, vertical side panel
- >50% of insects in well up to 95 kph
- 1st instars and early adults withstood greater wind speeds
- SLF on painted metal withstood less wind than on rubber, hard plastic, glass

[SLF on hood \(youtube.com\)](https://www.youtube.com/shorts/ECVBhGAM5Z8)

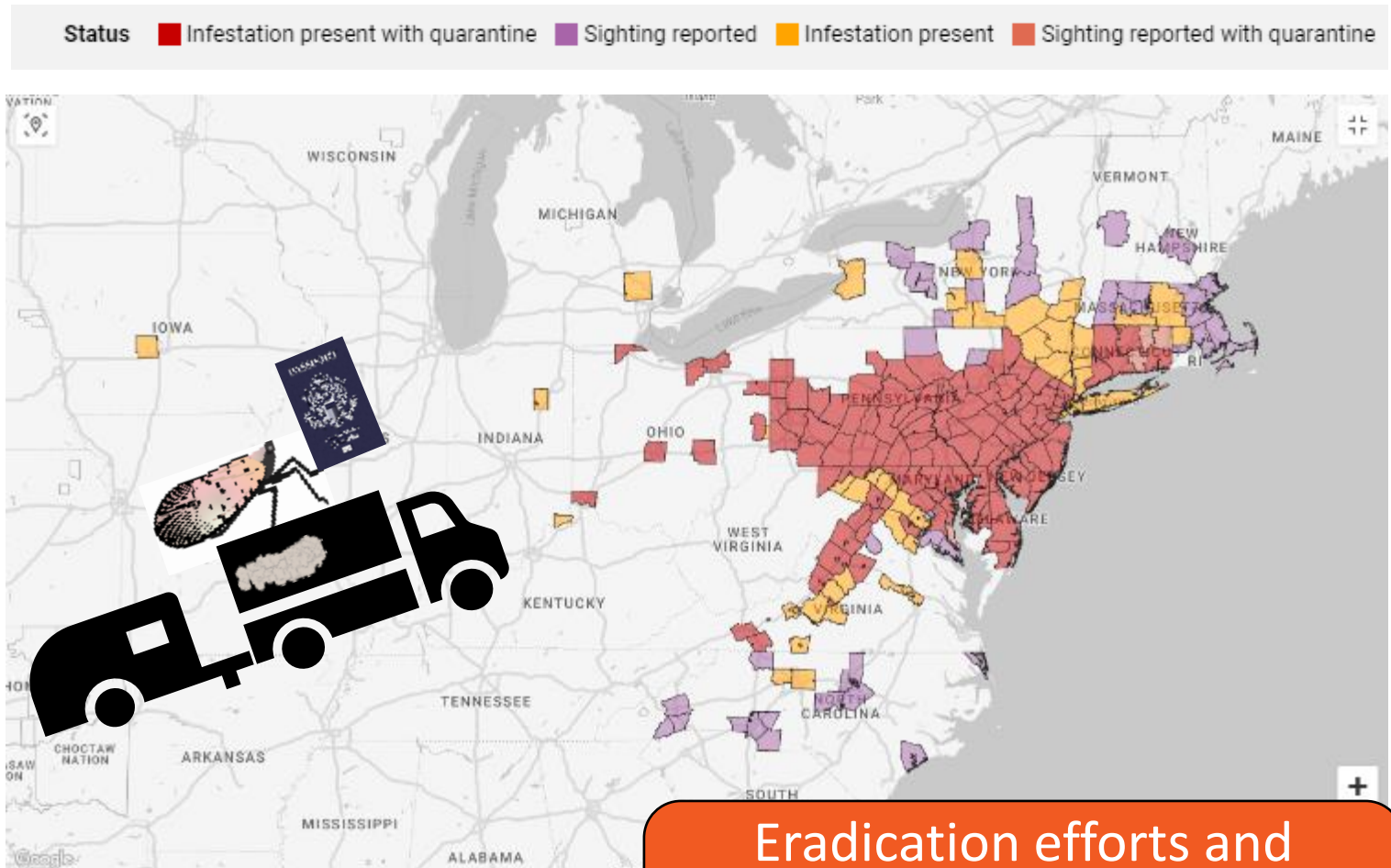
<https://www.youtube.com/shorts/ECVBhGAM5Z8>



Spotted Lanternfly Long Distance Dispersal

LONG DISTANCE SPREAD

SLF is a Great Hitchhiker



Cornell Interactive Spotted Lanternfly (September 11, 2023)

Eradication efforts and quarantines to date have resulted in limited success



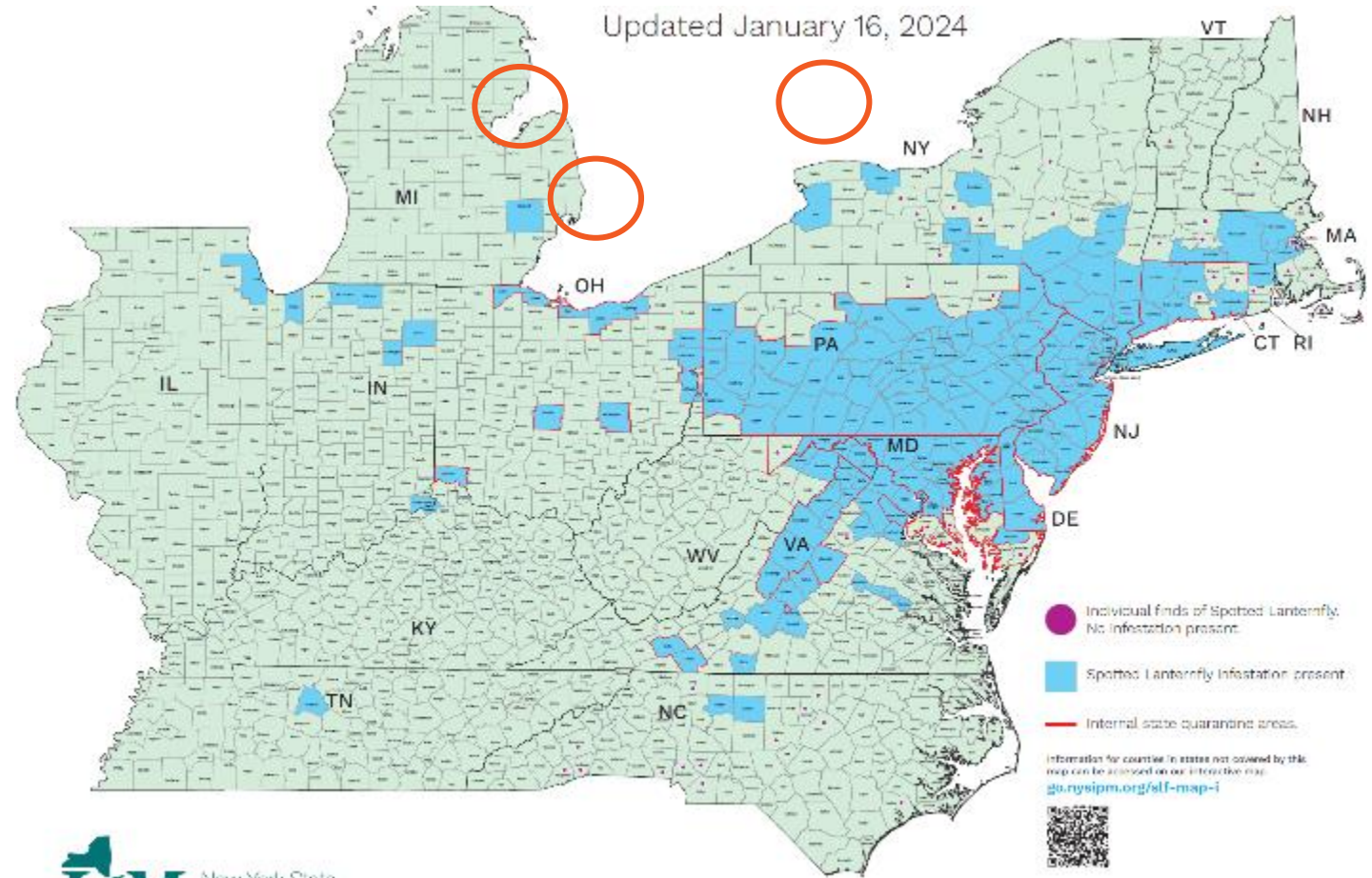
Photo: Ken Law, USDA APHIS PPQ, Bugwood.org 5539473

“Sniffer dog” Detection of Spotted Lanternfly



Spotted Lanternfly Distribution

- Infestations in 2022
 - Buffalo, NY
 - Oakland Co, MI
 - Cleveland Ohio

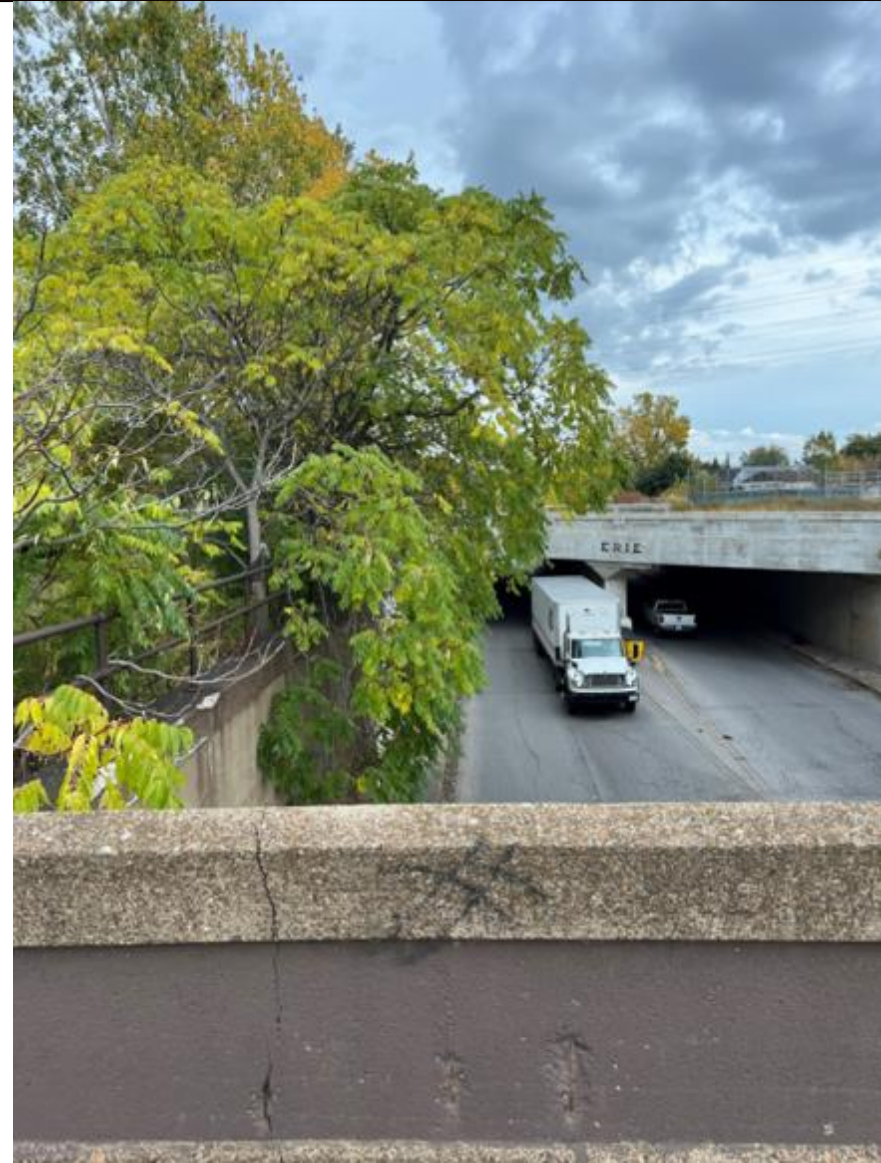


Spotted Lanternfly, Buffalo NY



Nearby: WM Station (waste mgmt), UPS Customer Center, Railway, major highway

Spotted Lanternfly, Buffalo NY, October 2023

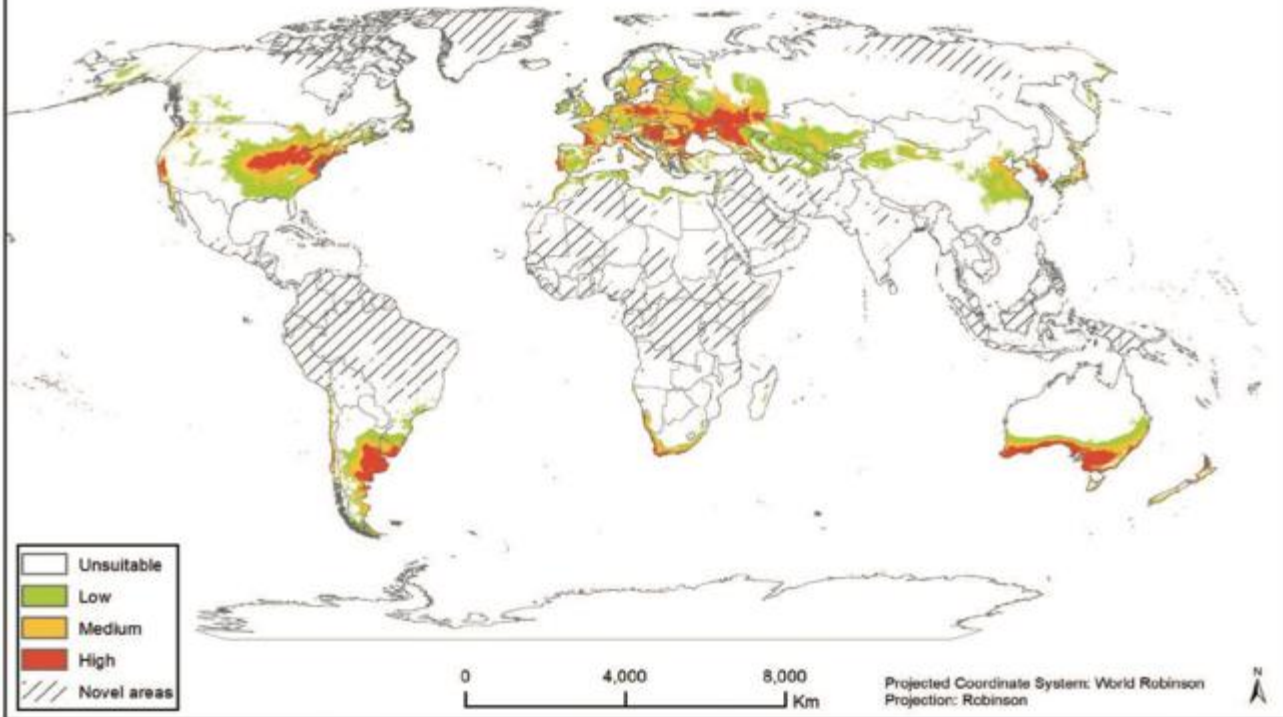




Is it
here ???

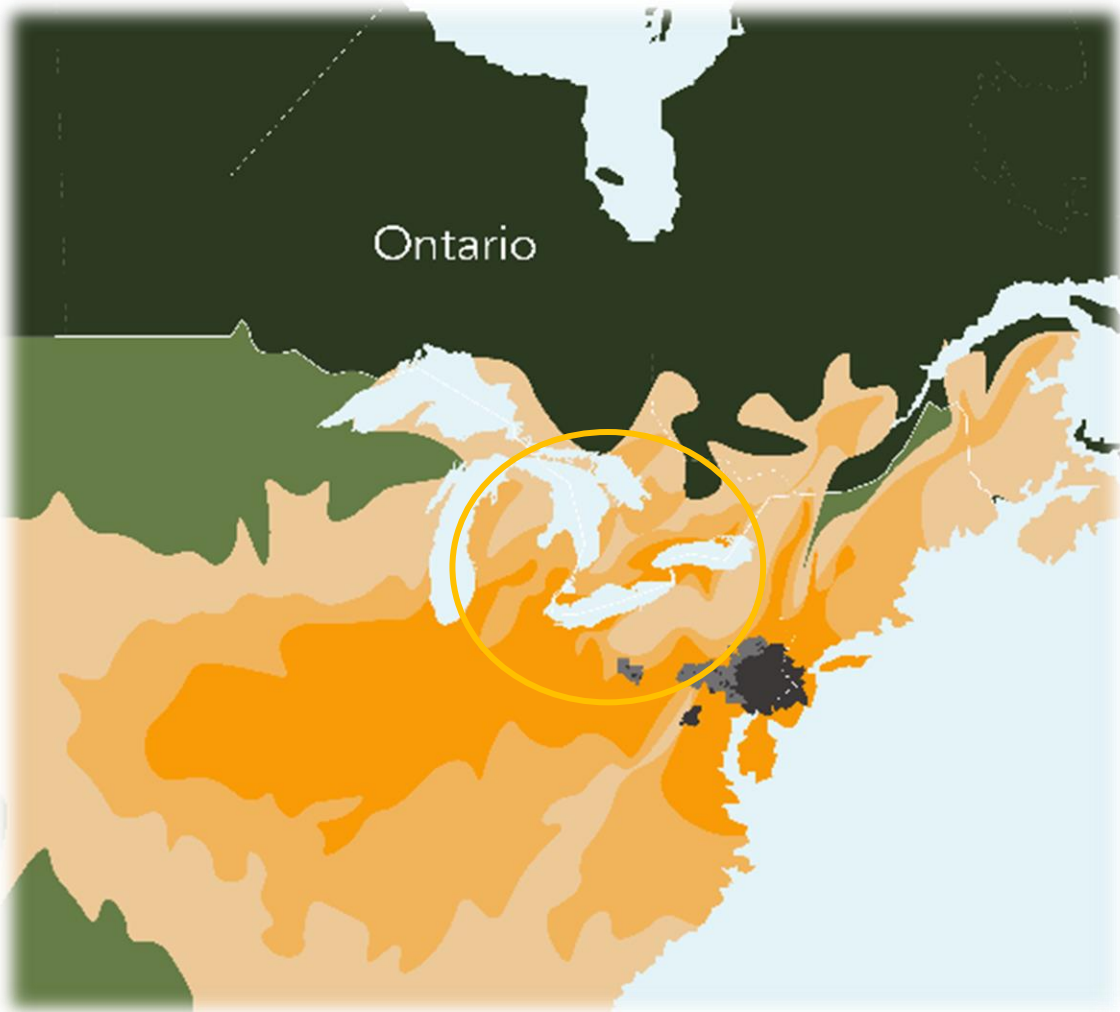
Will our cold winters protect us?

Global potential distribution of spotted lanternfly based on MAXENT model
from Wakie, Neven, Yee & Lu, 2019



- Wakie et al. 2019 (MAXTENT)
 - Compares optimal environmental locations/dynamics for a species using existing occurrence data to identify potential areas of establishment
 - Expect establishment in southern Ontario
 - Optimal conditions in Ontario's wine grape production areas

Will our cold winters protect us?



Map Developed by the
Invasive Species Centre

- Wakie et al. 2019 (MAXTENT)
 - Compares optimal environmental locations/dynamics for a species using existing occurrence data to identify potential areas of establishment
 - expect establishment in southern Ontario
 - optimal conditions in Ontario's wine grape production areas

Spotted Lanternfly Observations in Canada

- CFIA regulated pest list (2018)
- Sighting
 - Reports of spotted lanternfly in Canada that the CFIA is aware of, including those made on public reporting sites (e.g. iNaturalist Canada, Facebook, etc.). Sightings are not confirmed by the CFIA.
- Interception
 - Live spotted lanternfly, confirmed by the CFIA, in contained situations (e.g. warehouse) with no evidence of release to the Canadian environment; and/or dead spotted lanternfly, confirmed by the CFIA.
- no known established populations

<https://inspection.canada.ca/plant-health/invasive-species/insects/spotted-lanternfly/observations/eng/1704906112038/1704906614226>

Observations of spotted lanternfly

Date	City/Town	Province	Type of Observation
December 2023	Lincoln	Ontario	Interception (Dead)
November 2023	Toronto	Ontario	Sighting (dead)
September 2023	Pelham	Ontario	Interception (live)
September 2023	Fort Erie	Ontario	Interception (dead)
September 2023	Fort Erie	Ontario	Interception (dead)
September 2023	Fort Erie	Ontario	Sighting (live)
September 2023	Oakville	Ontario	Sighting (live)
August 2023	Waterloo	Québec	Sighting (live)
August 2023	Sydney	Nova Scotia	Sighting (dead)
August 2023	Halifax	Nova Scotia	Sighting (dead)
August 2023	Saint-Bernard-de-Lacolle	Québec	Interception (live)
June 2023	Saint-Hyacinthe	Québec	Interception (dead)
April 2023	Welland	Ontario	Sighting (dead)
January 2023	Ottawa	Ontario	Interception (dead)
November 2022	Clearview	Ontario	Interception (dead)
November 2022	Winnipeg	Manitoba	Interception (dead)
October 2022	Moncton	New Brunswick	Interception (dead)
October 2022	Varenes	Québec	Interception (dead)
September 2022	Longueuil	Québec	Interception (dead)
September 2022	Lévis	Québec	Interception (dead)

Spotted Lanternfly Monitoring in Ontario



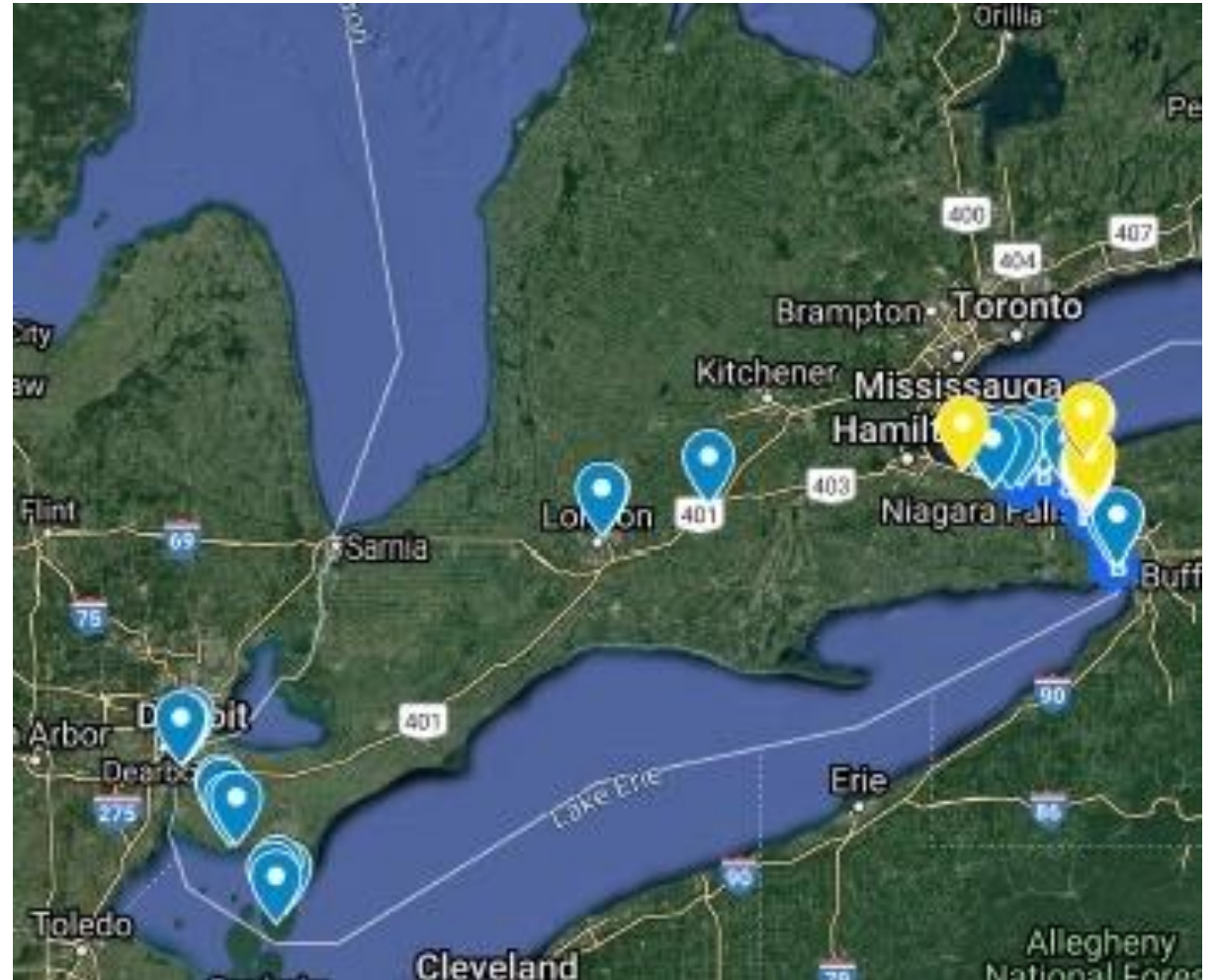
Spotted Lanternfly Monitoring in Ontario

- Criteria for monitoring sites
 - Long distance travel (especially from US) with extended parking
 - Host tree close to parking
 - Safe access for monitoring

Funding from the Marketing and Vineyard Improvement Program
of OMAFRA through Ontario Grape and Wine Research Inc.

Spotted Lanternfly Monitoring in Ontario, 2021

- 29 locations across southern Ontario, focus in Niagara
- 65 tree bands
- Checked biweekly



Spotted Lanternfly Monitoring in Ontario, 2022

- 41 locations - 110 traps total
- Checked every 2-3 weeks
- Bug barrier traps used
- Added QR code linked to CFIA website for more information



Canada
Canadian Food Inspection Agency / Agence canadienne d'inspection des aliments

SPOTTED LANTERNFLY

HOSTS
GRAPE
TREE-OF-HEAVEN
WILLOW
APPLE
PINE
STONE FRUIT

ACTUAL SIZE
BODY LENGTH
20 mm - 25 mm

Canada
Canadian Food Inspection Agency / Agence canadienne d'inspection des aliments

SPOTTED LANTERNFLY

(Lycorma delicatula)

Adult

Nymph

Nymph

Woodpecker

Woody plant

Egg mass

© 2015 Her Majesty the Queen in Right of Canada | Asses d'inspection des produits
Use without permission is prohibited | Photo Credits: L. Barringer & M. Popescu (Barringer rept. & Wickham, Insectology) | Report ALL sightings www.inspection.gc.ca/pests

Monitoring site for Spotted Lanternfly

For more information see

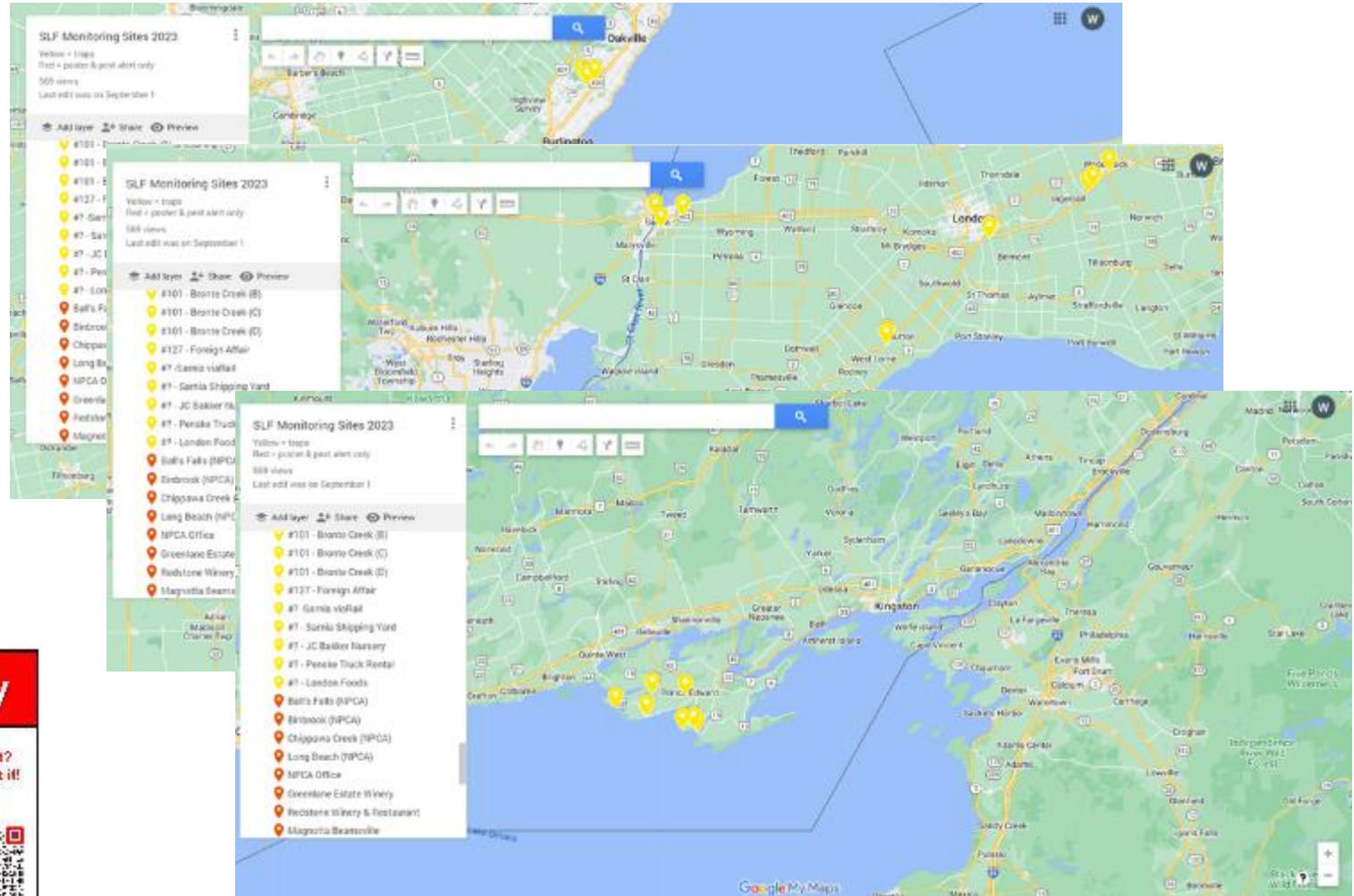


Or contact:
Wendy McFadden-Smith
Horticulture Integrated Pest Management Specialist
Ontario Ministry of Agriculture, Food and Rural Affairs
Email: Wendy.McFadden-Smith@ontario.ca

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Spotted Lanternfly Monitoring in Ontario, 2023

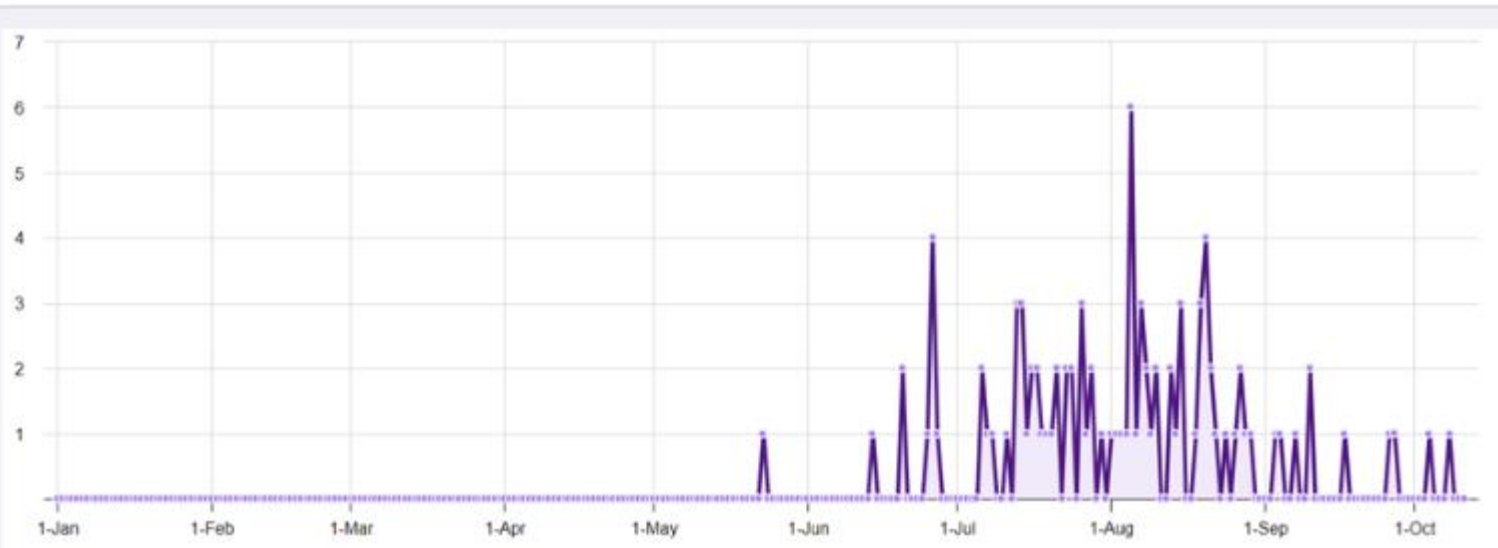
- 160 traps in 89 sites
- Info tags & posters
 - Trail heads for Bruce Trail and Essex county greenway
 - Conservation areas
 - Provincial parks
 - High Park
 - Visitor centre SS Marie



Spotted Lanternfly Monitoring in Ontario, 2023

94 Scans

Times and dates in this report are displayed using the America/Blanc-Sablontime zone. [Change your default time zone.](#)



Survey Site for Invasive Spotted Lanternfly

Egg Cluster (Sept - May) | **Nymphs** (May - Jun) | **Adults** (Jul - Sept, Jul - Nov)



See it? Report it!

Questions? Contact: Wendy K. Locke-Bell, Director of Agriculture, Food and Rural Affairs, Perth County, 613-925-2222, Perth@ontario.ca


Spotted Lanternfly Public Awareness, 2023

- Digital signs
 - OnRoute rest stations at Tilbury, West Lorne/Dutton, Mallorytown


Spotted lanternfly
Le fulgore tacheté




See it?
Le voir?



Snap it!
Capturer-le!



Report it!
Signaler-le!



Credit: Richard Gardner, Bugwood.org

Spotted lanternfly
Le fulgore tacheté



See it?
Le voir?



Snap it!
Capturer-le!



Report it!
Signaler-le!



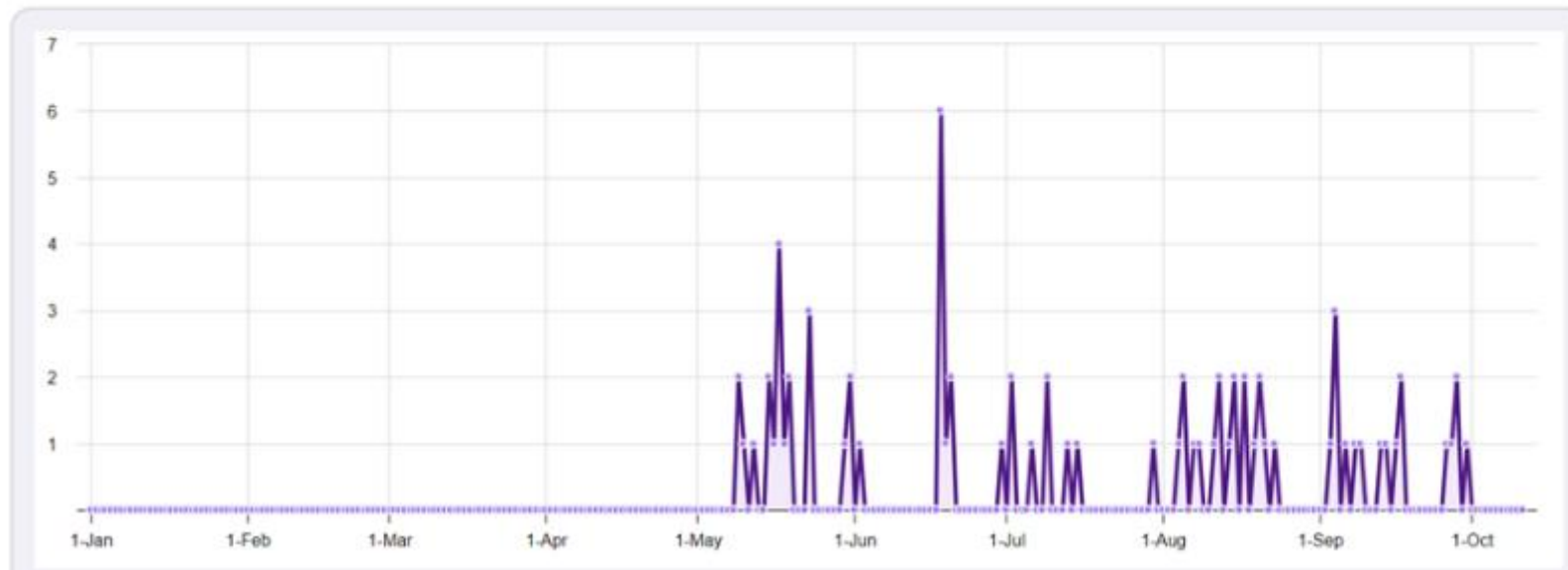
Credit: Heather Leach, MSU

Spotted Lanternfly Public Awareness, 2023

- Digital signs
 - OnRoute rest stations at Tilbury, West Lorne/Dutton, Mallorytown

74 Scans

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What are our Management Options?



SCIENCE | OCTOBER 2020

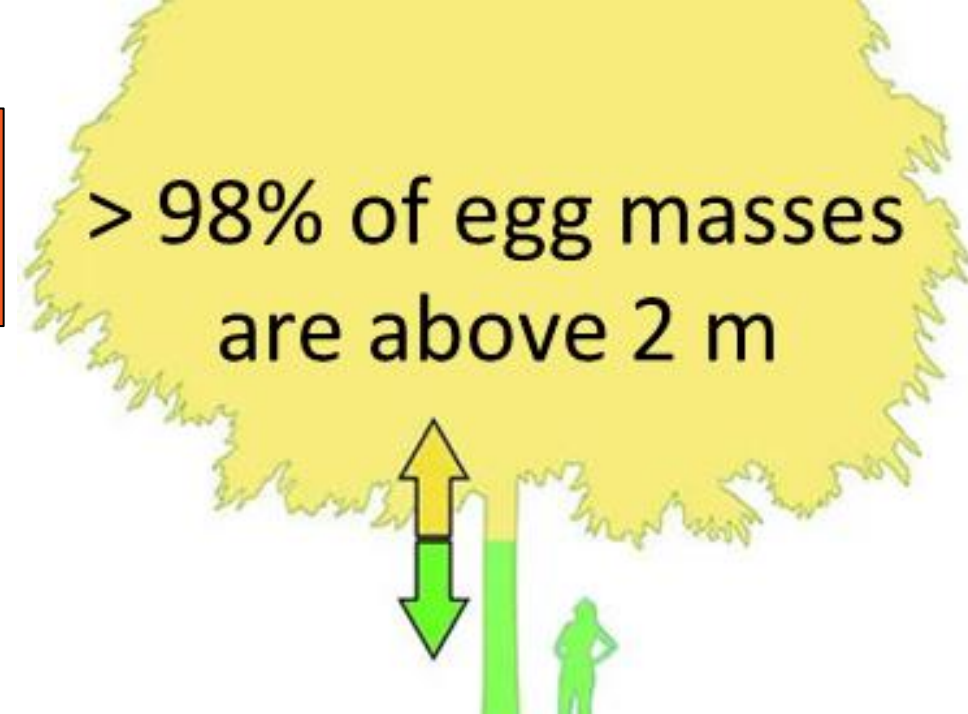
Can Scientists Stop the Plague of the Spotted Lanternfly?

The voracious, shape-shifting insect native to Asia is attacking crops, vineyards and trees

Management of SLF

- Include SLF in scouting program
 - Recognize different growth stages
 - Early
 - Nymphs on foliage and shoots
 - Later
 - Trunks and branches
 - Check other hosts along borders (ToH, black walnut, maple, sumac)
 - Look for
 - Eggs, other life stages
 - Weeping on trunks
 - Sooty mould on understory plants
 - Sweet/foul odour

> 98% of egg masses are above 2 m



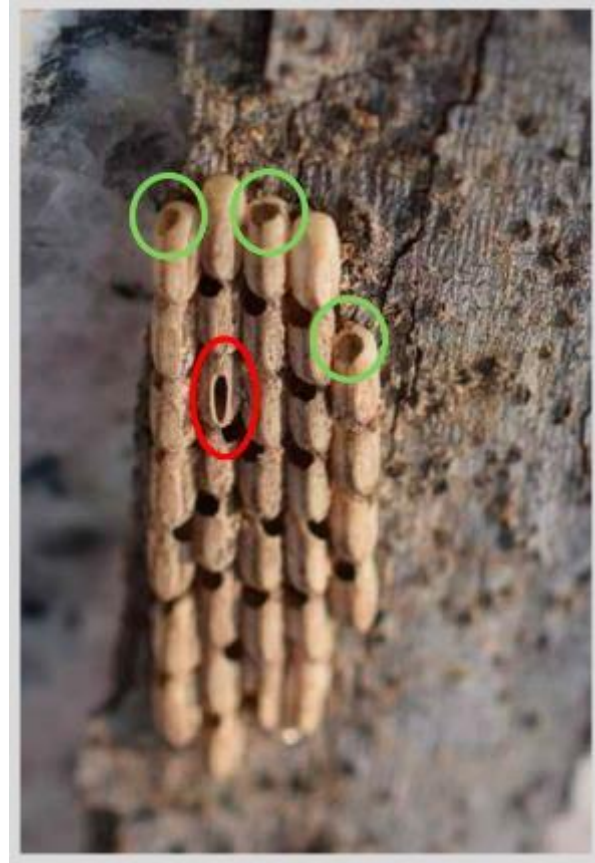
Management of SLF



Photo: Tim Haye, CABI

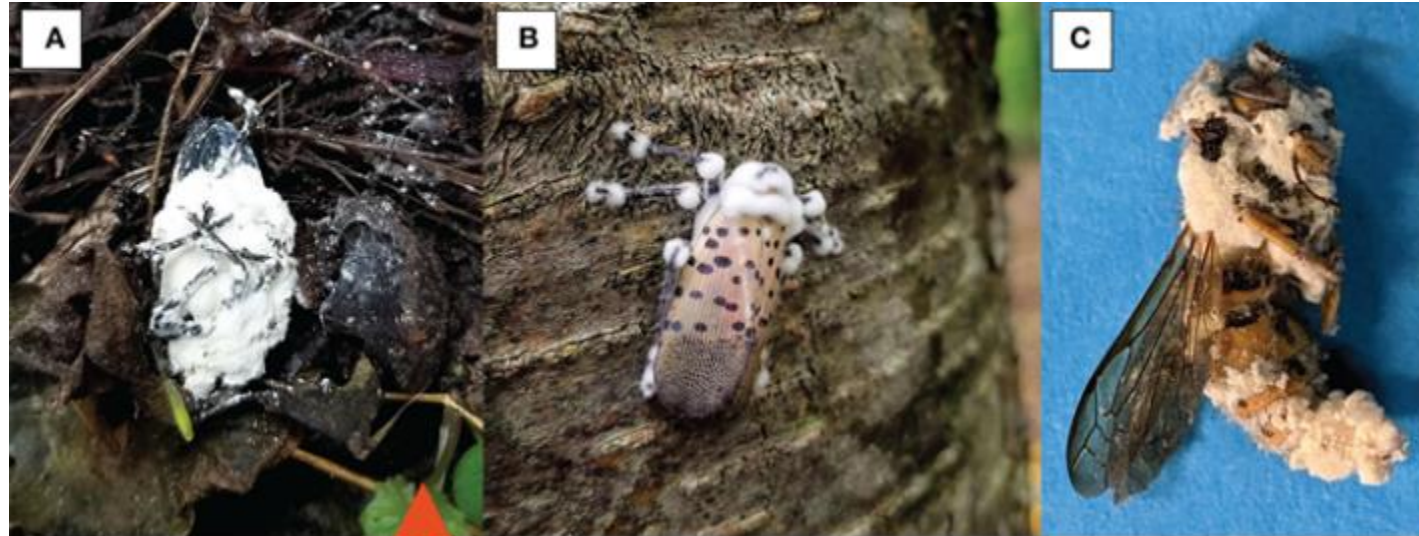
- Key tools in US include pyrethroids (bifenthrin) and neonicotinoids (imidacloprid and dinotefuran)
- Proactive pesticide registrations in Canada
 - Kopa Insecticidal soap (grapes, tree fruit, outdoor ornamentals)
 - Dannitol (tree fruit)
 - Altus emergency use (outdoor & landscape ornamentals)
 - Vegetable oils*

Management of SLF - Biological control



- *Anastatus orientalis*
 - Parasitic insects native to China (centre of origin of SLF)
 - Egg parasitoid of SLF
 - Reported to parasitize 30% of egg masses and 40% eggs within discovered masses (Yang et al. 2015)
 - In quarantine culture at APHIS for further study

Management of SLF - Biopesticides



ORIGINAL RESEARCH article

Front. Insect Sci., 25 April 2023
Sec. Invasive Insect Species
Volume 3 – 2023 | <https://doi.org/10.3389/finsc.2023.1327982>

This article is part of the Research Topic
Focus on Spotted Lanternfly
[View all 21 Articles >](#)

Cryptic diversity and virulence of *Beauveria bassiana* recovered from *Lycorma delicatula* (spotted lanternfly) in eastern Pennsylvania

Eric H. Clifton^{1*} Louela A. Castrillo² Stefan T. Jaronowski³ Ann E. Hajek⁴



Journal of Invertebrate Pathology

Volume 186, November 2021, 107689



Discovery of two hypocrealean fungi infecting spotted lanternflies, *Lycorma delicatula*: *Metarhizium pemphigi* and a novel species, *Ophiocordyceps delicatula*

[Eric H. Clifton](#)^{*} [Louela A. Castrillo](#)², [Ann E. Hajek](#)^{*}

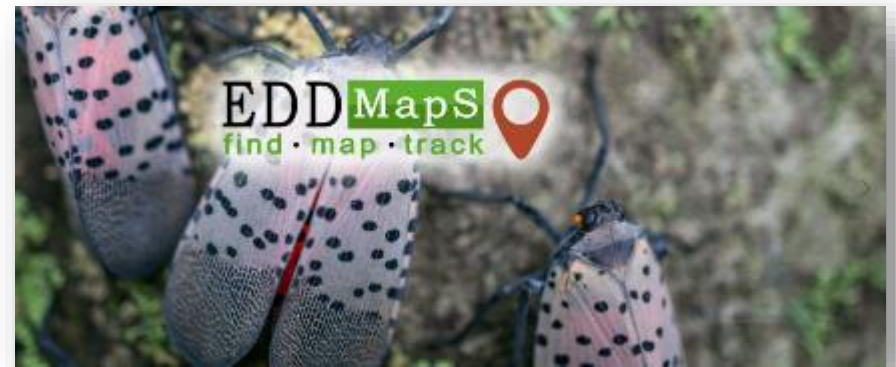
Cultural Management

- Exclusion netting over vine rows is highly effective (>99%)
- Not practical for growers



What can YOU do?

- Report ToH and possible Spotted Lanternfly finds
- EDDMapS: a web-based mapping system for documenting invasive species distribution
 - Website: www.eddmaps.org/
 - App for iOS and Android
- Notify the Canadian Food Inspection Agency (CFIA)
 - www.inspection.gc.ca/pests
 - Fill in online form, or contact national or local office
- Get in touch with the Invasive Species Centre
 - Email info@invasivespeciescentre.ca
 - Call 705-541-5790



What can YOU do?

- Inspect any materials that are introduced to your location especially for egg masses

Uncovered egg mass



Partially covered egg mass



Covered egg mass



Old hatched egg mass



What can YOU do?

- Look for signs of mould in surrounding woodlots
- Then look (especially UP!) for SLF



Should I remove tree-of-heaven?



Chuck Bargeron, University of Georgia, Bugwood.org



Annemarie Smith, ODNR Division of Forestry, Bugwood.org

- Listed under Ontario *Invasive Species Act*
 - prohibited effective January 1, 2024
 - preferred host for SLF, but NOT required for completing its lifecycle
- Used for biosurveillance / monitoring
- Trap trees in in the US “attract and kill”
 - treat with dinotefuran / imidacloprid
 - around vineyards, urban, other
- Removal?
 - Eliminating all of the *Ailanthus altissima* is not feasible or cost effective in the short term, nor will it eliminate SLF.
- Find it / Report it:
 - EDDMaps
 - iNaturalist

Wild grapes are also good hosts

Journal of Economic Entomology, 116(6), 2023, 2207–2211
<https://doi.org/10.1093/jee/toad198>

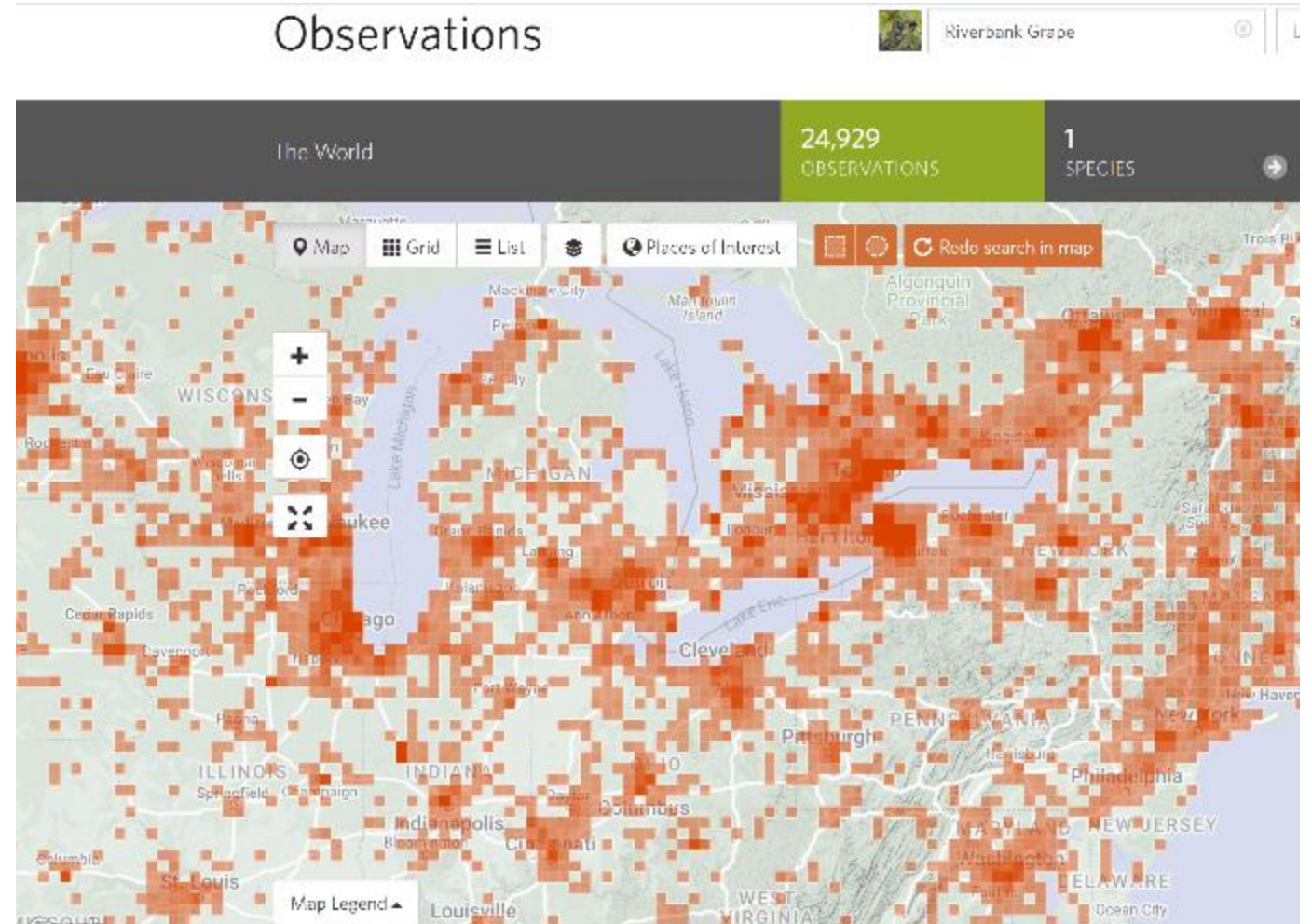
Development and survivorship of *Lycorma delicatula* (Hemiptera: Fulgoridae) on cultivated and native *Vitis* spp. (Vitales: Vitaceae) of the Eastern United States

Johanna E. Elsensohn^{1,2,*}, Laura J. Nixon^{1,*}, Alyssa Kloos¹, Tracy C. Leskey^{1,2,*}

¹Appalachian Fruit Research Station, USDA-ARS, Kearneysville, WV 25430, USA, *Corresponding author, mail: Tracy.Leskey@usda.gov
²Present affiliation: Professional Development Center, USDA-APHIS, Frederick, MD 21702, USA

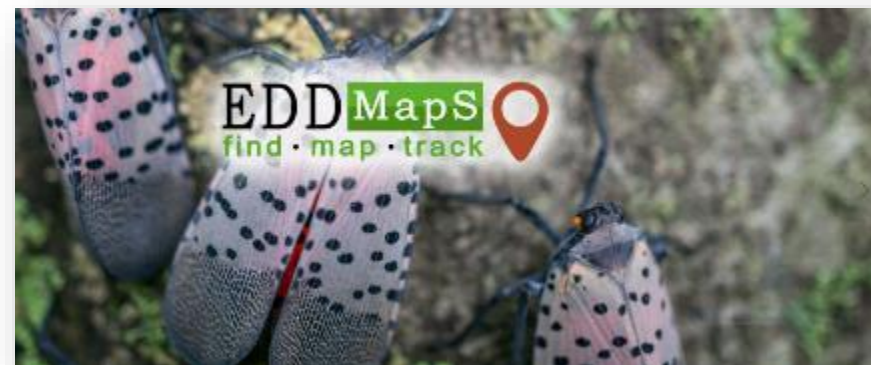
Vitis riparia (wild grapevine) is equivalent to tree of heaven for survivorship and rate of development.

May provide the means to invade and establish in new regions.



What can YOU do?

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 - Call 705-541-5790



A Good Report Includes:

- Location
 - If you use the EDDMapS app, your precise latitude/longitude are recorded automatically (can be set to a private setting)
- Photos
- Good description of specimen(s) if no photo, plus notes on any other relevant info – host species, behaviour, presence of honeydew
- Collect specimen if possible
 - Plastic bag or sealed container with rubbing alcohol or hand sanitizer
 - Can also place in freezer

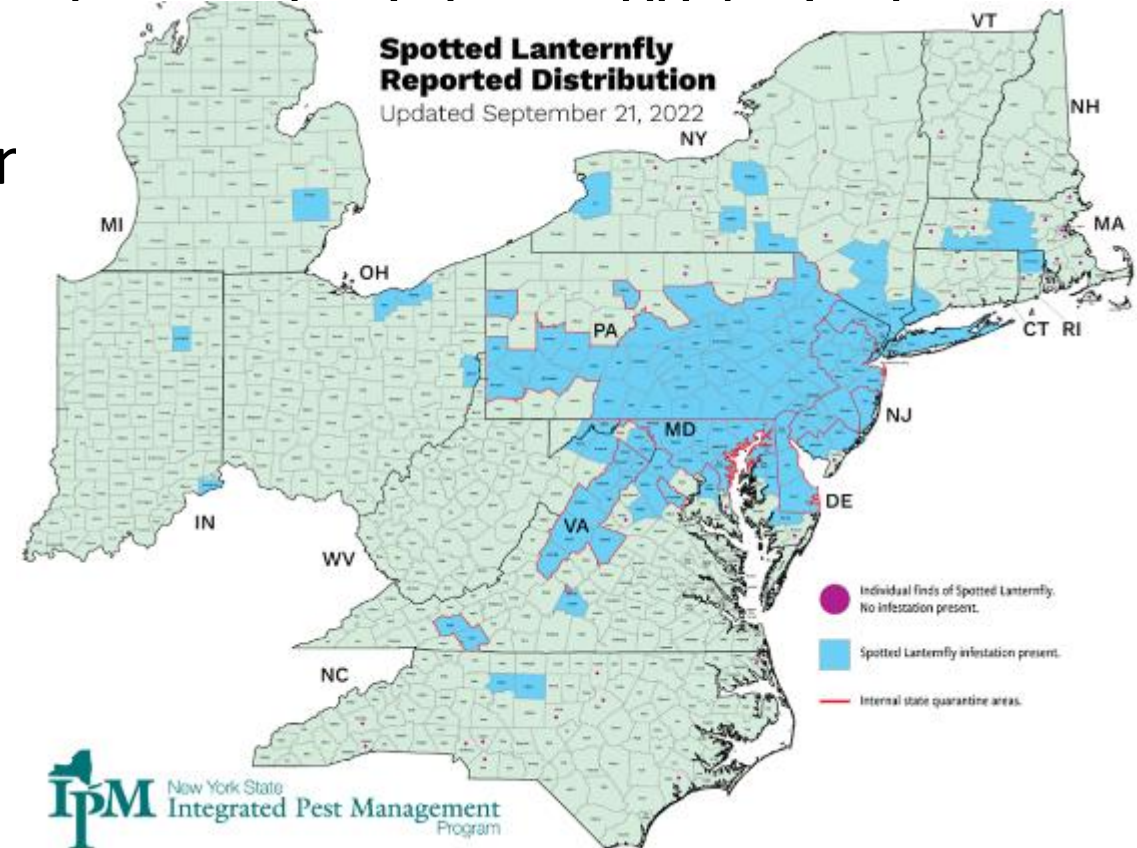
What can YOU do?

- Use a hard, flat edge to scrape the masses off of the surface and into a container filled with alcohol or hand sanitizer



What can YOU do?

- If you travel to an infested area, inspect your vehicle and anything that was left outdoors for an extended period (days) for eggs, nymphs and adults
- Go through a car wash after leaving it



Want more information?



Spotted Lanternfly: What Grape Growers Need to Know

SPOTTED LANTERNFLY: WHAT GRAPE GROWERS NEED TO KNOW

Room 205, [Second Level](#)

Chair: Denise Beaton, OMAFRA

Sponsored by:



9:30 10 Years with the Spotted Lanternfly

Richard [Blair](#), Setter Ridge Winery, USA

10:00 Spotted Lanternflies in Vineyards: Research Findings and Management Scenarios

Dr. Michela [Centinari](#), Pennsylvania State University, USA

10:30 SLF Update from CFIA

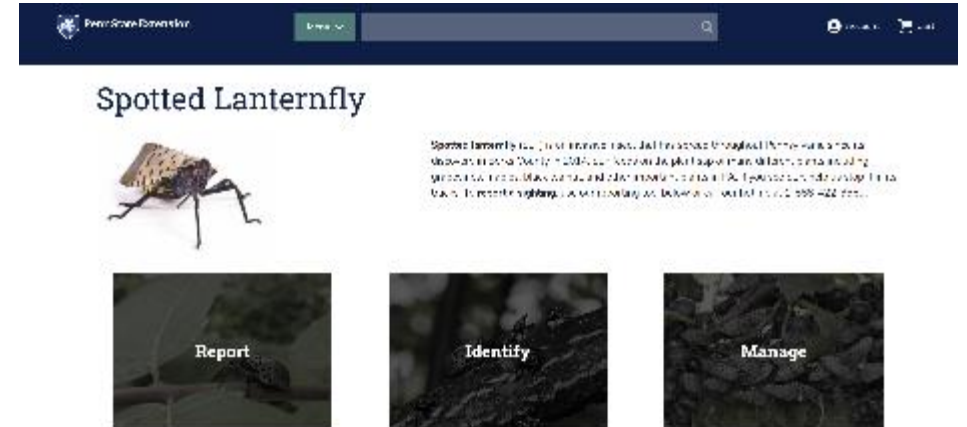
Carla Cassone, Jamie Maloney, Canadian Food Inspection Agency

11:00 Spotting Opportunities to Stomp Lanternfly

Josh [Mosiondz](#), Hannah [Fraser](#), OMAFRA

Want more information?

- Penn State Extension
<https://extension.psu.edu>

A banner for the "Invasive Species Training Program". The title "Invasive Species Training Program" is displayed in green and blue text. Below the title are three circular icons: a group of people, a leaf, and a microscope. A light blue rounded rectangle contains the text "NEW COURSE – Spotted Lanternfly Training" and "This free course provides an in-depth review on spotted lanternfly, covering topics related to species identification, habitat, biology, spread, impacts, and prevention." Below this is a link "Check out our other courses here." At the bottom left of the banner is the URL <https://invasivespeciestraining.ca/>.



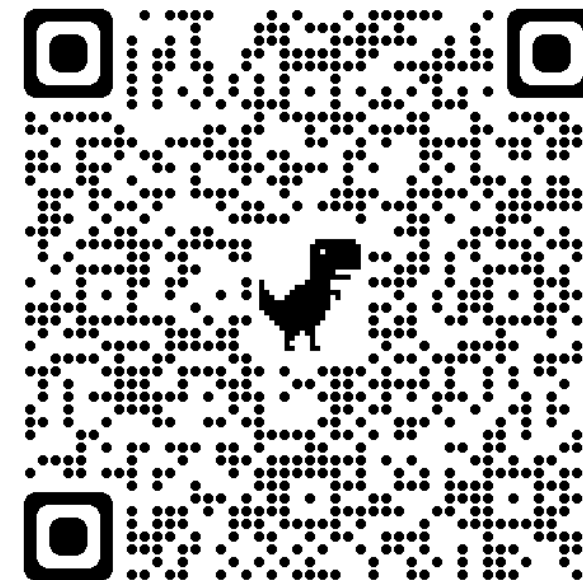
See it? Snap, catch, and report it!

Spotted lanternfly

Spot it? Snap it, catch it and report it

In an effort to prevent its introduction and spread into Canada, spotted lanternfly (*Lycorma delicatula*, Hemiptera: Fulgoridae) has been regulated by the CFIA since 2018. It can feed on more than 100 species of trees and plants. It is not known to be present in Canada, but poses a significant threat to the grape, tree fruit, wine and ornamental nursery industries.

If you think you have found the spotted lanternfly or its egg masses, report it to the CFIA immediately.



[Report a spotted lanternfly sighting](#)

Report suspects to the Canadian Food Inspection Agency

Good sh*t! Bees are making dark, smoky honey out of spotted lanternfly excrement.

Published: Jan. 29, 2023, 7:28 a.m.





Thank you!