



**Agriculture  
and Markets**

# Agricultural Invasive Species

In the SLELO PRISM Region



Photo: AP Matt Rourke

**June 24, 2021**

**Thom Allgaier, Invasive Species Coordinator**

# Agricultural Invasive Species Programs

- Grape Commodity Survey
- Stone Fruit Survey
- Small Fruit Survey
- Orchard Survey
- Phytosanitary Certification
- Non-native Bee Survey
- Apiary Inspection
- National Honeybee Survey
- Phytophthora ramorum Survey
- Seed Sampling & Testing
- Box Tree Moth Survey
- 
- Asian Longhorned Beetle (ALB)
- Golden Nematode (GN)
- Plum Pox Virus (PPV)
- Cooperative Agricultural Pest Survey (CAPS)
- European Cherry Fruit Fly (ECFF)
- Horticulture Services
- Spotted Lantern Fly (SLF)
- Joint Special Operations with US Customs & Border Protection
- Next bad bug when it arrives....

# Spotted lanternfly (SLF)

## *Lycorma delicatula*

- Plant hopper native to China and Southeastern Asia
- Discovered in Pennsylvania in 2014
- Use mouthparts to feed on the sap of more than 70 plant species
- - Prefer tree-of-heaven (*Ailanthus altissima*)
  - Grapes, apples, hops, maples, walnuts, and others



Photo: NJ Dept. of  
Agriculture



# SLF impacts

- Feeding stresses plants, making them vulnerable to disease and attacks from other insects
- 
- Excrete sticky sugar rich honeydew
- 
- Impacts quality of life; hinders outdoor activities,





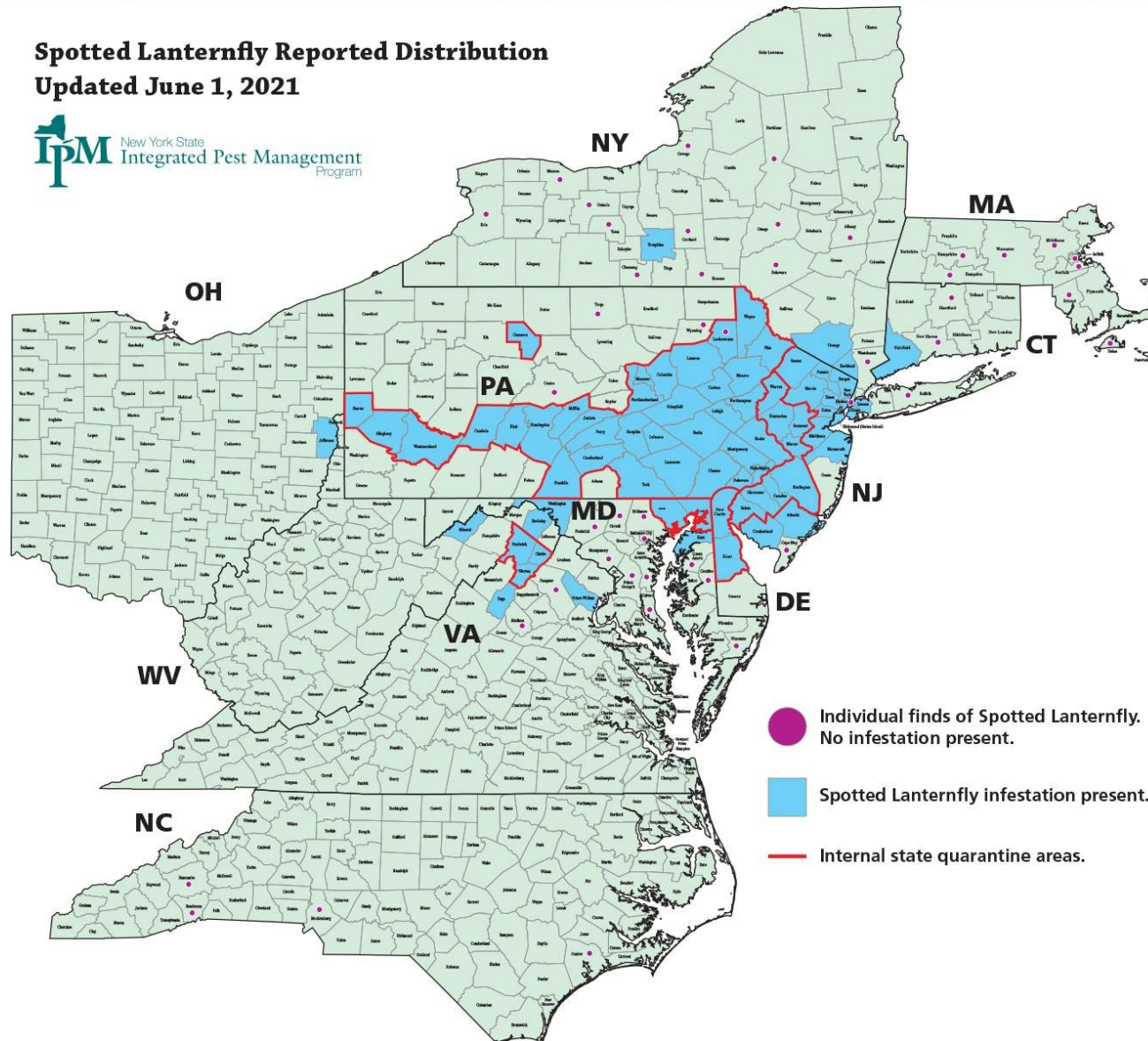
# SLF impacts

- Vineyard Losses
  - Nationally NY ranks third in grape production
- Orchard Impacts
  - Nationally NY ranks second apple production
- Hops Impacts
  - Expanding NY hops are likely to be impacted
- Environmental Impacts
  - Forests and forest products
  -



Photos: NYSDEC & PA Dept of  
Agriculture

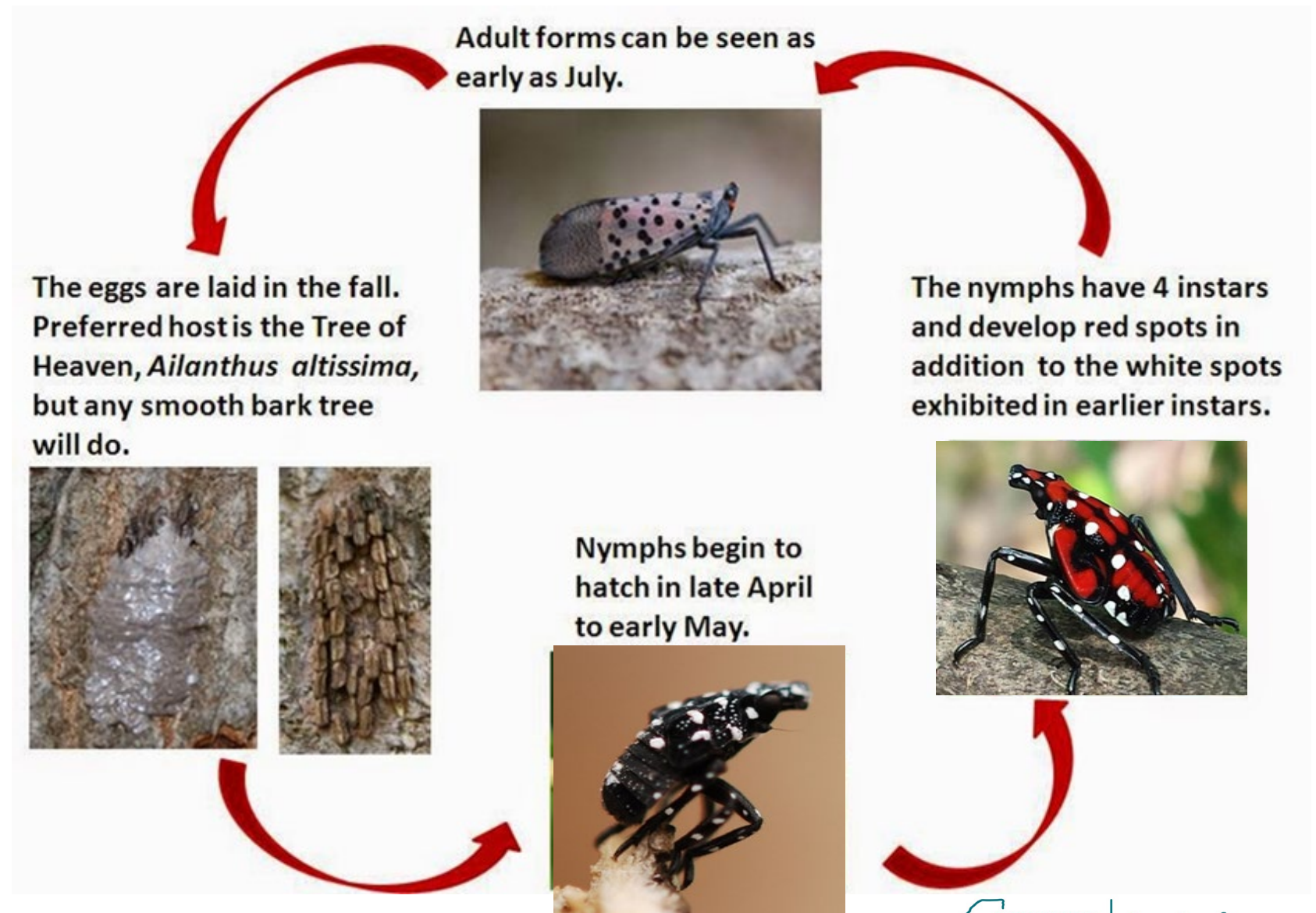
**Spotted Lanternfly Reported Distribution**  
**Updated June 1, 2021**



Richmond  
Orange  
Tomkins  
Rockland



# Life Cycle





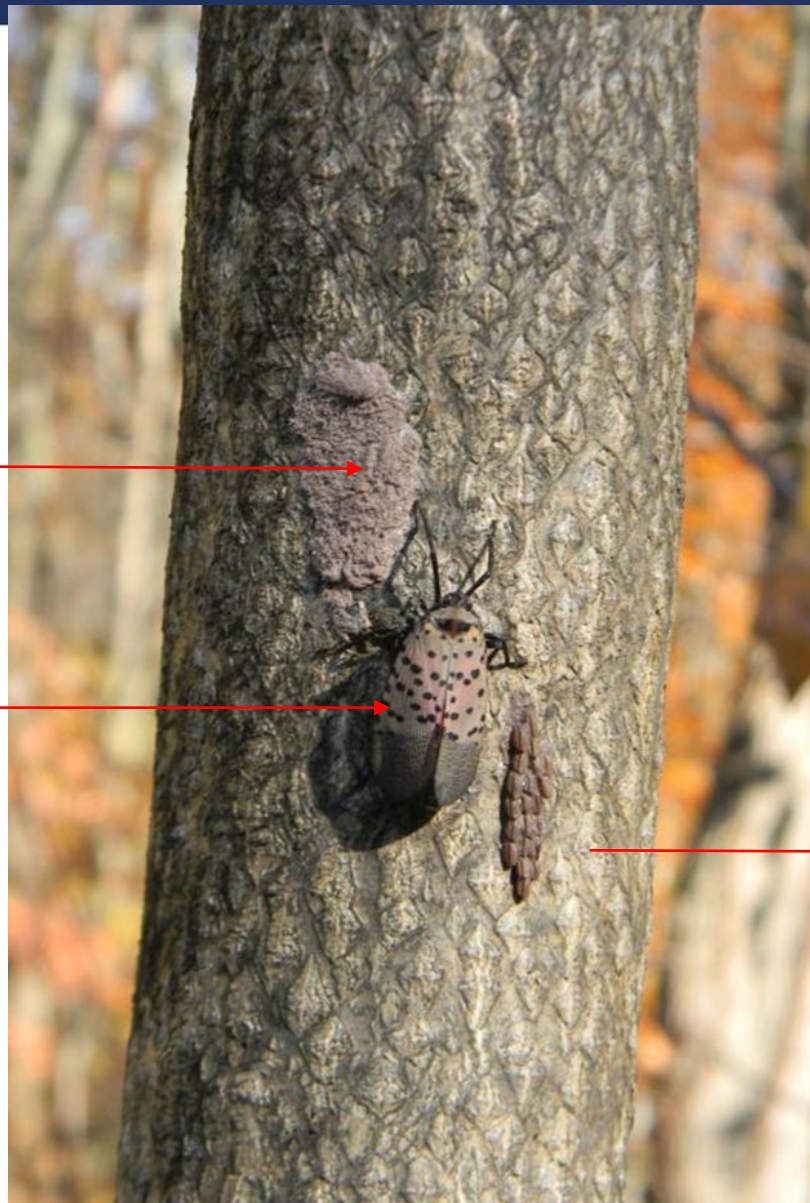
• Month	• Eggs		• 1 <sup>st</sup> -3 <sup>rd</sup> instar		• 4 <sup>th</sup> instar	• Adults
• August	•		•			
• September			•			
• October			•		•	
• November			•		•	
• December			•		•	
• January			•		•	•
• February			•		•	•
• March			•		•	•
• April					•	•
• May					•	•
• June					•	•
• July	•					



# Eggs

Covered egg mass

Adult SLF



Uncovered egg mass



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# Eggs

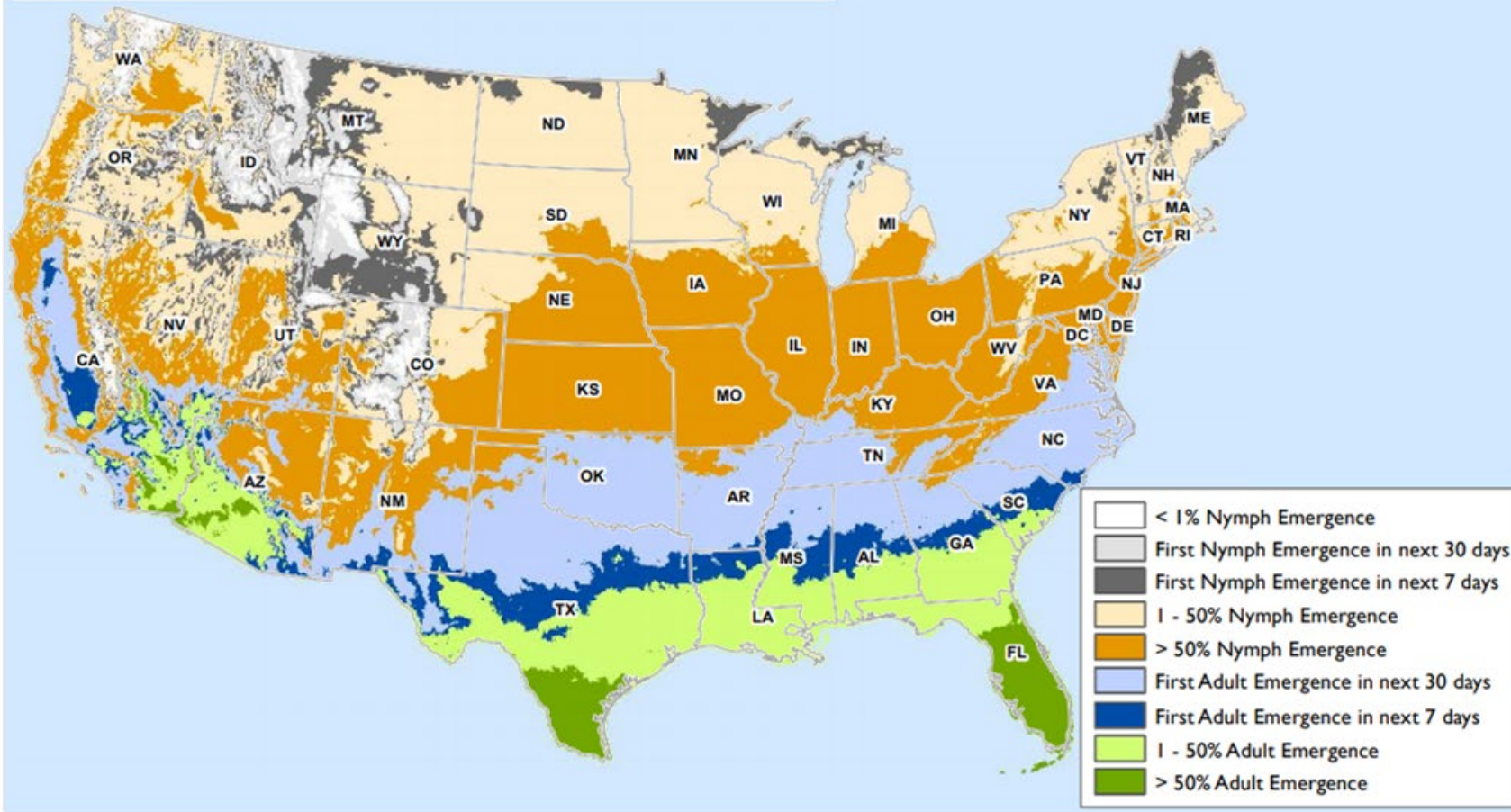


Photo: NYS  
DOT

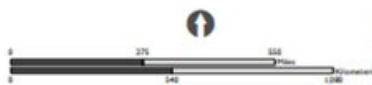


PEST FORECAST: 6/3/2021 - 7/2/2021  
*Lycorma delicatula* (White): Spotted Lanternfly

First nymphs are likely to be observed at 200 accumulated degree days.  
Peak nymph emergence would likely occur at 355 accumulated degree days.  
First adults are likely to be observed at 1121 accumulated degree days.  
Peak adult emergence would likely to occur at 1584 accumulated degree days.



Lower Threshold Temperature: 8.14°C  
Upper Threshold Temperature: 30.0°C



Date Created: June 3, 2021  
Data Source: SAFARI, 2021; PPQ, 2017-2020; NADPO, 2021; PRISM, 2021  
Coordinate System: USA Contiguous Albers Equal Area Conic  
NC State University, CIPM  
USDA APHIS PPQ S&T  
Note: Data, and all the information contained therein, have been collected by the U.S. Department of Agriculture's Animal and Plant Health Inspection Service (APHIS) or by its cooperation with APHIS' federal, for research purposes only and is the sole property of APHIS. See full disclaimer here: <https://aphis.usda.gov/helpline-disclaimer>

# Predictive Emergence of SLF Nymphs



# Emergence of 1<sup>st</sup> Instar Nymphs



Photo: Dr. Kristen Wickert



Photo: NYS OPRHP

Confirmed Emergence  
In New York

**Richmond County**  
**Orange County**



# 1<sup>st</sup> Instar Nymphs



Photo: Brian Eshenauer



Photo: Helga George



# Nymphs of Black Walnut & Tree of Heaven



Photo: Richard Gardner



Photo: Univ. of  
Virginia



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# Late Instar SLF Nymph



- Red markings
- 
- About the size of a dime
- 
- Often found with other life stages

# Adults Emerge Mid-summer

- Currently looking for Early Instar Nymphs
- 
- Mating and feeding until Heavy Frost
- $\frac{3}{4}$  inch -1 inch
  -
- Good Hitch hiker
  - 
  - 
  -



# Reporting Spotted Lantern Fly in NY



<https://www.nyimapinvasives.org/>



<https://agriculture.ny.gov/spottedlanternfly>





# Cooperative Agricultural Pest Survey



- National Survey
- 
- Many Partners
- 
- Changing Targets

## 2021 CAPS SURVEY QUICK REFERENCE MATRIX

### Nursery and Retail Plant Pest Survey

### Timeline of Survey

Target	Hosts	Survey Type	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Asian Gypsy Moth	Alnus spp. (alder), Larix spp. (larch), Larix sibirica (Siberian larch), Liquidambar spp. (sweetgum), Malus spp. (apple), Populus spp. (poplar), Quercus spp. (oak), Salix spp. (willow), Tilia spp. (linden), and Ulmus spp. (elm)	Milk Carton												
Oak Ambrosia Beetle	Quercus spp. (Oak), Quercus velutina (Black oak), Quercus rubra (Red oak), Quercus alba (White oak), Quercus bicolor (Swamp white oak), Quercus macrocarpa (Bur oak), Quercus stellata (Post oak), and Quercus montana (Chestnut oak)	Lindgren Funnel												
Pine processionary moth	Cedrus deodara (Deodara cedar), Pinus sp. (Pine), Pinus strobus (Eastern white pine), Pinus sylvestris (Scots pine)	Large Plastic Delta												
Six-toothed bark beetle	Abies spp. (Fir), Larix spp. (Larch), Pinus nigra (Austrian pine), Pinus sylvestris (Scots pine), Picea orientalis (Oriental spruce), Picea abies (Norway spruce), Pinus spp. (pine), Pseudotsuga menziesii (Douglas-fir)	Lindgren Funnel												
Boxwood Blight	English and American Boxwood, Pachysandra, Buxus spp.	Visual												
Cucurbit beetle	Allium spp. (onion, leek), Arachis spp. (peanut), Capsicum spp. (pepper), Cucurbita maxima (winter squash), Cucurbita pepo (ornamental gourd), Glycine max (soybean), Solanum tuberosum (potato), Vitis vinifera (grape), and Zea spp. (corn).	Visual												
Japanese Wax Scale	Citrus Trees, Apple, Boxelder, Boxwood, Elm, Hawthorn, Holly, Ivy, Jasmine, Magnolia, Cherry, Peach, Pear, Plum, Prune, Maple, Silver Maple, Willow	Visual												
Late Blight	Tomato, Potato	Visual												
Phytophthora ramorum Blight	Camellia, Rhododendron, Pieris, Viburnum, and Kalmia	Visual												
Southern Bacterial Wilt	Geranium	Visual												

= Survey Duration



Photos: Invasives.org



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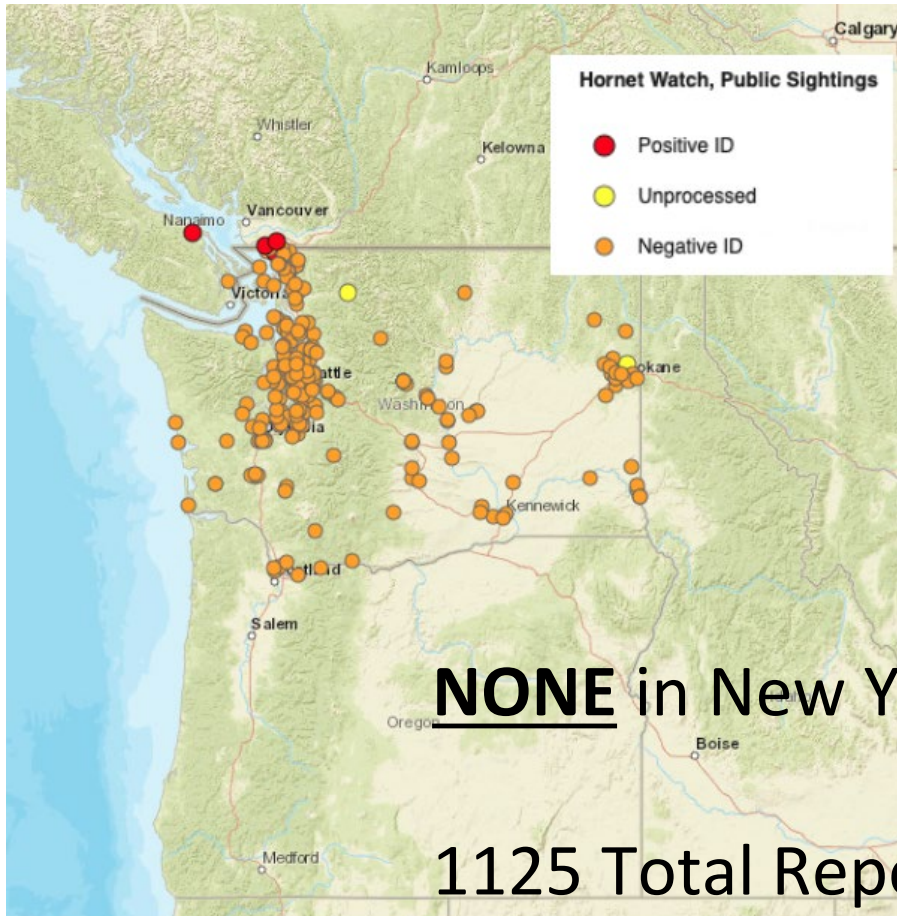
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**Asian Giant Hornet**  
**(*Vespa***  
***Mandarinia*)**

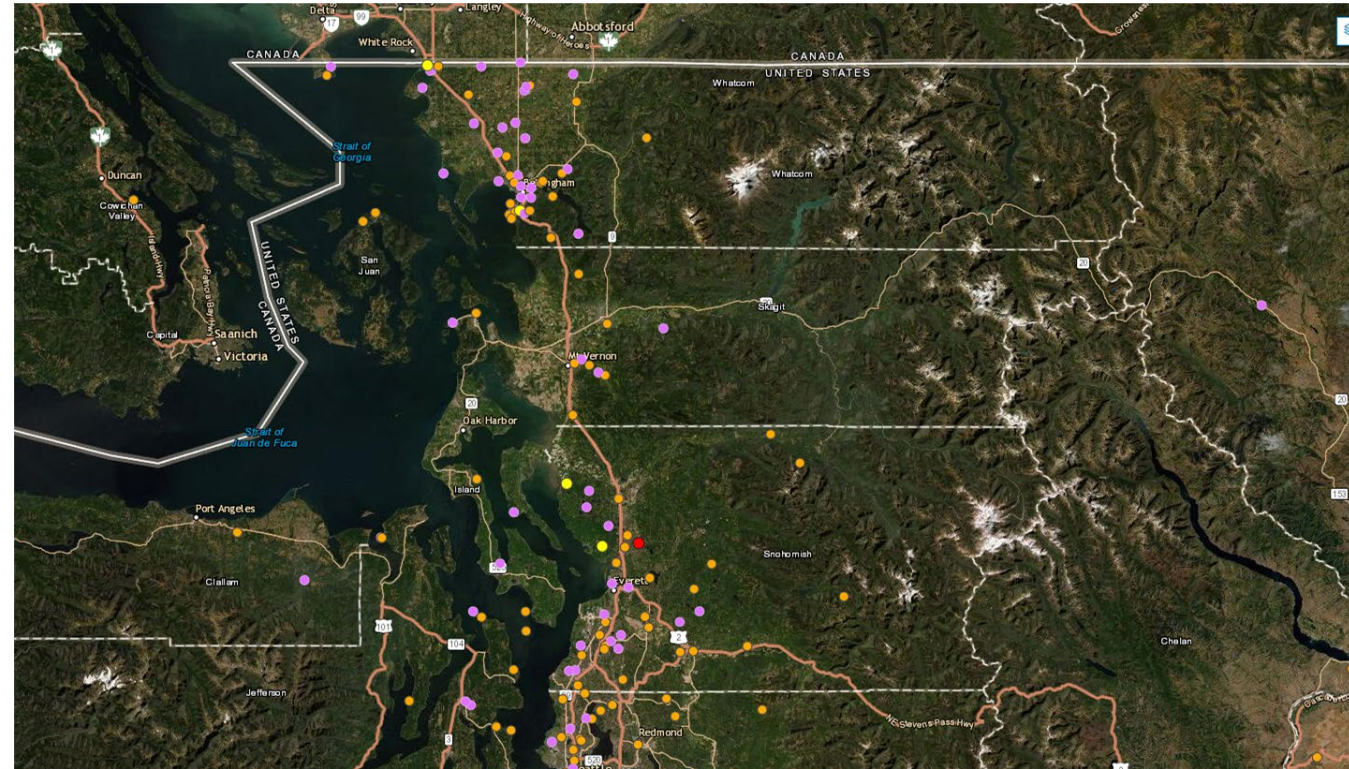


# Map of Locations



1125 Total Reports

111 Reports 2021





# Honeybee Pest

- 
- Mostly scarab and longhorn beetles, other large insects, and honeybees
- 
- AGH can wipe out a colony of (60,000)
- 
- 



Photo: Satoshi Kuribayashiv Minden Pictures



Photo: WSDA

# Slaughter State of Attack

2 to 50 AGH will stage themselves outside a colony and then decapitate 30,000 to 50,000 adult honeybees in a few hours.

The meatballing is abandoned, feeding on larvae begins.

AGH will aggressively defend a food source during this time. This often happens in late summer & fall during brooding season.

1.



Photo: Satoshi Kuribayashiv Minden Pictures



## Asian Giant Hornet



Head large,  
yellow or orange

Head smaller,  
chestnut or amber

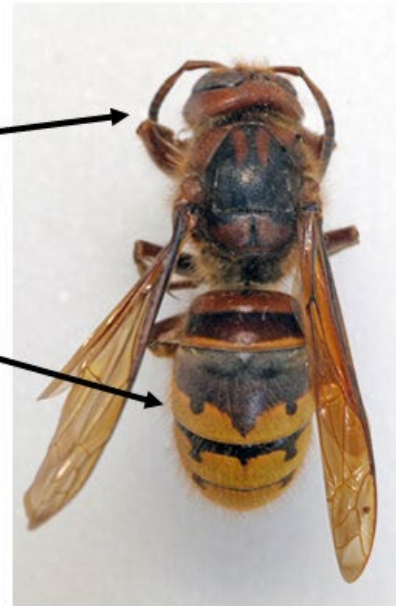
Few bands, some  
narrow, some  
wide, margins  
with dark spots

Many bands of  
similar width,  
margins uniform

Queen ~ 5 cm (~2 inches)

Allan Smith-Pardo, Invasive Hornets, USDA  
APHIS PPQ, Bugwood.org

## European Hornet



Queen ~ 3.5 cm (~1.4 inches)

Dr. Michael Raupp, Bug Guy, University of Maryland,  
College Park, [www.bugoftheweek.com](http://www.bugoftheweek.com)



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## Species in New York That Look Similar to the Asian Giant Hornet

European Hornet (*Vespa crabro*)



European Paper Wasp (*Polistes dominula*)



Cicada Killer Wasp (*Sphecius speciosus*)



Bald-faced Hornet (*Dolichovespula maculata*)



Dark Paper Wasp (*Polistes fuscatus*)



Western Yellow Jacket (*Vespula pensylvanica*)



## Look-a-Likes

Bumble Bee

Carpenter Bee

Mole Cricket

Hummingbird Moth

Hover Fly



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# Unsolicited Seed



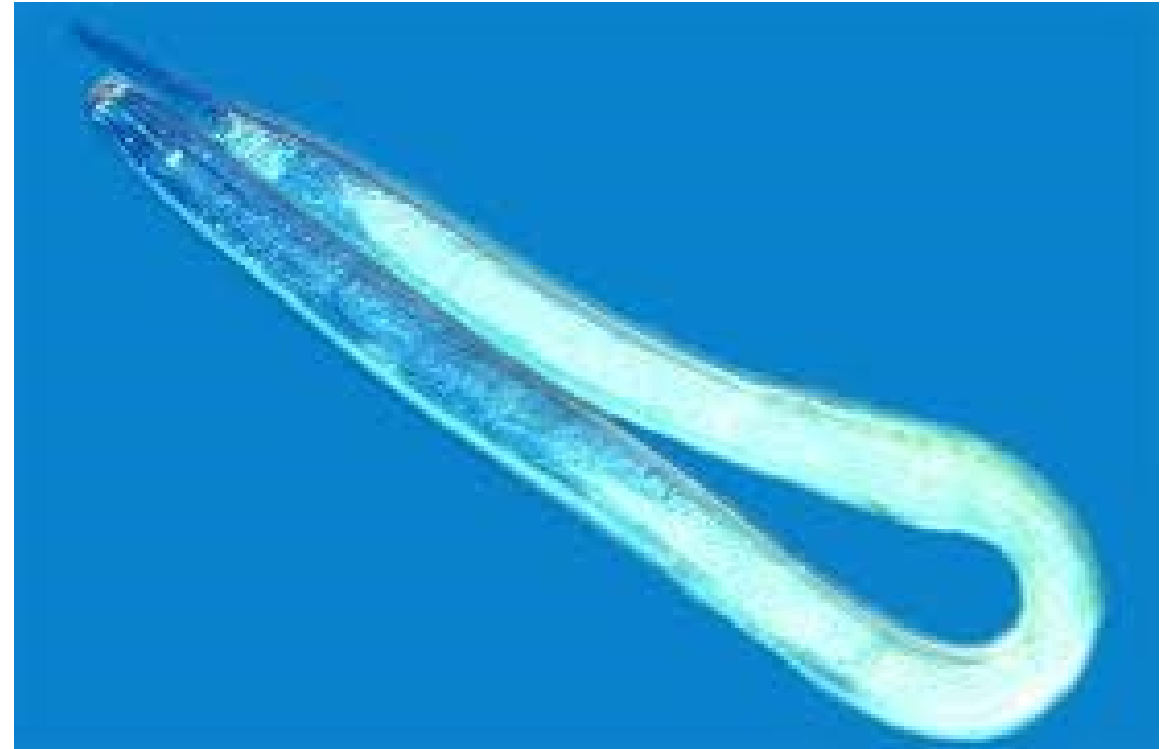
11 Different countries of origin

1533 Total reports

20 in 2021 (so far)



# Golden Nematode



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# Battlefield to Farm



Photo by U.S. Army Signal Corps



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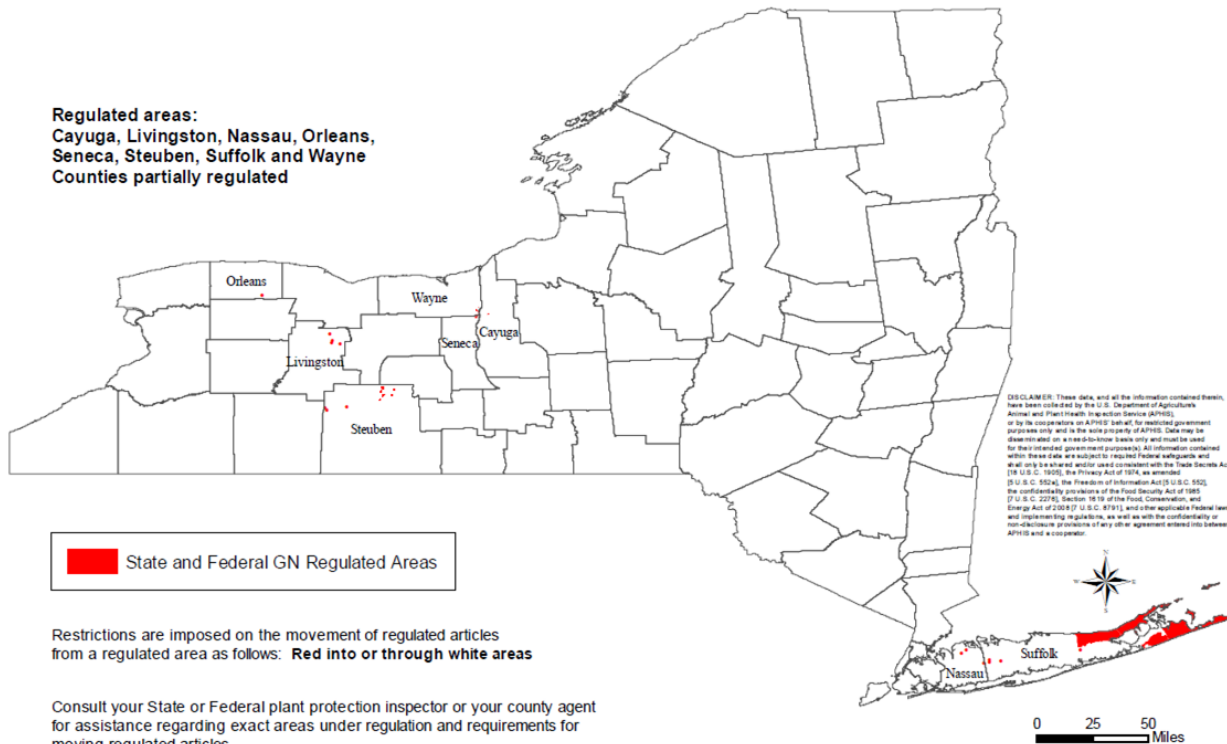
# Golden Nematode



United States  
Department of  
Agriculture

## Golden Nematode Regulated Areas in New York

Regulated areas:  
Cayuga, Livingston, Nassau, Orleans,  
Seneca, Steuben, Suffolk and Wayne  
Counties partially regulated



Restrictions are imposed on the movement of regulated articles from a regulated area as follows: **Red into or through white areas**

Consult your State or Federal plant protection inspector or your county agent for assistance regarding exact areas under regulation and requirements for moving regulated articles.

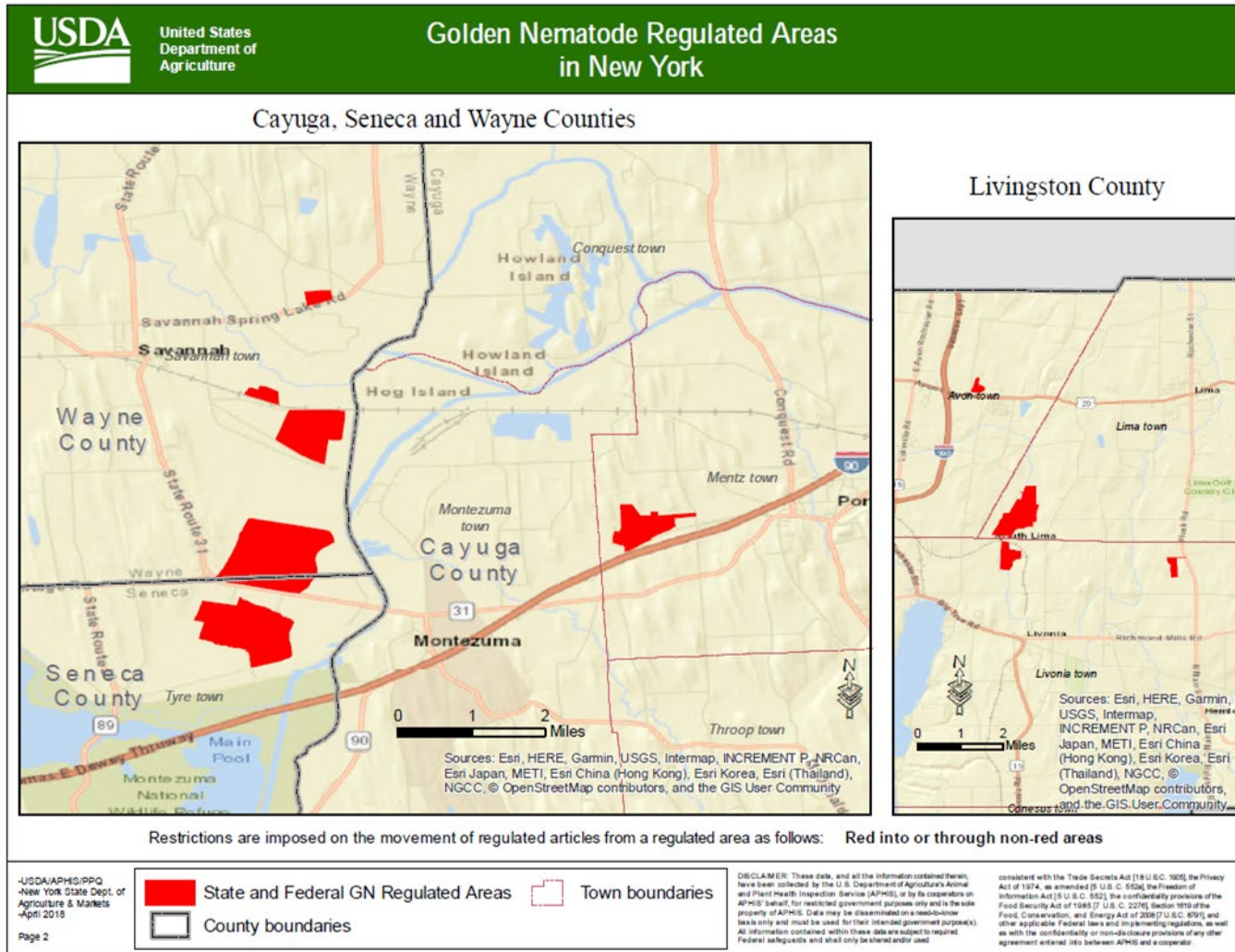
For detailed information see 7 CFR 301.85 for quarantine and regulations.

-USDA/APHIS/PPQ  
-New York State Dept. of Agriculture & Markets  
-June 2018



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# SLELO Region



Bordering the SLELO PRISM region

**NOT** in the SLELO PRISM region

Soil, vehicles, equipment, tools



# Questions & Contact Information



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