

Emerging Insect Trends in Wisconsin

PJ Liesch
UW-Madison
Insect Diagnostic Lab
pliesch@wisc.edu



1

The UW Insect Diagnostic Lab

- Established in 1978; directed by Phil Pellitteri for 36 years

Mission of the IDL:

- Provide rapid diagnostics (<24-48 hours)
- No/low costs for residents of Wisconsin

Groups Served:

- Growers/crop consultants
- Extension colleagues & UW Researchers
- Gov't agencies
- Industry partners
- General public & other groups

insectlab.russell.wisc.edu

2

IDL Website Resources:

Resources in the IDL Website

- Sample submission instructions ([Submitting Samples](#))
- Factsheets ([Resources](#))
- Invasive Insect Maps ([Resources](#))
- Visual ID Guides ([Resources](#))
- IDL Blog ([In Menu](#); [Signup in Sidebar](#))
- Growing Degree Day Map ([Color-coded map in Sidebar](#))



University of Wisconsin-Madison
Insect Diagnostic Lab

3

A Small Request...

- Please provide these three basic pieces of information with each submission:

- Name** (You / Client)
- Location** (State / County)
- Notes** about the case—*description of where insect was specifically found (host plant, type of damage, etc.), what was it doing, etc.*

University of Wisconsin-Madison
Insect Diagnostic Lab

4

Exotic Insects in Wisconsin

- ~2-3 new exotic insects are found in WI annually
- Impacts of these can vary from insignificant to major pests
- Other non-native insects are poised make their way to WI

University of Wisconsin-Madison
Insect Diagnostic Lab

5

Reporting Exotic/Trending Insects

- Collect evidence (photos & sample)
- Contact me (PJ Liesch) at the UW Insect Diagnostic Lab

University of Wisconsin-Madison
Insect Diagnostic Lab

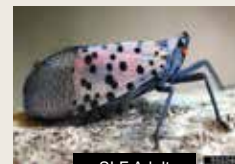
6

On the Radar (Not in WI Yet)

7

Spotted Lanternfly (*Lycorma delicatula*)

- Invasive Fulgorid planthopper from China, Taiwan, & Vietnam
 - Spread to Japan and Korea
 - Arrived in USA in 2014 (PA)
- Eggs can easily be transported
- SLF feeds on 70+ plant species
 - Tree of Heaven (*Ailanthus altissima*)
 - Fruits: grapes & tree fruits
 - Hops
 - Landscape/forest trees (maple, walnut, poplar, willow, etc.)

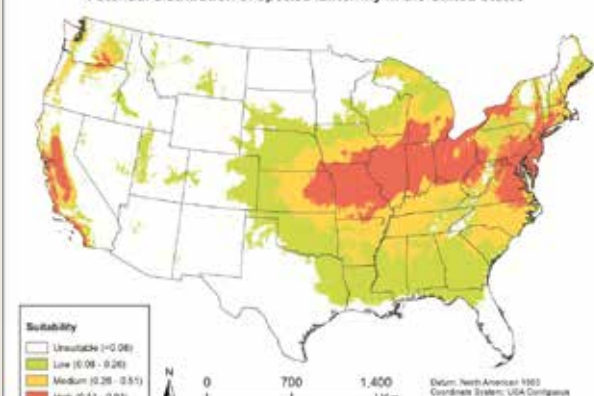


SLF Adult

8

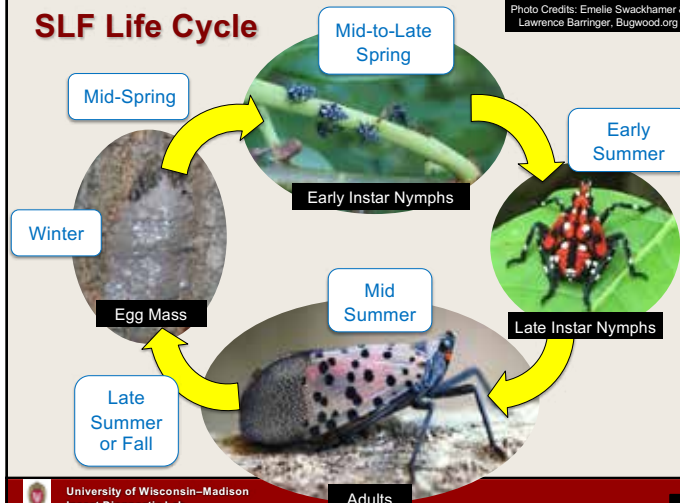
SLF Distribution & Potential Spread

Potential distribution of spotted lanternfly in the United States



9

SLF Life Cycle



10

SLF Damage & Impacts

- Juveniles & adults possess sucking-type mouthparts
 - Restricted to a liquid diet (phloem feeders)
- Pierce bark and feed on trunk and branches
- Primary Impacts: oozing wounds, branch/twig dieback, excretion of honeydew
- Secondary impacts: fungal growth & nuisance impacts

11

SLF Damage



Fungal Growth at Base of Tree



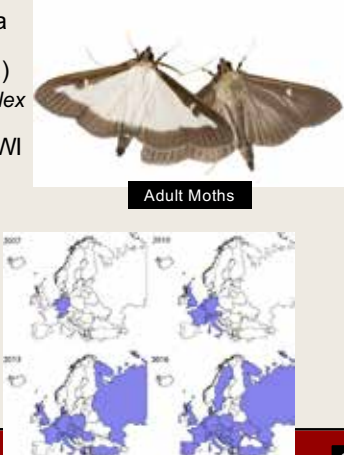
Group of adults

12

Boxwood Moth (*Cydalima perspectalis*)

- Crambid moth from East Asia
- Host: Boxwoods (*Buxus* spp.)
 - Native range: *Euonymus* & *Ilex*
- Likely 2 generations/year in WI
- Found in
 - Germany – 2007
 - Canada – 2018
 - Eastern US – 2021
 - MI, CT, SC

Spread in Europe:



Adult Moths

University of Wisconsin–Madison
Insect Diagnostic Lab

13

Boxwood Moth Damage & Indicators



Caterpillars

Heavy infestation

Frass

Pupa

University of Wisconsin–Madison
Insect Diagnostic Lab

14

Common Boxwood Insects in WI



Discoloration caused by Boxwood Leafminer

"Cupping" from Boxwood Psyllid

Dissected Leaf

Psyllid nymph

University of Wisconsin–Madison
Insect Diagnostic Lab

15

Notable & Trending Pests in WI

University of Wisconsin–Madison
Insect Diagnostic Lab

16

Viburnum Leaf Beetle (*Pyrrhalta viburni*)

- European leaf beetle; introduced to eastern Canada 1940's
 - Northeast US in 1990's; Wisconsin in 2014*
- Adults and larvae chew oblong holes in foliage of viburnums
- One generation per year



Adults: ~1/4" long; yellowish-green colour

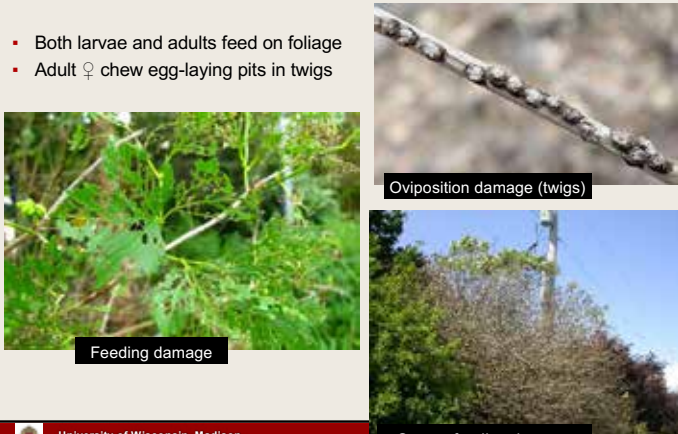
Larva: ~1/3" long; pale with pattern of spots; dark head capsule and 6 legs

University of Wisconsin–Madison
Insect Diagnostic Lab

17

VLB Damage

- Both larvae and adults feed on foliage
- Adult ♀ chew egg-laying pits in twigs



Feeding damage

Oviposition damage (twigs)

Severe feeding damage

University of Wisconsin–Madison
Insect Diagnostic Lab

18

Viburnum Leaf Beetle in WI

- 2009: Detection in Dane Co.
 - In nursery stock; eradicated
- 2014: Milwaukee Co.
- 2019: Dane Co.



19

Lily Leaf Beetle (*Lilioceris lili*)

- Also known as the "scarlet lily beetle"
- Leaf beetle native to Europe; introduced to eastern Canada 1940's
 - Northeast US in 1990's; Wisconsin in 2014
- Cause significant damage to true lilies



Adults: ~1/3" long; bright red colour; "squeak" when picked up
Insect Diagnostic Lab

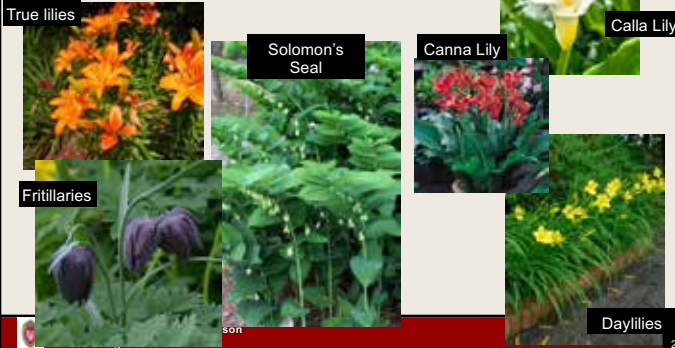


Larvae: ~1/3" long; yellow body; cover themselves with excrement giving a slimy appearance

20

Lily Leaf Beetle Host Plants

- True lilies: Asiatic, Oriental, Easter, Turk's cap, Tiger, & Wood lilies
 - Also eat: Fritillaries & Solomon's Seal
- Don't eat canna lilies, calla lilies, or daylilies



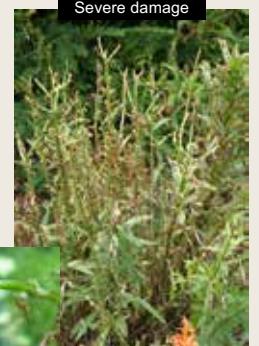
21

LLB Damage

- Both larvae and adults feed on foliage



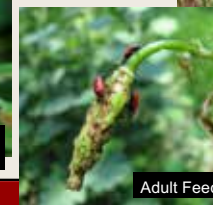
Damage of small larvae



Severe damage



Holes in leaves



Adult Feeding

22

Lily Leaf Beetle in Wisconsin

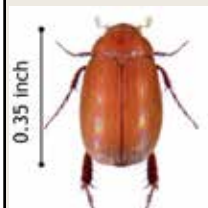
- 2014: Marathon County & nearby areas
- 2019: Confirmed in 6 Counties (incl. Dane)



23

Grubs & the Asiatic Garden Beetle

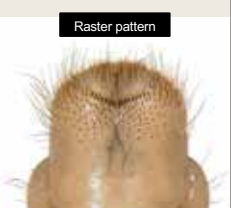
- In crop fields & gardens, white grubs of May/June beetles & Japanese beetles grubs can be occasional pests
- Asiatic garden beetle: first confirmed specimens in WI (2021)



AGB adult



AGB white grub



Raster pattern

24

Asiatic Garden Beetle

- Lots of unknowns at this point...
- Wisconsin details:
 - No reports of plant/crop damage to date
 - Adults (5) collected in late July [Dane Co.]; at lights on warm evening
 - Additional adult collected mid-September
- Adults can be pest of ornamental plants; grubs can be pest of vegetables

25

Asiatic Garden Beetle



26

Spongy Moth (*Lymantria dispar*)

- Name change in 2022; Formerly known as the “gypsy moth”
- 2019: #'s generally low (likely *Entomophaga* & polar vortex)
- 2020: Distinct increase in reports
- 2021: Dramatic increase in reports of caterpillars, adults, egg masses



Spongy Moth Caterpillar



Spongy Moth Adult
Female w/egg mass

27

Spongy Moth (*Lymantria dispar*)



Gypsy Moth Caterpillar killed by
Entomophaga maimaiga



28

Purple Carrot Seed Moth

Purple Carrot Seed Moth in Wisconsin:
Updated December 2021



Caterpillar



Adult
Moth

29

Questions?

PJ Liesch
UW Insect Diagnostic Lab
pliesch@wisc.edu
[@WiBugGuy](https://twitter.com/WiBugGuy)

insectlab.russell.wisc.edu

30