

Wisconsin's Trending & Emerging Landscape Insect Pests

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The UW Insect Diagnostic Lab

- Lab established in 1978 to serve as a resource for Extension colleagues
 - Managed by Phil Pellitteri for 35 years
 - Currently in its 47th year
- Main service:** arthropod diagnostics
 - Receive ~2,500 diagnostic requests annually
 - Samples from: general public, Extension, farmers, businesses, medical/public health, gov't, etc.
- Other services:** pest management consults, outreach, teaching, *providing context*

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Key Info:

- 1) Your contact info
- 2) Location (State/County/Town)
- 3) Where/when the specimen was found, what it was doing, size of the specimen, and any other relevant notes

Submission template for physical samples

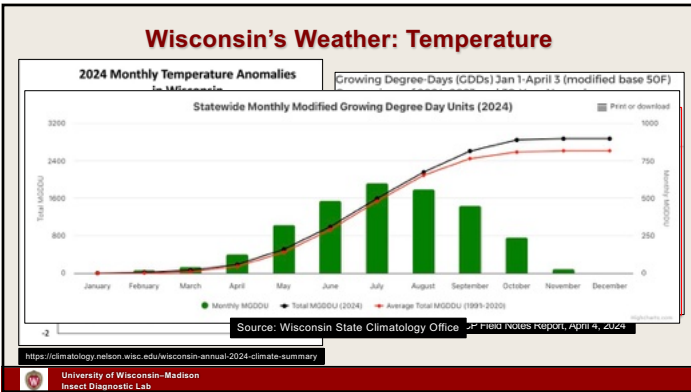
insectlab.russell.wisc.edu

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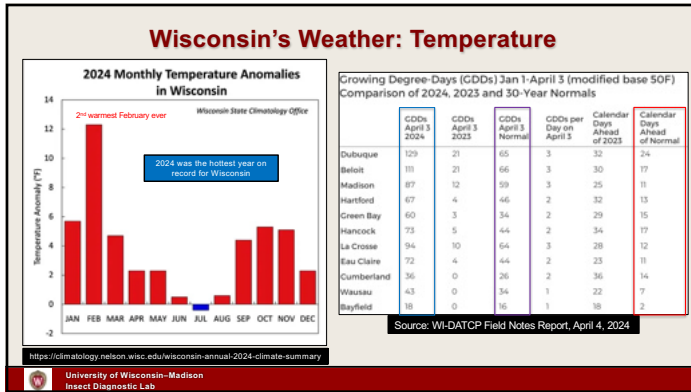
Wisconsin's Weather Patterns

- Weather patterns can indirectly influence insects via impacts on landscape plants
- Wisconsin's 2024 weather was warm, wet, and wavering, leading to the warmest year on record and precipitation ping-pong between record dry and record wet months**
-WI State Climatology Annual Report
- Winter of 2023-24 mild due to El Niño conditions

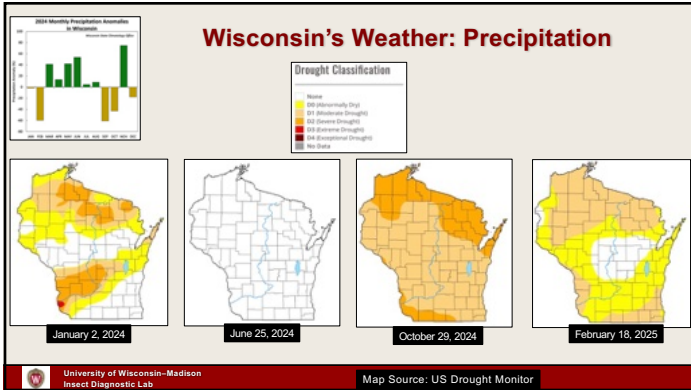
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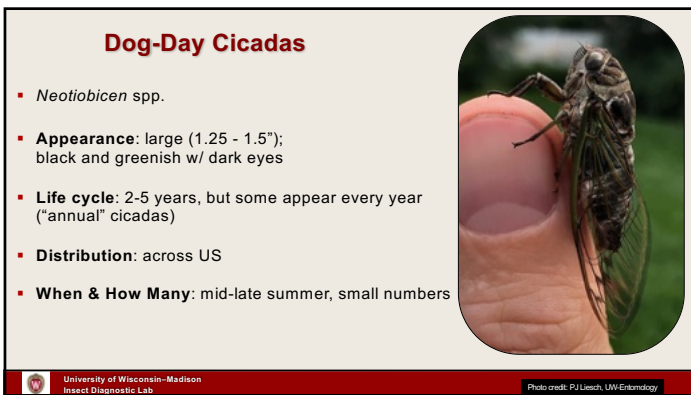
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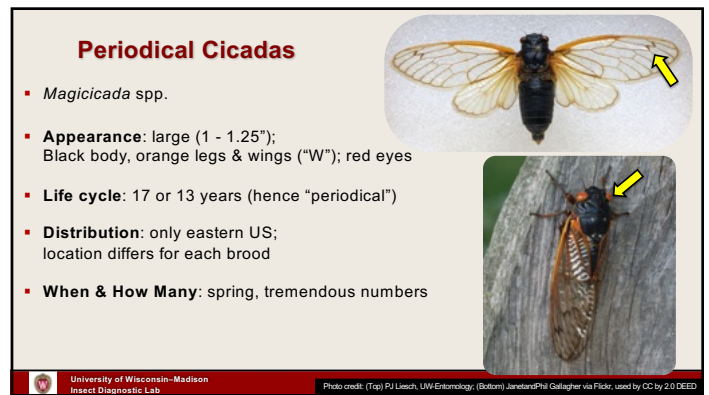
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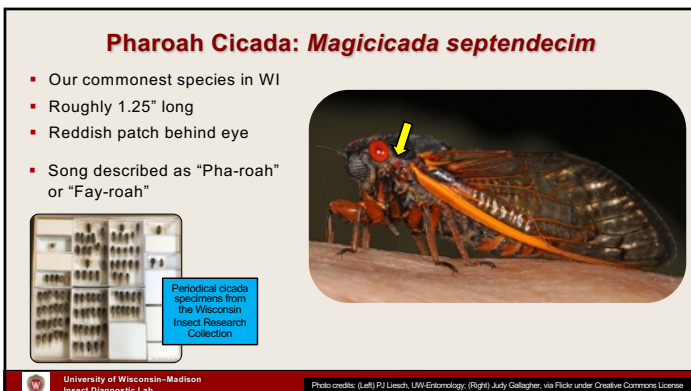
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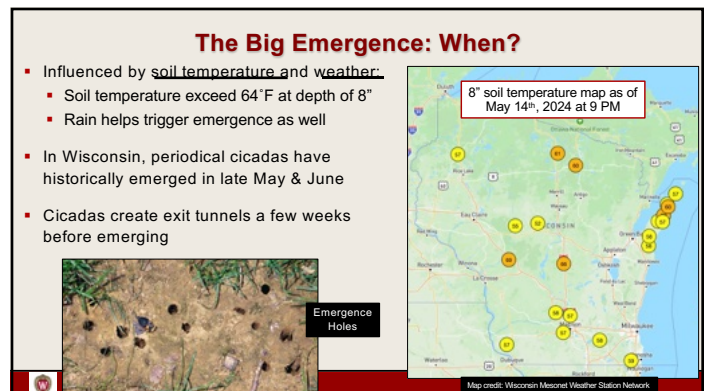
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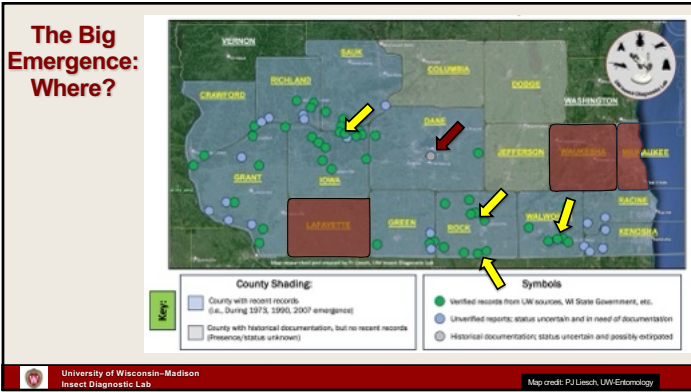
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Impacts to landscape plants?

- Females use ovipositor to cut slits into twigs/branches
 - Large trees:** damage mainly cosmetic; “flagging”
 - Small trees:** damage can be more problematic—consider mesh netting

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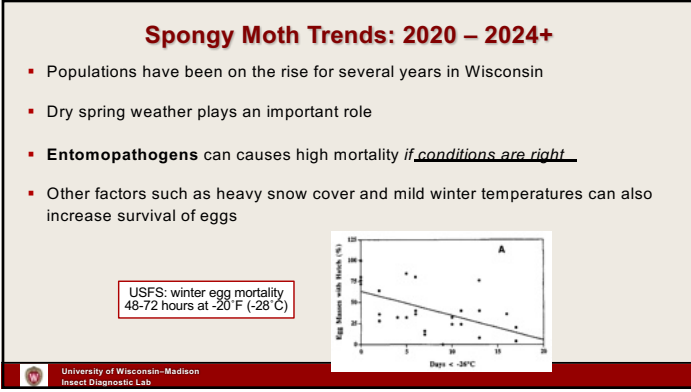
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Spongy Moth (*Lymantria dispar*)

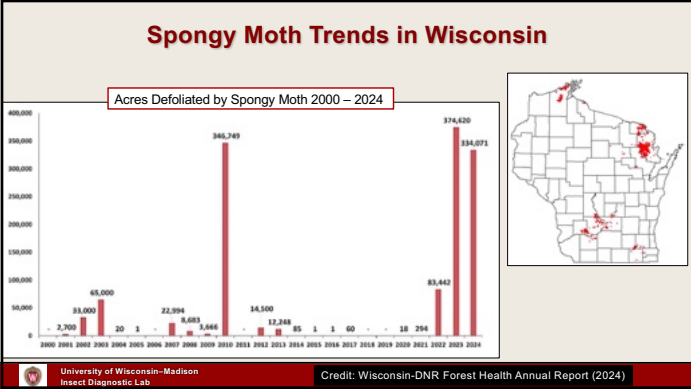
- Invasive; native to Europe and northern Asia
 - Introduced in Massachusetts: 1860's
 - Range expanding west/south; outbreaks @ leading edge
 - Feeds on a wide range of trees and shrubs

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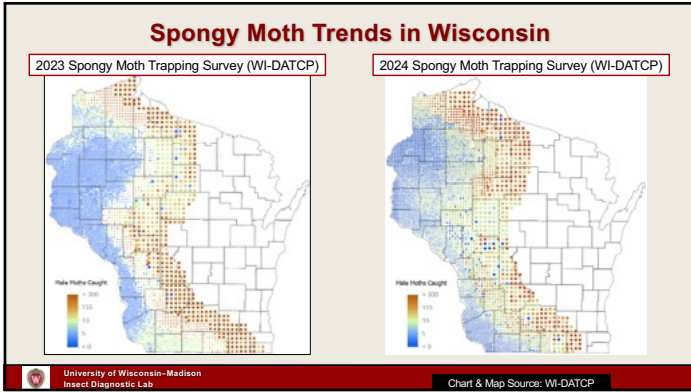
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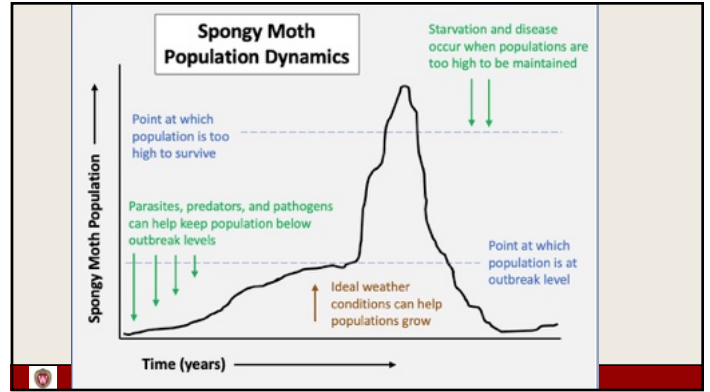
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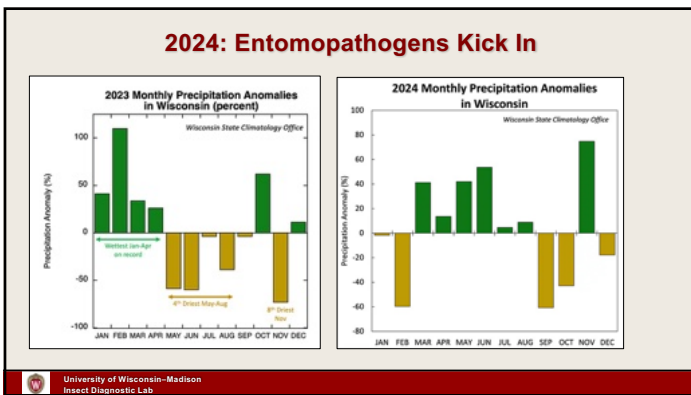
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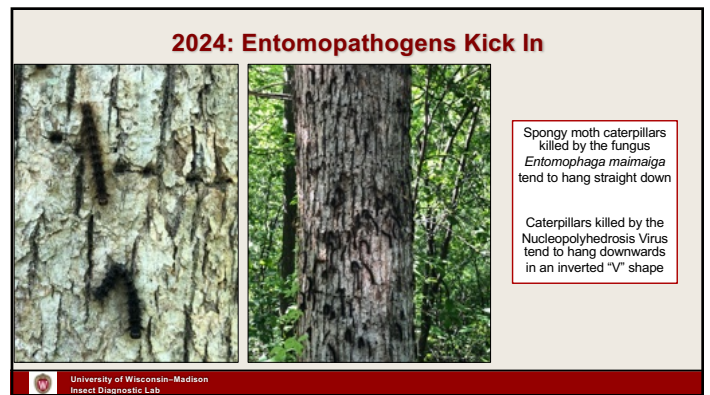
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Elm Zigzag Sawfly (EZS)

- Aproceros leucopoda* (Hymenoptera: Argidae)
- Invasive sawfly (Asia); feed on elm foliage
 - Also an invasive pest in Europe
 - First NA detection: Canada 2020

Distinctive feeding damage

EZS Larva

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EZS as an Effective Invader:

- Several factors help EZS rapidly build populations & spread:
 - Populations consist *entirely of females*, which can reproduce asexually
 - Potential exists for multiple generations each year
 - Adults are capable of long-distance dispersal: 28-56 miles (45-90 km) per year
 - Cocoons can occur on man-made items such as vehicles

EZS Pupa

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Elm Zigzag Sawfly: Invasion History

- North America (Quebec, CA) : 2020
- US: 2021
- WI: 2024 (early July)

Elm zigzag sawfly (*Aproceros leucopoda*) detections in the United States

Year Detected

- 2020
- 2021
- 2022
- 2023
- 2024

Map created 10/15/2024 by Mark Chao

The elm zigzag sawfly is an invasive defoliating pest of trees in the temperate forests. First in Quebec in 2020 and in Virginia in 2021. USDA APHIS is the federal agency that monitors the spread and regulates the use of this species. The state records of this pest are listed in Appendix 1. <https://www.dnr.wisconsin.gov/forestry/pests/elm-zigzag-sawfly>

Kramer, M. 2024. *Elm Zigzag Sawfly*. *Journal of Insect Conservation* 18(1): 1-10. <https://doi.org/10.1007/s10841-023-01000-0>

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Elm Zigzag Sawfly

- Damage caused by larvae
 - Use chewing mouthparts
 - Chew zigzag notches out of leaves
 - Complete defoliation can occur

Damage on individual elm leaf

Defoliation from heavy population

Species	Common name	Location (state)
<i>Elmus americana</i>	American elm	PA, NC, MD, NY
<i>Elmus alata</i>	winged elm	NC
<i>Elmus parvifolia</i>	Chinese elm	VA
<i>Elmus procera</i>	English elm	VA
<i>Elmus pumila</i>	Siberian elm	VA
<i>Elmus raluza</i>	algerian elm	MD
<i>Elmus</i> s. "Cathedral"	Japanese x Siberian hybrid	VA

Photo source: First records of elm zigzag sawfly (Hymenoptera: Argidae) in the United States, 2023. K. Oren, et. al.

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European Earwigs

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Slugs

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Hammerhead Worms

- Non-native land planarian
- Attacks earthworms
- If found, please report

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Aphids

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Multicolored Asian Lady Beetles

Adults (Indoors)

Pupa (Outdoors)

Larva (Outdoors)

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Commonest Broad-Nosed Weevils

Black Vine Weevil (Taxus Weevil)

Strawberry Root Weevil

BWV

SRW

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Broad-Nosed Weevils (Curculionidae: Entiminae)

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Two-Banded Japanese Weevil

- Non-native (Japan) broad-nosed weevil
- Feed on a wide range of landscape plants
- Females can reproduce asexually

Adult Weevil

Notching damage caused by adults

Two-Banded Japanese Weevil in Wisconsin:
Updated October 2024

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Lily Leaf Beetle

Adult LLB

Heavily-Infested Lily Plant

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Viburnum Leaf Beetle

VLB Larvae and "Skeletonization" Damage

Oviposition (egg-laying) pits

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Japanese Beetle

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"New" Chafer & Grub Damage

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Emerald Ash Borer Update

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Emerald Ash Borer Update

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Emerald Ash Borer: Current Status of Damage

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Map Source: 2024 Wisconsin DNR Forest Health Annual Report

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Emerald Ash Borer: What's the Endgame?

- Ash trees will remain part of the forest ecosystem
 - Regeneration occurring; seeds produced
 - New ash trees will likely be smaller in size
- Biocontrol releases ongoing
 - Evidence of persistence in Wisconsin
- Future of insecticide treatments?


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Photo: 2024 Wisconsin DNR Forest Health Annual Report


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Secondary Borers


- Typically, spare trees that are "happy & healthy"
- Opportunistically attack stressed/weakened trees




Two Lined Chestnut Borer
(Oaks)




Bronze Birch Borer
(Birches)



Bark Beetles
(Most trees)






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Submitting Samples for Borer Check

- Send sufficient material to check for borers
- Branches are ideally fresh
- Diameter 2" or less



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New Arrivals & Pests to Watch for:



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New Leafhopper (*Tautoneura polymitusa*)



- Detected in WI: fall 024 (La Crosse)
- Leafhopper native to Korea
- Associated with elms
- No damage observed to plants
- Potential to be a minor structural pest


Photo source: Toth et al. 2017. Zootaxa 4311(1): 137-144.

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Report! Spotted Lanternfly


- Invasive Fulgorid planthopper from southeast Asia
 - Spread to Japan and Korea
 - Arrived in USA in 2014 (PA)
 - Not yet in WI...
- Eggs can easily be transported
- SLF feeds on 100+ plant species
 - Tree of Heaven (*Ailanthus altissima*)



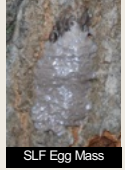
Early instar SLF Nymph




4th instar SLF Nymph



SLF adults covering tree trunk



SLF Egg Mass



SLF Adult

Photo Credits: Pennsylvania Department of Agriculture, Bugwood.org

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Report! Box Tree Moth

- Invasive caterpillar; native to Asia
 - Also a problem in Europe
- Host: Boxwoods
- Found in:
 - Canada (Toronto) – 2018
 - New York – 2021
 - Michigan – 2022



Typical color form adult



Dark color form adult



Caterpillar with silken webbing



Plant Damage

Insect Diagnostic Lab | Credit: Scabrics Saldán, University of West Hungary, Bugwood.org

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Reports Encouraged!

Elm Seed Bug

Elm Seed Bug
Arocatus melanocephalus
(Hemiptera: Lygaeidae)

Key Features:

- Body shape similar to boxelder bugs
- Length approx. $\frac{1}{4}$ - $\frac{1}{2}$ inch long
- Dark body with rusty, reddish patches
- Pale spots at edges of abdomen
- Black triangle (scutellum) within rusty "square"

Elm Seed Bugs Elm seed bugs have made the Chicago-Elm area home.

PI Liesch (@WisconsinBugGuy), UW-Madison Insect Diagnostic Lab

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Questions?

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