Wisconsin's Insect Trends and Pests to Watch for in 2024

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Wisconsin's Weather Patterns

- Many part of Wisconsin experienced dry conditions 2021, 2022, and 2023
- Dry conditions can directly favor or hinder certain arthropods
  - Spongy moth, spider mites, etc.
- Weather patterns can indirectly influence insects via impacts on landscape plants

Wisconsin's Recent Weather Patterns

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Spongy Moth (Lymantria dispar)

- Formerly known as the Gypsy Moth
- 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

Spongy Moth Trends: 2020 – 2023+

- Populations have been on the rise for several years in Wisconsin
- Dry spring weather plays an important role
- DATCP Trapping Surveys: record catch of adult moths in traps
- DNR monitoring: new record for acreage defoliated in the state (374,620 acres)
- Other factors such as heavy snow cover and mild winter temperatures can also increase survival of eggs

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Spongy Moth Trends in Wisconsin

The spongy moth population will decline...

Spongy Moth Caterpillars
- Larvae (caterpillars) are the damaging life stage
  - Use chewing mouthparts to feed on foliage
  - Pass through 5-6 larval sub-stages (instars)
    - Small caterpillars (1st & 2nd instar)
      - Dark w/pale spots; "shaggy" w/raised bumps
      - Active day & night
      - Can disperse via ballooning
    - Large caterpillars (3rd + instar)
      - Up to ~2’ long
      - Grayish w/raised blue and red nodules
      - Active at night
      - Most feeding damage caused by last two instars

Leaf Consumption by Caterpillars
- Later instars consume much more leaf area than younger larvae
  - For spongy moth, 80-90% of feeding damage is caused by final two instars!
  - This can give the impression of a sudden or overnight appearance of caterpillars

An ace in the hole?... *Entomophaga maimaiga*
- Fungus from native range of spongy moths
  - Purposefully introduced in 1910-11 & 1985-86; infected caterpillars found in 1989
  - Can kill caterpillars in a matter of days; additional spores produced
  - Weather plays a key role... moisture/humidity is critical!

Spongy Moths – Thoughts on Management
- We have a lot of options in the IPM toolbox
  - How much tolerance do we have for this pest?
    - Considerations: weather patterns, repeated defoliation, secondary pests
  - How proactive / aggressive do we need to be?
**Two Lined Chestnut Borer (Agrilus bilineatus)**

- Native metallic wood boring beetle (Buprestidae)
- Associated with stressed/compromised oaks: "secondary" borer
- If warranted, treatments similar to EAB

**TLGB Symptoms:**
Discolored foliage (left) & thinning canopy (right)

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**Bronze Birch Borer (Agrilus anxius)**

- Native metallic wood boring beetle (Buprestidae)
- Associated with stressed/compromised oaks: "secondary" borer
- If warranted, treatments similar to EAB

**Emerald Ash Borer**

**Other “Secondary” Borers**

- Flatheaded Appletree Borer (Chrysobothris femorata)
  - Associated with stressed hardwoods (many species)

- Whitespotted Sawyer (Monochamus scutellatus)
  - Associated with dead & dying conifers

- Painted Hickory Borer (Megacyllene caryae)
  - Associated with dying & dead hickories

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**“Secondary” Bark Beetles**

- *Pseudopityophthorus minutissimus*
  - Associated with really stressed oaks & cut branches/wood

- *Pityogenes hopkinsi*
  - Associated with smooth barked portions of dead/dying white pines

- *Hylesinus aculeatus*
  - Associated with dead, cut or seriously weakened ash trees

Many bark beetles show up to trees that are severely stressed or actively dying.
EAB Damage Map

Periodical Cicadas
- Brood XIII 17-year periodical cicadas will emerge this year
- Last emerged in 2007

Where will we see periodical cicadas? When?

Potential impacts to nursery & 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

Key Things Arborists Should Know About 17-Year Cicadas:
1. Distribution is restricted to very specific spots in southern WI
   - Most of Wisconsin will not see these
2. Site history is a key factor!
   - Were they present at a site in 2007? If not, you won't see them in 2024 either...
3. Periodical cicadas are generally harmless and don't need to be managed
   - Small trees or shrubs would be the exception

Japanese beetles
**Asiatic Garden Beetle**
- First confirmed in 2021 (Dane Co.)
- Adults feed on landscape plants
  - Most active when temps > 70˚F at night
  - Readily fly to lights
- Larvae can be associated with poorly maintained lawns

**Broad-Nosed Weevils (Curculionidae: Entiminae)**

**Commonest Broad-Nosed Weevils**
- Strawberry Root Weevil
- Black Vine Weevil (Taxus Weevil)

**Invasive Leaf Beetles**
- Viburnum leaf beetle
- Lily leaf beetle

**Sucking Insect Pests**
- Aphids
- Thrips
- Triozids (Serviceberry)

**Multicolored Asian Lady Beetles**
- Adults (Indoors)
- Pupa (Outdoors)
- Larva (Outdoors)
**Sucking Pests: Spider Mites**

- **Two-Spotted Spider Mite**

**Forest Tent Caterpillar**

- Forest tent caterpillar defoliation from our last WI outbreak ~ 1999-2002

**Weather Patterns & Mosquito Activity**

- **2023**: Mosquito activity varied greatly around the Midwest
- **Moderate WNV cases**

**Mosquitoes**

- **Woodland Pool Mosquito** (*Aedes triseriatus*)
- **Cape Mosquito** (*Culex pipiens pallidus*)
- **Northern House Mosquito** (*Culex pipiens*)

**Nursery & Landscape pests to have on your radar:**

- Spotted lanternfly
- Box tree moth
- Elm zigzag sawfly
- **Not yet in Wisconsin**
- **If you suspect any of these, please 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*)
  - **Fruits**: grapes & tree fruits
  - **Hops**
  - **Landscape/forest trees** (maple, walnut, poplar, willow, etc.)

**Mosquitoes**

- **Wisconsin 2023 vector data**
- **Mosquitoes that carry WNV**
- **Source**: WI DOT Report "Winter Maintenance at a Glance"
**Damage & Impacts**

- Nymphs & adults possess **sucking-type mouthparts**
  - Restricted to a liquid diet (phloem feeders)

- Feeding location varies by life stage:
  - **Nymphs**: leaves, petioles, branches, and young stems (of wide range of plants)
  - **Adults**: trunk and branches (mostly on trees)

- Primary Impacts: oozing wounds, branch/twig dieback, honeydew
  - Also – fungal growth & nuisance impacts

- Bottom line: doesn’t kill plants; messy nuisance (trees); reduced yield (grapes)
  - Can kill TOH, grapes, black walnut saplings

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**Damage**

![SLF nymphs on roses](Image)

![Fungal Growth at Base of Tree](Image)

![SLF adults covering tree trunk](Image)

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**Current SLF Distribution & Potential Range**

![Map of SLF Distribution](Image)

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**Elm Zigzag Sawfly**

- Invasive sawfly; native to Asia
  - Also an invasive pest in Europe

- Host: elms

- Found in:
  - Quebec, Canada – 2020
  - VA – 2021
  - NC, MD, PA, NY – 2022
  - VT, MA, OH – 2023

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**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

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### Box Tree Moth
- Damage caused by **caterpillars**
- Use chewing mouthparts
- Consume foliage
- Create silken webbing

![Caterpillar with silken webbing](image)

![Extensive webbing](image)

![Significant damage (Europe)](image)

**Questions?**

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