

# Emerald ash borer (EAB)

## History:

- Native to NE China, Korean peninsula, and E Russia
- Discovered in 2002 near Detroit, MI
- Probably imported to NA via shipping crates or pallets
- Dendrochronological analyses show EAB was established in SE MI by at least the early 1990s and trees were killed by 1998
- Has killed hundreds of millions of ash trees in NA



**TOLEDO STREET BEFORE AND AFTER EMERALD ASH BORER**

**BEFORE: JUNE 2006**

**PHOTO COURTESY OF DAN HERMS, OSU**

**AFTER: AUGUST 2009**

# Emerald ash borer

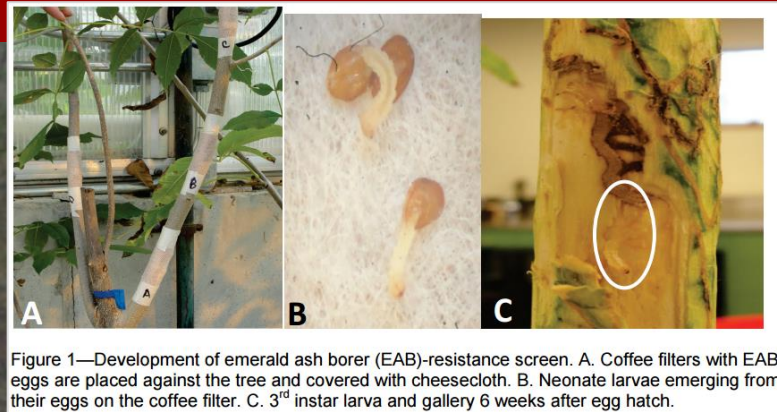


Photo: Joe Boggs



# Emerald ash borer

- Chemical treatment
- “Lingering ash”
- Biological controls



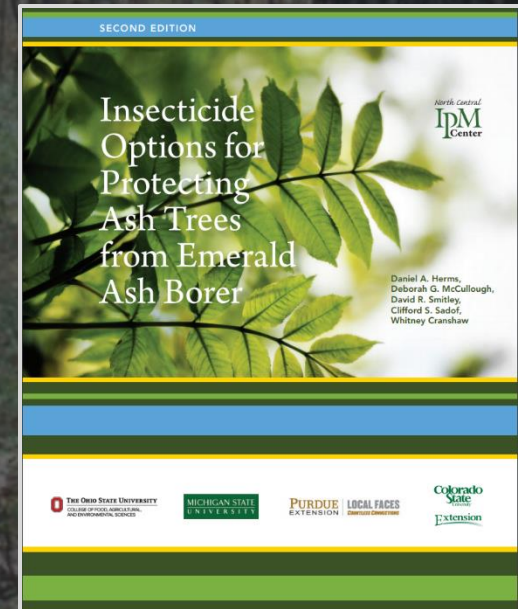
From: Koch et al. 2012



Photo: Houping Liu



Photo: Jian Duan



[emeraldashborer.info](http://emeraldashborer.info)

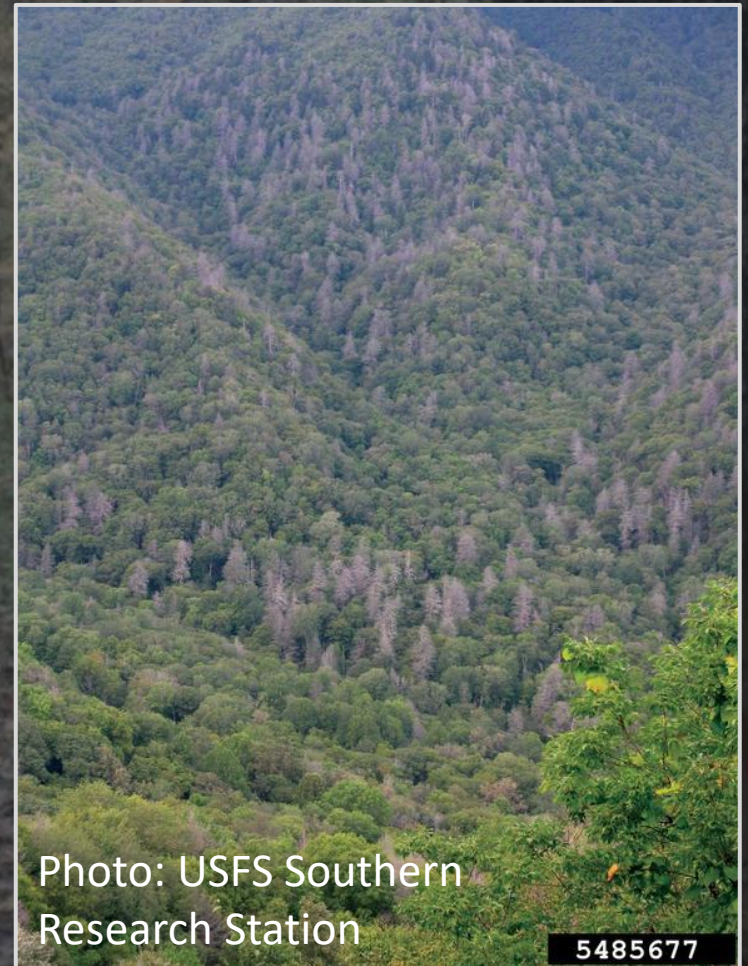
# Hemlock woolly adelgid

- Tiny, aphid-like insect native to Japan (VA 1950s)
- Attaches to undersides of hemlock needles
- Woolly covering (<math><1/8\text{''}</math> dia) October – June
- 2 generations/yr (100+ eggs laid per adelgid)



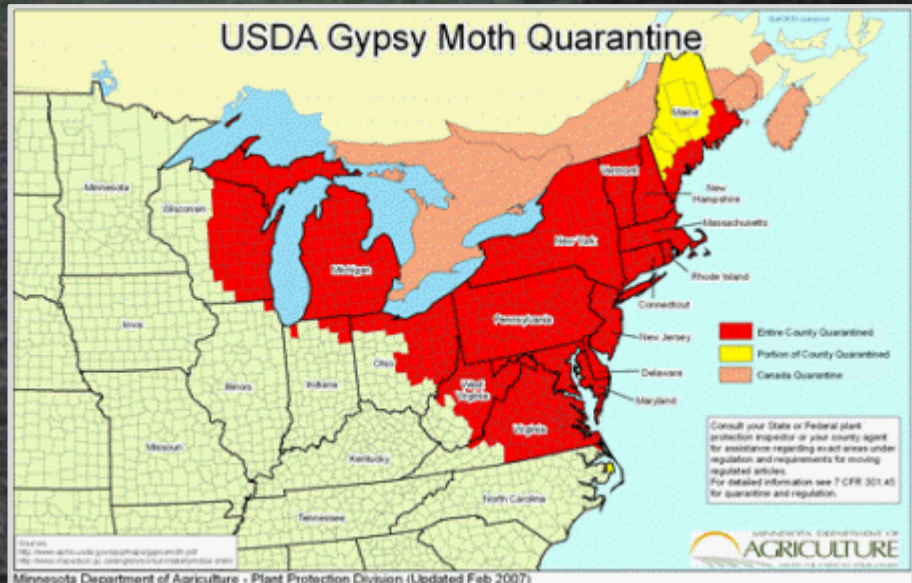
# Hemlock woolly adelgid

- Killed millions hemlocks in Appalachians and New England
- Kills trees in 4-15+ years
- Spread by wind, wildlife (birds), people



# Spongy moth

- Native to Europe
- Introduced to MA in 1860s
- Defoliates a of wide range of plants (>300 spp)
- Oaks are preferred host
- Slow the Spread Program



# Asian longhorned beetle

- Native to Asia (China, Korea, Taiwan)
- First discovery – 1996, NYC
- 5 other sites since – all unique introductions
- Goal = 100% eradication
- Feeds on 12 genera:
  - **Maple**, buckeye, willow, elm, birch, ash, golden raintree, poplar, planetree, horsechestnut, mimosa, mountain-ash, katsura



Photo: Joe Boggs

Joe Boggs, OSU Extension

# Asian longhorned beetle



Photo: Ontario Ministry of Natural Resources and Forestry



Photo: Rutgers University



Photo: Joe Boggs



# Spotted lanternfly

- Discovered in SE PA in 2014
  - Ohio 2020
- Planthopper native to Asia
- Egg masses likely imported on stone
- Fairly large (1") and colorful
- Many known host plants (including *Ailanthus altissima*, grape, and various fruit trees)
- Serious pest for grape orchards

