



EAB

Emerald Ash Borer
(*Agrilus planipennis*)

EAB BACKGROUND

- ◉ Native to Asia: China, Russia, Japan, Korea.
- ◉ Thought to have been introduced in the 1990's in solid wood packing material.
- ◉ In 2002, first North American detections made in Michigan and in Ontario, Canada.
- ◉ Considered the most destructive pest in North America.
- ◉ Responsible for the death of tens of millions of trees in southeastern Michigan alone.



EAB FACTS

- Currently found in 18 states plus Canada
- Found in CT on July 15, 2012
- Found in Dalton, MA (Berkshire County) in August 2012
- Host trees: Ash Only
 - white ash (*Fraxinus americana*)
 - black ash (*F. nigra*)
 - red ash (*F. pennsylvanica*)
 - green ash (*F. pennsylvanica* var. *subintegerrima*)
 - Other horticultural varieties



WHY DO WE NEED ASH TREES?

- Habitat & Biodiversity
- Ecosystem services
 - Shade
 - Improved air quality
 - Erosion control
- Economic benefits
 - Lumber
 - Ornamental plantings
 - Wood products (Paper, Baseball bats, Tool handles, Furniture and more)



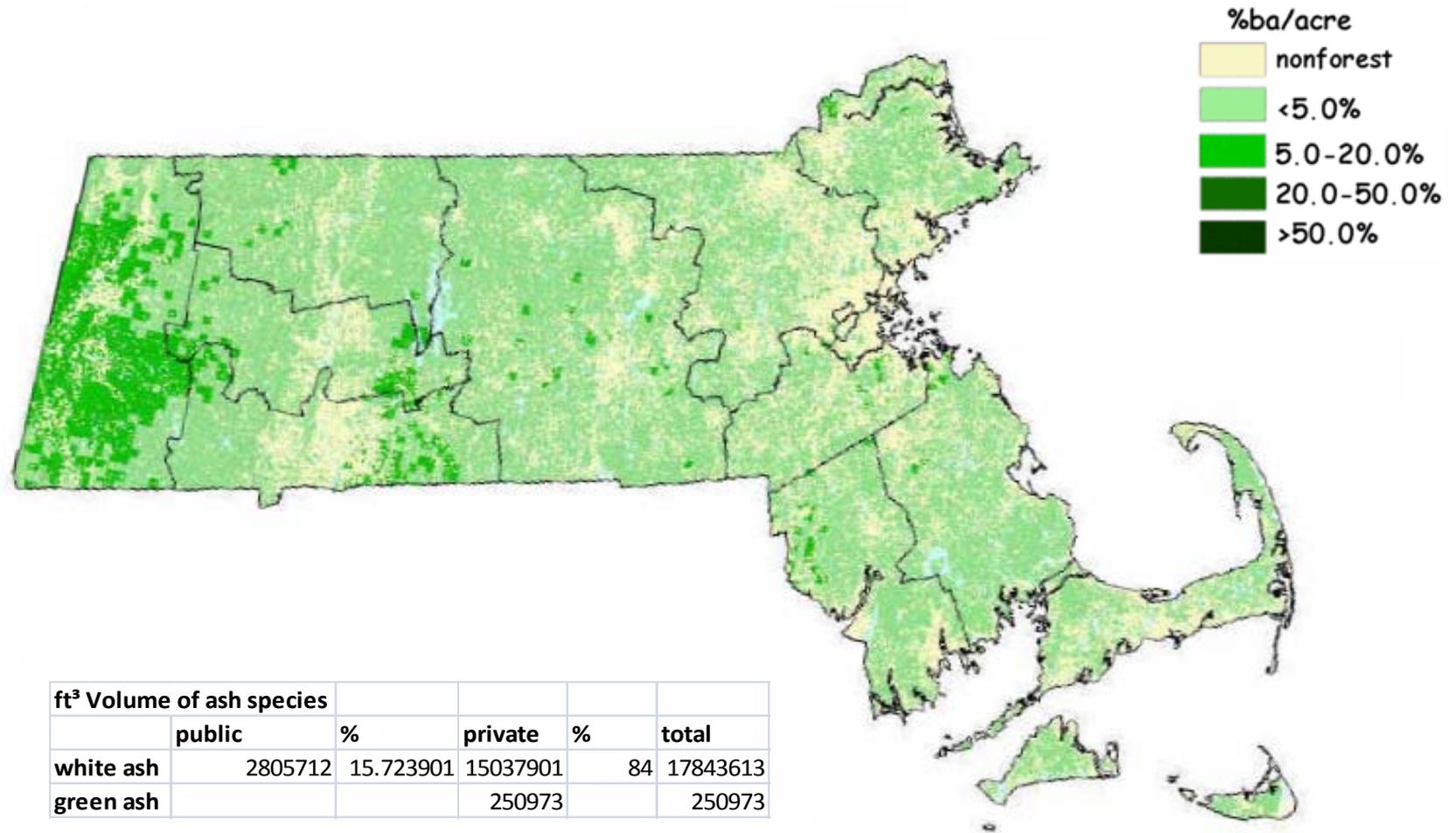
Bat image: http://sicksport.com/baseball-bats-wood-baseball-bat-c-115_135_140

Axe image: <http://www.wkfinetools.com/contrib/jThompson/restore/Stanley593/stanley593.asp>

Oar image: http://www.twinsrecreation.com/Boat-Oars-8Ft-Ash-Oar-Each-1-34In-Shaft_p_52264.html

INCIDENCE OF WHITE AND GREEN ASH

USDA FOREST INVENTORY AND ANALYSIS (FIA)



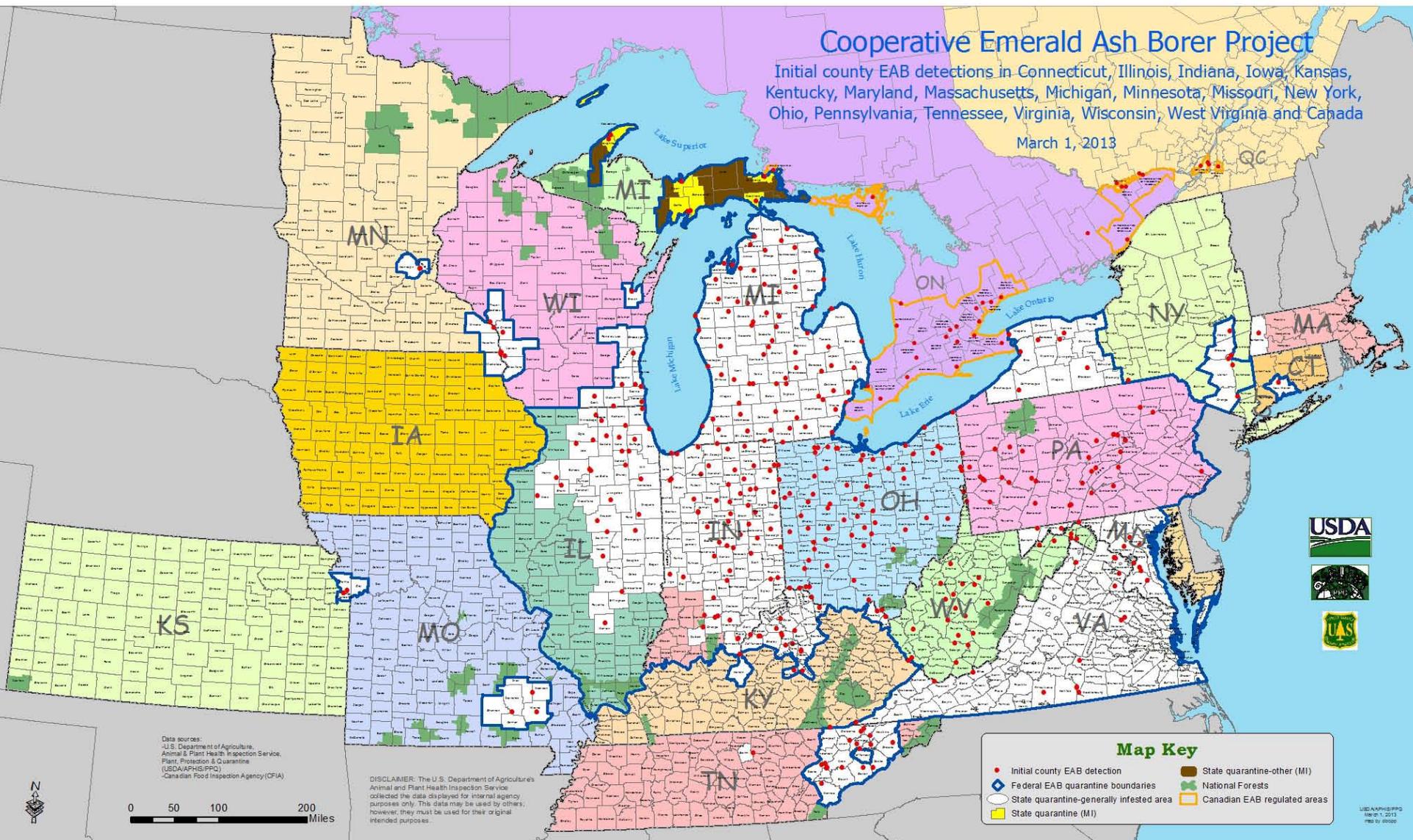
Slide courtesy of Bill Will, DCR

EAB DISTRIBUTION

Cooperative Emerald Ash Borer Project

Initial county EAB detections in Connecticut, Illinois, Indiana, Iowa, Kansas, Kentucky, Maryland, Massachusetts, Michigan, Minnesota, Missouri, New York, Ohio, Pennsylvania, Tennessee, Virginia, Wisconsin, West Virginia and Canada

March 1, 2013



LIFE CYCLE OF EAB

Emerald Ash Borer life cycle:



Eggs: Adult EABs lay eggs from May-September on the bark of Ash trees.



Larvae: Eggs hatch into larvae that burrow under the bark of the tree to feed. Feeding occurs August - November.



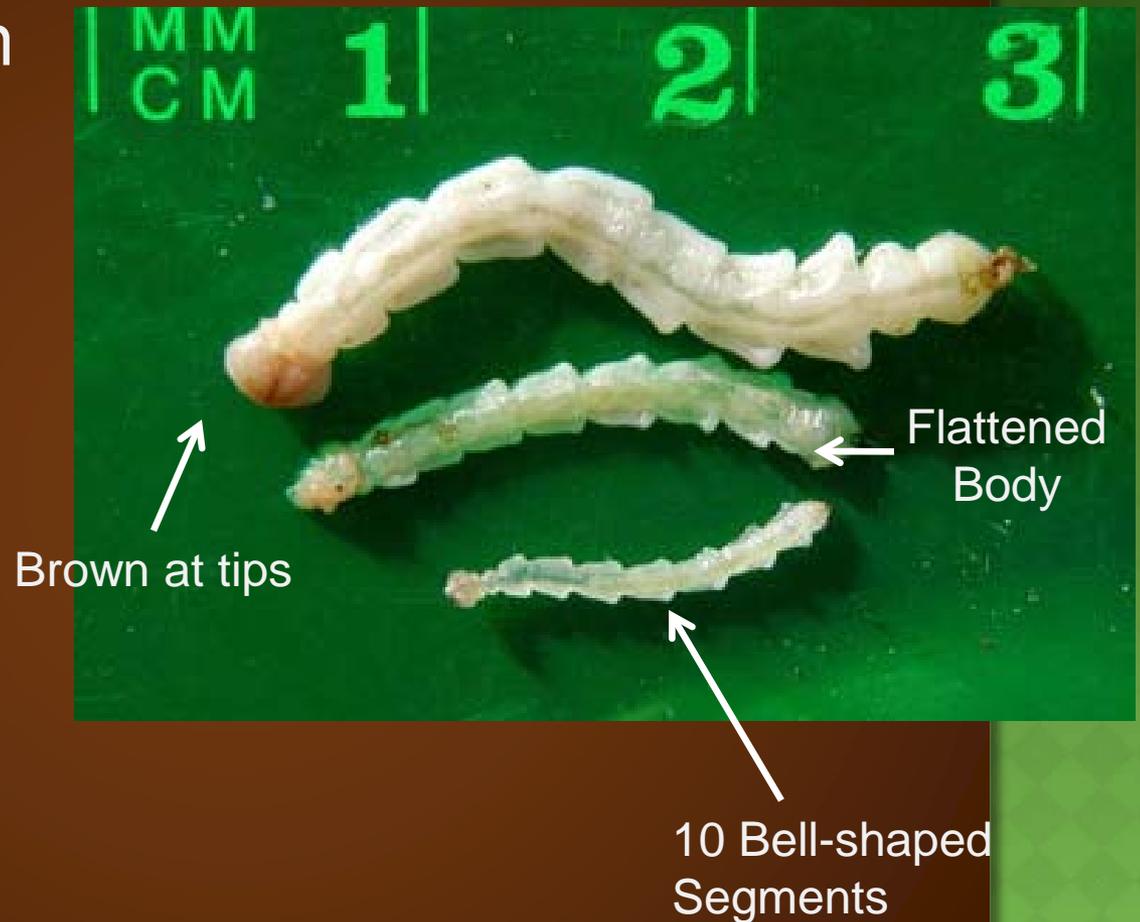
Pupae: Larvae turn into pupae and overwinter from November - April.



Adults: Pupae change into adult EABs and emerge from the tree from May - June.

EAB LARVAE

- Larvae feed on inner bark of the tree, disrupting the transport of nutrients and water
- Smaller trees can die in as little as 1-2 years



EAB TREE DAMAGE

- Tunnels beneath bark
- Distinct, S-shaped paths
- Larval galleries filled with frass
- D-shaped exit holes



EAB TREE DAMAGE

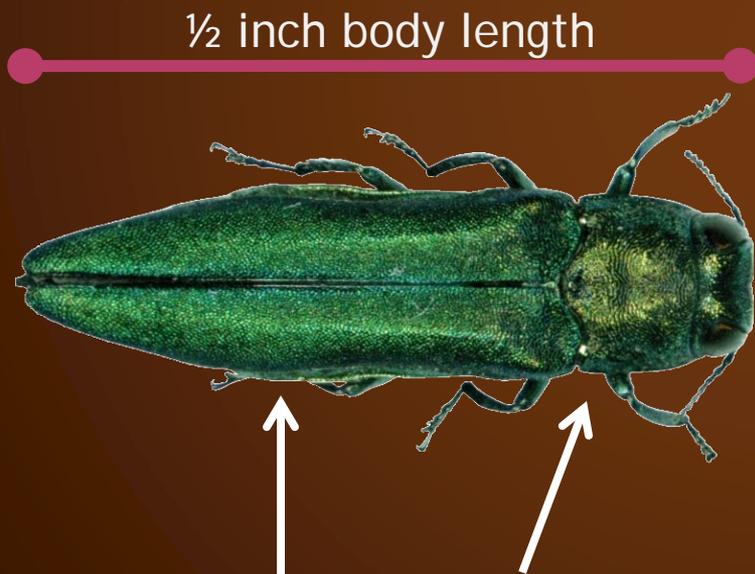
- Canopy dieback
- Bark splitting



- Shoots emerging from roots or trunk
- Increased woodpecker damage

EAB IDENTIFICATION

- There are many types of wood boring insects in Massachusetts
- To confirm that an insect is Emerald Ash Borer, check for these signs:



Wing covers, abdomen and head are iridescent, jeweled green

Coppery purple/red body under the wings

EAB SIMILAR SPECIES



Six-spotted tiger beetle
(*Cicindela sexguttata*)



Two-lined chestnut borer
(*Agrilus bilineatus*)

EAB SIMILAR DAMAGE

Eastern Ash Bark Beetle (*Hylesinus aculeatus*)



EAB SIMILAR DAMAGE

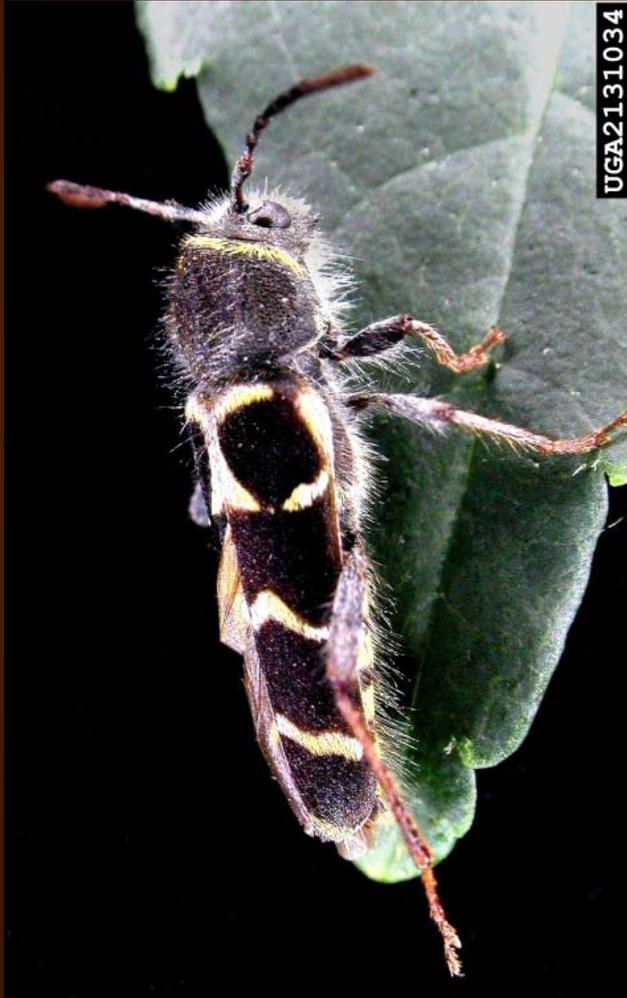
Ash Lilac Borer (*Podosesia syringae*)



Adult: James Solomon, USDA Forest Service, Bugwood.org
Larvae: David Cappaert, Michigan State University, Bugwood.org
Damage: Steven Katovich, USDA Forest Service, Bugwood.org

EAB SIMILAR DAMAGE

Banded Ash Borer (*Neoclytus caprea*)



Adult: David Cappaert, Michigan State University, Bugwood.org
Larvae: David Cappaert, Michigan State University, Bugwood.org
Damage: Lacy L. Hyché, Auburn University, Bugwood.org

EAB: WHAT'S BEING DONE

- Regulation of Infested Areas
 - Restrict movement of Ash, including firewood, lumber & logs
 - Compliance Agreements
- Monitoring
 - Visual Surveys
 - Girdled Trees; EAB attracted to stressed ash
 - Purple Panel Traps



EAB: WHAT'S BEING DONE

- Management
 - Insecticide use for prevention & treatment of low-level infestations
 - Girdled Trees (removing population sinks)
 - Biocontrol such as parasitic wasps, woodpeckers
 - Research
 - Education and Outreach

www.emeraldashborer.info



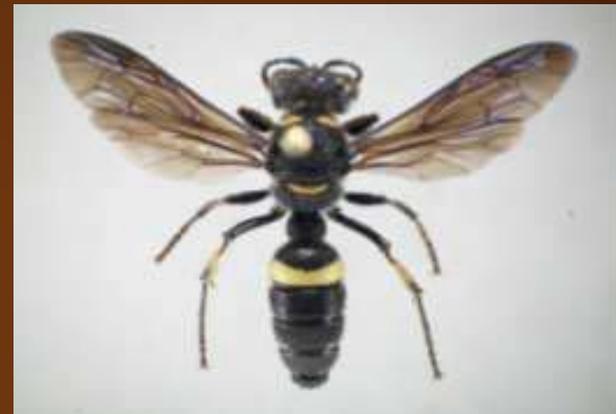
EAB - WHAT'S BEING DONE

- The Wasp Watchers program targets native non-stinging wasps that hunt EAB
- Search for these wasps in ball fields and sandy parking lots



WASP WATCHERS

- *Cerceris fumipennis*
 - ½ - ¾ inch long
 - Dark smoky brown wings
 - One cream/yellow band on second segment of abdomen (near “waist”)
 - Three large cream/yellow spots on face



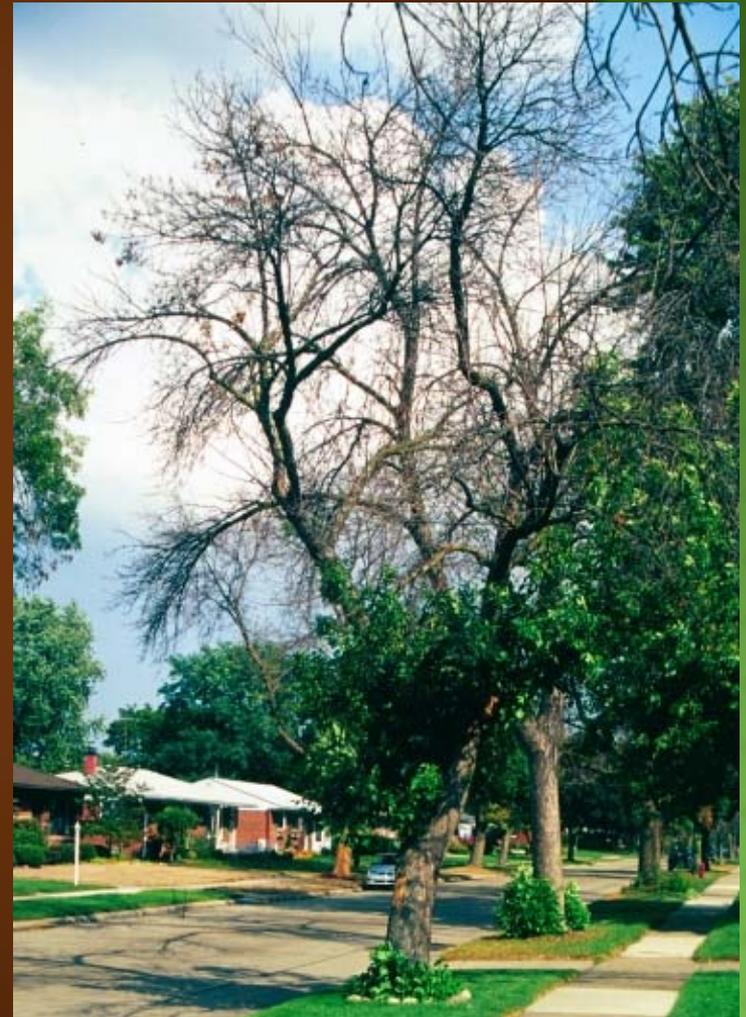
WASP WATCHERS: HOW TO IDENTIFY A NEST

- Round hole the diameter of a pencil
- Holes go straight down (not angled into the ground)
- Surrounded by a circle of excavated soil (not all to one side)
- Often tucked beside or partially under a clump of grass



EAB: WHAT CAN YOU DO?

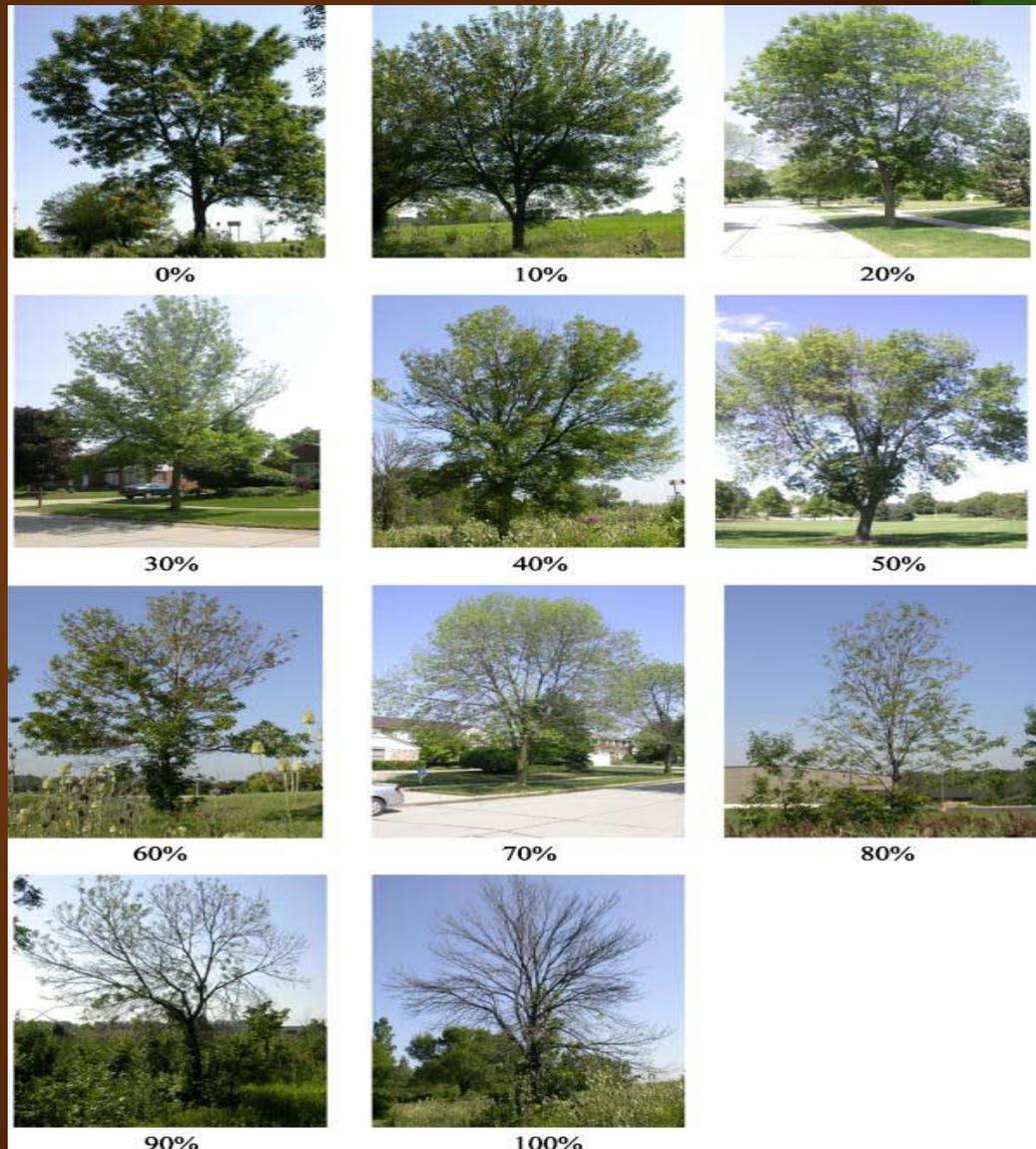
- Check for the presence of Ash trees and EAB infestation in your own yard/neighborhood
- Decide if the trees are worth saving
 - If so, treatment is possible
 - If not, early removal is preferable



EAB: WHAT CAN YOU DO?

- Considerations for treatment vs. removal:

- Extent of damage
- Location
- Value (aesthetic, emotional)





REPORT EAB AND OTHER SUSPICIOUS PESTS!

Found something odd?

1. Get a specimen or a photo!

Save specimens in a container in the freezer, or in a jar with rubbing alcohol

2. Report online:

<http://massnrc.org/pests>

3. EAB? Call 1-866-322-4512

4. Or, call the MDAR pest hotline: 617-626-1779

ACKNOWLEDGEMENTS

- This presentation was developed by Forest Pest Outreach staff at the Mass. Dept. of Agricultural Resources
- For more information:

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617-626-1735

<http://massnrc.org/pests>

