

Emerald Ash Borer



What is an Invasive Species?

1. non-native to the ecosystem under consideration and
2. whose introduction causes or is likely to cause economic or environmental harm or harm to human health.

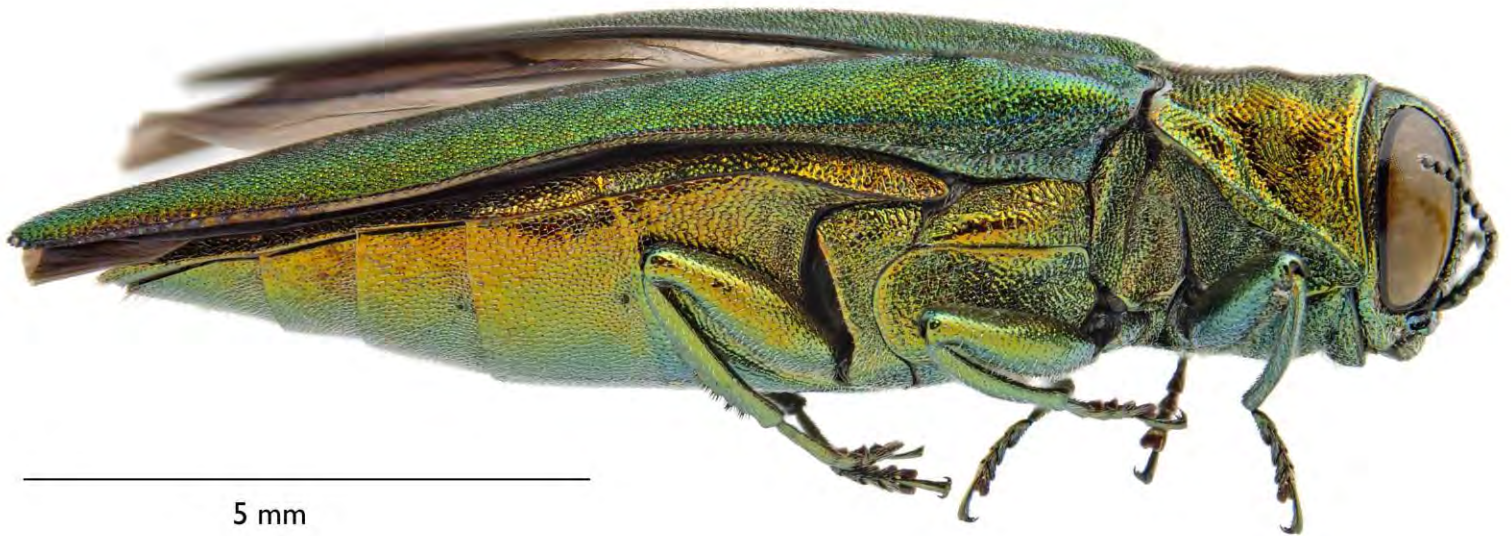
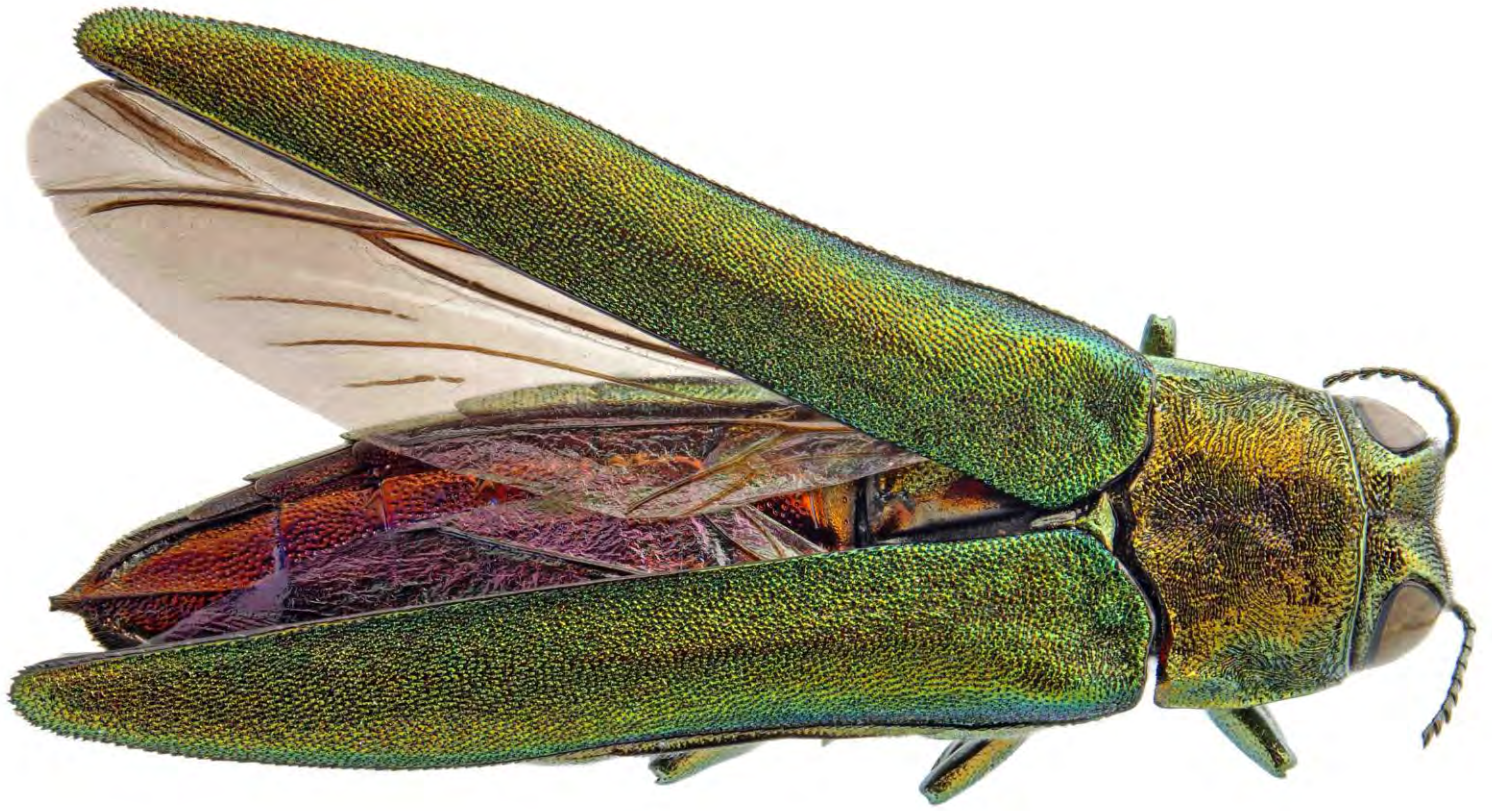


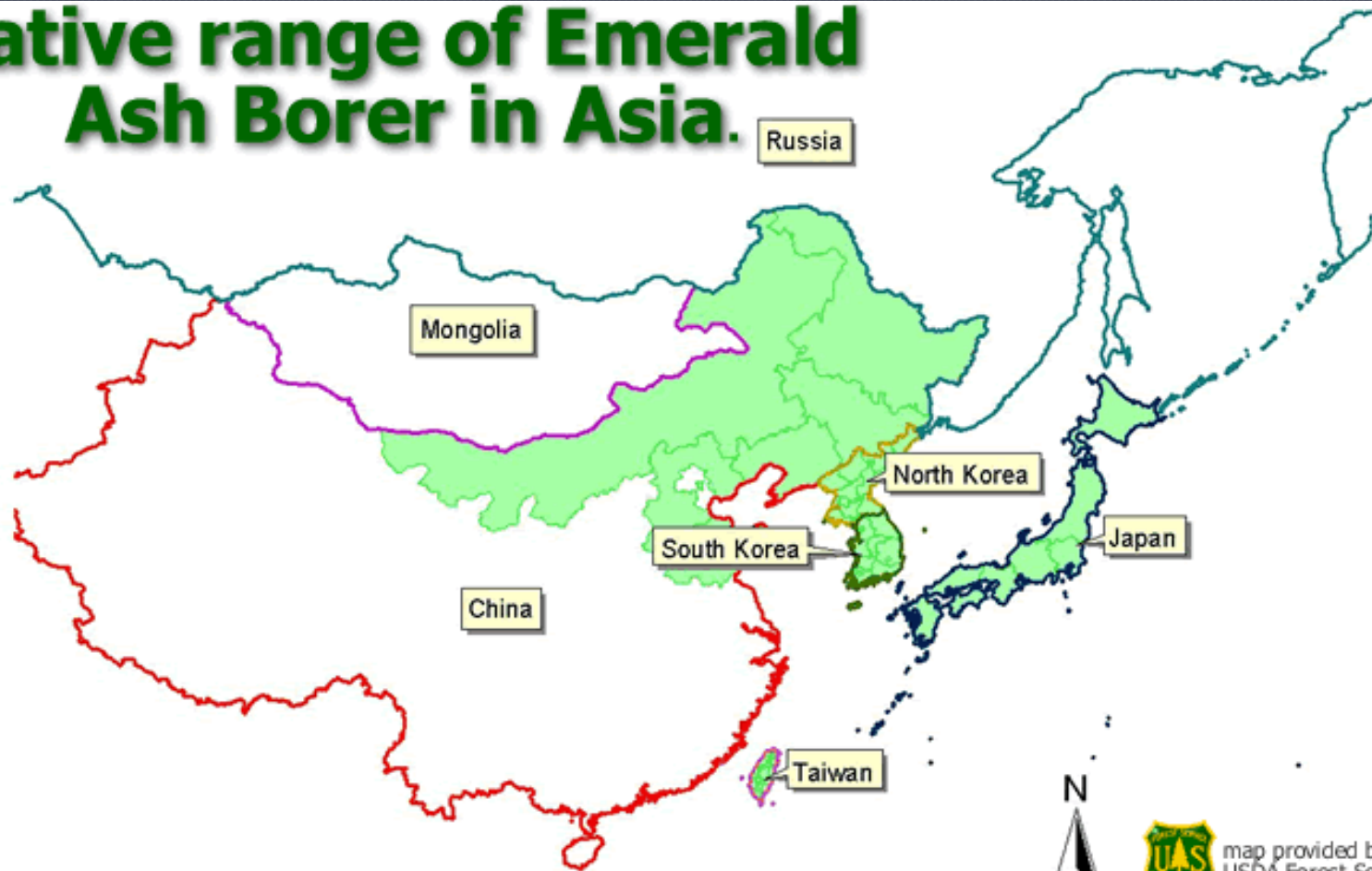
Photo by
Kent Loeffler,
Cornell University



The Story of the EAB



Native range of Emerald Ash Borer in Asia.



EAB Native Range
Presence of emerald ash borer has also been reported in adjacent Mongolia and Russia.

2000

0

2000 Miles



map provided by
USDA Forest Service



HOW DO THEY GET HERE?





United States
Department of
Agriculture

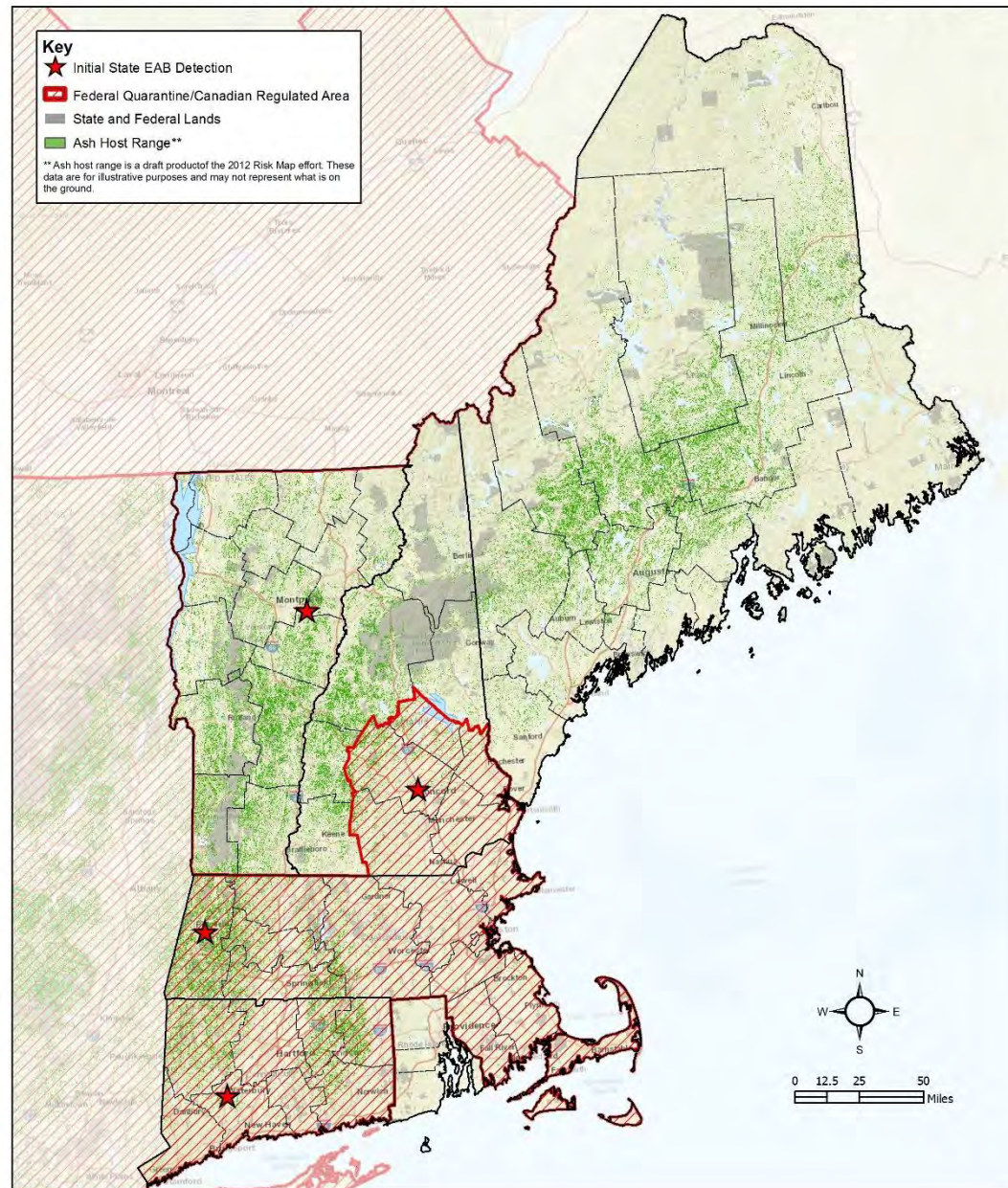
Cooperative Emerald Ash Borer Project

Initial county EAB detections in North America

March 1, 2018



Emerald Ash Borer Quarantine in New England



Ash Trees



White fringetree





\$10.7+ billion dollars spent so far on treatment, removal, and replacement.

Ash mortality due to EAB. Photo taken in August.

Credit: Bill McNee, Wisconsin Dept of Natural Resources, Bugwood.org

5500050

Toledo, Ohio



2006 (Before EAB)



2009 (After EAB)

99.7% Mortality of Ash Trees in North America



5% of trees in Vermont are ash



◎ Burlington: 1,000 ash trees ROW.

Remove and Replace: **\$500,000**

◎ Johnson: 440 ash trees along back roads

Removal: **\$132,000**



286 species of arthropods (insects and spiders) depend on North American ash trees for food and shelter. At least 44 species of arthropods feed exclusively on ash.













June/July
Oviposition



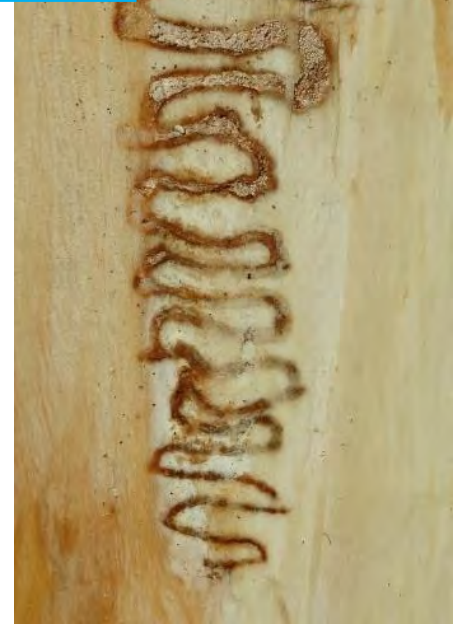
Summer/Fall
Larval growth



May/June
Adult Emergence
Ovary maturation

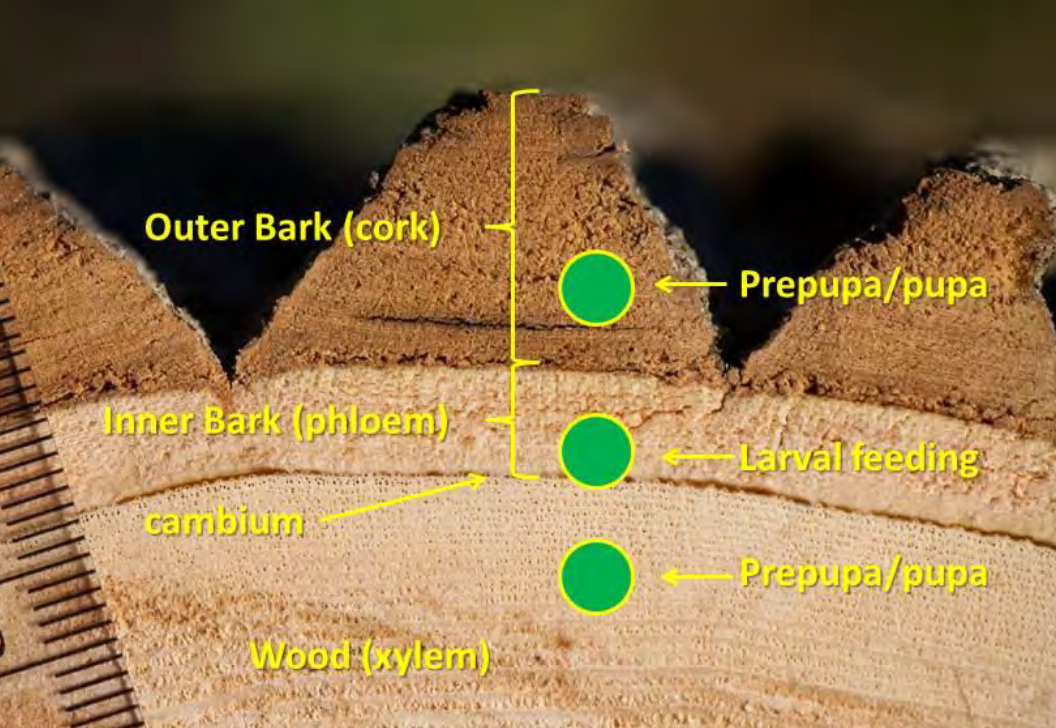
1-Year Life Cycle

Winter
Pre-pupae



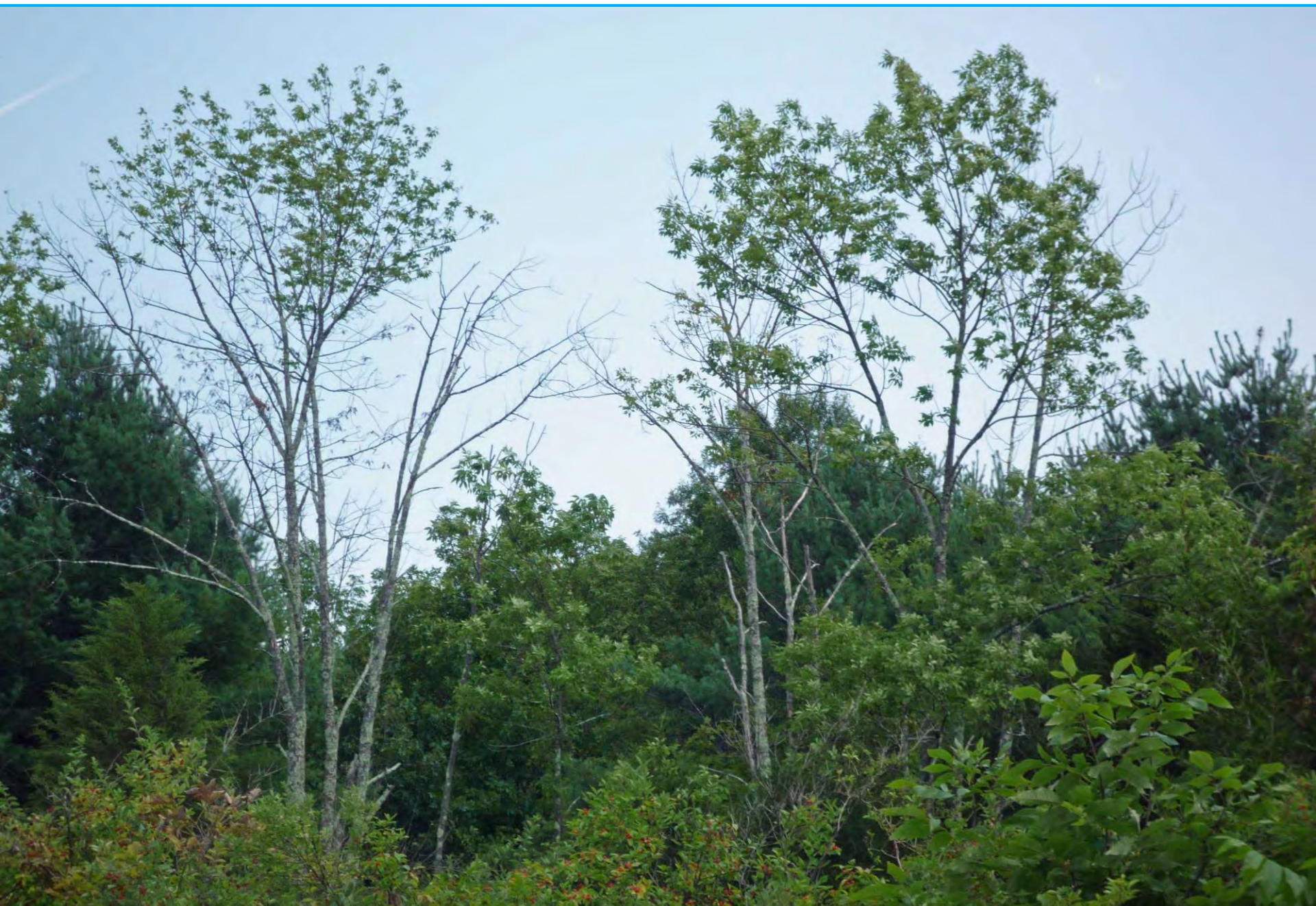
Early spring
Pupation







Canopy Thinning



Epicormic, or water sprouts



Woodpecker Flecking



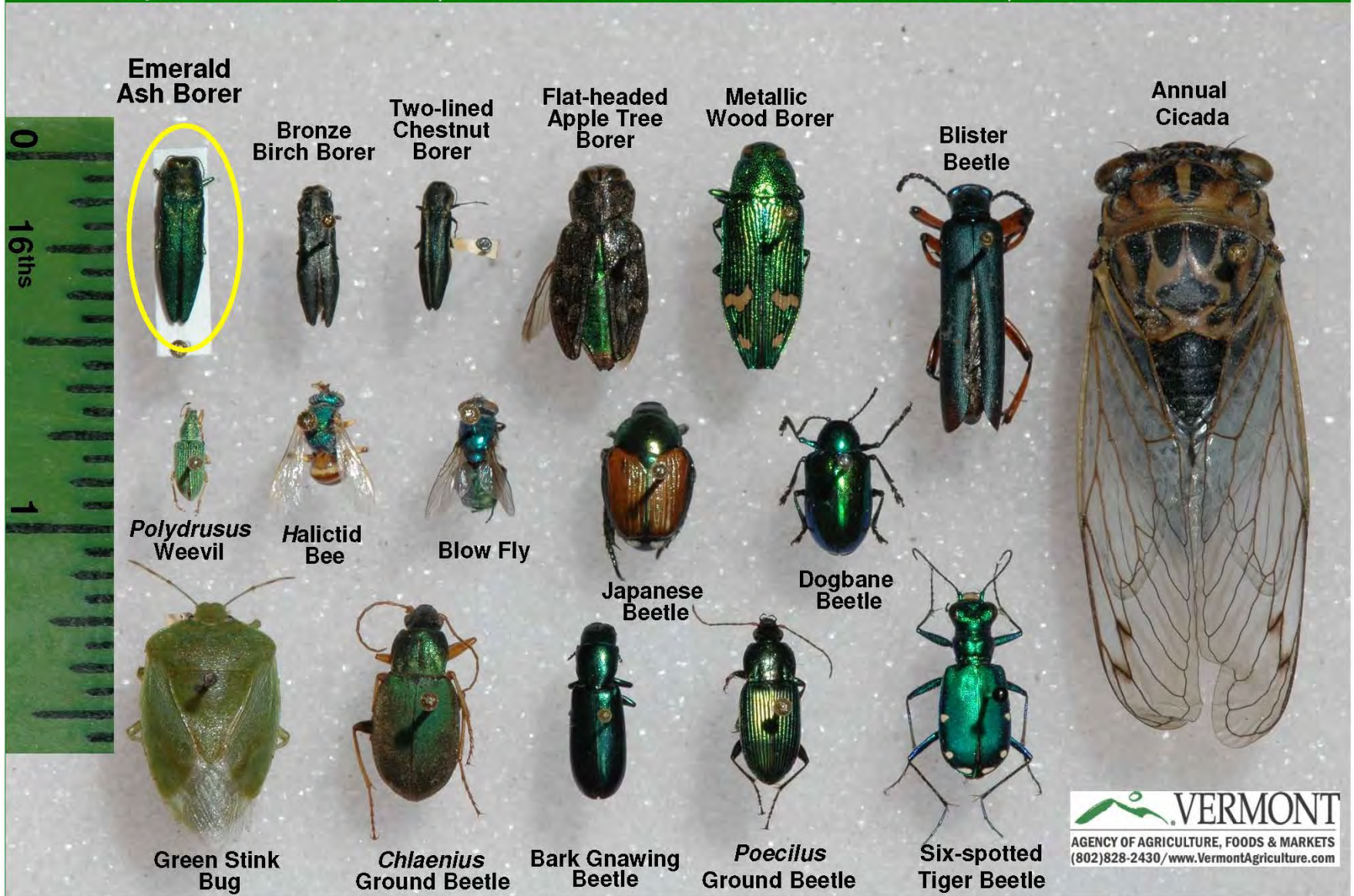
Bark splitting





Insects in Vermont that may be confused with Emerald Ash Borer

Adapted from Jeff Hahn, University of Minnesota Extension and Val Cervenka Minnesota Dept. of Natural Resources





[INTRO TO INVASIVES](#)

[GET INVOLVED](#)

[NEWS & EVENTS](#)

[ABOUT US](#)



Invasive species

Pose A Serious Threat To Vermont Communities.

Become part of the solution: Learn, Get Involved, Make a Difference.

QUICK LINKS



Gallery of

Aquatic Invaders



Gallery of

Forest Pests



Gallery of

Terrestrial Plants

INVASIVES IN THE NEWS



Announcing ourVTwoods.org:
New Digital Resource for
Healthy Forests

MAKE A DIFFERENCE



EAB in Vermont

Emerald ash borer has been confirmed in Vermont.