



Michigan Eyes on the Forest & Forest Sentinel Tree Network

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JUSTICE
FOR ALL"**

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"Cost" of Invasive Species

- Tree Health
- Forest Health
- Ecosystem Health
- Human Health
- Economic impact



Credit: Kathleen Knight, US Forest Service

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- Proactive awareness
- Early detection, rapid response
- Minimize risk of damage to forest resource
- Take pictures, not samples
- If you see something, say something!

Michigan Department of
Agriculture
Email: MDA-Info@michigan.gov
Phone: 1-800-292-3939

Howard Russell,
Entomologist
MSU Diagnostics Lab
Email: bugman@msu.edu

Michigan Eyes on the Forest



Michigan State University
Department of Entomology

Michigan State University Extension

Midwest Invasive Species Information Network
(MISIN)

Funded by the Michigan Invasive Species Grant Program



Michigan Eyes on the Forest



Asian Longhorn Beetle



Hemlock Woolly Adelgid



Credit: Ted Tisserat, Colorado State University

5406091

Thousand Cankers Disease of Walnut

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Asian Longhorn Beetle
Anoplophora glabripennis

Wood boring beetle
Native to China, Japan, Korea

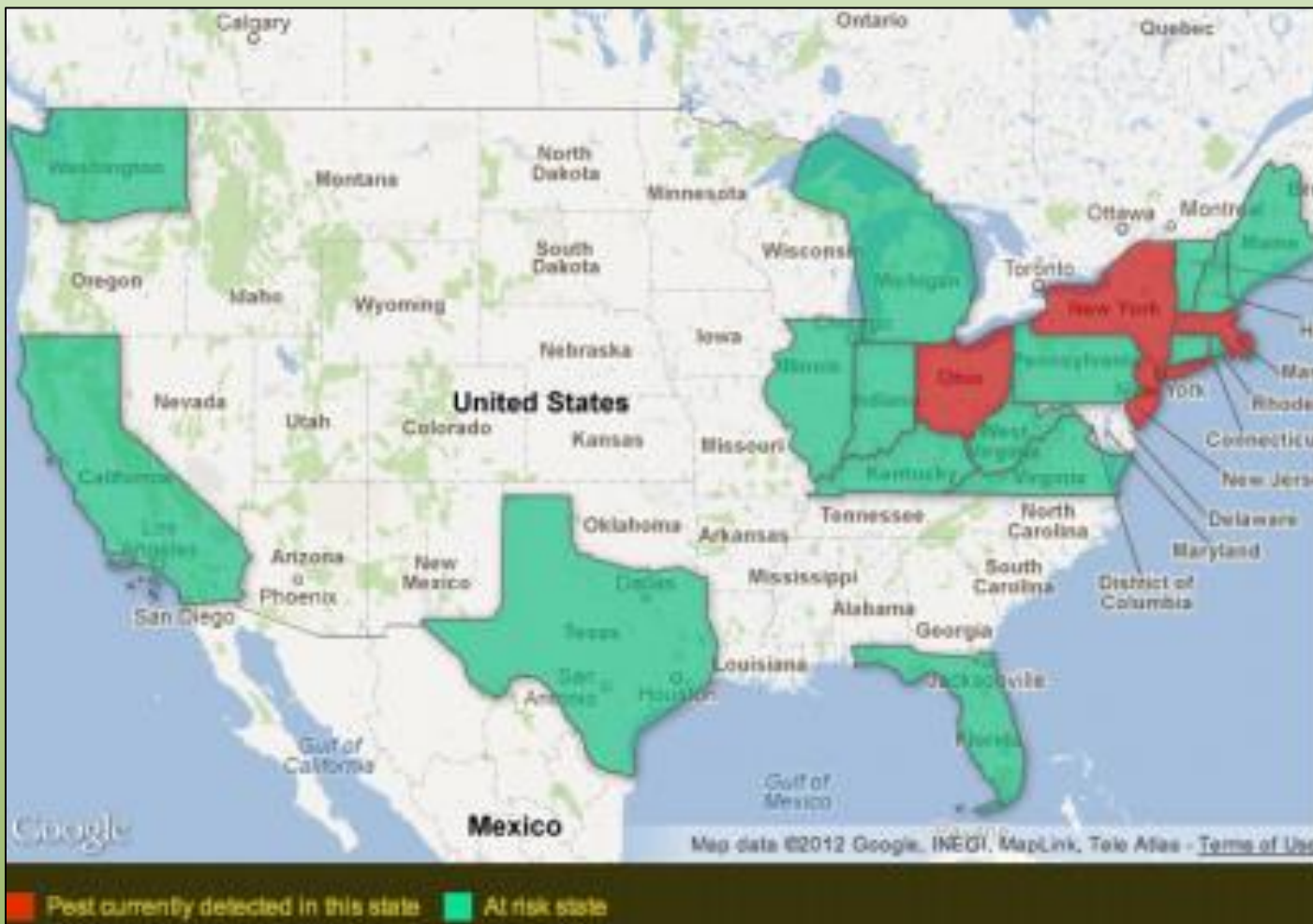


Maples preferred
Poplar, willow, sycamore, birch, Ohio buckeye,
horse chestnut

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Current Asian longhorn beetle detection

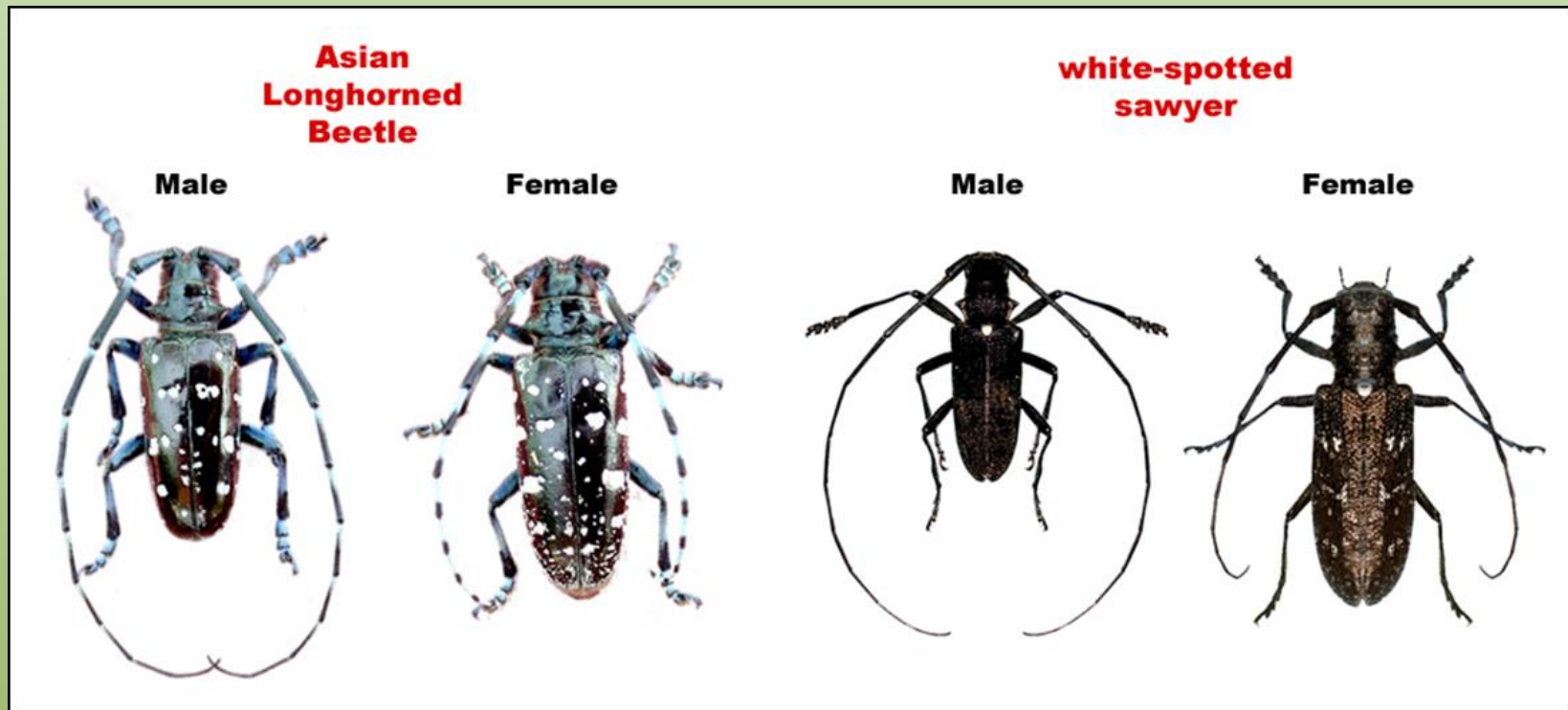


Source: USDA Hungry Pest Tracker

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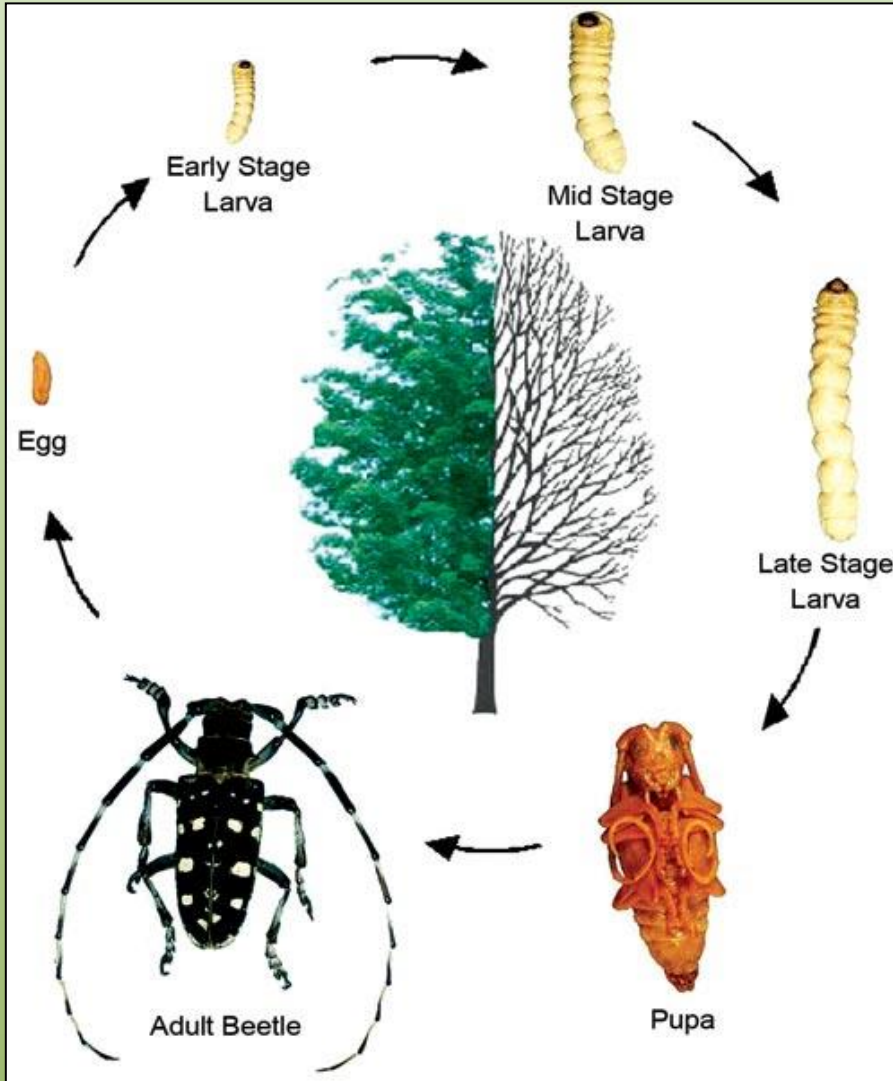


Larger than native borers



Pine Sawyer

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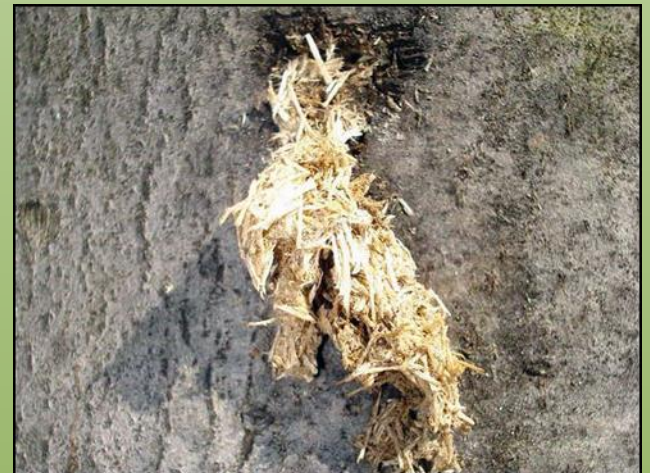


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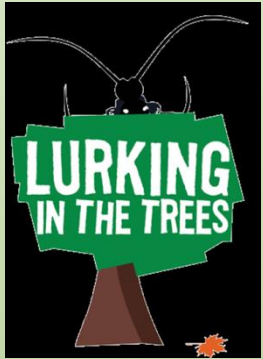


Asian Longhorn Beetle – what you'll see:

- Pencil sized exit holes
- Shallow scars in bark
- Saw-dust like material on ground or in branches
- Dead branches
- The beetle



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Asian Longhorn Beetle– what to do?

Report suspect forest pest infestations to:

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Agriculture and Rural
Development

Email: MDA-Info@michigan.gov

Phone: 800-292-3939

-or-

Howard Russell
Entomologist

MSU Diagnostics Lab

Email: bugman@msu.edu

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Hemlock Woolly Adelgid *Adelges tsugae*

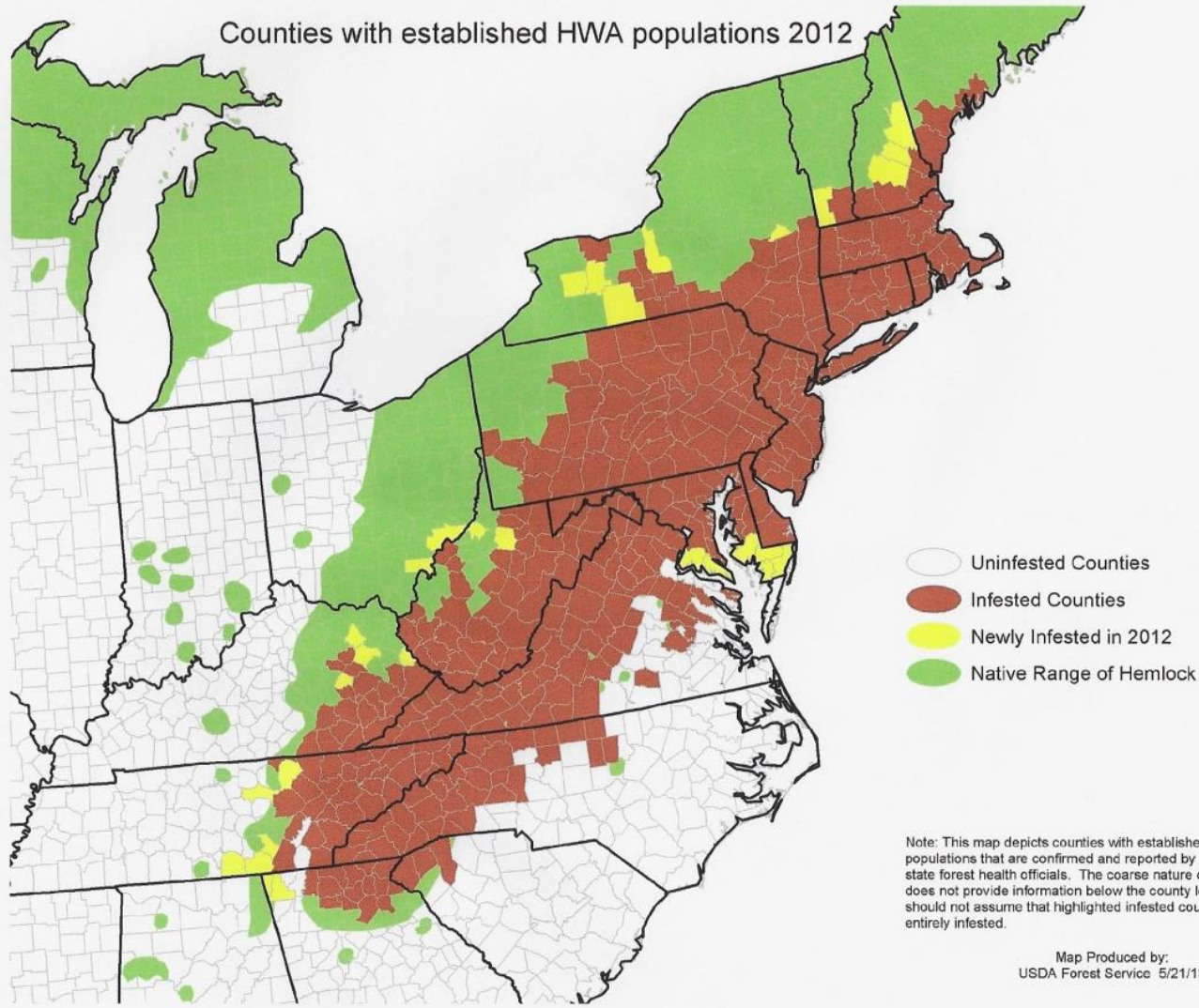
- Tiny insects feed on sap
- White 'wax' is protection
- Overtime weakens, can help kill trees
- Movement by wind, wildlife, logs, firewood, infected trees/nursery stock



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Counties with established HWA populations 2012

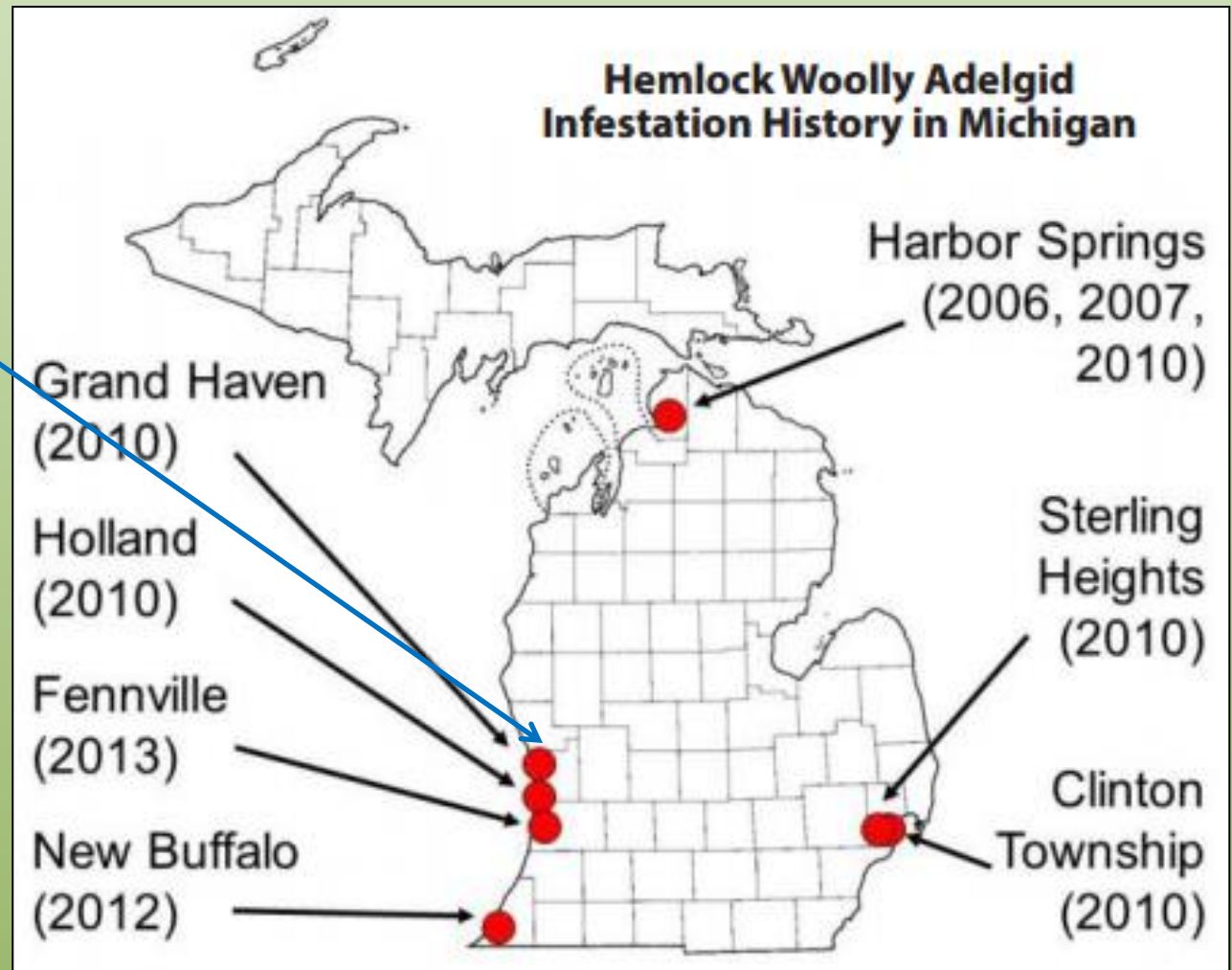


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Summer
2015
Detections
Ottawa &
Muskegon
Counties

Treatment,
survey &
eradication
activities
underway



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Source: Maine Forest Service

http://www.maine.gov/dacf/mfs/forest_health/insects/hemlock_woolly_adelgid_life_stages.htm

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Hemlock Woolly Adelgid – what you'll see:

- Small cottony masses at base of needles
- Advanced infestations
 - twig and branch mortality
 - needles become grayish green



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Hemlock Woolly Adelgid– what to do?

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Take pictures, not samples!

Michigan Eyes on the Forest



Thousand Cankers Disease

Pityophthorus juglandis and *Geosmithia morbida*

Walnut twig beetle and fungus

- Twig beetle native to western states
- Fungus newly identified
- Beetle introduces spores into phloem
- Cankers develop – girdle branch
- Beetle entry sites can number in the 1,000's



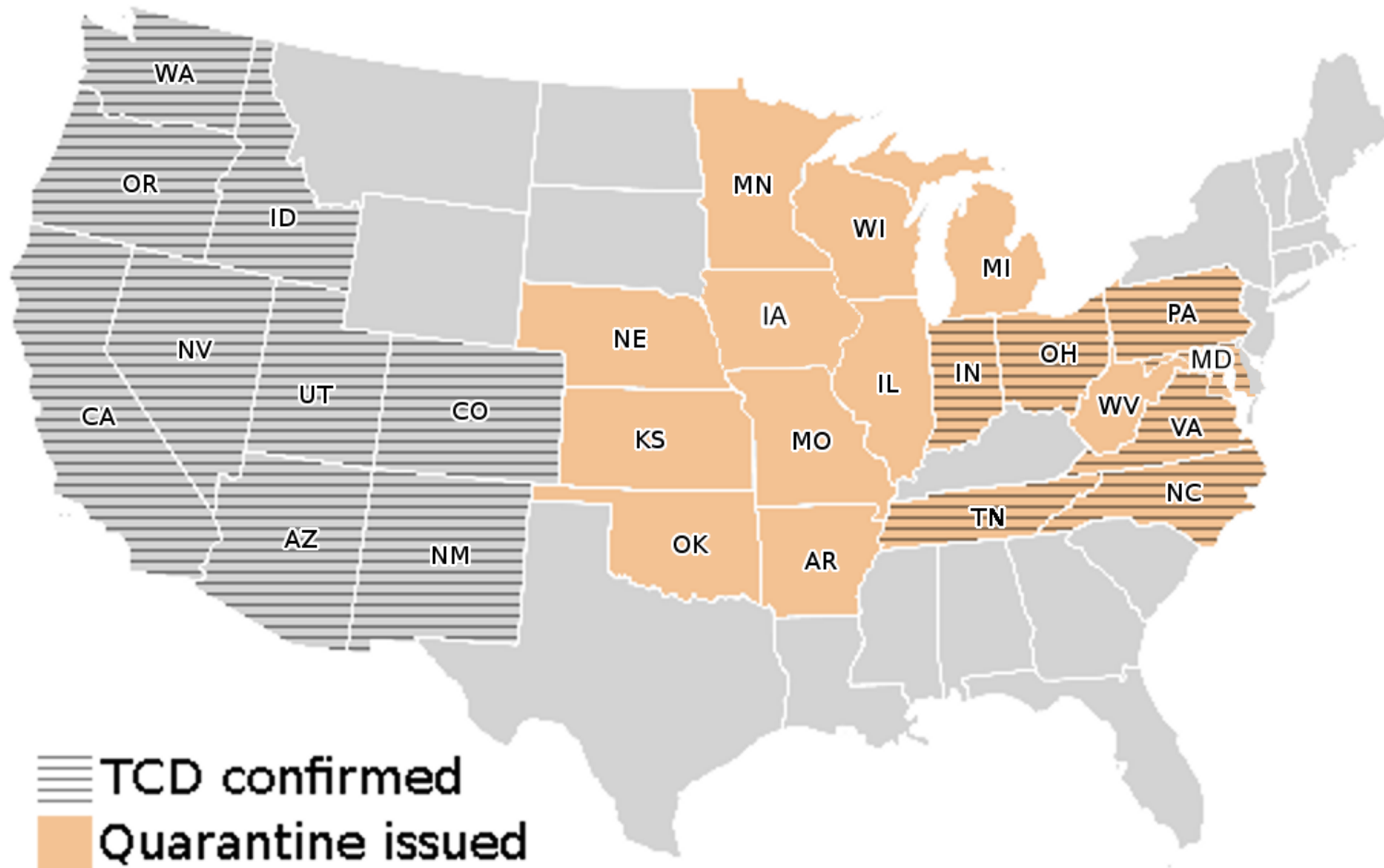
5406045

Credit: Whitney Cranshaw

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Distribution of Thousand Cankers Disease as of April 20, 2015



Source: www.thousandcankers.com

Source: <http://www.thousandcankers.com/tcd-locations.php>

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Thousand Cankers Disease – what you'll see:

- All species of Juglans
- Yellow foliage that quickly turns brown
- Branch mortality
- Circular or oblong cankers in phloem (under bark)
- Bark may have no symptoms, or have stain or cracking over canker

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Thousand Cankers Disease



Credit: Whitney Cranshaw, Colorado State University



Credit: Whitney Cranshaw, Colorado State University

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Thousand Cankers Disease– what to do?

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Michigan Eyes on the Forest



Forest Sentinel Tree Network

- Volunteers 'adopt' an individual tree
- Monitor it 2-3 times a year
- Report on the condition of the tree



Credit: http://badger.uvm.edu/omeka/exhibits/sno-w/uvm/trees/bw_intro

Michigan
Sentinel
Trees

*Eyes On
The Forest
Project*

MICHIGAN STATE UNIVERSITY Extension

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Forest Sentinel Tree Network – what we ask

- Tree common name
- Location – lat/long
- Diameter
- Type of land
- Forest or natural area?
- Dominance
- Growing condition
- Current tree condition
- Compared to neighbors
- Canopy condition
- Soil disturbance?
- Insect defoliation present?
- Defoliation severity
- Insect exit holes in bark?
- Size of insect holes
- Insect galleries under bark?
- Cavities in trunk?
- Cottony or waxy material visible?
- Where?
- Insect webbing, nest, or other evidence?
- Unusual pitch flows or globs on bark?
- Conks or mushrooms present?
- Where?

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Forest Sentinel Tree Network

A screenshot of a web browser displaying the MISIN website. The browser's address bar shows "www.misin.msu.edu". The website header includes the MISIN logo and the text "Midwest Invasive Species Information Network". A navigation menu is visible with items: HOME, ABOUT, REPORT SIGHTINGS, SPECIES INFORMATION, BROWSE DATA, CITIZEN SCIENCE (circled in red), TOOLS, and MY MISIN. Below the menu is a large banner with the text "Join the Eyes Network Today" and a circular logo. To the right of the banner, there is introductory text about MISIN. At the bottom, there are three columns: "Report Sightings" with a leaf icon, "MISIN Alerts" with a document icon, and "Species Distribution" with a globe icon. The Windows taskbar is visible at the bottom of the screenshot, showing the date and time as 1:22 PM on 9/23/2015.

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Forest Sentinel Tree Network

A screenshot of a web browser displaying the MISIN website. The browser's address bar shows "www.misin.msu.edu". The website header includes the MISIN logo and navigation tabs: HOME, ABOUT, REPORT SIGHTINGS, SPECIES INFORMATION, BROWSE DATA, CITIZEN SCIENCE, TOOLS, and MY MISIN. The "CITIZEN SCIENCE" tab is active, and a dropdown menu is open, highlighting "Eyes on the Forest" with a red circle. Other menu items include "MI-MAST" and "Backyard Bark Beetles". The main content area features a large banner with the "Michigan Eyes on the Forest & Forest Sentinel Tree Network" logo and the text "Join the Eyes Network Today". Below the banner, there are three columns: "Report Sightings" with a leaf icon, "MISIN Alerts" with a document icon, and "Species Distribution" with a globe icon. The footer shows the URL "www.misin.msu.edu/citsciprojects/" and a Windows taskbar at the bottom with the date "9/24/2015" and time "1:56 PM".

Michigan Eyes on the Forest



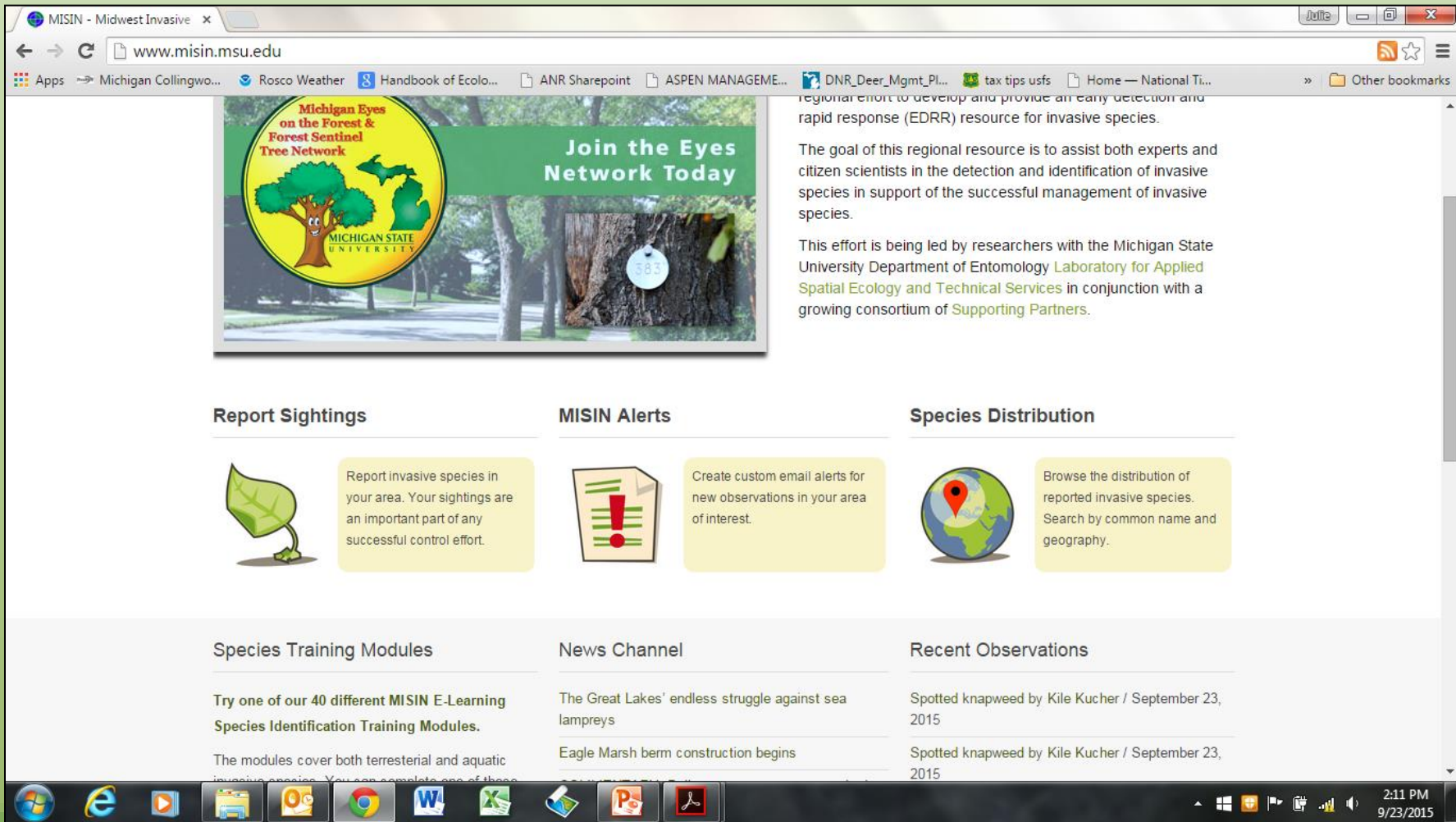
Forest Sentinel Tree Network

The screenshot shows a web browser window with the URL www.misin.msu.edu/eyes/. The page has a green header with the MISIN logo and navigation links: HOME, ABOUT, REPORT SIGHTINGS, SPECIES INFORMATION, BROWSE DATA, CITIZEN SCIENCE, TOOLS, and MY MISIN. A login section includes fields for Username and Password, a Login button, and links for Register (Free) and Forgot Password?. The main content area features a circular logo on the left and text on the right: "Join the Michigan Eyes on the Forest sentinel tree network and help monitor Michigan's forest resources and help us protect against potential invasive threats. We are asking Michigan residents to help in the identification of evidence of unusual decline, dieback or the presence of major invasive forest pests not known to be established in Michigan. Register with the MISIN project in order to begin monitoring your own trees. Once you are registered use the 'Submit Data' link." Below this is a blue link: "Submit Data | Field Data Form". On the right side, there is a "Latest Contributions" section listing items like "Spotted knapweed by Kile Kucher / September 23, 2015" and "Water hyacinth by Nancy Eldridge / September 23, 2015". Below that is a "MISIN eNews" section with a text input field and a "GO" button. The Windows taskbar at the bottom shows various application icons and the system clock displaying 2:08 PM on 9/23/2015.

Michigan Eyes on the Forest



Midwest Invasive Species Information Network



The screenshot shows a web browser window displaying the MISIN website. The browser's address bar shows the URL www.misin.msu.edu. The website's header features a large banner with the Michigan Eyes on the Forest logo and the text "Join the Eyes Network Today". Below the banner, there are three main sections: "Report Sightings", "MISIN Alerts", and "Species Distribution". Each section has a corresponding icon and a brief description of the service. At the bottom of the page, there are three more sections: "Species Training Modules", "News Channel", and "Recent Observations". The browser's taskbar at the bottom shows various application icons and the system clock indicating the date and time as 9/23/2015 at 2:11 PM.

MISIN - Midwest Invasive x
www.misin.msu.edu

Michigan Collingwo... Rosco Weather Handbook of Ecolo... ANR Sharepoint ASPEN MANAGEME... DNR_Deer_Mgmt_Pl... tax tips usfs Home — National Ti... Other bookmarks


Michigan Eyes on the Forest & Forest Sentinel Tree Network
Join the Eyes Network Today

regional effort to develop and provide an early detection and rapid response (EDRR) resource for invasive species.


The goal of this regional resource is to assist both experts and citizen scientists in the detection and identification of invasive species in support of the successful management of invasive species.

This effort is being led by researchers with the Michigan State University Department of Entomology [Laboratory for Applied Spatial Ecology and Technical Services](#) in conjunction with a growing consortium of [Supporting Partners](#).


Report Sightings

 Report invasive species in your area. Your sightings are an important part of any successful control effort.

MISIN Alerts

 Create custom email alerts for new observations in your area of interest.

Species Distribution

 Browse the distribution of reported invasive species. Search by common name and geography.

Species Training Modules

Try one of our 40 different MISIN E-Learning Species Identification Training Modules.

The modules cover both terrestrial and aquatic

News Channel

The Great Lakes' endless struggle against sea lampreys

Eagle Marsh berm construction begins

Recent Observations

Spotted knapweed by Kile Kucher / September 23, 2015

Spotted knapweed by Kile Kucher / September 23, 2015

2:11 PM
9/23/2015

Michigan Eyes on the Forest



Project Funded by the Michigan Invasive Species Grant Program

