



Community Detectors

Invasive Tree Pests to Know



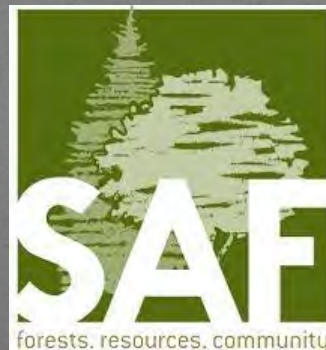
Forest Pest Outreach Program

A project of the Maine Department of Agriculture,
Conservation & Forestry / Division of Animal & Plant Health and
Maine Association of Conservation Districts



This material is made possible through a grant from the Maine Department of Agriculture, Conservation and Forestry (DACF) and is funded in part by a Cooperative Agreement from the United States Department of Agriculture (USDA) Animal and Plant Health Inspection Service (APHIS). USDA, DACF and MACD are equal opportunity lenders, providers and employers.

Today's program sponsors:



What are invasive species?

- Are not naturally found in the area
- Cause harm to:
 - environment
 - economy
 - human health
- Any benefits are outweighed by harm

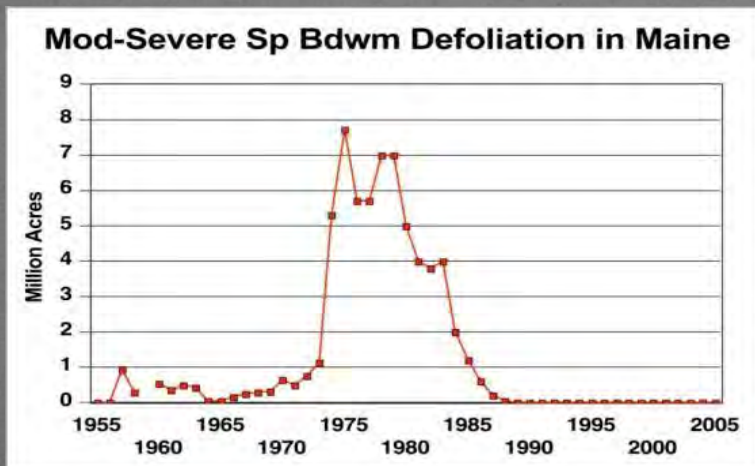


Japanese Barberry, CTAES

Most non-native (alien) species are not invasive

Native Pests vs. Invasive Pests

- Trees have some resistance
 - Predators and parasites
 - Populations often cycle
 - Example: **spruce budworm**
- Trees often have no resistance
 - Few or no effective natural enemies
 - Populations build, often until host collapses



What is the harm?

- More than \$100 billion per year to control invasive species
 - Costs beyond your control!
 - e.g., property values and browntail moth
- Ecological damage
- Human Health Issues
 - In ME: browntail moth



U.S. History of Invasive Tree Pests

American Chestnut



> 3 billion mature trees
in Eastern U.S.

U.S. History of Invasive Tree Pests

Chestnut Blight



discovered 1904 in NY; killed
nearly all 3 billion by 1940s

U.S. History of Invasive Tree Pests

American Elm



Predominant street tree –
provides beauty and shade

U.S. History of Invasive Tree Pests

Dutch Elm Disease



discovered 1930s in OH;
100 million elm trees died

New Invasive Pests: Deciduous Trees

In Maine!

Winter Moth



Browntail Moth



In Maine!!!

Emerald Ash Borer



Asian Longhorned Beetle



**NOT in
Maine... yet**

Winter Moth

Adults
emerge
late Fall



Nov - Jan

Geometrid moth;
"inchworm"



Eggs
overwinter



Dec - Apr

Pupa looks
like soil



Jun - Nov



Caterpillars
chew leaves

Apr - Jun

What does WM do?

Larvae feed in early spring

- On newly forming buds
- Then free-feed on expanded foliage
- Causes “swiss cheese” effect



Favored hosts:

- oak
- apple
- maple
- birch
- basswood
- highbush & **wild blueberry**
- cranberry





Winter Moth Males Drawn to Lights
Cape Elizabeth

Photo: R. Cronin

Winter Moth

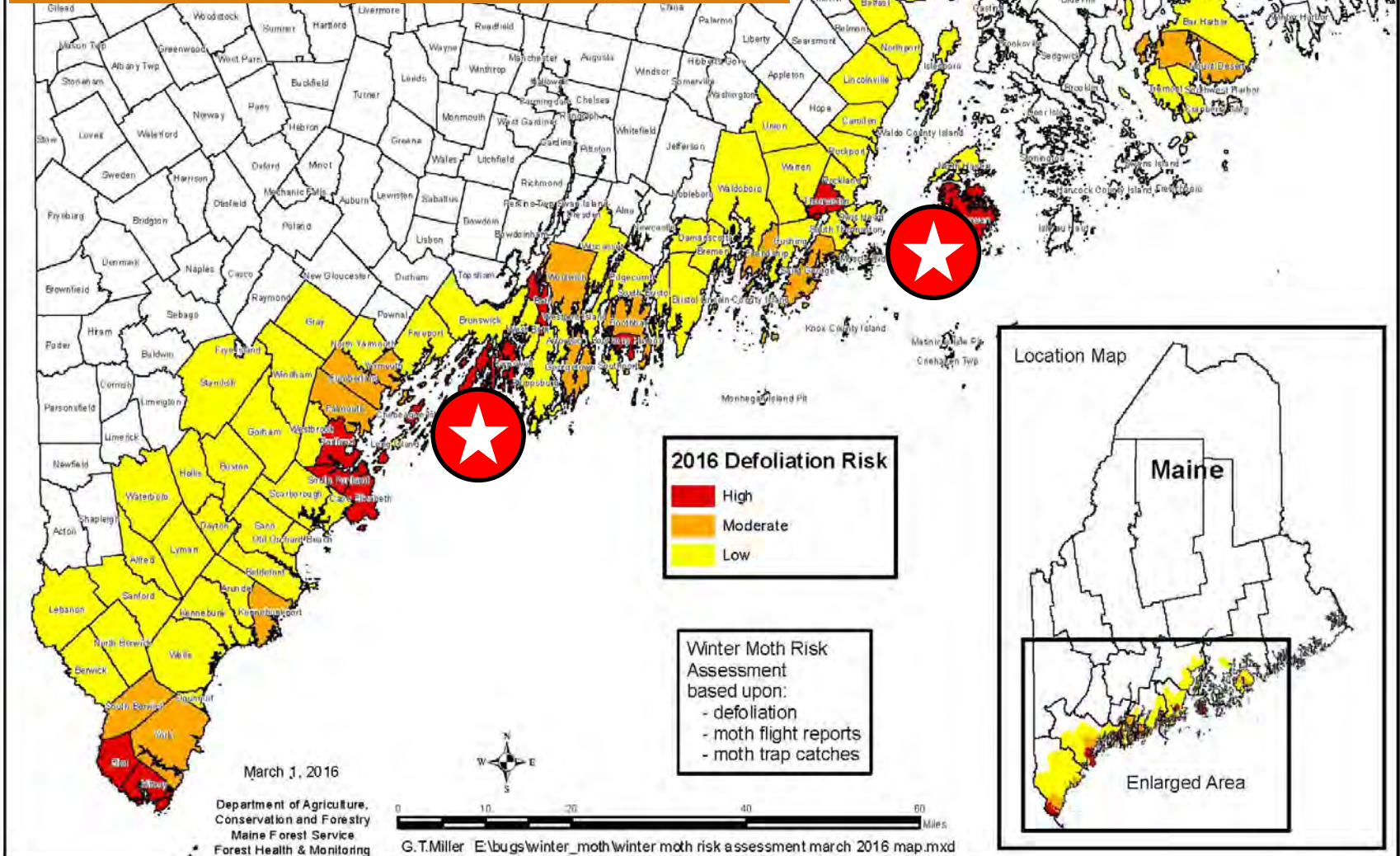
Massachusetts

- Now defoliating 100's of thousands of acres
 - Primarily eastern MA
- Killing thousands of trees – especially oaks
 - In Nova Scotia, 40% red oak mortality after 4 years of defoliation!



Winter Moth Defoliation Risk 2016

2015: More than 10,000 acres defoliated



Winter Moth - *Operophtera brumata*

- More likely to be found in 2nd home areas than forest
- Probably brought from Southern NE in landscape plantings



Winter Moth

Biocontrol

- Parasitic fly (*Cyzenis albicans*)
- It will take years for it to become effective
- Not guaranteed to work in ME. Has worked in Nova Scotia.



Long Term Outlook—Biological Control

- *Cyzenis albicans* – Parasitic Fly



- Organism **recovery** in 2016!
- Experimental cocoon release in 2016 (Harpswell)

ME Towns with *Cyzenis albicans* Releases

<u>Location</u>	<u>Year</u>
Harpswell	2013, 2014, 2016
Cape Elizabeth	2013, 2015
Kittery	2014
Vinalhaven	2014
Portland (Peaks Island)	2015

Parasitic Wasp in ME

- Searching activity observed
- Specimens collected
- Species ID unknown (perhaps undescribed)
- Important mortality factor in MA

Winter Moth

Chemical Control

- An early April horticultural spray on trunks and branches of infested trees to kill eggs may be helpful.

Physical Control

- There are heavy weight paper strips available that are covered with a sticky substance that will snare the climbing moth or caterpillar.





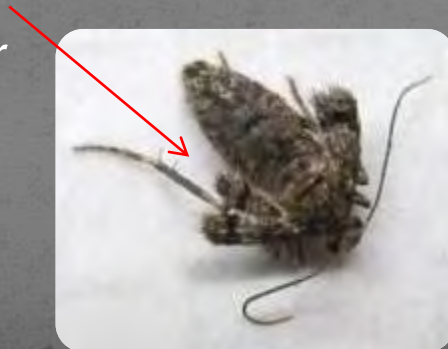
Winter Moth vs. Bruce Spanworm



Steve Dunbar , BugGuide.net

- *Operophtera brumata*
- Exotic
- Prefers oak, apple, maple, birch, blueberry
- Population growth exponential
- Adult moths

Females longer wings stubs



- *Operophtera bruceata*
- Native
- Prefers maple, beech, birch, poplar
- Occasional outbreaks
- Adult moths

Females shorter wing stubs



Climate Limitations?

- Eggs are tolerant of extreme freezing temperatures



BUT...

- Late fall/early winter cold/snow/frozen ground reduces adult emergence—especially males.

Browntail Moth

Euproctis chrysorrhoea

- Invasive insect from Europe
 - Order: Lepidoptera (moths)
 - Family: Lymantriidae
- Caterpillars have toxic hairs

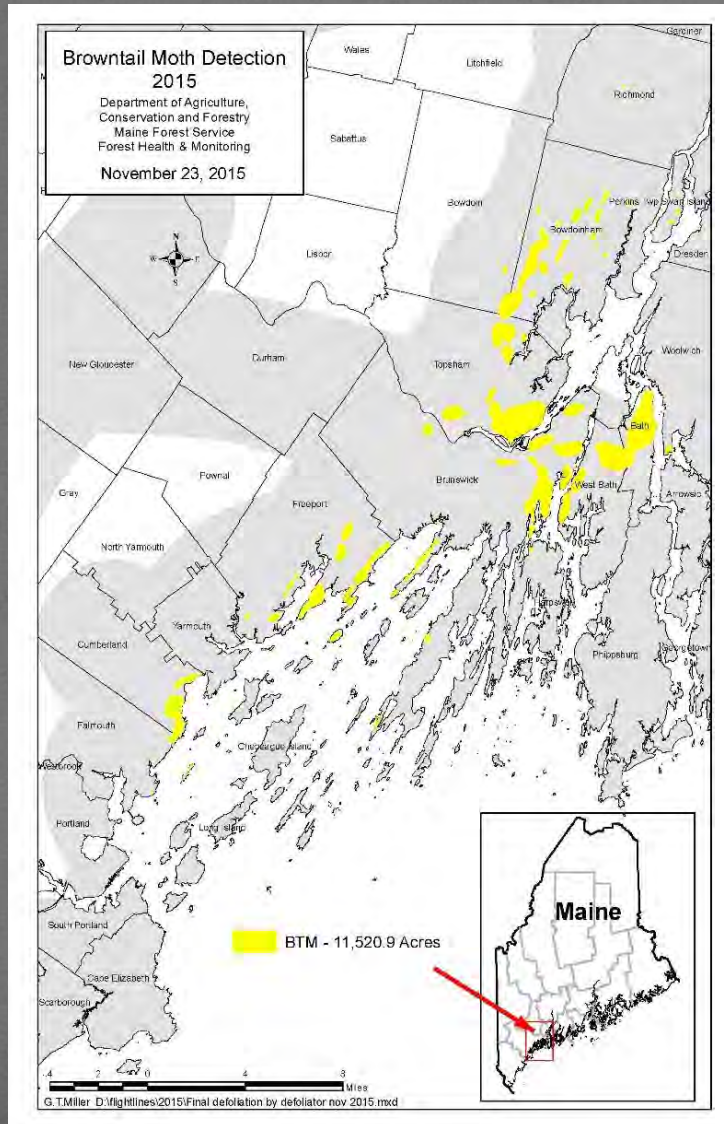


Browntail Moth

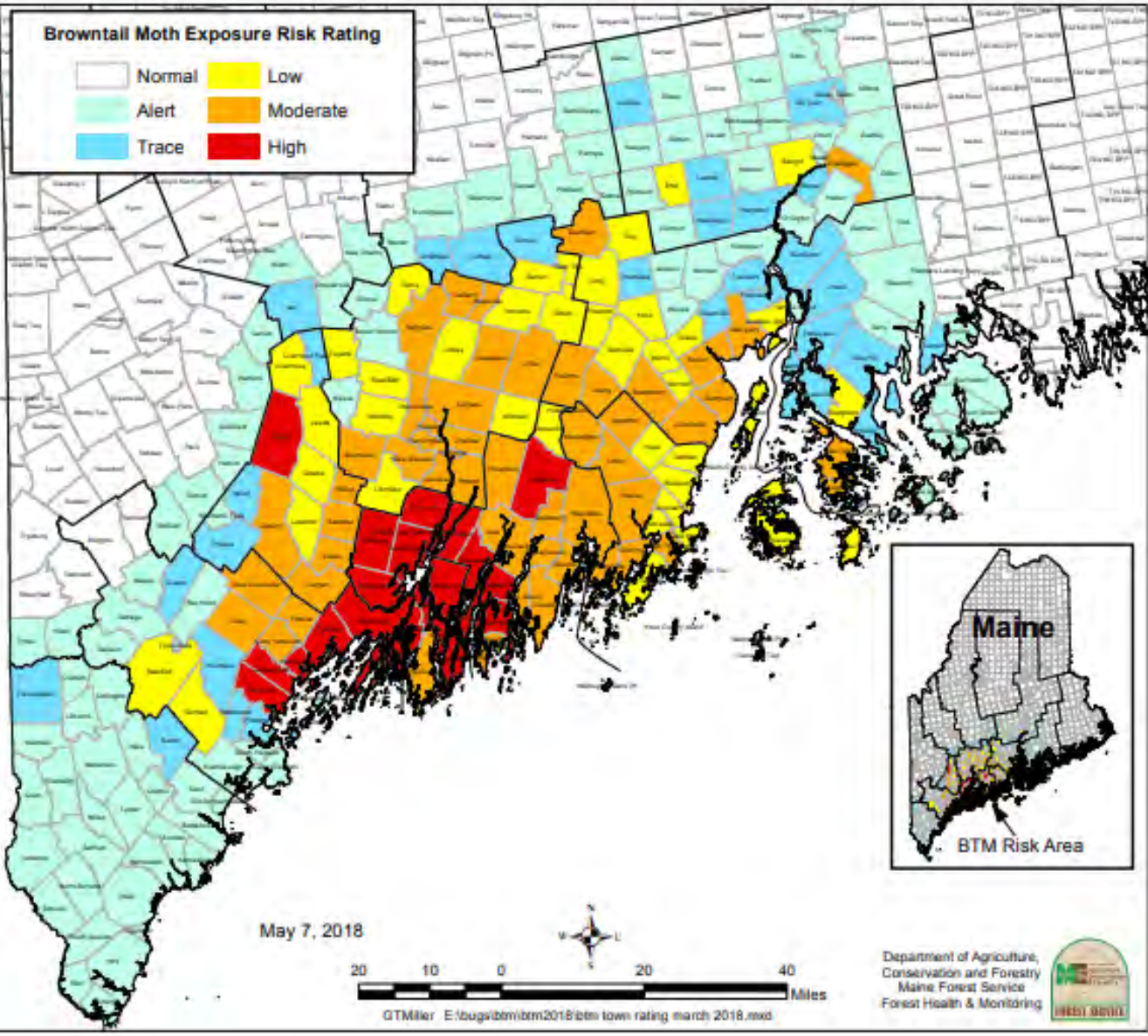
- Major defoliator
 - Huge host range
 - Prefers hardwood trees and shrubs; oak, apple, cherry, hawthorn, beach plum, rugosa rose...
- Caterpillar hairs are poisonous
 - Can cause severe rashes
 - Can cause respiratory problems



Browntail Moth Defoliation



- Nov 23, 2015
- DACF – MFS - Forest Health and Monitoring
- 11,520.9 acres defoliated
- Coastal damage
 - Small populations are surviving in Lewiston, Vassalboro, Augusta, Gardiner, Turner & Waterville



Browntail Moth

Recognizing

- Adult moth
 - White with tuft of brown at tip of abdomen
 - Active July-August
- Caterpillar
 - Brown with red & white markings
 - Very hairy
 - August-following June
 - Make nests out of autumn leaves to overwinter



Browntail Moth

Look for winter webs



Webs

- White
- Tightly woven around leaves
- Tips of branches, esp. oak and apple
- Seen late fall thru early spring

Browntail Moth

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Look for winter webs




















Browntail Moth

Controlling

- Non-chemical
 - *Clip off the webs*
 - Mid-September to mid-April
 - Soak in soapy water
- Chemical
 - Licensed applicator
 - Apply in May
- *Protect yourself from toxic hairs!*
 - Cover up
 - Wear a respirator when mowing
 - Wash body and clothes after

Comparison of Life Stages of Native and Invasive Tree Defoliating Moths

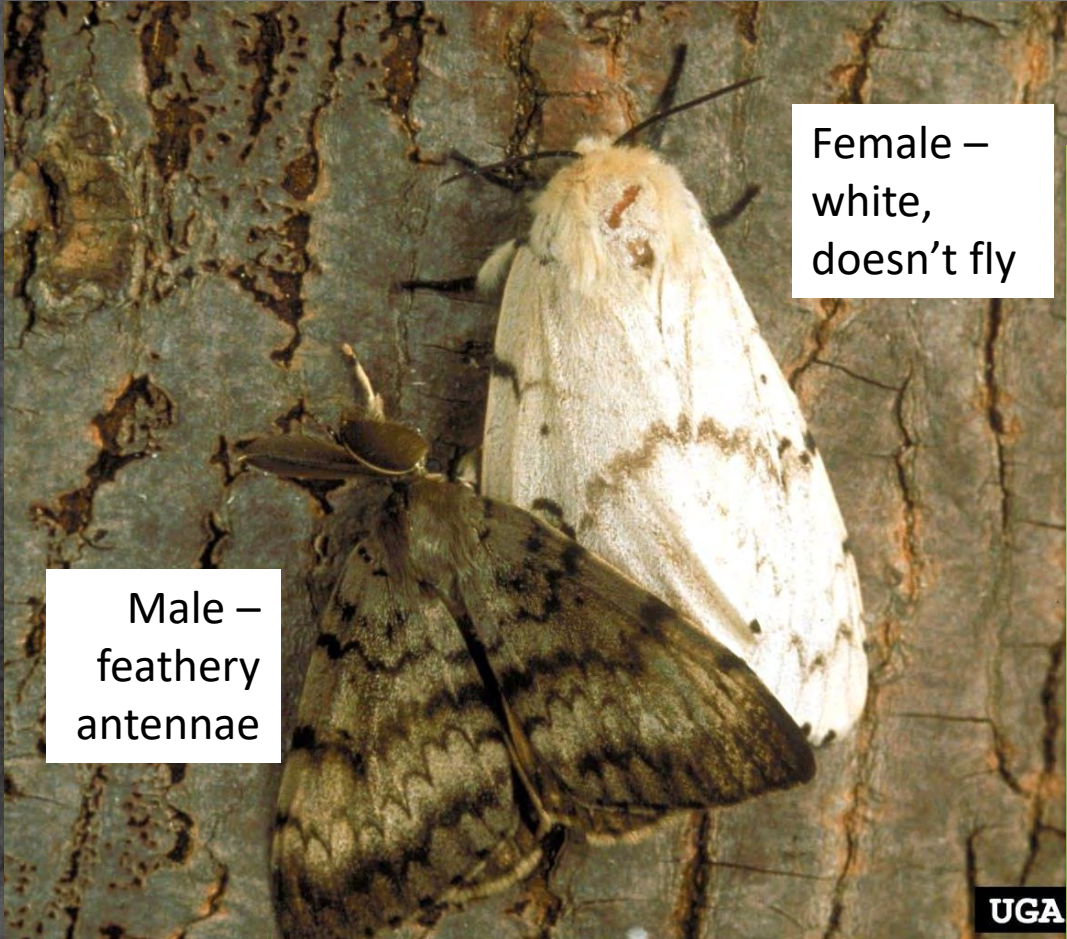
	native	native	INVASIVE	INVASIVE	INVASIVE
	Eastern Tent Caterpillar (<i>Malacosoma americanum</i>)	Fall Webworm (<i>Hyphantria cunea</i>)	European Gypsy Moth (<i>Lymantria dispar</i>)	Browntail Moth (<i>Euproctis chrysorrhoea</i>)	Winter Moth (<i>Operophtera brumata</i>)
Description - caterpillar		 <i>Highly variable</i>		 <small>Brown-tail Moth Caterpillar</small> CAUTION! Toxic hairs of caterpillars can cause severe rash and respiratory problems.	
Season	Early spring - June	July - September	Early spring - June	Previous summer- June	Early spring - June
Description - adults		<i>Forewing variation</i> 	<i>male</i>  <i>female</i> 		<i>male</i>  <i>female</i> 
Season	July	Late June - July	July-August	July-August	July-August
Overwinters as:	egg	pupa	egg	larva	egg
Favored hosts:	apple, cherry, crabapple	apple, cherry, ash, willow, oak, birch, other deciduous species	oak, maple, birch, apple, alder, poplar, pine, spruce, etc...	oak, shadbush, apple, cherry, beach plum, and rugosa rose	oak, maple, apple, ash, crabapple, cherry, blueberry...
What to look for:	 tightly-webbed tents in branch crotches - spring	 large loose webs esp. on apple, cherry - summer/fall	 egg masses on trees, vehicles, picnic tables, etc. - fall/winter	 winter webs, esp. in oak, at tips of branches - winter	 holes in newly expanding leaves - spring

Gypsy Moth



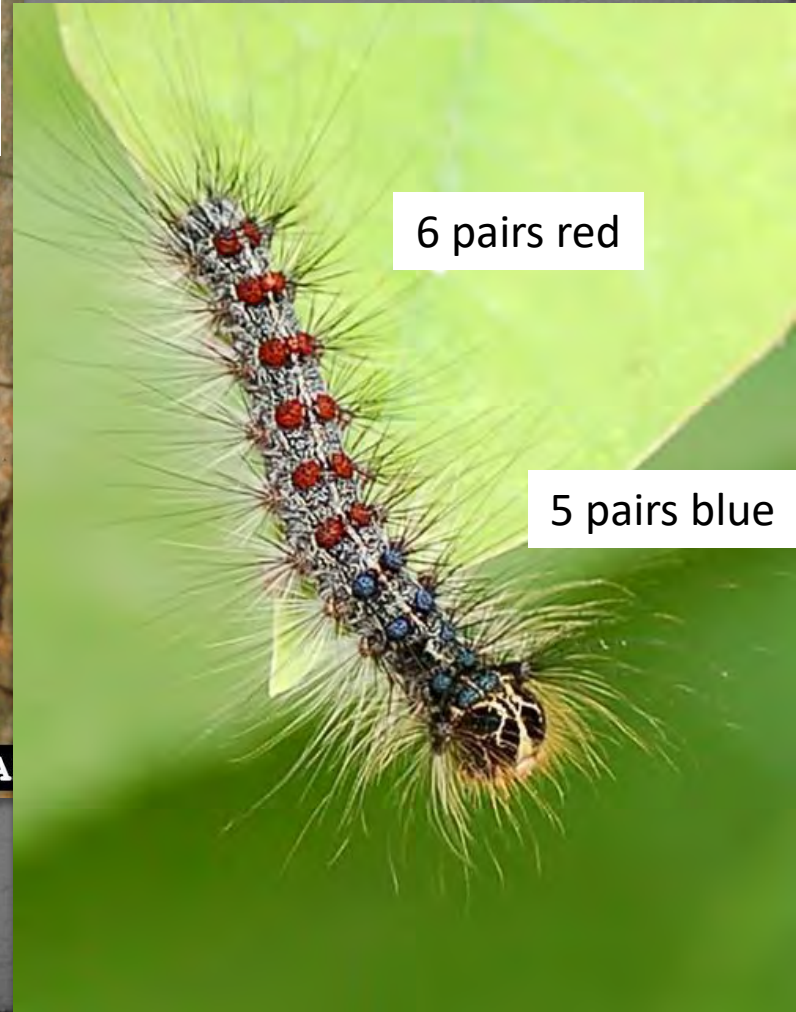
Intentionally introduced

Gypsy Moth



Female –
white,
doesn't fly

Male –
feathery
antennae



6 pairs red

5 pairs blue

Look for egg masses



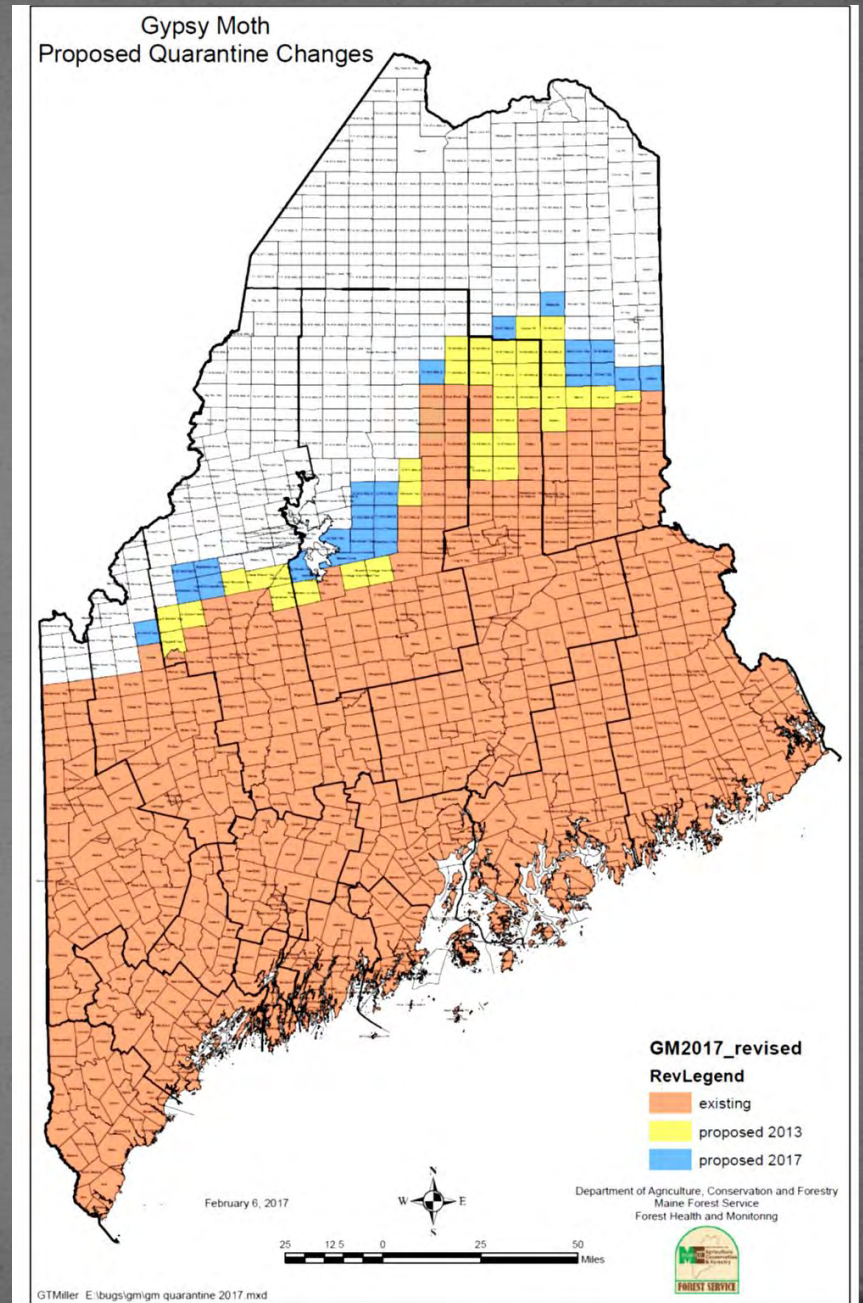
5502

...not just on trees...



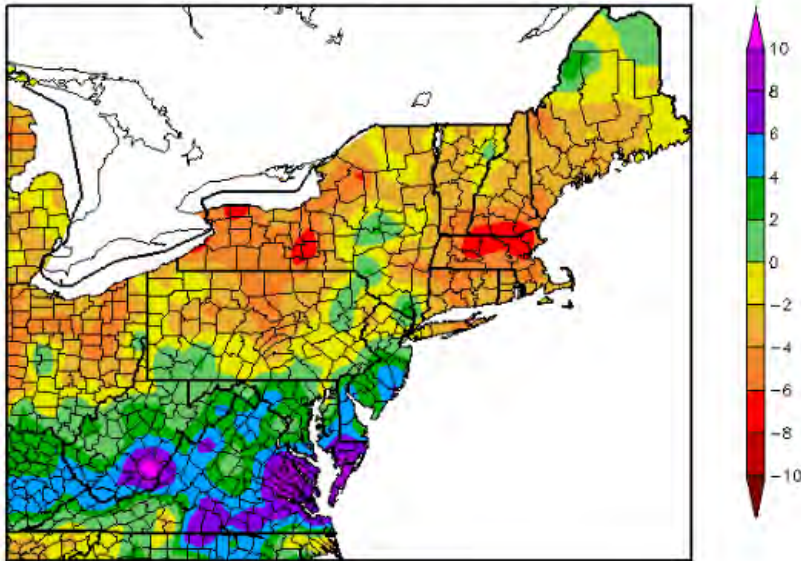
Gypsy Moth

- Quarantine
 - Cannot move firewood, logs, chips out of quarantine area exc. to a regulated receiver
- Host trees – high mortality
 - Oak (*but will eat almost anything and everything*)
 - Tamarack
 - Poplars
 - Birches
 - Alder
- 2002 last significant epidemic in ME



Gypsy Moth Outbreaks

Departure from Normal Precipitation (in)
5/1/2016 - 7/31/2016



Generated 8/11/2016 at HPRCC using provisional data.

Regional Climate Centers

↓ Rainfall = ↑ GM survival

Dry conditions in areas traditionally hard-hit by gypsy moth and affected by hemlock woolly adelgid may spell trouble for their hosts.

Image Source: Northeast Regional Climate Center.

Emerald Ash Borer

Small and Deadly



Emerald Ash Borer (EAB)

Agrilus planipennis



David Cappaert, Michigan State University, Bugwood.org



Troy Kimoto, Canadian Food Inspection Agency, Bugwood.org

From: Asia

FOUND IN MAINE

What is the Emerald Ash Borer (EAB)?

- ❑ metallic woodboring beetle (Buprestidae)
- ❑ native to Asia
- ❑ 1-2 year lifecycle in N. America



Larva in gallery



dorsal view

ventral view

Adult



~ 1/2" long
metallic green

How did EAB get to North America?

- Solid wood packing materials (SWPM), like pallets, crates and spools, are used to transport goods from China to the U.S.
- SWPMs were infested with live EAB larvae.



Why is EAB a Problem?

❑ Early detection is difficult:

- ❑ Adult beetle is tiny
- ❑ Signs are hard to see
- ❑ Symptoms are confusing



Maine Department of Agriculture

❑ Spreads easily through firewood

- 75% of detected infestations are due to movement of firewood



dreamstime.com

Why is EAB a Problem?

- ❑ EAB attacks all species of ash (*Fraxinus spp.*) grown in N.A.
 - None of our species are resistant to attack
 - All attacked ash trees die
 - Over 50 million ash trees have died since EAB was discovered in 2002
 - The white fringetree is also a host (2014)
- ❑ Numerous industries affected:
 - Furniture/flooring
 - Tool making
 - Sports equipment
 - **Native American basketmaking**



Ash mortality in Ontario



5518010

EAB Food – Ash Trees (*Fraxinus sp.*)

White



Green



Brown



Recognizing ash

Opposite branching

Compound leaves

Bark – diamond-shape furrows or corky

Oar-shaped seeds



Paul Wray, Iowa State University

EAB Food



The white fringetree (*Chionanthus virginicus*) was recently discovered as a host for EAB.

Perhaps other species in the same family? (Oleaceae; e.g. olive, forsythia, lilac)



Paul Wray, Iowa State University



Cooperative Emerald Ash Borer Project

Initial county EAB detections in North America

August 1, 2018



Recognizing EAB Adults



Not EAB



Howard Russell, Michigan State University

Pennsylvania Department of Conservation and Natural Resources

Emerald Ash Borer

- metallic emerald green
- long and narrow
- $\frac{3}{8}$ to $\frac{1}{4}$ " long
- tapered abdomen
- found near ash trees

Tiger Beetle

- bright green
- broader; definite 'shoulders'
- $\sim\frac{1}{2}$ " long
- often walks/flies near ground (very fast)

Recognizing EAB

From afar

Woodpecker activity!!!



04/24/2012

USDA APHIS PPQ, Bugwood.org



USDA APHIS PPQ, Bugwood.org

Crown dieback



J. Ellis, Purdue University

Epicormic shoots

Recognizing EAB - Symptoms

Michigan Department of Agriculture, Bugwood.org



Bark Splitting



Recognizing EAB

S-shaped Galleries



Recognizing EAB

D-shaped Exit Holes



Monitoring for EAB

Trap/lure (purple traps)

- USDA-issued
- Unknown effectiveness in low populations
- Inexpensive, user-friendly



2012 – 965 traps
2013 – 852 traps
2014 – 700 traps
2015 > 970 traps
2016 > 950 traps

Monitoring for EAB

□ Trap tree

- Girdle to draw EAB
- Fairly sensitive
- Sacrifice the tree
- Labor intensive
- Most flexible/sensitive tool for landowners/managers

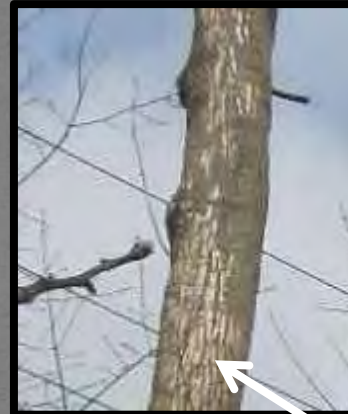


Monitoring for EAB

- *Sensitized public!!!!!!*

N. Andover, MA:

Detection by a customer at the restaurant across the street

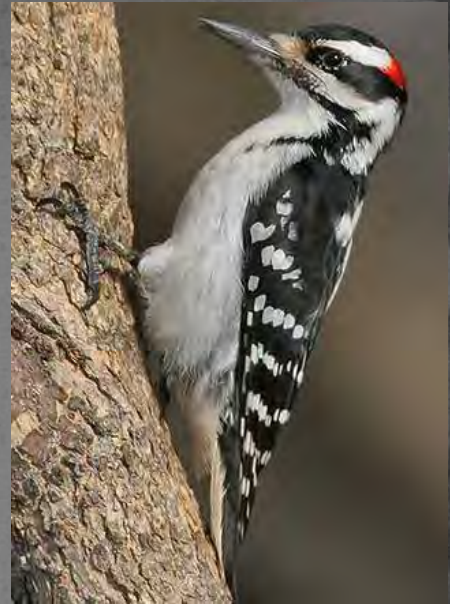


Google.com

Biological Control

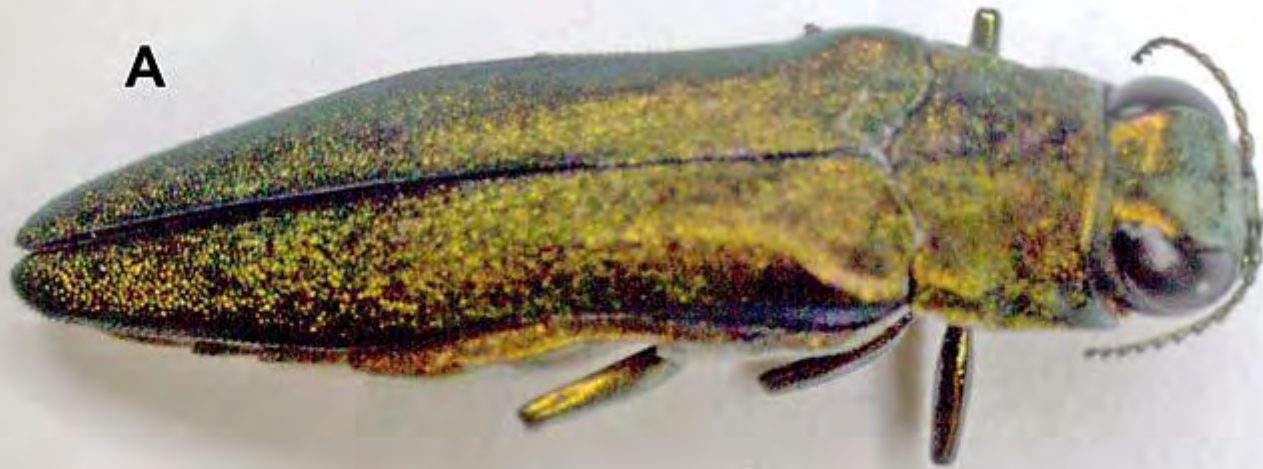
□ Woodpeckers

- Can cause over 90% mortality of EAB in some trees; 40% overall



Woodpecker flecking – “blonding”
a **very** good way to monitor in winter

Biological Control



3 Parasitic Wasps



3.000 mm

J. Plunkett

Pesticide Options

□ Insecticide applications

- Systemic - trunk injections, soil drench, lower bark spray
- Can protect individual landscape trees
 - Requires continuous applications
- Can reduce EAB density
 - slows tree mortality

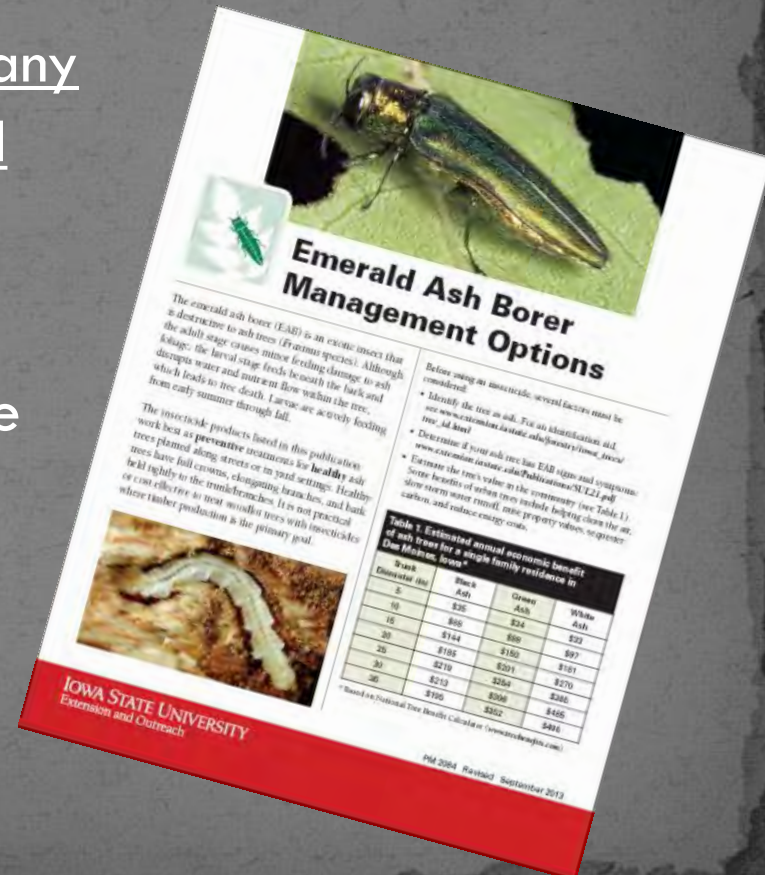


UGA5371032

Preparing for EAB

❑ Does your town have an EAB management plan?

- Inventory your ash
- Identify risky pathways, e.g. any area where out-of-state firewood may be coming in
- Plan to monitor – early detection, e.g. set up a trap tree
- Raise/save funds
 - Pesticide treatments
 - Tree removal
 - Tree replanting
- etc.



Emerald Ash Borer Management Options

The emerald ash borer (EAB) is an exotic insect that is destructive to ash trees (*Fraxinus* species). Although the adult stage causes minimal feeding damage to ash foliage, the larval stage feeds beneath the bark and disrupts water and nutrient flow within the tree, which leads to tree death. Larvae are actively feeding from early summer through fall.

The insecticide products listed in this publication work best as **preventive treatments for healthy ash trees** planted along streets or in yard settings. Healthy trees have full crowns, elongating branches, and bark that is light to the trunk/branches. It is not practical or cost effective to treat woodlot trees with insecticides where timber production is the primary goal.

Before using an insecticide, several factors must be considered:

- Identify the tree as ash. For an identification aid, see www.extension.iastate.edu/entry/time_120617
- Determine if your ash tree has EAB signs and symptoms. See the benefits of ash tree removal benefits below the air, carbon, and reduce energy costs.

Table 1. Estimated annual economic benefit of ash trees for a single family residence in Des Moines, Iowa*

Stem Diameter (in)	Black Ash	Green Ash	White Ash
5	\$26	\$24	\$23
10	\$66	\$60	\$57
15	\$144	\$130	\$121
20	\$185	\$201	\$181
25	\$219	\$264	\$246
30	\$213	\$298	\$285
35	\$190	\$322	\$296

*Based on National Tree Benefits Calculator (www.natreebenefits.com)

MI 2004 Revised September 2013

IOWA STATE UNIVERSITY
Extension and Outreach

Asian Longhorned Beetle (ALB)

Anoplophora glabripennis



City of Bowling Green, OH



MA Dept. of Agricultural Resources



USDA Forest Service

From: Asia

NOT FOUND IN MAINE

What is the Asian Longhorned Beetle (ALB)?

- Native to China and Korea
- ALB is a wood boring beetle.
 - Small larvae feed in the cambium and sapwood disrupting flow of nutrients
 - Larger larvae feed deeper into the tree's heartwood, weakening the tree's structure.



- ALB attacks healthy hardwood trees
- Repeated attacks lead to weakened trees and eventually death.

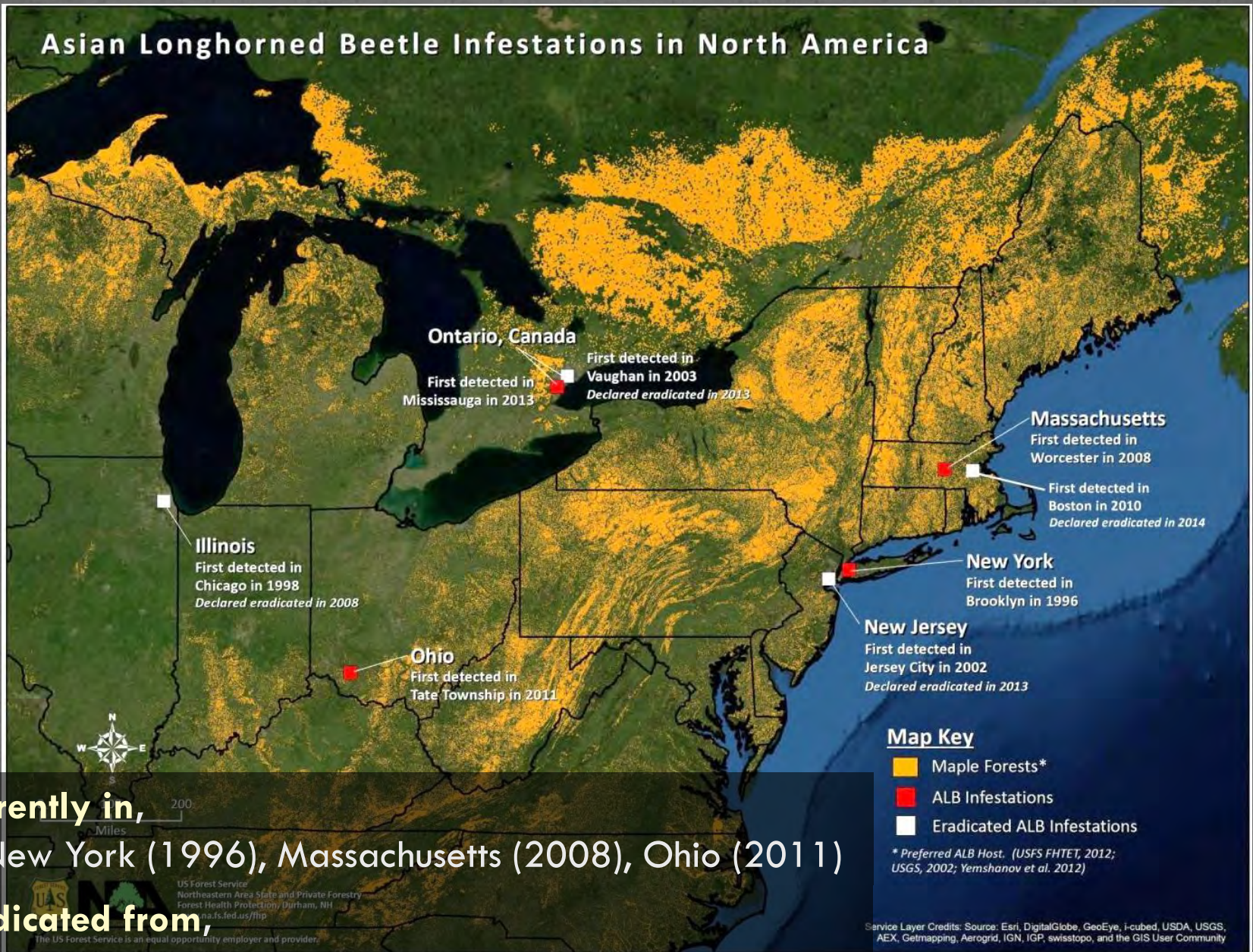


How did ALB get to North America?

- Solid wood packing materials (SWPM), like pallets, crates and spools, are used to transport goods from China to the U.S.
- SWPMs were infested with live ALB larvae.



Asian Longhorned Beetle Infestations in North America



Currently in,
New York (1996), Massachusetts (2008), Ohio (2011)

Eradicated from,
Illinois; New Jersey; Boston, MA; Toronto, Canada

Map Key
■ Maple Forests*
■ ALB Infestations
■ Eradicated ALB Infestations

* Preferred ALB Host. (USFS FHTET, 2012; USGS, 2002; Yemshanov et al. 2012)

Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, I-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

Why is ALB a problem?

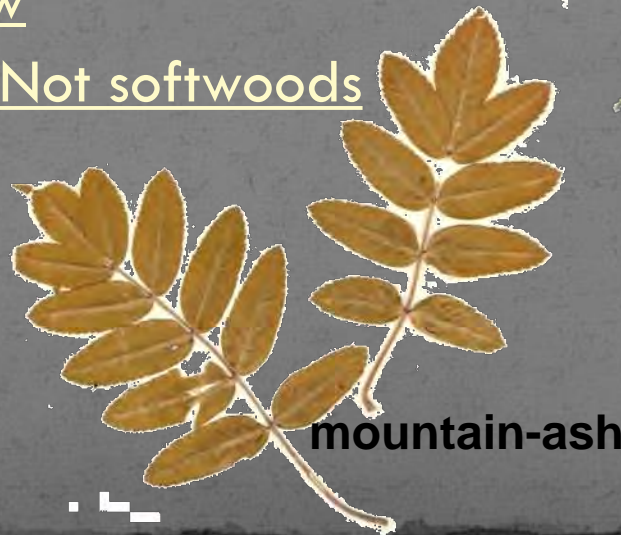
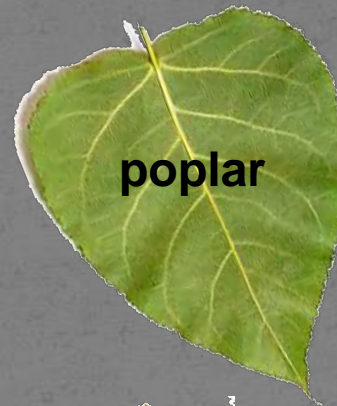
- ALB attacks many hardwood tree species
- Oftentimes the trees are perfectly healthy
- Economic loss to various industries
 - Lumber
 - Nursery stock
 - Wood products
 - Maple syrup
 - Tourism



Beetle Food

aka: ALB Host Trees in Maine

- *Maple (including boxelder)*
- Birch
- Elm
- Horsechestnut
- Mountain-ash
- Poplar
- Willow
- etc....Not softwoods



Symptoms of an ALB Infestation

Branch Dieback and Discolored Foliage



PA DCNR - Forestry Archive, Bugwood.org



Patty Douglass, USDA APHIS PPO

Bark Problems



Michael Bohne, US Forest Service

Cracks



Missing

Oviposition Sites (egg niches)



Jenn Forman Orth, Mass. Department of Agricultural Resources



Jenn Forman Orth, Mass. Department of Agricultural Resources

Oviposition Sites (egg niches)



Frass



Robert A. Haack, USDA Forest Service, Bugwood.org



Michael Bohne, US Forest Service

Exit (emergence) Holes



Adult Feeding Damage



Recognizing ALB

Adult Beetles



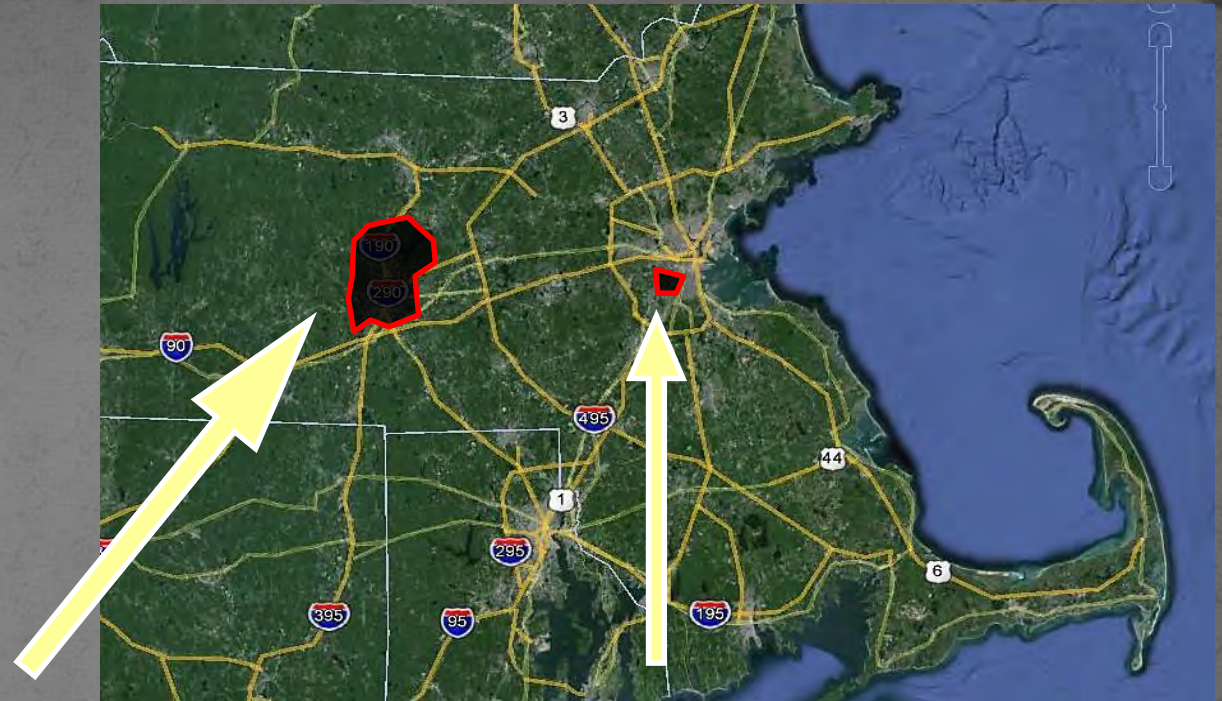
female

- **Large** over 1"; females larger than males
- **Shiny black** like patent leather shoes
- **White markings** strong alternating bands on antennae; splotches on body
- **Blue tinge** on legs



male

A Tale of Two Cities



Worcester, MA

ALB reported in 2008 by a public citizen

Infested trees date back to **1994**

110 mi² quarantined

>34,000 trees removed to date



Boston, MA

ALB reported in 2010 by a trained volunteer

Infested trees date back to **2008**

10 mi² quarantined

6 trees removed to date

How to Look for ALB



□ On host trees

- Look for signs and symptoms throughout the year
- Look for adult beetles July – October
- Binoculars are good for higher branches
- Bucket Trucks
- Smoke Jumpers



If You Find a Suspect ALB...

☐ Capture it

- Place in a container that can be sealed
- Freeze ASAP
- or, take a picture

☐ Collect data

- Date
- Location
- Nearby trees or tree it was on
- Your name and contact info



New Invasive Pests - Conifers

Hemlock



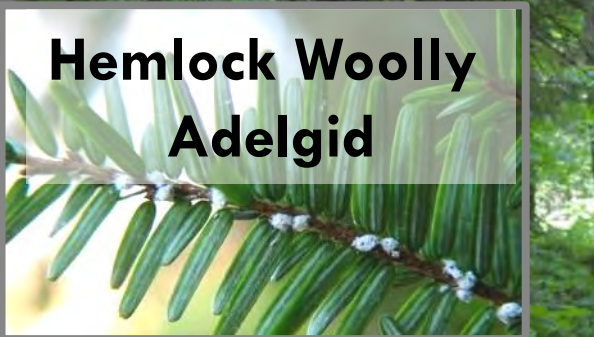
Fir



Spruce



**Hemlock Woolly
Adelgid**



Elongate Hemlock Scale



What is HWA

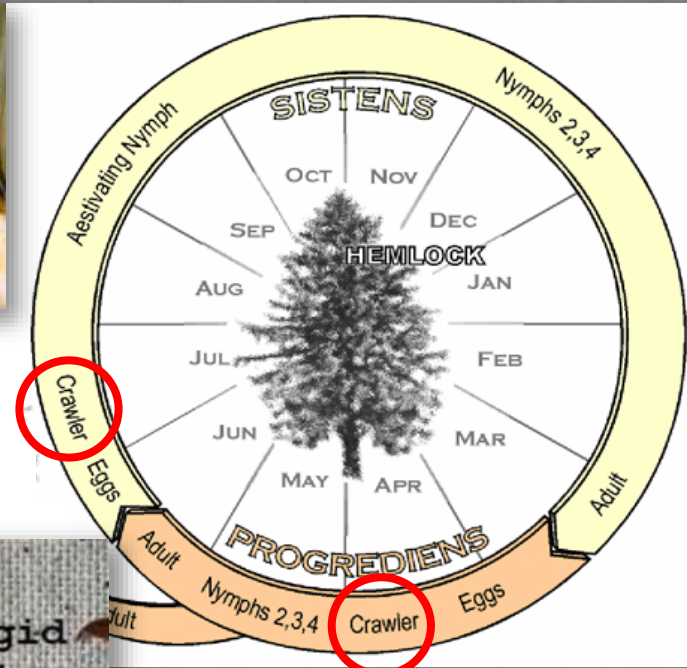
An aphid-like, sap-sucking insect



Feeding nymph



Dormant in summer



2 generations/year spreads more easily during crawler stage

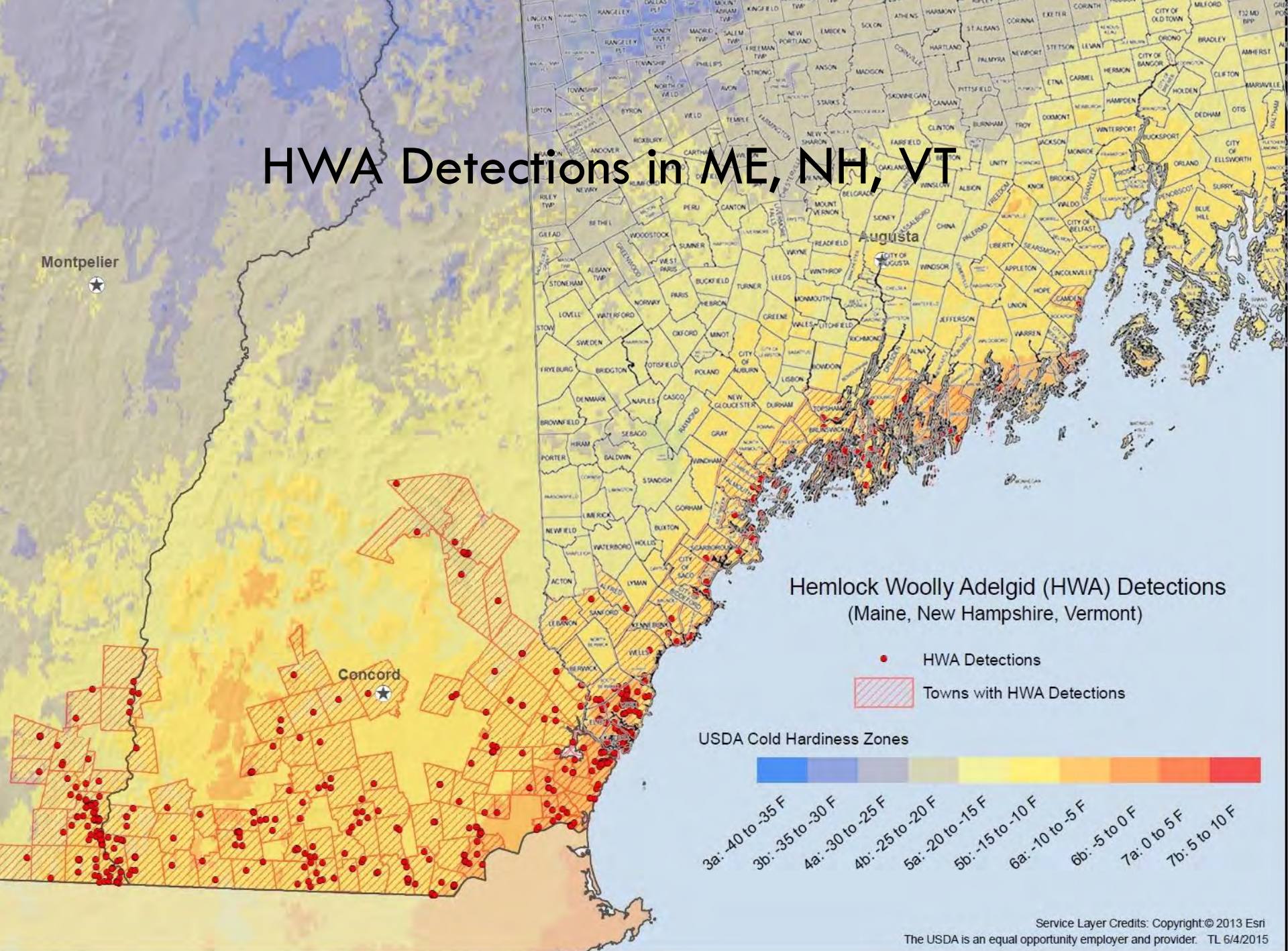


Older nymphs/adults produce "woolen" balls (fall/winter)

USDA Forest Service



HWA Detections in ME, NH, VT



Montpelier

Concord


Hemlock Woolly Adelgid (HWA) Detections
(Maine, New Hampshire, Vermont)

- HWA Detections
- ▨ Towns with HWA Detections


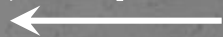
USDA Cold Hardiness Zones



- 3a: -40 to -35 F
- 3b: -35 to -30 F
- 4a: -30 to -25 F
- 4b: -25 to -20 F
- 5a: -20 to -15 F
- 5b: -15 to -10 F
- 6a: -10 to -5 F
- 6b: -5 to 0 F
- 7a: 0 to 5 F
- 7b: 5 to 10 F

A tall, dense evergreen tree with vibrant green needles, standing in a forest. The tree is the central focus of the image.

Healthy hemlock
(maybe HWA)

A tall evergreen tree with a sparse, thin canopy and many bare, light-colored branches, indicating it is infested with HWA. The tree is the central focus of the image.

HWA infested
→
hemlock

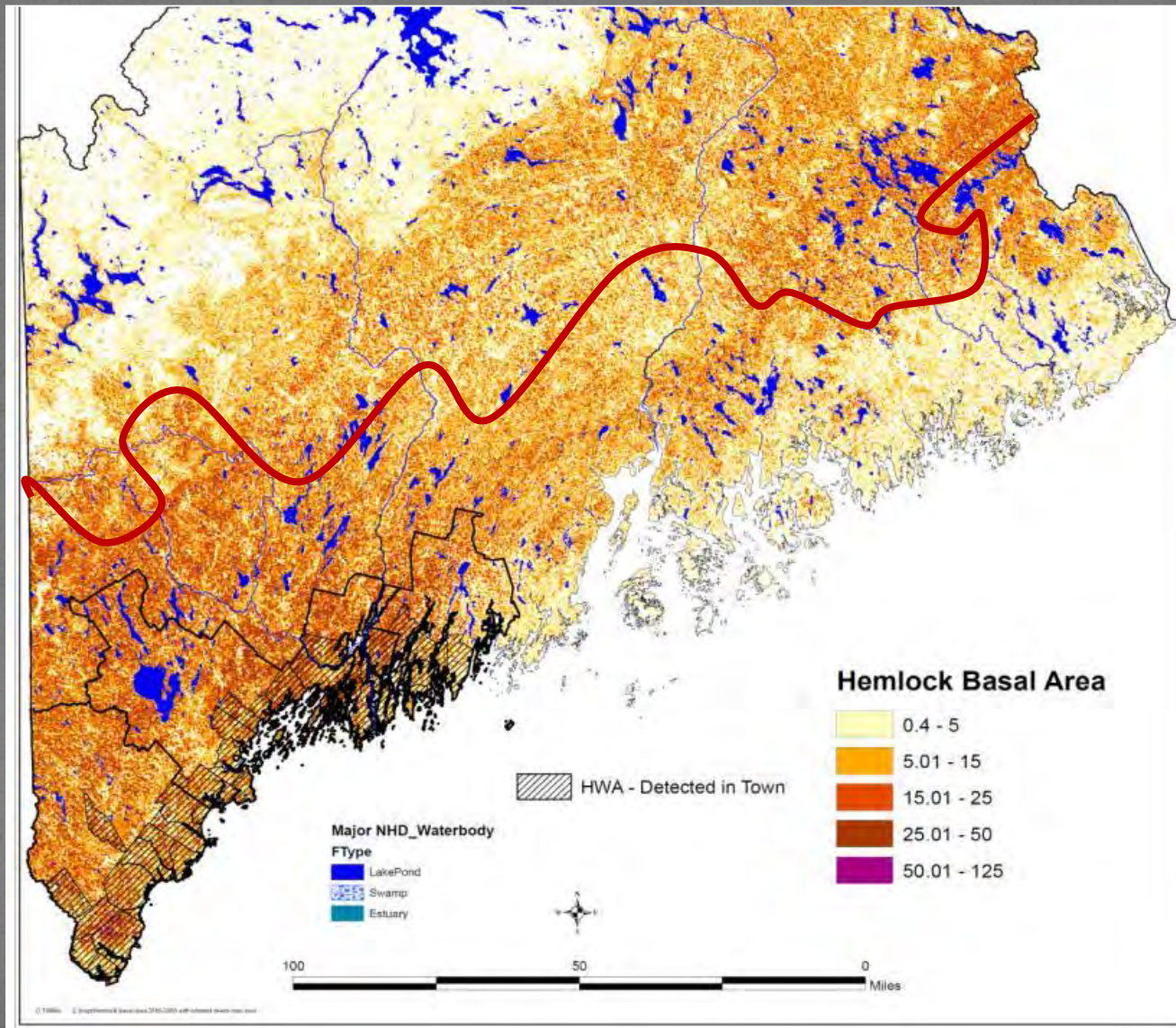
A snowy landscape with a small stream or path winding through it. The snow is white and the background shows some trees.

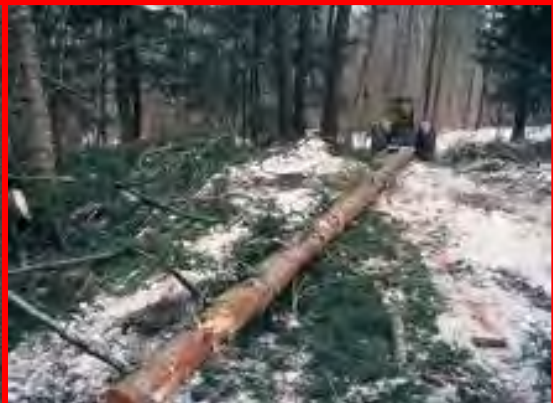
Westbrook ME
(Uninfested)
April 2008

A snowy landscape with a small stream or path winding through it. The snow is white and the background shows some trees.

Wolfe Neck Woods
State Park
March 2012

Hemlock Basal Area & PHZ 5 Boundary





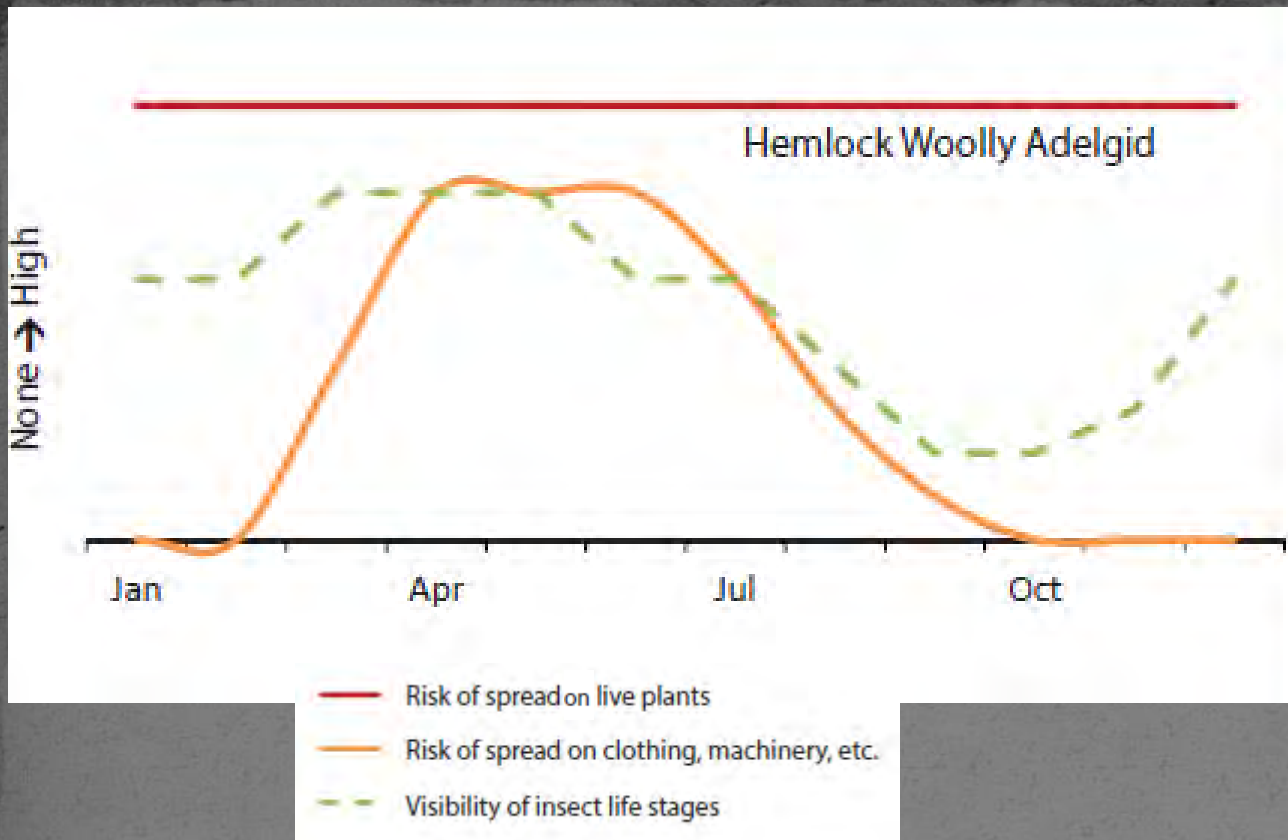
How do WE move them?

- **Year round – Live Plants**
- **March-July** (crawlers/eggs)
 - Severed hemlock
 - Clothing, machinery, etc.

What about natural spread?

- **March-July** (crawlers/eggs)
 - Wind and weather
 - Animals







CAUTION:
 You can carry this pest
 when it is an egg or
 crawler
 (~Mar through Early Aug)

Sometimes Hard to See!

- **crawlers are invisible, summer stage aestivates**

Recognizing HWA

Look at undersides of HEMLOCK twigs



- Discrete white cottony balls at BASE of needles
- Found on newer growth
- Most visible November thru July

Recognizing HWA

From Afar



- premature needle drop
- lack of new growth
- lush green color fades
- branch dieback



HWA Management

Imported Biological Control

Predatory Beetles:

- One commercial vendor for State – costly (~2.50 each)
- Long horizon
- Uncertain results
- Not compatible with insecticide-intensive settled areas

Sasajiscymnus tsugae (St)

St, a lady beetle (Coccinellidae), is an important predator of HWA in Japan. Releases of St in Maine began in 2004. It has since become established at several sites.

Color: Black
Shape: Oval
Size: 1/16th inch
Origin: Japan



Image: Dr. Carole Cheah, CAES, bugwood.org

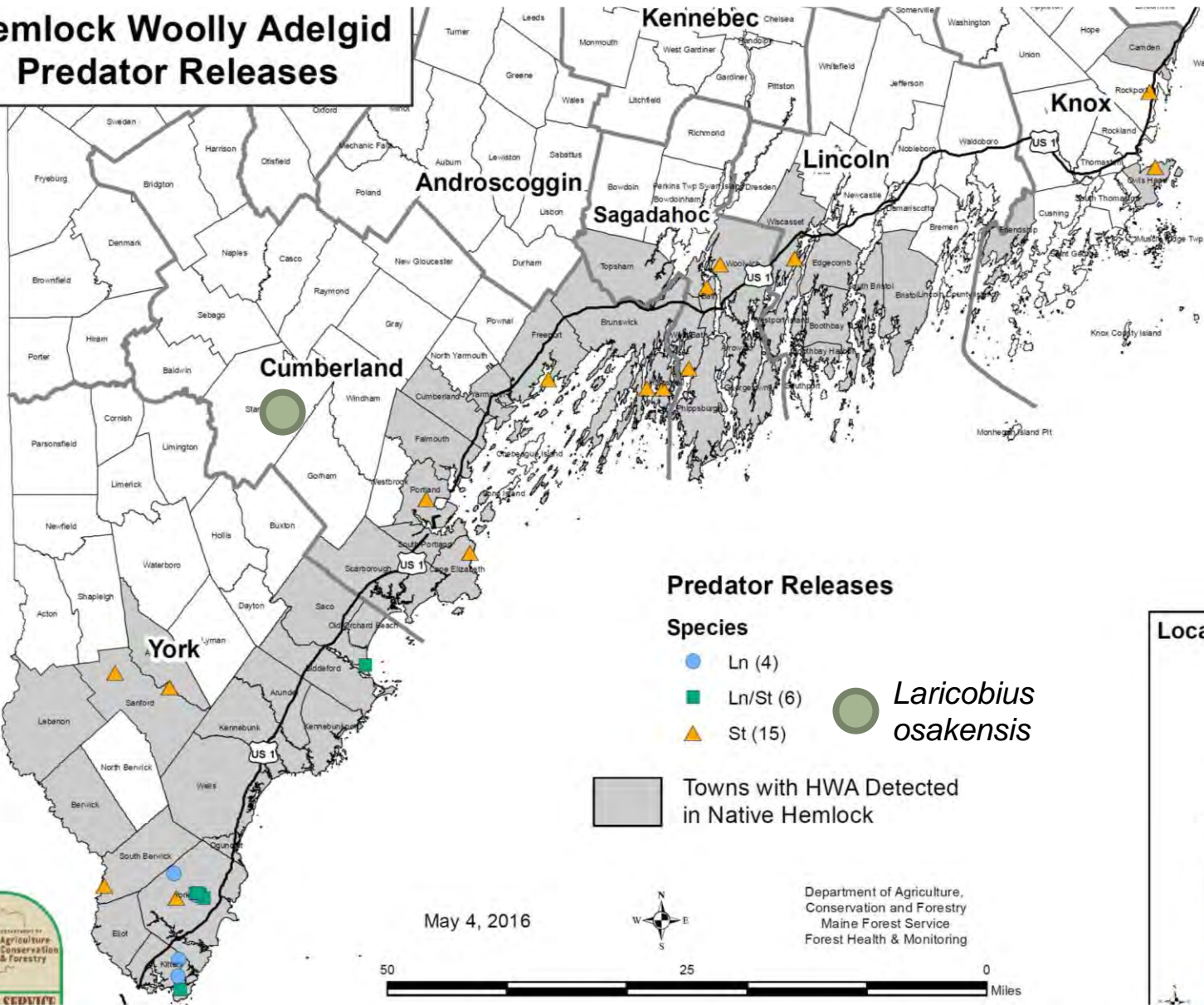
Laricobius nigrinus (Ln)

Ln, a tooth-necked fungus beetle (Derodontidae), is an important predator of HWA in the Pacific Northwest. This species was first released in Maine in 2006

Color: Black
Shape: Oval
Size: 1/10th inch
Origin: Pacific Northwest



Hemlock Woolly Adelgid Predator Releases



Predator Releases

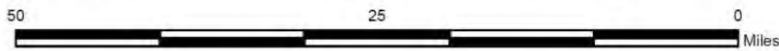
Species

- Ln (4)
- Ln/St (6)
- ▲ St (15)

● *Laricobius osakensis*

Towns with HWA Detected in Native Hemlock

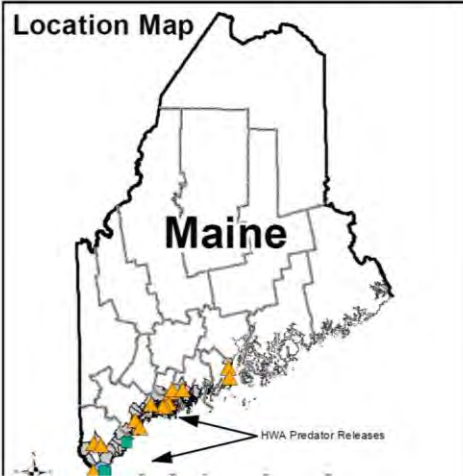
May 4, 2016



Department of Agriculture,
Conservation and Forestry
Maine Forest Service
Forest Health & Monitoring



Ln *Laricobius nigrinus*
St *Sasajiscymnus tsugae*



Mechanical Options

- High pressure hose during crawler active period
- Cut infested material (Pref. Aug-Mar)
 - Branches
 - Whole trees (target heavily infested, definitely in Aug-Mar!)
- Cut “at risk” material (human-carrier exposure)



Chemical Options

- Foliar spray- horticultural oils/soaps; conventional pesticides
 - Repeat every 1-2 years (population dependent)
- Systemics: soil drench, soil injection, stem injection, basal bark. Repeated every 2-10 years (product, method, population dependent)

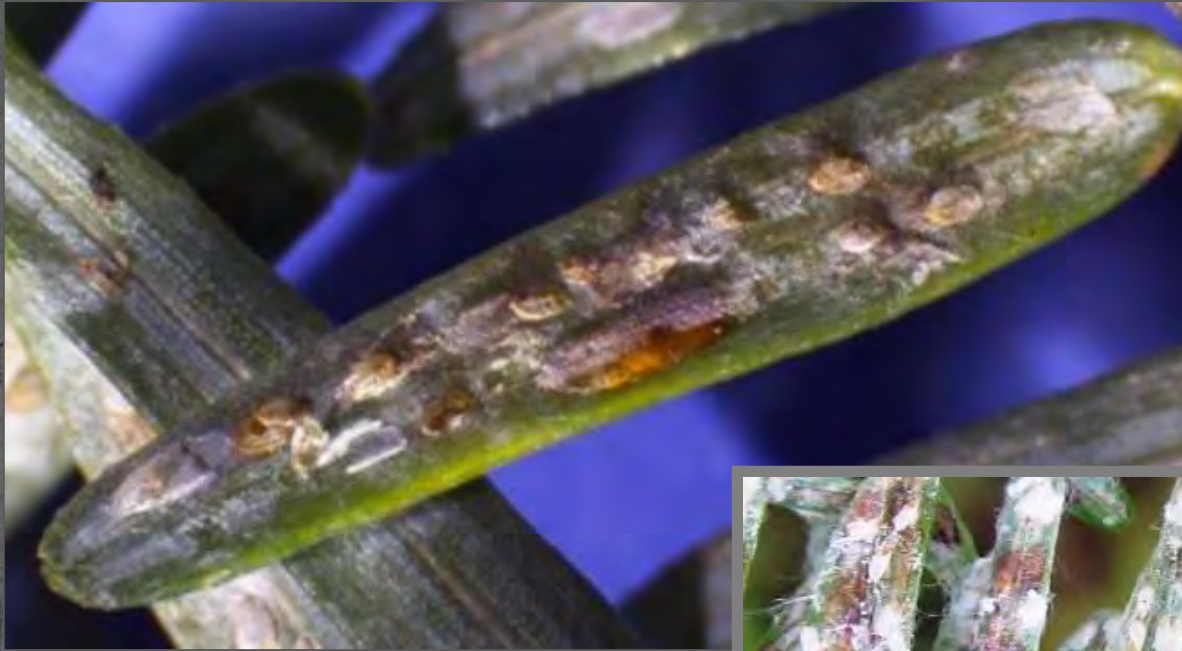


Foliar Application



Basal Bark Application of Dinotefuran
(Credit NH DFL)

And, while you are looking at hemlocks . . .



Elongate Hemlock Scale
(*Fiorinia externa*)

- Hemlock and Fir
- Spruce
- Other Conifers



Elongate Hemlock Scale

A Second Invasive Sucker on the Scene

- Armored scale insect
- First U.S. detection - 1908 (NY)
- First Maine detection – 2009
- Appearance:
 - Female: yellow/brown waxy coating, immobile adult
 - Male, white waxy “cocoon”
 - Threadlike “floss”
 - Along the length of needle



Elongate Hemlock Scale

- What to look for

- Waxy deposits – “gray” colored needles on upper surface
- Thinning foliage
- Scale coverings/floss undersurface

- Where to look

- Hemlock and Fir
- Older branches
- Planted trees
- Forests infested w/HWA



On trees with HWA...



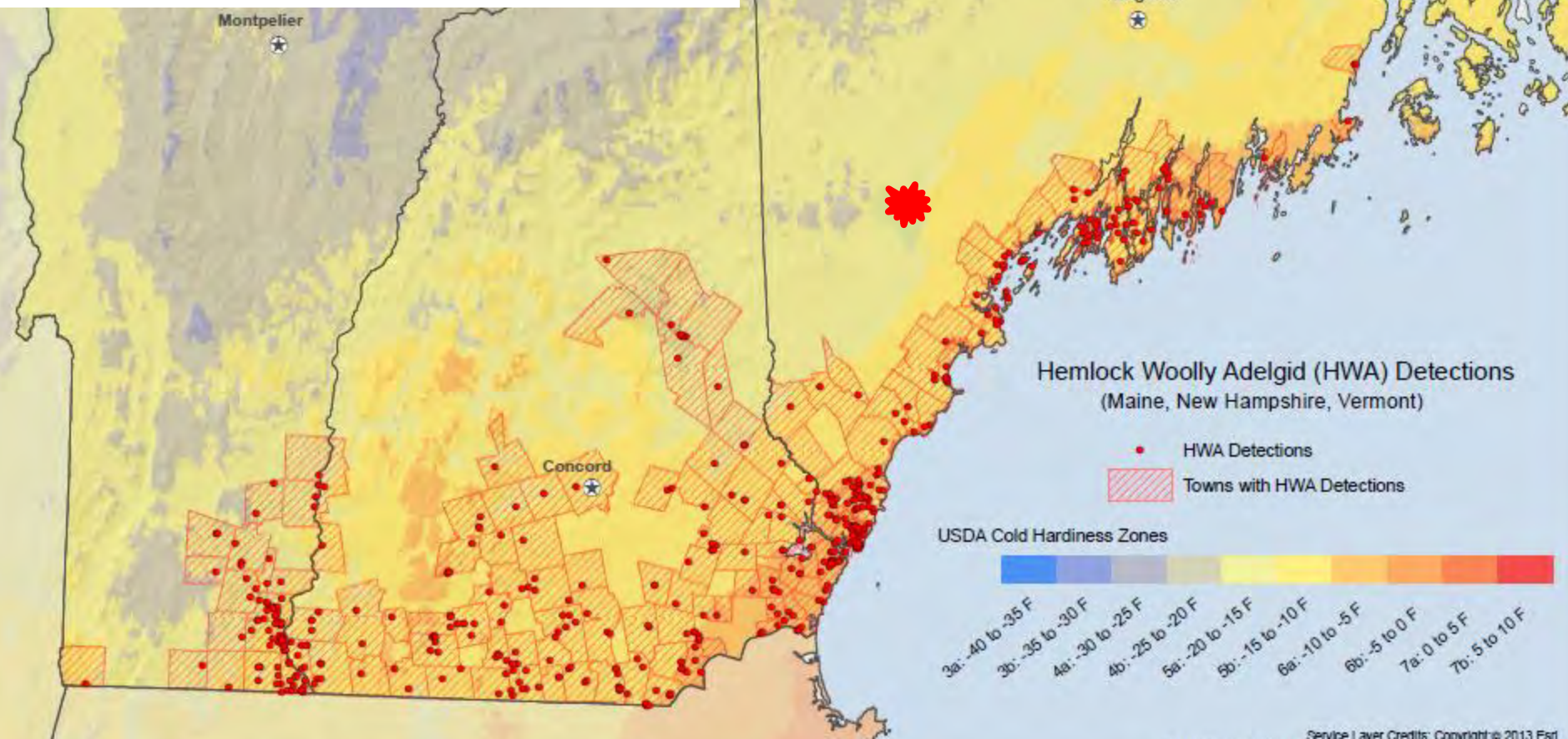
See the sneaky scales?

Elongate Hemlock Scale Ornamental Plantings

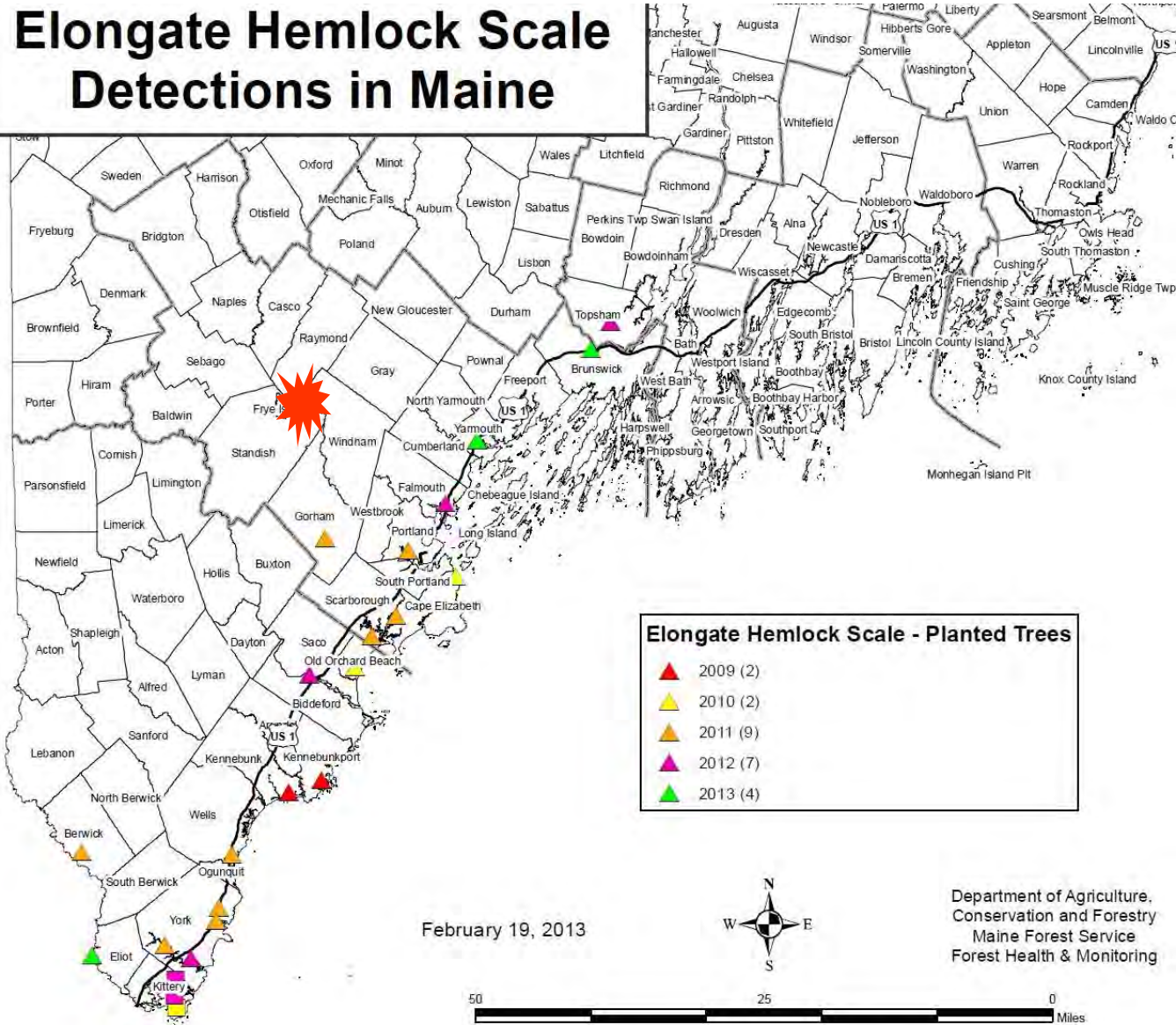
- Coastal Towns to MDI
- Spread to native fir in several locations

Forested Areas

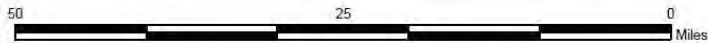
- Kittery
- Frye Island



Elongate Hemlock Scale Detections in Maine

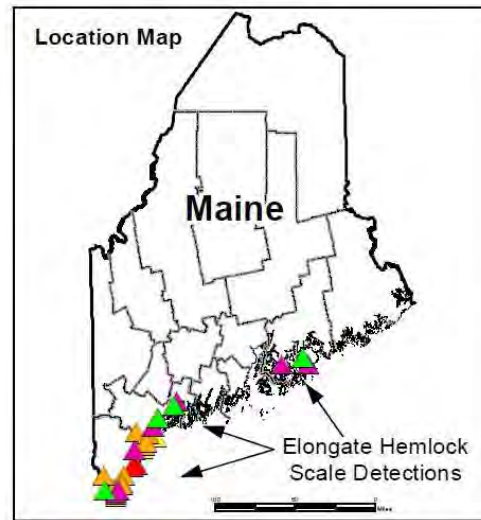
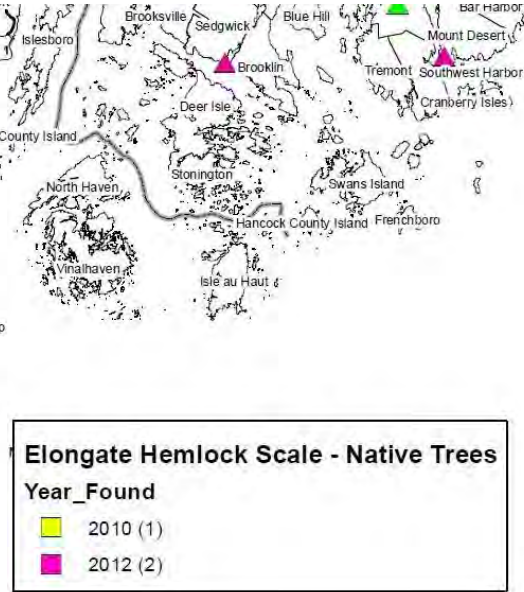


February 19, 2013



Department of Agriculture,
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Maine Forest Service
Forest Health & Monitoring

G:\T Miller\Fibius\hemlock_scale\elongate hemlock scale feb2014.mxd



What We ALL Can Do

A single piece of firewood can DESTROY millions of trees.

Moving firewood, even just a few kilometres away, can spread invasive insects and diseases to our forests.

DON'T MOVE FIREWOOD

Buy it locally. Burn it on site. Never bring it back home.

For more information call 1-800-641-2342 or visit www.inspection.gc.ca

Canada

DON'T MOVE FIREWOOD

ashborer.info

Firewood spreads unwanted pests. Firewood contains Emerald Ash Borer and other tree-killing insects and diseases. Moving firewood threatens our landscape & forests.

Selling Firewood? Buying Firewood?

At [FIREWOODSCOUT.ORG](http://firewoodscout.org) you can:

- Sell your firewood!
- Locate local firewood!
- Reduce invasive pest movement!

Buy it where you burn it!

BUY IT WHERE YOU BURN IT.

dontmovefirewood.org

PROMISE AMERICA

you won't move firewood.

Moving firewood kills trees.

Don't Move Firewood

BURN IT WHERE YOU BUY IT

Stop the Emerald Ash Borer
Don't Move Firewood > StopTheBeetle.info

Stop Emerald Ash Borer!

Help Protect Our Trees

1-888-OHIO-EAB
www.ohioagriculture.gov/eab

Not firewood

www.StopTheBeetle.info

Don't move firewood. Buy it at your destination.

Pack hot dogs. Not firewood.

www.StopTheBeetle.info

Don't move firewood. Buy it at your destination.



Spread the Word!



**Pack marshmallows.
Not firewood.**



www.StopTheBeetle.info
United States Department of Agriculture

Don't move firewood. Buy it at your destination.



Report Your Find or Damage Signs

- **Asian Longhorned Beetle:**

www.maine.gov/alb

- **Emerald Ash Borer:**

www.maine.gov/eab

- **Bug Watch ME**

- bugwatchme.agr@maine.gov

- (207) 287-3891

- www.maine.gov/forestpests

- forestinfo@maine.gov

- **Maine Forest Service**

(207) 287-2431



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ALB Resource Page
Asian Longhorned Beetle (ALB), *Anoplophora glabripennis*
The Asian longhorned beetle (ALB), *Anoplophora glabripennis*, is a woodborer beetle native to China. ALB develops and reproduces within healthy and stressed deciduous hardwood trees, such as maple, birch, horse chestnut, poplar, willow, elm, and ash. The attacked tree will eventually die.
The ALB hitchhiked to the United States in solid wood packing material used to import goods from Asian countries. ALB also can spread with firewood movement. There are currently ALB infestations being eradicated in Massachusetts, New York, New Jersey, Illinois, and most recently Ohio.
The Asian longhorned beetle has not been found in Maine.
If you suspect Asian longhorned beetle in Maine, please report it [online](#), or call: 207.287.3891.
To learn more about other invasive pests that threaten Maine's forests, [GO HERE](#).
Updated: January 22, 2014
Find us on Facebook:
Maine Bug Watch
Maine Bug Watch
Event: Maine Department of Agriculture, Conservation and Forestry
www.maine.gov

WHAT'S NEW
February 8, 2014 : Invasive Forest Insect Outreach Volunteer Training
February 19, 2014 : Invasive Forest Insect Outreach Volunteer Training
FEATURED TOPICS
FAQs About Firewood
Facts of the Forests - view
ALB Images (Invasives.org)
ALB Lookalikes
ALB vs. Whitespotted Sawyer
ALB Damage Pictures (Invasives.org)
Other invasive forest pests
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- ...Even USPS

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- Facebook Maine Bug Watch (invasive pest news)**
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Maine Bug Watch
Like You like this.

A day in the life of a city arborist bracing his community for the arrival of emerald ash borer (EAB hasn't been found in Vermont yet either).

City's trees keeps forester busy all year : Rutland Herald Online
Rutland Herald Online - Vermont
You and 382 others like Maine Bug Watch.

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Did you know...
...that [Popham Beach](#) provided much of the backdrop for the 1999 hit movie "Message in a Bottle", starring Paul Newman, Kevin Costner, and Robin Wright Penn?

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Department of Agriculture, Conservation and Forestry
22 State House Station
18 Dixville Lane
Augusta, ME 04330
Maine Locations
Phone: (207) 687-6000
Fax: (207) 687-6400
TTY: Maine Relay 711
DACE@maine.gov

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For further information, or to report any
of these insects, call:

Maine Department of Agriculture,
Conservation and Forestry at 287-3891



James E. Appleby, University of Illinois

Questions?