Invasive Insect Pests
Winter Pesticide Recertification Meetings

Virginia Forest Pest Management Update
Presented by

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Forestry and Natural Resources
Welcome to the Insect Identification Laboratory at Virginia Tech

A Service for Extension Agents and Citizens of Virginia
“BUGWOOD”

Insects

- Foliage Feeding
- Bark Beetles and Phloem Boring
- Wood Boring
- Terminal, Shoot, Twig and Root
- Seed, Cone, Flower and Fruit
- Sapsucking Insects and Mites
- Gall Makers
- Other Important Insects

Also visit:

http://www.hungrypests.com/
A FEW PHONE CALLS THIS SPRING WERE FROM PERIODICAL CICADA
### FORECASTS FOR THE “CHOIR BOYS”

<table>
<thead>
<tr>
<th>County</th>
<th>17 - year</th>
<th>13 - year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brunswick</td>
<td>2012</td>
<td>2011</td>
</tr>
<tr>
<td>Buckingham</td>
<td>2013</td>
<td></td>
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<tr>
<td>Cumberland</td>
<td>2013</td>
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<tr>
<td>Lunenburg</td>
<td>2013</td>
<td></td>
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<tr>
<td>Prince Edward</td>
<td>2013, 2017</td>
<td></td>
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<tr>
<td>Pittsylvania</td>
<td>2013, 2020</td>
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Exit Holes from emerging pupae
Concerns only on fruit crops
Emerald Ash Borer Update

Emerald Ash Borer - *Agrilus planipennis* Fairmaire, 1888

Quarantine Information
All movement of hardwood firewood, ash wood and wood products in Virginia and other quarantined areas is regulated. The following items may not be moved from quarantined areas without a compliance agreement:

- **all** hardwood firewood
- ash nursery stock
- ash green lumber
- ash waste
- ash compost
- ash chips
Emerald Ash Borer
History FACTS

• First identified in Michigan in 2002
• Detected in Ohio in 2003
• Northern Indiana in 2004
• Northern Illinois and Maryland in 2006
• Western Pennsylvania and West Virginia in 2007
• Wisconsin, Missouri, and Virginia in 2008
• Minnesota and New York in 2009
Emerald Ash Borer Update
Cooperative Emerald Ash Borer Project
Federal EAB Quarantine & Authorized Transit

Movement of EAB regulated articles **cannot** exit Federal quarantine boundaries **without** Federal permits.

Movement of EAB regulated articles **within** Federal quarantine boundaries (excluding protected areas) does not require Federal permits but may require State permits.

Check for and follow any relevant interior State EAB quarantine regulations before moving regulated articles.

For more information: 866-322-4512

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**Map Key**
- Federal quarantine boundaries
- Protected area restricted for interstate and intrastate movement and permits are required
- Area subject to Michigan Department of Agriculture and Rural Development regulatory policies
EAB Control

• Systemic options for parks and public areas

Research options with variable to little success have included: (USFS)
1. Imicide using Mauget capsules (has 10% imidacloprid)
2. Trunk injection with emamectin benzoate
3. A non-invasive trunk spray of Macho 2F (imidacloprid) + Pentra Bark (disease efficacy)

Biological Control – mainly parasitic wasps
Halifax Initial EAB find
Dead and dying Ash
D-shaped exit holes
EAB Recommendations

• Do not move firewood – buy it and burn it locally!
• Historical and “sensitive” sites may be treated with imidacloprid as a soil drench in late March – caution of toxicity to pollinating insects and upland game birds if used in pelletized form
• Conduct a salvage cut before infestation occurs; recommend chipping within 18 months of infestation
• Visit http://www.hungrypests.com/the-threat/emerald-ash-borer.php
EAB Contacts

• **Virginia:** [Quarantine Information](#)

• Contact The Virginia Department of Agriculture and Consumer Services: 804-786-3515 for permits or quarantine questions.

• Or Virginia Cooperative Extension Agent Jason Fisher at 434-476-2147 – [jasonf@vt.edu](mailto:jasonf@vt.edu)

• Local VA Department of Forestry State Forester – see [www.vdof.virginia.gov](http://www.vdof.virginia.gov)
Asian Longhorn Beetle
New York 1988
Chicago 1991
2010 to present

source http://pest.ceris.purdue.edu/map
Host tree species for ALB

Good Hosts – Maple family, Elm family, Birch and Sycamore

Occasional hosts – Mimosa, hackberry, ash, poplar,

Questionable hosts – fruit trees, oak, black locust, basswood, alder

Unlikely – chinaberry, tree of heaven
New Pheromone Traps Lure Asian Longhorned Beetles out of Hiding (Winter 2012)

USDA. Forest Service.

Entomologists from the U.S. Forest Service's Northern Research Station and Pennsylvania State University have developed a pheromone trap that lures Asian long-horned beetles out of hiding. Although it is not a treatment that can kill lots of beetles, this new trap is a major step forward in being able to detect the beetle. It may be used for finding outliers and hidden infestations in quarantine zones and standing sentry in high-risk areas.
**Dendroctonus frontalis**
Zimmermann, 1868

**English Common Name:** southern pine beetle

**Taxonomic Rank:** Coleoptera: Scolytidae: Scolytinae: Hylesinini: Tomicina
<table>
<thead>
<tr>
<th>Insect</th>
<th>Description</th>
<th>Mode of Attack</th>
<th>Sign of Attack</th>
</tr>
</thead>
<tbody>
<tr>
<td>Southern pine beetle</td>
<td>Brown-black beetle 1/8 inch long, rounded posterior, with minute notch in front of head when viewed from above.</td>
<td>Bores under bark and girdles southern pines. Attacks middle and upper stem in fall and winter, and lower stem in spring and summer.</td>
<td>Small white pitch tubes on bark or just boring dust. S-shaped and criss-crossed tunnels under bark.</td>
</tr>
<tr>
<td>Turpentine beetles</td>
<td>Light reddish brown or black beetles from ¼ to 1/3 inch long with rounded posterior.</td>
<td>Girdles inner bark of stumps and butts of larger pines. Larvae feed in groups. Usually found after fires, logging, or other disturbance.</td>
<td>Large pitch tubes on bark surface at tree base. Tunnels in inner bark are rather shapeless cavities.</td>
</tr>
<tr>
<td>Engraver beetles</td>
<td>Reddish dark-brown or black beetles less than ¼ inch long with a posterior that looks cut off and scoop-shaped.</td>
<td>Bores under the bark and girdles small commercial trees.</td>
<td>Small reddish pitch tubes on bark surface or just boring dust in cracks of bark or on ground. Y- or H-shaped tunnels parallel with wood grain on inside bark.</td>
</tr>
</tbody>
</table>
Comparison of IPS engraver and Southern Pine Bark Beetle

(note concave rear abdomen of IPS)
Ips and some Turpentine in 2011

- Field edges particularly showed indication of individual pine tree mortality in parts of VA.
- Drought-induced and “spotty” in nature
Thousand Cankers Disease

*Geosmithia morbida* (Proposed name)

- Associated with walnut Twig beetle
TCD Distribution

http://forestthreats.org/
Walnut Twig Beetle
Currently there are no known insecticide sprays that reliably control this disease.

Treatments made after symptoms begin to appear are ineffective.

**Trunk injected** fungicides combined with insecticides may be the most effective way to eliminate the **beetle** and the fungus. Additionally, **injected fertilizers** will assist in restoring the nutrients to the tree.
USDA APHIS Contacts for VA

• To report an animal pest or disease, contact:
  Dr. Terry L. Taylor Area Veterinarian-in-Charge Federal
  Building 400 North 8th Street, Room 726 Richmond, VA 23219-4824 Phone: (804) 343-2560 Fax: (804) 343-2599

• To report a plant pest or disease, contact:
  Bernetta Barco State Plant Health Director 5657 South
  Laburnum Avenue Richmond, VA 23231-4536 Phone: (804) 771-2042 Fax: (804) 771-2185
Resources Review

• http://www.idlab.ento.vt.edu/
• http://www.hungrypests.com/
• http://www.forestpests.org/

AND SEE

• http://pest.ceris.purdue.edu/index.php for distribution maps on insects and plants
THANK YOU FOR YOUR ATTENDANCE
For questions or more information contact:

K. Jason Fisher
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Virginia Cooperative Extension
Central District

434-476-2147
jasonf@vt.edu