Landscape Insect Pests of Concern: Tree Borers, Nuisance Pests, and Invasives

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Topics

- Tree Borers
  - Pitch moths
  - White pine weevil
  - Locust borer
- Invasive Nuisance Insects
  - Elm seed bug
  - Red fire bug
  - Brown marmorated stink bug
- High Alert Potential Invasive
  - Emerald ash borer
Tree Borers Submitted to the Utah Plant Pest Diagnostic Lab in 2014
Pitch Borers

Pitch Mass Borer - Moth
*Diorystria* spp. (Lepidoptera: Pyralidae)

Hosts: Pines (Austrian, Scots, Ponderosa, Lodgepole, Pinyon), occasionally Douglas Fir and true firs

Attacks weakened trees

Large, oozing masses of pitch caused by larvae feeding beneath the bark

Moths lay eggs in bark crevices near pitch masses

Larvae actively feed in late summer, can spend up to two years feeding on the resin

Boring larvae damage the tree’s water conducting vessels
Pitch Borers

Management

Keep trees healthy, avoid stress, avoid summer pruning when moths lay eggs

Manually remove pitch masses, crush caterpillars, and allow wounds to heal

Preventive bark sprays
Late June through August for at least two years
bifenthrin, cyfluthrin, and carbaryl

Insecticides will not kill larvae under the bark, require several years to suppress
White Pine Weevil

Weevil: small beetle with a snout

Attacks terminal leaders of blue spruce trees in Utah (rarely attack pine in the West)

‘Shepherd’s crook’, needle drop

Stunted growth, bushy growth with multiple leaders

Adult weevils spend the winter in leaf litter under trees

Adults become active at full bloom of forsythia in the spring

Adults feed just below terminal bud, Lay eggs (up to 100 per female)

Grub-like larvae bore into terminal
White Pine Weevil

Management

Sanitation:
Clean up duff under trees in late fall to reduce populations for the following spring

Insecticides:
Apply preventive sprays to spruce terminal branches beginning at forsythia bloom and keep protected for two weeks
Pyrethroids: bifenthrin, cyfluthrin
Systemics: imidacloprid?

Summer pruning:
Prune out terminal shoots with shepherd’s crook & destroy before larvae pupate
Locust Borer

Striking black and yellow longhorned beetle (~1 inch long)

Hosts: Black locust (‘Purple Robe’); Honeylocust is not attacked

Adults become active about the first week of August along Wasatch Front; early bloom of goldenrod (nectar feeders)

Female lays up to 200 eggs in bark crevices near wounds on trunk & larger branches

Larvae bore into cambium, remain for the winter

In spring, larvae bore into sapwood & heartwood (large tunnels)
Locust Borer

Management

Avoid planting black locust

Maintain healthy trees with optimal watering and fertilization

Prune to remove damaged limbs (hazards in wind storms)

Preventive insecticide trunk sprays
Beginning mid-August, repeat once or twice through early October

carbaryl, pyrethroids
Invasive Nuisance Insect Pests
Elm Seed Bug

First confirmed detection in Utah: July, 2014 (Salt Lake and Cache Counties)

Native to Europe
Idaho in 2012
Oregon in 2013

Seed bug family: Lygaeidae
Feeds primarily on elm seeds, also other trees

Major nuisance pest
Enters buildings (like boxelder bug)
Emits a pungent odor from scent glands (bitter almonds)

In Italy, apply insecticides to host trees when immature stage (nymph) is present (spring and early summer; May-June)

Use building exclusion techniques like for boxelder bug; vacuum congregations – warm soapy water
Red Fire Bug

- First North America detection in Salt Lake City in 2008
  - Detected in Kaysville (Davis Co.) in 2014
- Native to Europe and Asia
- Seed feeders (Pyrrhocoridae): linden, mallow, and limes (dry, ripe seeds)
- Seek shade on hot days
- Congregate on structures, plants and under leaf litter
- Manage like boxelder bug
Brown Marmorated Stink Bug

Invades homes/buildings in the fall/winter – major nuisance pest

Extremely broad host range: field crops, fruits, vegetables, fruiting ornamentals

Can cause substantial economic crop loss

Difficult to control with insecticides

Trapped in Salt Lake and Utah Cos. 2012-2014
Avenues, University of Utah, Eastern Bench

Look alike:
Rough stink bug
(native to Utah)
Brown Marmorated Stink Bug

- Native to eastern Asia
- First detected in the U.S. in Pennsylvania in late 1990s
- Feeds on a broad range of plants
  - crops, ornamentals
- Can be a major nuisance pest
High Alert Potential Invasive: Emerald Ash Borer
Emerald Ash Borer: Invasive – not in Utah, yet...

Emerald Ash Borer is on our doorstep

- Native to Asia
- Flatheaded beetle (Buprestidae) (~1/2 inch)
- Larvae feed on inner bark disrupting water & nutrient transport
- First found in the U.S. in MI in 2002
- Killed nearly 60 million ash trees (~50 million in southern Michigan)
- Attacks mature trees (olive family, Oleaceae)
  - Ash: all species of North American ash
  - White fringetree (*Chioanthus virginicus* L.)
Larva
Larval Tunnels - Injury
Monitoring
Monitoring
Monitoring

D-shaped exit hole
## Monitoring – Degree days/plant indicator

<table>
<thead>
<tr>
<th>Pest Life Stage</th>
<th>Degree Days</th>
<th>Plant Indicator</th>
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<tbody>
<tr>
<td>start of adult emergence</td>
<td>450 - 500</td>
<td>black locust bloom May to early June</td>
</tr>
<tr>
<td>peak of adult emergence</td>
<td>900 - 1100</td>
<td>catalpa bloom June</td>
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Monitoring and Management Practices

This – and all New York State ASH TREES – are threatened by the invasive insect EMERALD ASH BORER.

To find out how you can help save ash trees, visit www.dec.ny.gov and search “Emerald ash borer”.

Or Call NYSDEC toll free at 1-866-640-0652

Help slow the spread and Don’t Move Firewood.
No threshold has been set

- When present, trees should be protected
  - within two miles of attacked tree

- Protective trunk sprays
  - pyrethroids

- Inject systemic
  - Safari (dinitefuran)
Management Practices
Fact Sheets: over 200 fact sheets on pests of ornamentals, turf, fruits, vegetables, field crops, health-related, nuisance, stored products, structural, etc.
Video Fact Sheets

Paper Wasp Traps
Entomologist Dane Alton discusses the difference between native paper wasps and European paper wasps, and how to make your own traps to combat them.

Using a Beating Tray
A beating tray is a large cloth frame that is used to catch insects that fall from a shaken branch. It is helpful for monitoring a large area, such as an orchard, quickly.

Billbug Identification and Detection in Turf
Entomologist Ricardo Ramirez discusses the identifying characteristics of billbugs in turf, and demonstrates how to detect the damaging larval stage.

Tips for avoiding bed bugs while traveling
Entomologist Ryan Davis discusses safe travel techniques to avoid falling prey to bed bugs, and how to minimize the chances of bringing bed bugs back to the home.
IPM Advisories:
ornamentals, turf, fruits, vegetables
www.utahpests.usu.edu/ipm

Free subscription
Timely info on pest activity
- insects
- mites
- diseases
- nutrient deficiencies
- environmental stress
Lots of images!
IPM recommendations
Effective pesticides

All you need to sign up for the advisories is an email address
IPM Advisories (2014 Examples)
Pest Diagnostics
Utah Plant Pest Diagnostic Lab
www.utahpests.usu.edu/uppdl
USU Extension Pest Management Team: Utah Pests

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Find this slideshow and others at www.utahpests.usu.edu

Slideshows: Insects – Landscape Ornamentals