Asian longhorned beetle confirmed in South Carolina

On June 15, USDA announced that the Asian longhorned beetle (ALB) was confirmed in South Carolina and that surveys were underway to determine the extent of the infestation.

A dead adult beetle was found by a resident of Hollywood, South Carolina on May 29. Thinking it could be an Asian longhorned beetle, the homeowner called Clemson University’s Department of Plant Industry (DPI) to report it. Later that day, an employee from DPI collected the insect and began preliminary surveys of the property. Clemson’s Plant and Pest Diagnostic Clinic identified the specimen as a suspect ALB which was confirmed by USDA-APHIS’ National Identification Services (NIS) on June 4. The following week, APHIS and DPI inspectors confirmed that one tree on the reporting homeowner’s property was infested with a second infested tree on a property nearby.

Asian longhorned beetle. Photo Joe Boggs, the Ohio State University, Bugwood.org

First Detector webinars begin this month

Mark your calendar for a great lineup of First Detector presentations beginning this month and continuing into August. Brush up on target pests and learn tips to help you recognize symptoms and signs in the field. See webinars on page 2 for the schedule and registration link.

PLANT FACT

Climate change is having a big impact on plant health.

It threatens to reduce both the quality and quantity of crops, leading to lower yields. Rising temperatures are also exacerbating water scarcity, and changing the relationship between pests, plants and pathogens.

Our First Detector summer webinar series kicks off Wednesday, June 24. Join us each week for a live presentation on some of First Detector’s biggest threats. Improve your diagnostic skills with tips and tricks to help you recognize symptoms of common plant problems. Brush up on identification features of pests on the move like spotted lanternfly, Asian longhorned beetle and oak wilt. What do you do if you think you’ve found a target pest? We’ll review just how easy it is to report suspect pests!

Presentations begin at 12:30 PM ET/9:30 AM PT and run for approximately 45 mins followed by a question and answer session. Register at First Detector workshops. Attend one or all sessions. We hope to see you there!

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<tr>
<th>DATE &amp; TIME</th>
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<tr>
<td>June 24</td>
<td>Diagnostics 101—general scouting tips</td>
<td>Rich Buckley</td>
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<td>Rutgers</td>
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<td>Spotted lanternfly</td>
<td>Eric Day</td>
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<td>July 8</td>
<td>Oak wilt</td>
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<td>July 15</td>
<td>Huanglongbing &amp; Asian citrus psyllid</td>
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<td>July 22</td>
<td>Asian longhorned beetle &amp; emerald ash borer</td>
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<td>Thousand cankers disease &amp; laurel wilt</td>
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<td>August 5</td>
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**DIRECTOR'S NOTE**

If you did not already know this, many first detections of invasive plant pests are made by homeowners! That’s right, people just like you, find a suspicious insect (or plant disease) that resembles a pest they learned about in a class, or heard about on the radio, or just never saw before, and then report it.

One thing that our target pests have in common is that any of them can pop up in a new location at any time. So as you go about your summer activities, stay safe, have fun and watch for symptoms of invasive plant pests. When in doubt, report. Reporting is easy and early detection ensures rapid response. YOU can protect the plants in our yards, communities and forests.

Take care and be well,

Rachel
PEST PROFILE

If a healthy plant suddenly undergoes unusual damage or decline, it could indicate the presence of an invasive pest or pathogen.

Oak Wilt  

*Quercus fagacearum*

Oak wilt (OW) is an aggressive disease that affects the vascular system of oak trees. In some species, the disease progresses rapidly with large, healthy trees dying in as little as a couple of weeks.

Thousands of trees die from oak wilt each year and the disease continues to spread. Natural spread of OW occurs two ways—above ground and below ground. Above ground transmission occurs when sap and bark beetles visit an infected tree, pick up spores and then visit a healthy tree. Additionally, oak trees growing in proximity to other related oaks form natural root grafts. This communal root system allows the pathogen to move from infected tree to healthy tree and is the reason why symptoms typically occur in neighboring oak trees (B).

OW can be confused with many other problems, therefore laboratory testing is needed to confirm diagnosis and ensure you take the appropriate disease management steps.

**Hosts**  
All oaks (*Quercus* spp.) are susceptible to oak wilt, but some species are more so than others. Oaks can be divided into three groups, red, white and live. Oaks in the **red group** (A) are the most susceptible species, experiencing high mortality when infected. Oaks in the **white group** (C) are susceptible but the disease progresses more slowly and may not kill the tree. Oaks in the **live group** (D) are moderately susceptible but experience high levels of mortality when infected.

**Symptoms**
- Wilting beginning at the top and moving downward
- Leaf discoloration: tan to bronze beginning at leaf margin and progressing towards midrib (A&C) or interveinal chlorosis on live oak leaves (D)
- Early and excessive leaf drop (E)
- Tree death

**Signs**  
Some OW infected red oaks produce fungal mats (F) beneath the bark. As pressure builds in a fungal mat, the bark splits. Fungal mats have a distinct fruity odor that attracts sap and bark beetles.
SCOUTING GUIDE

Symptoms of oak wilt vary depending by species. Oaks in the red oak group are characterized by lobed leaves and pointed tips, examples include northern red oak, pin oak and Texas red oak. Oaks in the white oak group are characterized by lobed leaves and rounded tips, examples include white oak, bur oak and post oak. Texas live oak is an example of an oak in the live oak group and is characterized by unlobed leaves and either a rounded or pointed tip.

RED OAK GROUP
Oaks in this group are most susceptible and typically die within three weeks to a couple months after infection.

Monitor oaks in this group for wilting, rapid leaf discoloration and leaf drop. Color change typically starts at the top of the tree and quickly spreads throughout the canopy. Oaks affected by other diseases with similar foliar symptoms do not typically shed leaves until autumn.

WHITE OAK GROUP
Oak wilt in this group progresses more slowly and some oaks may even survive.

Monitor oaks in this group for wilting and leaf discoloration similar to that of oaks in the red group. Branches often die individually (known as flagging) and could be an indicator of this disease. OW still needs to be managed in this group to limit the spread of the fungus to other oaks.

LIVE OAK GROUP
Oaks in this group are moderately susceptible and while most trees die from the disease in 1–6 months others may survive but in a serious state of decline.

Monitor live oaks for wilting, interveinal chlorosis and necrosis, and leaf drop. As leaves are shed the canopy thins until the tree is completely defoliated.

GET INVOLVED

1. see where it is
Oak wilt is affecting trees across much of the central and eastern U.S. and it continues to spread. Explore the EDDMapS’ OW page to see where OW has been confirmed.

2. monitor and report
If OW is present in your state or in a neighboring state, we need your help to monitor and report sightings to slow its spread. Use the First Detector form to report suspect trees through EDDMapS. Experts will review your report and contact you if it could be oak wilt.

3. protect your oaks
To limit the spread of OW avoid pruning oaks in spring and summer when sap and bark beetles are most abundant. These beetles are attracted to fresh pruning wounds and can move spores to other oak trees further spreading the disease.

4. don’t move wood
OW can spread to new locations when infected wood is moved. When red oaks die from OW they develop fungal mats beneath the bark. These fungal mats contain the spores that can start a new infection on a new host. To prevent human assisted spread of OW, learn how to dispose of infected wood properly.

ADDITIONAL RESOURCES

More information, photos and partner links are available on the First Detector OW page.

Download and print a pocket-sized scouting card from our pest identification page.

Photos: (B, D, F) Joseph OBrien, US-FS; (C&H) Fred Baker, Utah State University; (E) Steven Katovich; (G) Ryan Armbrust, Kansas Forest Service; (I) Ronald Billings, Texas A&M Forest Service. all images bugwood.org

www.firstdetector.org/oak-wilt

June 2020
First Detector target pests* are some of the most threatening plant pests and pathogens known to exist in the U.S. today. If you see symptoms or signs described here, use our reporting form to report.

* These pests were selected based upon USDA national priorities and may not be reflective of the most significant threats in your region.

Asian longhorned beetle (ALB)
- Adults (1 & 2) are emerging in OH and could emerge within a week in MA and NY. Adults detected in SC so monitor for adults in points south of OH.
- Large beetles measuring 1–1.5" in length. Banded antennae are 1.5–2x body length. Body is shiny black with irregular white (yellow) splotches. More photos and resources at FD ALB page.

Hemlock woolly adelgid (HWA)
- Monitor for eggs and active nymphs or crawlers (7) and settled nymphs (8) in northern range.
- Check the HWA pheno forecast map and sign up for alerts. See where it has been reported at the HWA EDDMapS page. Find more information, partner links and scouting resources at FD HWA page.

Emerald ash borer (EAB)
- Adult EAB are present throughout most of its range. Visit the EAB EDDMapS page to see where EAB has been reported.
- Monitor native ash for crown thinning (3), heavy woodpecker damage and adults (4). EAB adults are bright, metallic green, about ½" long and ⅛" wide with a flattened back.

Laurel wilt (LW)
- LW continues to spread in the south. Monitor redbay, sassafrass, avocado and other plants in laurel family, for wilting, leaves that turn reddish to purplish-brown (9), and ambrosia beetle activity like frass tubes (10) or sawdust.
- See where LW has been reported at LW EDDMapS page. Visit the FD LW page for information, photos and resources.

European gypsy moth (EGM)
- Larvae are emerging in northernmost range. GM feed on 300+ species of trees and shrubs including some evergreens. Monitor trees and shrubs for larvae (5 & 6) and defoliation (6).
- GM larvae are hairy with blue then red, raised spots from head to tail. See FD EGM pg for photos and partner links.

Oak wilt (OW)
- See insert.

Spotted lanternfly (SLF)
- Nymphs present with adults appearing in mid-July in southern range. Young nymphs are black with white spots (11) becoming more red before turning into adults (12).
- SLF nymphs feed on a long list of hosts while adults prefer tree-of-heaven.
- SLF is easily moved to new locations by human activity. Learn more at FD SLF.

Learn more at
www.firstdetector.org/target-pests

Photo credits:
(1&2 USDA; 3) Whitmore, Cornell; (4) PA-DCNR, bugwood; (5) Ovidiu; (6) WI DOA, flickr; (7) Graney, Bartlett, bugwood; (8) Oten, NC-FS, bugwood; (9&10) Mayfield; (11) USDA, flickr.
ALB confirmed in SC

continued from page 1

Timing is extremely important right now as regulatory officials work to survey the extent of the infestation. If you live in the area where the detection was made, USDA asks for your cooperation by allowing officials access to your property to inspect trees. Inspectors will ask for permission from residents to survey trees on private properties and will be dressed in USDA or Clemson uniforms.

South Carolina is the sixth state to detect the Asian longhorned beetle. ALB eradication programs are in place in OH, MA and NY.

Read the official report Tree Surveys Are Underway In South Carolina to Detect Asian Longhorned Beetle 6/15/20 at the USDA-APHIS newsroom.

identification resources

First Detector offers resources in a variety of formats to support your plant pest education. Download printable field guides and scouting cards from our pest identification page. Bookmarks and posters featuring select target pests and native look-alikes can be downloaded from our outreach page. Watch identification videos on Asian longhorned beetle and emerald ash borer at FD training videos.

First Detector educator resources

If you are an educator working on invasive species outreach, check out First Detector's educator resources! Print resources are available by request for educators conducting First Detector training programs. Learn more!

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www.firstdetector.org