October is firewood awareness month!
Leigh Greenwood, The Nature Conservancy

Each October, the Don't Move Firewood campaign celebrates Firewood Month across the USA and Canada. In the warmer southern states, it’s the season for camping, fishing, and enjoying the outdoors after the heat of the summer has waned. In the cooler northern states and Canada, it’s a great time to think about stocking up on firewood for the winter ahead, planning for firewood needs during hunting season, and getting in those last crisp fall days of camping under the stars.

If you’re reading First Detector Report, you probably know that moving firewood long distances can spread Laurel wilt.

Firewood Month continues on page 5...

SHARE WHAT YOU KNOW

38% of people are aware that invasive insects can move in firewood. With consistent outreach, that number jumps to 96%.

FOREST FACTS

30% of Earth's land surface is forest ¹

80% of Earth’s land animals & plants live in forests ²

130+ million acres of America’s forests are located in cities & towns ²

¹ National Geographic  |  ² US-Forest Service
TARGET PEST scouting report

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.

In celebration of Firewood Month, we focus this scouting report on FD targets that are known to spread in or on firewood. Monitor the trees you care about for these signs and symptoms but remember—even if you do not see physical evidence of these pests in/on your firewood, they (or other invasive pests) can still be present. For this reason always follow best firewood practices to minimize the spread of unwanted pests!

Lots of other nasty pests can be introduced to new locations through firewood, for a more comprehensive list visit the Don’t Move Firewood invasive species page.

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European gypsy moth (EGM)
EGM females lay eggs on just about anything—not just host plants!
EGM eggs are covered with fuzzy, buff-colored hairs from the female's abdomen (6&7). Scrape EGM egg masses into a container of soapy water, and dispose the next day.
See FD EGM page for more info, photos and partner links.

laurel wilt (LW)
See insert.

thousand cankers disease (TCD)
Walnut may not be popular firewood, but worth mentioning that movement of any plant or plant-part can inadvertently spread pests to new locations.
TCD spreads by the tiny walnut twig beetle (WTB). Evidence of WTB activity includes tiny exit holes on branches (10) and tiny insect galleries and cankers beneath bark (11). Learn more at FD TCD.

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

Asian longhorned beetle (ALB)
On ALB host trees, monitor for adults, exit holes, and new (and/or old) oviposition sites (1). Egg sites vary in appearance depending on host and age.
On cut branches or firewood, look for tunneling through the wood (2).
ALB adults are large, measuring 1–1.5" in length. More photos and resources at FD ALB page.

emerald ash borer (EAB)
Woodpecker activity may indicate insect presence, but not all woodpecker activity means you have a problem.
Trees highly infested with EAB often have woodpecker damage known as blonding (3&4) which may be easier to notice than other EAB signs and symptoms. Regular EAB exit hole (left) and woodpecker damaged exit hole (right) (4).
Removing bark may reveal serpentine galleries etched on surface of wood (5). Find state specific quarantine information and regulations about firewood at EAB Univ. firewood.

Spotted lanternfly (SLF)
SLF adults present in landscape until there is a hard frost. Females deposit eggs in vertical rows and cover them with shiny putty-like substance (8).
Appearance of covering changes with time and will start to look like dry mud.
Exposed eggs look like seeds (9). SLF lay eggs on just about any plant and outdoor object! Learn more at FD SLF.

Photo credits: (1&2) USDA; (3&4) Cappaert, bugwood.org; (5) Kimoto, Canadian Food Inspection Agency, bugwood; (6) WA-DOA, flickr; (7) McCarthy, Cornell; (8) PA-DOA, bugwood; (9) Barringer, PA-DOA, bugwood.org; (10) Snover-Clift, Cornell, bugwood.org (11) Cranshaw, Colorado State, bugwood.org.
Laurel Wilt \textit{Raffaelea lauricola} & \textit{Xyleborus glabratus}

Laurel wilt (LW) is a disease complex that has spread rapidly across the southeast coastal plain and has already killed hundreds of millions of trees. LW occurs when a tiny redbay ambrosia beetle (RAB) introduces spores from the pathogen, \textit{Raffaelea lauricola}, to a host. The spores grow in the beetle galleries and the beetles and their offspring feed on the fungus. As the fungus grows, it plugs up the vascular system which causes rapid wilting, foliar discoloration, and death.

LW can spread to new locations if infested wood is moved and research now suggests that a single female RAB is capable of starting a colony in a new location.

Currently, there is no cure for LW, so the disease will continue to spread into the northern range of its hosts.

Hosts LW affects plants in the laurel family including several economically and ecologically important hosts. Redbay (A) has been the most widely affected species with 320+ million trees killed to date.

Other hosts include avocado (\textit{Persea americana}), sassafras (\textit{Sassafras albidum}), pondberry (\textit{Lindera melissifolia}), and pondspice (\textit{Litsea aestivalis}).

Symptoms may vary by species & begin in a portion of the canopy

- wilted (C) green foliage
- leaf discoloration from reddish to purplish to brown; occasional chlorosis (D)
- evergreen hosts retain dead leaves for 12+ months (B)

Signs Evidence of ambrosia beetle activity in combination with LW symptoms should be investigated. Sawdust toothpicks (E), boring dust on trunks or at tree base (L), and tiny exit holes (F) are signs of ambrosia beetles. Removing the bark on symptomatic host trees may reveal dark streaking on the surface of sapwood caused by the LW fungus (F).
SCOUTING GUIDE

Symptoms of laurel wilt vary by species and begin in a portion of the canopy, known also as flagging (D,J), before spreading throughout. Monitor host trees (1 inch or greater in diameter) for wilting and change in leaf color.

Evergreen hosts hold dead foliage for 12+ months (G), but deciduous hosts may drop leaves (J). Symptoms in sassafras are more subtle, so monitor these hosts closely (H).

the redbay ambrosia beetle

Native ambrosia beetles and their associated fungi rarely harm their hosts, but the opposite is true for RAB and the LW fungus.

Look for loose sawdust on or around infested trees (K), sawdust toothpicks (E,L) and tiny exit holes. Cut trees may reveal tiny tunnels in the wood (M).

GET INVOLVED

1. see where it is

Laurel wilt and the redbay ambrosia beetle continue to spread. To see where it has been reported, visit the LW EDDMapS page.

2. monitor and report

Protect susceptible trees and the wildlife that depend on them by monitoring for LW. If you see symptoms that look similar, take a series of quality photos and report it using the FD report form.

3. don’t move wood

Unwanted pests, including RAB and the LW fungus, spread to new locations when infested wood is moved. With LW, it only takes one tiny RAB to start a colony in a new location!

If you use firewood remember: BUY IT WHERE YOU BURN IT!

Learn more firewood tips from our friends at Don’t Move Firewood.

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

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

Photos: (B,M) James Johnson, Georgia Forestry Commission, bugwood.org; (C,E,F,G) Albert (Bud) Mayfield, USDA Forest Service, bugwood.org; (D,J,K,L) Mark Hoddle, Center for Invasive Species Research, UC Riverside; (H,I) Chip Bates, Georgia Forestry Commission, bugwood.org.
Firewood Month

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invasive forest pests hidden in or on the wood. By focusing on this issue each October, the Don’t Move Firewood campaign works with many partners—like you!—to push outreach messages to the firewood using public. Both recreational firewood users (camping, RV’ers, hunters, and more), as well as folks that use firewood for home heating, need to know that their firewood choices matter—and they can help slow the spread of tree-killing pests.

The safest choices for firewood can vary according to where you plan to burn firewood, as well as where you live! Because of that, outreach specialists should list which of these safer choices work best for their region’s needs:

• Buy local firewood at or near where you’ll burn it.
• Buy certified heat-treated firewood when it is available.
• Gather firewood on site when permitted by the landowner or campground.

By working together, we all have the power to slow the spread of forest pests.

Learn more about Firewood Month at www.dontmovefirewood.org/firewood-month

resource spotlight

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. Posters featuring select target pests and native look-alikes and posters to promote the International Year of Plant Health (IYPH) can be downloaded from our outreach page. Watch identification videos and recorded webinars on the videos page.

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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