



# Forest Health *Notes*

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## Laurel Wilt Confirmed In North Carolina

Our fears were confirmed late last month when laurel wilt was found killing redbay trees in southeastern Bladen County. N.C. Division of Forest Resources (NC DFR) Pest Control East Forester Ryan Blaedow and Technician Wayne Langston discovered the Bladen County infestation while conducting a systematic survey in the area.

A subsequent survey conducted by the division's Pest Control Branch staff and N.C. Department of Agriculture plant pest specialists found symptomatic redbay in the adjacent counties of Columbus, Pender, and Sampson; these samples were also confirmed as positive for the disease. A complete formal survey to determine the entire range of laurel wilt in the state has not been completed at this time. It is possible that other counties or other areas within known positive counties could be added in the near future. A map of the areas currently confirmed as having laurel wilt present can be found at the end of this note.

### What is laurel wilt?

Laurel wilt is caused by a fungus (*Raffaelea lauricola*) that is introduced into trees in the Laurel family by a tiny non-native beetle known as the redbay ambrosia beetle (*Xyleborus glabratus*). Trees and shrubs susceptible to this disease include redbay and swampbay and to a lesser extent, sassafras, spicebush, pondspice, and pondberry. **Note that mountain laurel, loblolly bay, sweetbay, and rhododendrons are not susceptible to this disease.**

Host trees are killed by a vascular pathogen caused by the ambrosia fungus that the female beetle carries as she bores into the tree. All ambrosia beetles carry an ambrosia fungus, which they feed on after boring into the tree. The redbay ambrosia beetle is unique in that the ambrosia fungus it carries kills the host tree. The fungus spreads inside the tree essentially choking it of water, resulting in tree death. This fungus spreads quickly and infected trees often die in as little as 30 days after symptoms first appear. The ambrosia fungus is virulent and it is believed that the pathogen released by a single beetle can kill a tree.

### Where did it come from?

Two years ago, the South Carolina Forestry Commission confirmed the presence of laurel wilt disease in Horry County, SC, near Conway. Horry County borders the North Carolina counties of Columbus and Brunswick in the southeastern corner of our state. At that time, the infestations in Horry County were the northernmost extent of both the insect and disease.

This disease naturally spreads at a rate of 15-20 miles per year but the recent finds were found a good distance from the Horry County infestations, suggesting the introductions in North Carolina may have been accidentally

introduced by the movement of wood products or debris. The redbay ambrosia beetle can easily be moved in wood products, such as logs, firewood and other unprocessed woody material from trees in the Laurel family.

The disease was originally observed killing redbay trees and other hosts in the Laurel family in Georgia and South Carolina in 2003. The disease has been spreading outward, predominantly south and west, since that time.

### How will I recognize laurel wilt?

Symptoms of laurel wilt include drooping reddish-brown and/or purplish leaves. Even after the tree is dead, these leaves may stay attached for several years. Evidence of the ambrosia beetle attack can be found by looking at the main stem of the tree. When the beetles bore into the tree, they push out toothpick-like strings of chewed wood, called frass. These toothpick-like frass strings may not be present after wind or rain events. Trees with this disease will also have black staining in the outer sapwood, which can be seen after removing a section of the tree's bark.

### What can be done?

Currently, there is no reliable way to save a wilting tree. **Avoiding the movement of infested wood will slow the spread of the beetle and fungus. This non-native invasive pest is easily moved to new locations by people via the movement of infested wood products such as firewood or yard debris. Confirmed laurel wilt-killed trees should not be removed from the site.** Preferred methods of disposal include cutting the tree and leaving it **on the site**, or burying or burning dead trees **on the site** following all state and local regulations.

NC DFR Pest Control Branch personnel are monitoring the spread of the insect and disease. New suspected spots of laurel wilt-killed trees should be reported to [new.threat@ncdenr.gov](mailto:new.threat@ncdenr.gov) or to any of the Pest Control Branch personnel listed below for confirmation. When reporting, please give the location (GPS coordinates or addresses are best) of the spot and as much information as possible about the location, site, host and symptoms—digital pictures are also appreciated.

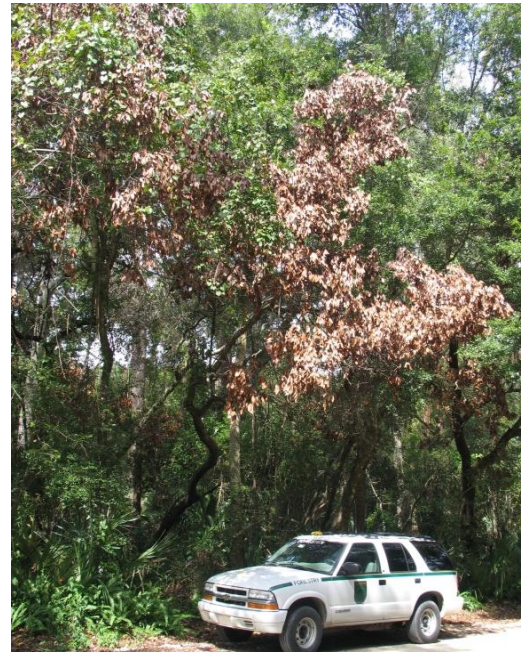
Additional information on the redbay ambrosia beetle and laurel wilt disease can be found at <http://www.fs.fed.us/r8/foresthealth/laurelwilt/index.shtml>

For other non-native forest pests of concern in North Carolina, please visit [http://www.dfr.state.nc.us/forest\\_health/fh\\_firewood.htm](http://www.dfr.state.nc.us/forest_health/fh_firewood.htm)

A recent webinar on this subject has been archived at: [http://go.ncsu.edu/laurel\\_wilt\\_recording](http://go.ncsu.edu/laurel_wilt_recording). A 50-minute narrated PowerPoint presentation explains in detail about this forest health threat including history, hosts, range, insect, disease, symptoms, signs and management information.

### Pest Control Contact Information

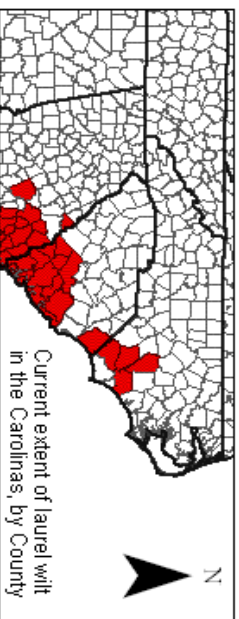
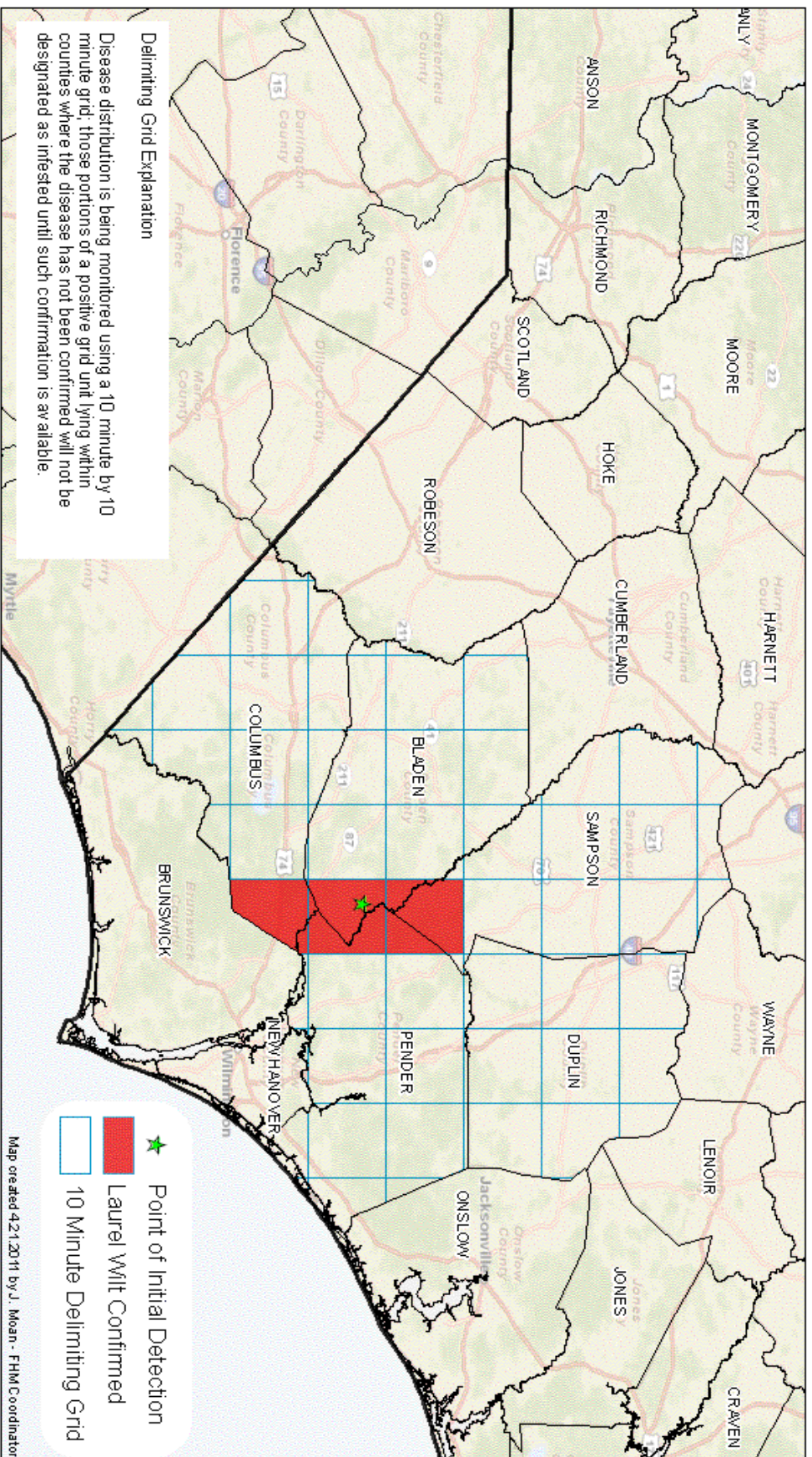
Name, Position	Work Phone	Cell Phone	Email
<b>Ryan Blaedow, PC East Forester</b>	919-731-7988 x209	919-609-1556	Ryan.Blaedow@ncdenr.gov
<b>Wayne Langston, PC East Tech</b>	919-731-7988 x214	919-920-4906	Wayne.Langston@ncdenr.gov
<b>Jason Moan, FHM Coordinator</b>	919-553-6178 x223	919-280-7219	Jason.Moan@ncdenr.gov
<b>Robert Trickel, Program Head</b>	919-857-4858	919-604-5802	Rob.Trickel@ncdenr.gov
<b>Or send email to: <a href="mailto:new.threat@ncdenr.gov">new.threat@ncdenr.gov</a></b>			



**Toothpick-like frass strings (Top-left)** J. Johnson, Georgia Forestry Commission  
**Dying redbay (Top-right)** A. Mayfield, Florida DACS Division of Forestry  
**Staining in sapwood (Bottom-left)** J. Moan, NC Division of Forest Resources  
**Female redbay ambrosia beetle (Bottom-right)**, M. Thomas, Florida DACS Division of Plant Industry



# Current Known Distribution of Laurel Wilt in North Carolina



Laurel wilt is a devastating invasive disease of plants in the Laurel family (Note: This does NOT include mountain-laurel or rhododendron)

Susceptible plants in North Carolina are redbay, swampbay, spicebush, pondberry, and pondspice. This disease is spread by the redbay ambrosia beetle and can be moved to new locations in woody material from infested trees.

