

# CFEOR Updates

09.14.07



Conserved Forest Ecosystems: Outreach and Research  
<http://sfrc.ufl.edu/cfeor>

Laura Sadowski · [lap322@ufl.edu](mailto:lap322@ufl.edu) · 352.846.0546 · PO Box 110410, Gainesville, FL 32611 · <http://sfrc.ufl.edu/cfeor>

## CFEOR Endorsed Project

### Evaluation of natural resistance to Laurel Wilt Disease in Red Bay

Laurel wilt disease (LWD) is a recently discovered, presumably introduced and devastating fungal wilt disease caused by an undescribed *Raffaelea* species. LWD is causing extensive mortality to Red Bay (*Persea borbonia*) and other members of the Lauraceae (Laurel family) in the southeastern U.S. In 2002 an Asian species of ambrosia beetle (*Xyleborus glabratus*) was found in insect monitoring traps (Early Detection/Rapid Response) near Port Wentworth, Georgia (near Savannah). It was soon discovered associated with dying Red Bay (*Persea borbonia*) trees in the vicinity. Closer inspection revealed the presence of a fungus (*Raffaelea* species) similar to the dutch elm disease fungus (*Ophiostoma novo-ulmi*). The fungus is very aggressive and can kill entire trees in a couple of months. Since its discovery in 2002, the disease has spread to over 35 counties in Florida, Georgia and South Carolina.



(Left) *Xyleborus glabratus*, the vector of the LWD fungus



(Right) Extensive mortality in a Red Bay forest

From limited surveys completed in Florida, South Carolina and Georgia the disease appears to be rapidly decimating stands (with mortality in 2 years increasing from 10% to 92% for example). Although many questions about the biology and impact of the disease remain unanswered, it is clear that action is needed immediately to preserve Red Bay germplasm and to take steps to maintain Red Bay as a vital component of the ecosystem.

Currently, we have a unique opportunity to identify individual trees that have withstood the very high disease pressure (high vector population and inoculum levels) of the initial “wave” of the disease. The few remaining trees may possess natural resistance that will be vital to protecting the species from extinction. In addition, future efforts to re-establish the species in areas where it has been extirpated will depend on this resistant germplasm. The first step toward this approach is to determine if resistance is present in these trees. Disease affected stands are being surveyed in FL, GA and SC for the presence of live trees. Seeds and cuttings are being collected from these trees and progeny are being screened for resistance to LWD in the greenhouse. If steps aren’t taken immediately to plan for the protection and future re-introduction, Red Bay, and potentially other associated species (such as the Palamedes swallowtail for example) may be lost forever.

This project is being funded by the U.S. Forest Service, Forest Health Protection Unit and is being led by Jason Smith, Assistant Professor of Forest Pathology at the University of Florida and his graduate student, Marc Hughes. For more information on this project and LWD please contact Jason at [jasons@ufl.edu](mailto:jasons@ufl.edu) or visit the Laurel Wilt Disease website at <http://www.fs.fed.us/r8/foresthealth/laurelwilt/index.shtml>.

## **Upcoming CFEOR Meeting: Wednesday October 17<sup>th</sup>**

There will be a CFEOR Steering, Science, and Outreach Committee meeting on Wednesday, October 17<sup>th</sup> at the Austin Cary Memorial Forest in Gainesville, FL. More information on dates and agendas will be coming soon.

## **Call for CFEOR member news and updates!**

Does your agency or group have any relevant news or projects that may be of interest to other CFEOR members? Let us know! We would like to post them in the CFEOR weekly reader. The weekly reader is a great resource to easily communicate information between members. Please email Laura Sadowski with any news or updates at [lap322@ufl.edu](mailto:lap322@ufl.edu).

## **Upcoming Conferences**

- **Southeastern Society of American Foresters (SESFA) 2007 Annual Meeting**  
“Keeping Forests in Forests: The Dilemma of Private Forests in the 21<sup>st</sup> Century”  
September 23-25 at Sandestin Beach Hilton in Destin, FL  
For more information visit <http://www.sesaf.org/annual07.php>
- **Florida Firewise Conference**  
Protecting Florida Communities from Wildfire  
October 2-3 at Florida Hotel and Conference Center, Orlando, FL  
Visit: [http://www.fl-dof.com/calendar/firewise\\_conference2007.html](http://www.fl-dof.com/calendar/firewise_conference2007.html)
- **Deer and Turkey Management Short Course-UF/IFAS Extension**

October 4-5 at UF's North Florida Research & Education Center-Quincy, FL

For more information visit <http://nfrec.ifas.ufl.edu/Calendar/DeerTurkey-2007.pdf>

- **3<sup>rd</sup> Annual Florida Quail & Dove Management Short Course-UF/IFAS Extension**

October 19 at Turner-Civic Center in Arcadia, FL

[http://desoto.ifas.ufl.edu/Agricultural/wildlife\\_and\\_conservation.html](http://desoto.ifas.ufl.edu/Agricultural/wildlife_and_conservation.html)

- **Confronting the Cogongrass Crisis Across the South**

November 7-8 at Arthur R. Outlaw Mobile Convention Center in Mobile, AL

[http://www.sfrc.ufl.edu/Extension/florida\\_forestry\\_information/events\\_calendar/files/Cogongrass\\_Conference\\_Announcement11-07.pdf](http://www.sfrc.ufl.edu/Extension/florida_forestry_information/events_calendar/files/Cogongrass_Conference_Announcement11-07.pdf)

- **Public Land Acquisition & Management Partnership Conference**

Hosted by the Southwest Florida Water Management District

December 5-7 Hyatt Hotel in Sarasota, FL

For more information visit <http://www.ces.fau.edu/plam2007/index.php>

## Recent Research Finding

### **Biomechanical plasticity facilitates invasion of maritime forests in the southern USA by Brazilian pepper (*Schinus terebinthifolius*)**

Spector, T., Putz, F.E.. 2006. Biological Invasions. 8 (2): 255-260.

Biomechanical plasticity and within-species growth form diversity are traits that can facilitate invasion by non-native plant species. We support this argument with evidence from the invasion of coastal habitats in northern Florida, USA, by *Schinus terebinthifolius* and describe some of the consequences of this invasion for overtopped saltmarsh plants.

In crowded stands, *Schinus* grows more like a vine than a tree, with stem height : diameter ratios nearly twice than those observed in open-grown individuals but with no changes in wood density or the modulus of elasticity of stem material. When extracted from the surrounding vegetation, the formerly crowded *Schinus* stems buckle under their own weight. *Schinus* crowns also extend much further over adjacent saltmarsh than crowns of *Juniperus virginiana*, the only other tree species abundant in the study site. Along forest edges, the above-ground biomass of saltmarsh plants overtopped by *Schinus* crowns was reduced by more than an order of magnitude.

The biomechanical plasticity of *Schinus* allows it to adapt its growth form to suit habitat conditions and can dominate the edges of salt marshes as a sprawling shrub and maritime forests as either a free-standing tree or a woody vine, depending on stand crowding.