

Walnut Council

Maryland Chapter Newsletter

Fall 2011

Volume 18, Issue 1

President's Message:

The Times, They Are A-Changin'

David Robbins

The times, they are a-changin'. Every second, trillions of bits of information and knowledge are being exchanged at the speed of light. Society is changing so rapidly that anyone who is not constantly accessing Facebook, Twitter, e-mail, and the internet with their smart phone simply can't keep up. We are in the middle of a national economic crisis, and no one can even begin to predict the future.

Our forests do not seem to be fairing much better. It seems like every day we hear about a new invasive plant, animal, or disease that threatens the health of our trees, and changes how we should manage our land. Timber prices and markets have been in a steady decline for years, making timber harvest unrewarding and often unfeasible. So what can we do?

The mission of the Walnut Council has always been to educate people on the sound management of Walnut and other hardwood trees. This mission is even more important and critical than ever, since increasing our knowledge is the best

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way to prepare for uncertainty. The only way to keep up with the changing times is to stay abreast of the latest knowledge, trends, and techniques. Over the years, the Walnut Council has provided an ever-expanding breadth of information and resources to its members; and this year's Fall Meeting will be no different.

The 2011 Fall Meeting will focus on non-timber forest products. We have spent many workshops telling you how to manage your trees; but at this workshop we will give you some other options for managing your *land*. With the timber markets in a slump, perhaps it is time to look at some other ways that we can generate income from

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insert...

Walnut Council Fall Meeting Information and Registration Form

Report on Site Visits in Virginia and Pennsylvania to Examine Thousand Cankers Disease (TCD) Infections in Eastern Black Walnut

Manfred Mielke

Editors Note: Thousand Cankers Disease (TCD) outbreaks have now been confirmed in Virginia (near Richmond) and Pennsylvania (in Bucks County). With TCD now in our neighboring states to the north and south, it seems all but inevitable that it will be traveling to Maryland soon. It is even quite probable that it is already here, just waiting to be found.

The following excerpts were taken from the notes that Manfred Mielke took, on his visits to the sites of these TCD outbreaks. The format is not the easiest to follow, but the information is interesting, important, and timely.

Date of Visit: September 7-9, 2011

TCD Status in Richmond, VA:

TCD was identified by VDACS and later confirmed in June of 2011. VDACS immediately issued a quarantine for the counties involved. Pheromone lure was provided on a trial basis, and funnel traps were deployed on a grid pattern covering multiple counties surrounding the original outbreak location near Richmond. Since then, the walnut twig beetle has been found in 4 counties and 2 municipalities over an area approximately 50 miles in radius. More than 750 beetles have been trapped at the original discovery site, with a gradation down to as few as 1 in traps near the edge of the trapping grid. There are also traps with no beetles, suggesting a successful delimitation of the current known infestation.

Symptoms and signs appear to be consistent with those described in the National Pest Alert and elsewhere. Symptoms include bronzing of leaves, wilted foliage remaining attached to the trees, dieback, and mortality. Signs include tiny beetle exit holes, galleries in the bark, fungus stain surrounding the galleries, and under magnification, white mycelium (*Geosmithia morbida*) growing in the exit holes, and finally, the presence of the beetles.

The beetle is very small, difficult to see with the naked eye, but clearly identifiable under magnification per the characteristic markings described in the National Pest Alert. The pheromone-baited traps are clearly effective in capturing the beetle and far more efficient than trying to find the beetle in the bark or on the tree while sampling in the field. Due to its small size it is difficult to identify the beetle in infested branch samples even under magnification.

Walnut is a common volunteer tree along roadsides and openings, and in riparian areas. They

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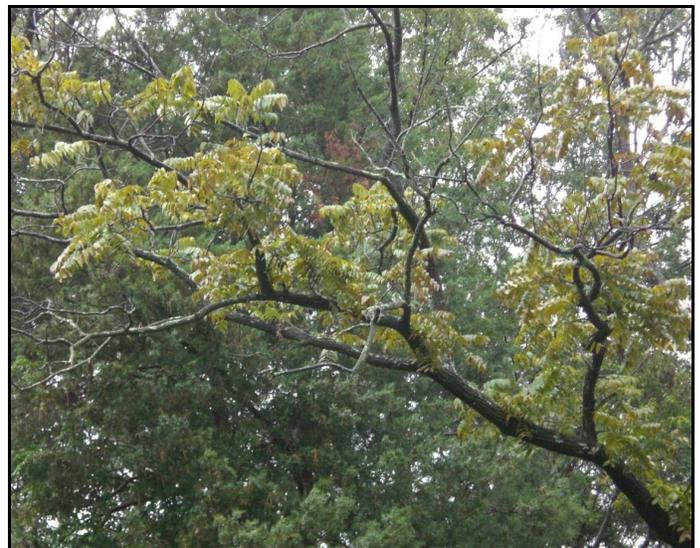


Figure 1: TCD infected trees in Virginia with bronzed foliage and tip dieback, common indicators of TCD.

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are not uncommon as yard trees. The sites with walnut appear to be marginal as expressed by tree growth and form: trees are limby, and shorter than would be expected under ideal growing conditions, based on their diameters.

TCD Status in Bucks County, PA:

TCD was discovered in Bucks County, PA in July of 2011. Pennsylvania immediately placed a quarantine on the county. Several trees on one property have been confirmed diseased. Very few beetles have been identified to date and no traps have been deployed. No delimitation survey has been implemented.

We did not visit the property with confirmed diseased trees, but we did examine a number of trees in the vicinity. We were unable to identify any beetles, however, we did see trees with dieback (this is not uncommon, even in TCD-free areas) and upon closer examination found what appeared to be *Geosmithia*-like brown stain in the bark. Given that

TCD Report (Continued on page 4)



ATTENTION MEMBERS:

Don't forget to renew your dues for 2012!

Chapter President's Message (Continued from page 1):

our land, while keeping it in forest, until the timber markets rebound.

Last year's Fall Meeting differed from most of our workshops, but received excellent feedback from the attendees. So, we are going to hold a similar event this year. We will be meeting at the Holly Hills Country Club on Thursday, November 10th for a fine meal and special guest presentations. The presenters at this year's meeting will be Craig Highfield, of the Forestry for the Bay Program, and Dan Rider, of the Maryland DNR Forest Service.

Craig Highfield will tell us all about non-timber forest product opportunities that the Forestry for the Bay program has been researching and implementing. These include Ginseng and Shitake mushroom growing, carbon and other ecosystem markets, and the Bay Bank and Landserver online management tools.

Dan Rider has spent several years researching the details and viability of wood-based bio-energy and woody biomass utilization. He will be sharing with us his findings and predictions for the future of this resource. Dan will also take time to tell us about agroforestry, and the opportunities it may provide for you.

In these uncertain times, there's one thing you can be certain of – you do not want to miss this year's Fall Meeting. An announcement and registration flyer for the meeting is enclosed with this newsletter. I hope that all of you can free up the evening of November 10th and join us for good food, great company, and valuable information.



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we were unable to find beetles or even obvious signs of beetle galleries, we were somewhat perplexed. There did appear to be small pits in the stained areas, suggesting possible beetle probing and perhaps the introduction of a fungus. The stain was not present on all areas of a branch, or all the parts of the trees we examined. We also thought the discoloration might be a characteristic of walnut bark itself. To test this theory we sampled trees far removed (in Chester County) from the area where TCD has been confirmed in Bucks County and found no signs of TCD cankering. At this time we are uncertain if we were observing the *Geosmithia morbida* component of TCD, since culture positives from these samples were not taken. We certainly did not find the walnut twig beetle, galleries, or exit holes.



Figure 2: Unidentified stain on branches near Doylestown, PA

Walnut is an extremely common volunteer tree along highways, fence rows, edges of woods, and just about everywhere one looks while driving down the road. It was also very common as a yard tree in neighborhoods with mature trees. Our impression was that in southeastern PA, Walnut might just be the most common roadside tree, along with Green Ash and Tree-of-Heaven.

Conclusions:

1. Walnut is very common tree in the areas where TCD has been confirmed. Eradication is not an option regardless of how early an infested tree is discovered, especially if a tree is symptomatic, since it can take 6-10 years for a tree to become symptomatic.
2. The Richmond, VA infestation has been active for decades and the beetle appears to be able to spread easily and naturally, with high host density.
3. Bronzing and wilted foliage, when present, seem to be the only consistent diagnostic symptom.
4. The lure and funnel trap may be the most effective and efficient detection tool at present.
5. The Richmond infestation appears to have older diseased trees in the center of a 50 mile radius area of infestation suggesting a single source origin of infestation or outbreak.
6. It is still unknown if TCD occurs on interior forest trees or what the epidemiology of TCD might be on interior woodland walnut in the native range. Most of the trees observed with TCD in both VA and PA are edge trees, marginal trees, yard trees or open grown trees.
7. The walnut twig beetle is difficult to identify in the field, so field diagnosis in the absence of a lure/trap as the main survey tool is not practical. Therefore, collection of samples from suspect trees or non-symptomatic sample trees becomes necessary and expensive.
8. Identification of signs in the field is difficult in newly infested areas.
9. All surveys at this point should focus first on identifying the presence of the beetle, and then on confirming the presence of *Geosmithia morbida*.

TCD Report (Continued on page 5)



Figure 3: Lindgren funnel trap with lure packet, deployed near a TCD confirmed walnut tree in the Richmond, Virginia area. The lure packet can be seen attached to the outside of the trap about halfway down from the top.

TCD Report (Continued from page 4)

Recommendations:

1. Immediately deploy the existing lure and funnel trap to delimit known populations (in PA)
2. Continue to trap beetles through fall until they are no longer present to determine when overwintering begins, and begin trapping in late winter to ascertain the onset of spring emergence.
3. Continue to improve the lure pheromone formulation parallel with current deployment, and implement trapping as part of a general survey protocol immediately.

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Re-Establishing the Butternut Tree

Reprinted from the Hardwood Tree Improvement and Regeneration Center Newsletter

The mission of HTIRC with respect to butternut is to make *locally adapted, canker-resistant butternut available to landowners and forest managers in the Central Hardwoods region of the United States*. The most likely way for us to accomplish our mission will be by breeding disease-resistant (or disease-tolerant) butternuts, and deploying them as grafted clones in seed orchards. Ideally, these seed orchards will be regional or even state-wide. Thus, each state or region would have a butternut seed orchard—a group of adapted trees that cross with each other to produce seeds that could be planted directly or planted into a nursery for the production of seedlings. The seed orchards might be maintained by a public agency (such as your state's Division of Forestry), by a nonprofit, or by a private nursery. Our goal is to have select, disease resistant or disease-tolerant planting stock for butternut available as widely and as inexpensively as possible. We also want to make sure that once seeds or planting stock are available, there will be clear and effective guidelines for planting and managing young trees. This is the kind of research that is our focus at HTIRC. HTIRC is ready with expert advice and support for agencies or other groups that need help collecting or propagating butternut.

HTIRC researchers, staff and students have been working with landowners and other scientists on butternut almost since its establishment in 1999. Ongoing or recently completed research at HTIRC related to butternut includes:

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TCD Report (Continued from page 5)

4. Attempt to isolate *Geosmithia* from stain that is present in branches on trees in the Bucks County area.
5. Hold multiple local training sessions on recognizing field signs and symptoms, and laboratory identification protocols. Visiting numerous confirmed TCD sites to see and better understand the site, host, and pest characteristics is advised.
6. Accelerate a public information campaign with non-traditional wood and tree constituencies: specialty wood workers and turners, internet walnut wood purveyors and buyers, independent tree service firms, Hispanic tree service employees, etc.
7. Acquire and disseminate sterilized branch material showing cankering and galleries to aid in detection surveys (for example, like the EAB kits).
8. Immediately begin deploying traps on interior forest trees and begin to observe the etiology of TCD on any trees (if) found to be infested there.



Got E-mail?

Occasionally we have timely information to share with you. If you have an e-mail account, but have not received any e-mails from us this summer, that means we don't have your current address. If you would like to be included in the e-mail news list, please send an e-mail to David Robbins at: [drobbins@dnr.state.md.us](mailto:d Robbins@dnr.state.md.us).

We promise not to clutter your inbox!

Butternut (Continued from page 5)

- Studies of the growth of butternut and hybrids in mixed hardwood plantations.
- Studies of the efficiency of photosynthesis and water use of butternuts and hybrids, with a focus on stress tolerance and site preference.
- Studies of the disease process and mechanisms of disease resistance in butternut and hybrids.
- Studies of the ecology and genetic diversity of butternut in Great Smoky Mountains National Park.
- Development of genetic tools for identifying butternut hybrids and for understanding the extent of hybridization between butternut and Japanese walnut.
- Results from inoculation trials investigating the resistance of butternuts and hybrids and the effects of fungal strain on canker disease development.

Butternut (Continued on page 7)



Scions from butternuts identified as candidate resistant trees are grafted onto black walnut rootstock by staff at HTIRC.

Butternut (Continued from page 6)

We are a long way from achieving our goals for butternut. But with this letter and attachment, I want to emphasize the importance of your contribution to butternut's future. Although the management of butternut on public lands in the U.S. is vitally important, most butternuts grow on private land, and most of those who care about sustaining butternut are private landowners. To serve private landowners, HTIRC has tried to emphasize the practical, even as its researchers have tackled important basic science questions about butternut and butternut canker disease.

Those of you who live in the U.S. may not be aware that butternut has been listed as an endangered species in Canada for several years. As a consequence, scientists in the U.S. and Canada have been working together to try to solve the most important practical questions related to butternut, butternut canker, and butternut recovery. Below are some of the Canadian websites:

http://www.rvca.ca/programs/green_acres/butternut/BNR_2010.pdf

http://www.ontariostewardship.org/councils/northsimcoe/files/FGCA_ButternutPamphlet.pdf

What can each of us do to help? Here are several suggestions:

1. Learn more about forest management, reforestation and tree planting. Consider contacting interest groups such as the Walnut Council (<http://www.walnutcouncil.org/>) or Tree Farmers (<http://www.treefarmssystem.org/>), contact local or statewide group of forest landowners such as the Indiana Forest and Woodland Owners (<http://www.ifwoa.org/>), contact your local forestry extension specialist (usually University-based, for publications from Purdue, go to <http://www.ces.purdue.edu/extmedia/fnr.htm>) or

contact a professional consulting forester (<http://www.safnet.org/>).

2. If you have butternuts on your forested property, consider managing them to encourage regeneration. Best practices for butternut management still involve a lot of guesswork, but there are a few publications that should help:

<http://www.extension.purdue.edu/extmedia/FNR/FNR-421-W.pdf>

http://www.na.fs.fed.us/spfo/pubs/howtos/ht_but/ht_but.htm

3. Contact your state's division of forestry to see if your state has any programs for identifying and sustaining butternut.
4. Eat butternuts—and tell others about them too. It may sound surprising, but one important way to help butternut is to get people excited about how good they are. A lively market for butternuts would result in a lot of butternut trees being planted.

Over the past 10 years, HTIRC has received thousands of butternut seeds from hundreds of landowners. These seeds are a living library and resource for studying butternut. They are extremely valuable, as they provide access to a large sample of the genetic diversity for butternut, and HTIRC invests considerable resources each year in their maintenance. Many of these seeds produced seedlings that spent a year at the Indiana State Tree Nursery in Vallonia and were then transplanted to study sites around the Midwest. We keep records related to the origins of these seeds so that we and future scientists can learn about how seed source affects tree growth and development.



2011 Maryland Chapter Officers:

President: David Robbins, Middletown MD, 301-371-0675, drobbins@dnr.state.md.us

Vice President: Vacant

Secretary/Treasurer: Phil Pannill, Sharpsburg MD, 301-739-7743, ppannill@hughes.net

Editor: Christina Robbins, Middletown MD, 301-371-0675, curvesmiddletown@aol.com

Past President: Allan Lowe, Taneytown MD, 410-756-2217, allanlowe2334@gmail.com

Regional Directors:

Southeastern: Jim Haerer, Dunkirk MD, 301-855-8067, midgie2@verizon.net

Central: Dave Earle, Woodbine MD, 410-489-7948, jdearle38@verizon.net

Western: John Treadway, Rocky Ridge MD, 301-271-7697, jhtreadway@gmail.com

Upcoming Events:

November 2 – Registration deadline for the Walnut Council Fall Meeting (see insert)

November 10 – Walnut Council Fall Meeting, Holly Hills Country Club, Ijamsville, MD (Frederick Co.)

October 21 – UMD Coop. Extension Workshop— Integrating Terrain Navigator with GPS for Natural Resource Professionals, Conservation Volunteers, and Woodland Owners. For details, visit: <http://www.naturalresources.umd.edu/>

October 25 – UMD Coop. Extension Workshop— Working in your Woodlands: Sustainable income opportunities. For more information, go to: <http://www.naturalresources.umd.edu/>

November 2 – UMD Coop. Extension Workshop— GPS Training for Natural Resource Professionals, Conservation Volunteers, and Woodland Owners. Visit <http://www.naturalresources.umd.edu/> for info.

January 17, 2012 – MD Forests Association Timber Tax Workshop. Go to www.mdforests.org for info.

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c/o Christina Robbins, Editor
210A West Green Street
Middletown, MD 21769**

