

# THE SHADE TREE

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A BI-MONTHLY BULLETIN DEVOTED TO NEW JERSEY'S SHADE TREES

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**Volume 93 – July - August 2020 – Issue 7 & 8**

## *This Issue Presents...*

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What Every Happened to Thousand Cankers Disease  
William J. Porter Community Tree Project Award  
Three Things You Didn't Know Trees Did for You

## **DIRECTOR'S DISCOURSE: WE'RE GOING VIRTUAL!!**

By Donna Massa

Hello NJ Shade Tree Membership! I truly hope that this newsletter finds each and every one of you well during these uncertain times. Considering the health and welfare of our membership, our speakers, and the staff at the Crowne Plaza, the Executive Board has decided to take the 95th Annual Conference VIRTUAL. These are uncharted territories for all of us! Be sure to check our website at [www.njstf.org](http://www.njstf.org) and read our newsletter for continued updates regarding the status of the conference as we develop a virtual platform and provide you with an outstanding virtual conference! It is through our website and our newsletter that we will be sure to keep you informed of our developments and to educate you on how to attend a virtual conference.

The conference will be held virtually during the week of October 19-23, 2020. We have expanded the length of the conference and will schedule presentations throughout the entire week to allow flexibility for attending and viewing.

We will continue to offer NJ Forest Service Urban & Community Forestry program (NJUCF) CORE Training. Because the conference is VIRTUAL this year, registrants have the unique opportunity to attend NJUCF CORE Training as well as the NJ Shade Tree Federation Conference General Sessions all under one registration! Become NJUCF CORE trained, AND access all sessions of the conference to earn NJUCF Continuing Education Units (CEUs) toward municipal and county NJUCF Accreditation all at the same conference! We cannot offer this opportunity in the physical world!

NJUCF CORE training provides a solid foundation for understanding urban and community forest management in NJ including the legal aspects of shade tree commissions, advisory bodies, and NJUCF Accreditation, as well as the biology of trees, identifying tree risk, and proper tree planting. At least one

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municipal employee and one volunteer working with the tree and forest resource must be CORE trained; however, no NJUCF CEUs can be earned for participation in CORE. It is the foundation you need for the courses that will earn you CEUs.

DPW, ISA, LTE, and LTCO credits are available through NJUCF Core Training. Look for details about NJUCF CORE training in this year's program which is scheduled to be released toward the end of August.

If you are interested "CORE and CONFERENCE," here's how the program will work. When you register and indicate you will be taking "CORE and CONFERENCE," you will be sent a link to access the CORE program from the Rutgers Urban Forestry Program. You will also have access to the NJ Shade Tree Federation conference during the week of October 19-23. There are 6 one-hour sessions for CORE that will be pre-recorded provided through Rutgers and available for you to watch at your own pace from October 1 through October 19. These sessions must be completed by October 19. There will then be 4 one-hour discussion sessions during the week of the NJ Shade Tree Federation Conference that you must attend in order to be fully NJUCF Core trained. There will be 2 time slots offered for your convenience to choose from for your mandatory discussion session on the Tuesday, Wednesday, Thursday, and Friday of the conference. You must attend one discussion on each of those four days to complete the training. Your registration allows you to attend these discussion sessions as well as all other presentations at the NJ Shade Tree Federation Conference. **COMPLETION OF THE 6 ONE HOUR SESSIONS AND ATTENDANCE AT 4 DISCUSSION SESSIONS IS REQUIRED IN ORDER TO RECEIVE YOUR CORE CERTIFICATION.** Attend other presentations during the week of the conference and earn NJUCF CEUs as well!

This year's virtual conference is expected to allow you to earn educational credits from NJ Community Forestry and obtain Community Forestry CORE certifications. LTE and LTCO credits are expected to be awarded by the NJ Board of Licensed Tree Experts as well as from the State of Maryland. Earn other certification credits from the DEP Pesticide Control Programs in New Jersey as well as New York and Pennsylvania. Lastly, don't forget credits earned from the NJAISA, the Public Works Association, and the Society of American Foresters. Make sure your municipality remains in good

standing with the State of New Jersey as well as other states and keep your licenses current all at one conference.

The Sessions of the virtual conference continue to host talented speakers who have the knack to engage an audience's interest and relay information that each of us can bring back to our businesses and/or communities.

Dr. Daniel Herms of Davey Tree Expert Company will address the membership on "Climate Change and Arboriculture: As Earth Warms, Trees Feel the Heat." Earth temperatures has warmed sharply in recent years with impacts on tree growth and physiology, distribution of species, pest pressure and plant health care practices that are already apparent. This presentation will explore the impacts of ongoing climate change for arboriculture and urban forestry that are already apparent, projected impacts of future warming and the steps required to limit these impacts, including the potential for urban forests to mitigate climate change.

Dr. Herms will also address "The Future of Tree Health: Challenges and Opportunities." The history of commercial tree health care has been characterized by great progress but also unfulfilled promise. For example, host plant resistance has long been recognized as an ideal pest management tactic, yet there are few examples of selection or breeding for pest resistant trees. Invasive species will continue to threaten urban forests into the foreseeable future, as will climate change. Tree Health Care as a concept, adopted to minimize nontarget and other environmental impacts of pesticides, continues to evolve. Promising technology on the horizon includes management of key pests via gene silencing and internet-connected environmental sensors. The foundation of tree health will continue to rest on fundamental physiological and ecological principles.

Dr. James Clark of Bartlett Tree Experts joins us and will present "Managing Trees During Construction." What role does an arborist have during the construction process? This presentation will discuss the development process with a focus on the construction phase. It will highlight the important roles that the arborist has in preserving trees and getting the project built.

The 10th edition of the Guide for Plant Appraisal was published in 2018. Dr. James Clark will also provide us with a "Tree Appraisal Update." This presentation will highlight the contents of this new edition as well as the key changes from the 9th edition.

Dr. Doug Tallamy from the University of Delaware joins us to discuss "Nature's Best Hope." Recent headlines about global insect declines, the impending extinction of one million species worldwide, and three billion fewer



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birds in North America are a bleak reality check about how ineffective our current landscape designs have been at sustaining the plants and animals that sustain us. Such losses are not an option if we wish to continue our current standard of living on Planet Earth. The good news is that none of this is inevitable. Dr. Tallamy will discuss simple steps that each of us can-and must-take to reverse declining biodiversity. He will explain why we, ourselves, are nature's best hope.

Dr. Tallamy will provide us with "A guide to restoring the little things that run the world." A recent UN report predicts that as many as 1 million species will disappear from planet earth because of human activities. Many of these are insects and nearly all species at risk rely on insects. Insects have already declined 45% since 1974. The most alarming part of this statistic is that we don't seem to care, despite the fact that a world without insects is a world without humans! So how do we create beautiful landscapes brimming with life; landscapes that support the pollinators, herbivores, detritivores, predators and parasitoids that run the ecosystems we depend on? Dr. Tallamy will remind us of the many essential roles insects play, and describe the simple changes we must make in our landscapes and our attitudes to keep insects on the ground, in the air and yes, on our plants.

Dr. Lara Roman, Research Ecologist from the Forest Service, Philadelphia Field Station, Northern Research Station, will join us to discuss "Tree Death in Cities: A Review of Urban Tree Mortality Literature." Urban tree mortality research is on the rise, with dozens of studies published over the past few decades. This presentation will provide an overview of the state of the science on urban tree death. A recent literature review of over 50 studies revealed a mix of study designs, including tracking cohorts of planted trees and tracking uneven-aged groups of trees with repeat inventories. Typical annual mortality rates for planting cohort studies can be used to construct survivorship curves, showing middle-of-the-road performance as well as above-and below-typical survival. The literature shows a strong link between stewardship and maintenance and tree survival. Yet some factors which are likely important, like soil quality, household characteristics and program governance, are rarely studied. New mixed-methods studies that shed light on the intersecting biophysical and social forces impacting urban tree mortality will also be discussed. Lastly, the audience will be introduced to new urban tree monitoring guides from the USDA Forest Service, which will help local urban forestry professionals to carry out their own monitoring projects.

Dr. Ann Gould from Rutgers, The State University, will update us on tree diseases we are seeing. Beech leaf disease has become a topic of concern in the NJ Forested regions as of late. This and other current issues surrounding New Jersey's regions will be discussed.

Allyson Salisbury joins us to share with us her thoughts on Tree Root Biology. It's easy to spend a lot of time admiring the aboveground half of a tree, but we can't forget about what is happening below ground. There's a lot happening under our feet that is critical for tree growth and health. Learn about the fundamentals of tree root biology - how they grow, where they grow, and why. Discover how principles of root biology inform and guide best management practices for planting and caring for trees in the built environment.

Geoff Kempner of Asplundh Tree Expert will discuss "Incidental Line Clearance: Working Within the BMPs for Utility Pruning of Trees" and Art Laster of Plant Detectives will review "How to Properly Specify Plant Material".

This year we are introducing a panel discussion on "What Can You Do as a Municipality and When Should You Reach Out for Help." John Anlian, Esq. will have input on legal aspects, Neil Hendrickson sits on the Shade Tree Commission in Readington and will have input from the municipal point of view, John Linson of The Shade Tree Department is an LTE who consults with municipalities and will have input from a tree professional's point of view and Steve Chisholm, Sr is a current member of the Board of Licensed Tree Experts and will have input from the point of view of the Board of Licensed Tree Experts.

We have a plethora of talent ready, willing and able to share their expertise with you. Take advantage of all that the NJ Shade Tree Federation VIRTUAL conference has to offer. It will be time well spent!

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## **WHAT EVERY HAPPENED TO THOUSAND CANKERS DISEASE**

By Jackson Landers: The Forestry Source, June 2019, Vol. 24, No. 6

The first case of thousand cankers disease in the US were reported in 2001 in New Mexico. A fungus, *Geosmithia morbida*, was carried by some tiny walnut twig beetles into a walnut tree, where they reproduced and chewed tunnels. As the beetles spread through the tree, small cankers appeared beneath the bark like chicken pox.

The sheer number of cankers over-whelmed the walnut tree as summer heated up, resulting in its death and the start of a disease that many researchers warned could wipe out North American walnuts. Rifle manufacturers snapped up blanks for gunstocks, fearing the supply for their preferred material would disappear. Economist projected massive potential losses.

Eighteen years later, a lot of trees have died, but the walnut apocalypse

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clearly has not come to pass as projected. According to the USDA's Animal and Plant Health Inspection Service, walnut mortality has occurred in the West in Arizona, California, Colorado, Idaho, New Mexico, Oregon, Washington, and Utah and as well as in the East in North Carolina, Pennsylvania, Tennessee, and Virginia. What happened, and is the US really out of the woods?

A substantial body of research by scientists from throughout the US has recently shown that some initial assumptions about *G. morbida* were wrong. Originally, many people assumed that the beetle and fungus were each an invasive species and that this was the same sort of invasive dynamic witnessed with the gypsy moth and, more recently, with the emerald ash borer. A recent paper in PLOS One by scientists from Colorado State University, Purdue University, and the US Forest Service states that *G. morbida* is native to the US, as shown by the robust genetic diversity found in the researchers' samples (see [tinyurl.com/y6jvcyzq](http://tinyurl.com/y6jvcyzq)). Invasive species usually show a genetic bottleneck in their population stemming from a single contaminated shipping container or similar pathway that brought the invader in.

The beetle and fungus seem a lot less scary than they did a few years ago. The swarms of beetles largely disappeared from the eastern US once the walnut trees regained their health, although the fungus would also be capable of hitching a ride on any other beetle that emerges from a dead walnut branch.

So, if the beetle and the fungus are native, why did they suddenly start killing walnut trees:

The answer seems to be temperature, rainfall, and climate stress.

“It seems that in the eastern US, where the black walnut is native, the trees were stressed out by a series of unusually hot and dry years,” says Jiri Hulcr, associate professor of forest entomology at the University of Florida's School of Forest Resources and Conservation. “When more-favorable weather returned, the disease essentially disappeared. In the West, where the walnut is planted and the conditions are dry by default, the stress persists and, therefore, thousand cankers disease continues to be a problem.”

Walnut twig beetles and *Geosmithia* probably lived unobtrusively on several species of walnut tree for at least a century without causing problems. But according to Keith Woeste, a geneticist and one of the lead authors on the *Geosmithia* genetics paper, the tendency of people to plant more walnut trees in the 20th century set the stage for thousand cankers disease to not only occur but also to spread.



“Then things changed: Humans started changing the density of walnut in the West, they introduced new species [of walnut], and they moved the insect from place to place, enabling it to overcome the large inhospitable distances in the West that separated hosts. If the beetle population in one area exploded and got totally out of control, then all the hosts would die and the beetle would die, too. So, in those circumstances, beetles and hosts evolved to live in balance, neither getting the upper hand.”

All known species of *Geosmithia* can potentially be transported from tree to tree by various species of beetle. So even areas without walnut twig beetles could eventually experience outbreaks of something like thousand cankers disease if climate conditions allow it.

A team within Hulcr’s lab, led by Yin Tse Huang, recently published a paper in *Fungal Ecology* demonstrating that they have discovered at least four additional species of *Geosmithia*, closely related to *G. morbida*, in American forests.

Hulcr thinks that American foresters need to continue to be aware of both the walnut twig beetle and its fungus. The two have been introduced to Europe and will pose a threat anywhere walnuts are grown in hotter, drier conditions than their ideal native climate. That could also include future outbreak in parts of North America.

The other new *Geosmithia* species could become an issue as well.

“I would be on a lookout regarding species that are host-tree-specific,” Hulcr says. “Those can prove to be opportunistic pathogens on their respective hosts, just as other beetle-borne fungi did before.”

In the event of a future outbreak, foresters should be cautioned that there is currently no pesticide or other treatment recommended to save infested walnut trees. Trees exhibiting thousand cankers disease should be destroyed onsite to prevent further infestations, and an extension agent should be contacted for advice on safely managing a salvage harvest.



# **WILLIAM J. PORTER COMMUNITY TREE PROJECT AWARD**

**The NJ Shade Tree Federation is pleased to announce a new funding opportunity in honor of past NJSTF Executive Director, Bill Porter!**

**Application deadline is September 30th**

In addition to the William J. Porter Arboriculture Scholarship for students, the NJ Shade Tree Federation is now offering the opportunity for our NJSTF member communities to apply annually for the William J. Porter Community Tree Project Award. This award is intended to provide up-front funding for a small project to benefit the tree resource in your community. There will be one awardee per year. Details are as follows:

- Up to \$2,500.00 per award depending on availability of funds
- Project funds provided upfront upon receipt of the award (this is not a reimbursement grant)
- Project funds can be awarded to a municipality or tree organization working within their municipality (organization must have capability to accept funds – no checks to individuals)
- Awardee must be a current member of the NJ Shade Tree Federation

Go to our website at [www.njstf.org](http://www.njstf.org) to download the application.

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## **THREE THINGS YOU DIDN'T KNOW TREES DID FOR YOU**

By Morgan Lynch: Conservation International, March 21, 2018

Without forests, life on Earth as we know it would be unthinkable. Regular readers of this blog know that forests are home to a wealth of biodiversity, that they provide water for billions of people and regulate the climate for everyone.

But did you know that they can make you smarter? Or that — scientists think — they can drive rainfall? In honor of International Day of Forests, Human Nature looks into some of the benefits of forests that you might not know about.

### **1. Trees increase property values.**

Selling your house? Consider planting some trees.

In 2007, economists who analyzed home sales in Portland, Ore., found that homes with trees near the street sold for about US \$7,000 on average more



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than homes without them — adding about 10 percent to a property’s value, according to the U.S. Forest Service. For its part, Arborist News found that the presence of larger trees in yards can add up to 15 percent to home values.

Meanwhile, the U.S. Department of Agriculture, in a recent report on trees in California, called the effect of street trees on property values “the single largest benefit in California,” averaging more than US \$90 per tree.

**2. Trees make students smarter.**

Students with trees outside school windows have higher test scores and graduation rates, according to a 2014 study. Scientists compared the performance of elementary school students in Massachusetts with the amount of greenery in their surroundings using satellite imagery. They found that the students exposed to more greenery performed better in English and math when they ruled out socio-economic factors and language barriers.

The effects of greenery on health and productivity are well-documented: From patients who recovered from surgery faster in the presence of trees, to office workers who performed better in the presence of house plants, trees have undeniably positive effects on humans.

**3. Trees cool you down.**

The effects of greenery on health and productivity are well-documented: From patients who recovered from surgery faster in the presence of trees, to office workers who performed better in the presence of house plants, trees have

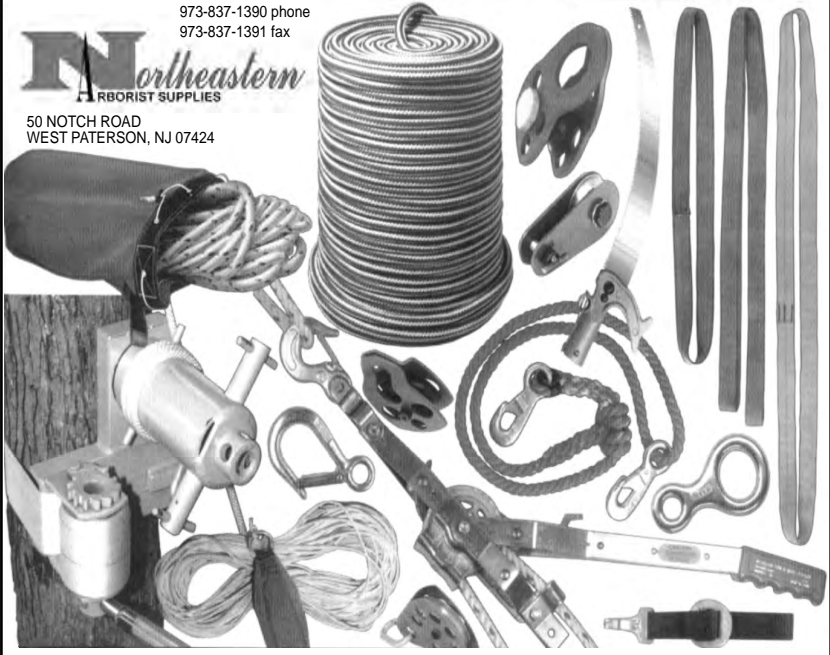
The net cooling effect of a young, healthy tree is equivalent to 10 room-size air conditioners operating for 20 hours a day. According to the American Power Association, effective landscaping can reduce a home cooling bill by up to 50 percent. All it takes? Planting trees that shade the house from sunlight during the hottest hours of the day. In addition, trees planted along streets, sidewalks and parking lots can help to absorb light energy and evaporate water.

<p style="text-align: center;"><b>SAVE THE DATE:</b> <b>Virtual Annual Meeting of the NJ Shade Tree Federation</b> <b>Oct 19-23, 2020</b></p>
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