



\$\$ Available

PAGE 3



Safety Corner

PAGE 8



OTCC

PAGE 10



Earn CEUs at Home

PAGE 20



# THE BUCKEYE Arborist

○ VOLUME 51, NO. 1    ○ JANUARY/FEBRUARY    ○ 2020

*Ohio Chapter International Society of Arboriculture*  
[www.ohiochapterisa.org](http://www.ohiochapterisa.org)

## Local Roots, Global Reach

Details  
Inside



## Ohio Tree Care Conference

February 25 - 27, 2020

Dayton, OH



## President's Branch

By Tyler Stevenson



### 2020 Vision

While 20/20 eyesight may be a prerequisite for becoming an astronaut, it is not required to develop a 2020 Vision. The beginning of a new year often lends time to reflect on our personal and professional challenges, defeats, and accomplishments and how they have set a trajectory for the next year ahead. It is a great time to create or revise your personal vision of who you want to be in the coming years.

What are your career goals for the next decade?

Supervising the crew? Leading your own company? Or retiring near the ocean? What skills, values, and connections will you need to accomplish those goals and make a positive difference in our profession?

Our Chapter's network of professionals and diverse opportunities for education and advancement is where you can begin or continue acquiring those skills and connections to make the next decade your vision realized. The Wright brothers' vision for human flight and NASA's ambitious vision for human missions to Mars can only be accomplished by individuals that set the bar beyond their perceived reach. It will be up to you to create that moonshot vision of your full potential and take the necessary actions to turn one small step into a giant leap.

We hope your 2020 Vision includes a trip to the Wright brothers' hometown of Dayton in February for the 23rd Annual Ohio Tree Care Conference. The anchor city of the Miami Valley has not conceded to the tragic events of 2019. They are Dayton Strong, and they are excited to welcome back our community of arborists in February. You can expect the excellent continuing education, inspirational speakers, valuable networking opportunities, and camaraderie we find each year at

*cont. on page 2*



Ohio Chapter International  
Society of Arboriculture  
**2019-2020 Board of Directors**

**Tyler Stevenson – President**  
ODNR Division of Forestry  
Columbus, OH

**David Bienemann – Vice President**  
City of Hamilton  
Hamilton, OH

**Virginia Bowman**  
FirstEnergy/The Illuminating Co.  
Brecksville, OH

**Scott Conover**  
City of Upper Arlington  
Upper Arlington, OH

**Dale Hopkins**  
AEP Ohio  
Steubenville, OH

**Kevin Jones**  
ACRT, Inc.  
Akron, OH

**Sue Mottl**  
City of Stow  
Stow, OH

**Steve Schneider**  
The Ohio State University  
Ashville, OH

**Eric Davis – Past President**  
Tree Care, Inc.  
Dayton, OH

# THE BUCKEYE ARBORIST

## Publisher

Ohio Chapter International Society of  
Arboriculture  
PO Box 267  
Baltimore, OH 43105-9998  
Phone: (614) 771-7494  
Email: [info@OhioChapterISA.org](mailto:info@OhioChapterISA.org)  
Website: [www.OhioChapterISA.org](http://www.OhioChapterISA.org)

## Editor

Dixie Russell, CAE, CMP, Executive Director

## Contributing Editors

Joe Boggs, OSU Extension  
& Department of Entomology  
Kevin Jones, ACRT Inc.  
Keith Pancake, ACRT & Bermex  
Dixie Russell, Ohio Chapter ISA  
Tyler Stevenson, Ohio Department of  
Natural Resources

## Proofreading Editor

John Siefer, III

## Articles

Submit articles in Word format to the Editor at [info@OhioChapterISA.org](mailto:info@OhioChapterISA.org) for consideration. All articles are subject to technical review. Accepted articles may be edited for brevity, clarity and adherence to Chapter requirements and standards. Submissions must contain original work.

An ISA Certified Arborist in good standing may receive CEUs for work published in *The Buckeye Arborist*.

## Advertising

Acceptance and publication of advertisements, editorial copy or product announcements do not necessarily imply Ohio Chapter ISA's endorsement of said products or techniques, nor does it reflect the opinion of the Chapter regarding any such product or technique. *The Buckeye Arborist* reserves the right to refuse any advertisement that is deemed unsuitable for publication.

For advertising reservations and material deadlines, rates and data – as well as other Ohio Chapter ISA sponsorship and messaging opportunities – please contact the Ohio Chapter at [info@OhioChapterISA.org](mailto:info@OhioChapterISA.org).

## Ohio Chapter ISA

The **Mission** of the Ohio Chapter International Society of Arboriculture is to advance responsible tree care practices through research, technology and education, while promoting the benefits of trees.

The Ohio Chapter **Values** investing in the future of professional arboriculture through education, research, safety and communication, while maintaining integrity and credibility.

### *President's Branch Cont. from page 1*

this event. And I'm thrilled to welcome back Dr. David Nowak from the US Forest Service as our conference's keynote speaker. We will be standing on the shoulders of another giant in our industry and there's also a unique historical connection Dave shares with Dayton that I challenge you to figure out before his opening remarks.

As much as I'm looking forward to a Nowak knowledge bomb, I'm also stoked about our 2nd Annual Buckeye Beer Bash hosted this year by Tree Care Inc. at their shop in downtown Dayton. Our past president and acting treasurer, Eric Davis, has graciously opened his doors to our membership, arranged for transportation, and struck a deal with the local authorities. I envision this year's gathering will solidify it as the "can't miss" event of our annual conference for years to come. Despite this minor obstacle to an early morning start, I encourage everyone to attend the annual breakfast meeting the following morning to learn more about the nuts and bolts of our Chapter and network with the various committees that make our Chapter one of the best in the ISA. For me, it will be a bittersweet passing of the gavel to Dave Bienemann as he initiates his grand vision for this historic organization. So please, come ready to learn something new, make new and lasting connections, and develop your vision to be a leader in our industry. But most importantly, come ready to have a good time in Dayton!

Before the terminal bud of this final branch enters dormancy, I would like to extend my utmost gratitude to Dixie and Jennifer, our committee chairs and members, our board members and liaisons, and the contributing editors of this great publication for their significant dedication to our membership and the profession. I have been a member of a few organizations and committees over the years and the passion and commitment of our Chapter staff and membership is unparalleled. Thank you.

# Chapter \$5,000 Education Grant Available

**Deadline to Apply – March 15**

Established in 2012, the Ohio Chapter ISA Education Grant Program funds arboricultural education programs or projects within the state. The purpose of this grant is to increase the public awareness of and support the advancement of knowledge in the field of arboriculture and urban forestry to benefit people, trees and the environment. Successful grant applications must:

- Relate to arboriculture, urban forestry or related disciplines
- Serve a target population of 16 years of age or older
- Include a hands-on, interactive or experiential component
- Include a sound evaluation component to demonstrate program outcomes and impact

The Chapter's grant is administered by the TREE Fund. The grant application process is open to non-profit, charitable, municipal or educational organizations that can demonstrate tax-exempt status, are not engaged in partisan political or religious activity, and whose mission is consonant with TREE Fund's charitable purpose, including but not limited to, arboretums, public gardens, high schools, vocational schools, two-year colleges and four-year colleges which serve a target population of 16 years of age or older. Individuals may only apply for grants if they have such an organization as a fiscal agent, confirmed in writing on agency letterhead.

Projects are expected to be completed within one year. One \$5,000 grant will be awarded annually. No project may receive more than one award from this program within a two-year period. Grants will not be made to endowment or annual operating campaigns.

## Application Process

TREE Fund will accept applications only between January 15 and March 15, 2020. To apply, send an email containing a brief (no more than 100 words) description of your project title and concept to [treefund@treefund.org](mailto:treefund@treefund.org). TREE Fund staff will confirm eligibility for consideration, and if your concept qualifies, will send you a numbered application form for your use.

Upon completion of this application form, you will save a Word version for your records, then create a PDF version of the completed document with title in the format "Organization Name, Grant Program, Application Number" (e.g. "Organization, OCISA, #19-023"), and email it as an attachment to [treefund@treefund.org](mailto:treefund@treefund.org) with a PDF of key staff (if applicable) CVs. Staff will confirm receipt of your application at that time.

*cont. on page 4*



**100% Employee Owned**  
[www.pennline.com](http://www.pennline.com)  
724.887.9110

**PennLine®**  
Since 1940  
Celebrating **80** years.

**TREE AND RIGHT-OF-WAY**

Utility Line Maintenance // Right-of-Way Clearing // Herbicide Application // Storm Restoration // Mowing



In addition to contact and CV information for key staff, applicants will need the following information to complete the form. Note that word count limits are firm and absolute. Exceeding word counts may result in your application being rejected before review. Applicants should compose their text in Word or related systems that allow counts to be confirmed before they are placed in the application form.

### Project Description

- Overall Project Summary, Including Overarching Goals (400 Words Maximum): A brief statement of the current need that requires grant support, how the project will meet that need, and what the expected goals of the project would be.
- Description of Measurable Outputs/Outcomes (250 Words Maximum): Include a list of the tangible outputs (publications, extension/outreach materials, posters, etc.) from this project and identify up to five measurable outcomes (real changes in the population served by the project) that are expected to result from work proposed.
- Project Work Plan (1,500 Words Maximum): Clearly define the scope and structure of the project, including design, methodology, and analyses.
- Dissemination, Sustainability and Replication Plans (300 words maximum): A brief description of activities and outlets used to share the results of this project, sustain the project after TREE Fund support is completed, and/or replicate the project successfully in other communities.

### Budget Elements, Including:

- Institutional Compensation, Stipends and Benefits
- Travel and Transportation
- Equipment
- Other Materials and Supplies (e.g. Paper, Ink, Etc.)
- Contract Labor (Consultants, Speakers, Etc.)
- Institutional Overhead (Maximum 10%)
- Other/Miscellaneous
- Cash or In-Kind Funding from Other Sources (Minimum 10%; unrecovered institutional overhead may be applied to meet this minimum)

### Evidence of Organizational Financial Health:

From your three most recent IRS Form 990s (or similar accounting documents), you must provide the following information for your current and prior two fiscal years:

- Total Expenses
- Revenue Less Expenses
- Year-End Net Assets or Fund Balances

### Criteria for Selection

Staff will screen all applications for applicant eligibility, word counts, alignment with TREE Fund and Ohio Chapter missions, and compliance with minimum requirements, then forward compliant applications to TREE Fund's Education Committee. Members of this committee will score your proposal as follows:

- Qualifications of the team: 10 points
- Potential impact of the project: 25 points
- Approach: 35 points
- Dissemination, Sustainability and Replication Plan: 10 points
- Feasibility: 15 points
- Discretionary: 5 points.
- Total Maximum Possible Score: 100 points

TREE Fund does not discriminate on the basis of race, color, creed, gender, sexual orientation, disability or national or ethnic origin. Current trustees of TREE Fund or any member of the family of any such trustee are ineligible to receive grants from TREE Fund.

### Award Process and Funds Distribution

Recommendations on grant awards will be presented by the TREE Fund Education Committee to the TREE Fund Board of Trustees for approval in May 2020, and grant recipient(s) will be notified in writing within two weeks of Trustee approval. A Grant Agreement form that includes a report and payment schedule will be provided with award notification. It must be completed within two weeks of notification and returned to TREE Fund with all required supporting documentation.

Applicants are most strongly encouraged to review the sample Grant Agreement form (<https://treefund.org/research/grant-recipient-resources>) with their employers' financial or grant management offices prior to submitting an application, to ensure that the Agreement forms can be signed expeditiously upon receipt. Potential difficulties with Agreement terms that are identified during the application process may be considered and negotiated more favorably than those presented after the grant award process.

## Free Member Benefit

By Mark A. Webber BCMA, CPH, LTE, MArborA, OCMNT, TPAQ, TRAQ

The Ohio Chapter ISA wants to connect you to the consumers and buyers of arboricultural services. Your membership in the Ohio Chapter can increase your exposure to potential consumers of your services and improve your financial bottom line. However, before new clients can find you, YOU need to be signed up to be seen and found by potential Ohio tree care clients.

### Potential Buyers Are Looking For YOU... But How Will They FIND You?

In 2018, the Ohio Chapter adopted and initiated a marketing plan that successfully completed a difficult task by getting legislation passed in the Ohio General Assembly that our Chapter had its very own specialty license plate. That license plate is now being sold and placed on vehicles all over Ohio. The "Trees4Ohio.org" license plates are mobile billboards and are now being seen along Ohio roadways 24 hours a day, 7 days a week. Consumers also hear and see the Trees4Ohio.org message daily on radio stations all across the state, as well as on social media outlets. Your Ohio Chapter ISA is telling the story that proper tree care matters and that the best choice is an ISA Certified Arborist.

### Increase Your Exposure To Potential Clients By Being Part of the Trees4ohio.org Message

If you are an ISA Certified Arborist, you have achieved and have exceeded the International Organization for Standardization (ISO 17024). To have earned an ISA Certified Arborist credential, you have been trained and are knowledgeable in all aspects of arboriculture. Your Ohio Chapter ISA

*cont. on page 6*



# TreeMec® Inject

## Emamectin Benzoate in one-quart bottles

Designed to be used with high volume tree injection devices that meet the label and dose requirements for the control of listed insects and mite pests.



**Emerald Ash Borer**



**Ambrosia Beetle\***



**Gypsy Moths**



**Japanese Beetles**



**Winter Moth**



**Bagworm**



**Conifer Mites\***



**Honeylocust Plant Bug**

TreeMec Inject can be used as formulated or diluted with water (low, medium, medium-high and high rates).

*See the label for a full list of pests controlled.  
\*Not registered for use in California*



888-557-2455  
BannerSales360@gmail.com  
www.bannersales.net



# i-Tree Returns to Dayton Roots

More than beauty and shade, trees work hard for us all. i-Tree software ([www.itreetools.org](http://www.itreetools.org)) explores how trees improve the environment in communities big and small, urban and rural... even in your own backyard!



Featured speaker at this year's Ohio Tree Care Conference is David Nowak. Dr. Nowak is a senior scientist and team leader with the USDA Forest Service in Syracuse, NY. He received a B.S. and M.S. from SUNY College of Environmental Science and Forestry and a Ph.D. from the University of California, Berkeley. His research investigates urban forest structure, health, and change, and its effect on human health and environmental quality across the world. He has authored over 325 publications

and leads teams developing the i-Tree software suite that quantifies the benefits and values from vegetation.

i-Tree is a suite of freely available software tools developed through a collaborative public-private partnership. The tools are designed to be accessible and easy-to-use, aiding urban and rural land managers, and the general public, in:

- Assessing and monitoring their local forest resource
- Understanding the services and values provided by trees and forests
- Evaluating risk to forest and human populations
- Developing sustainable forest management plans
- Improving environmental quality and human health
- Selecting appropriate tree species and locations
- Engaging stakeholders and public audiences

The vision of this program is to improve forest and human health

through easy-to-use technology that engages people globally in enhancing forest stewardship and resiliency. Attend the general session on Tuesday afternoon when Dr. Nowak will present the latest information on the various i-Tree tools, including how and why to use these tools.

## *Free Member Benefit Cont. from page 4*

marketing committee is spreading the word about the value of Ohio ISA Certified Arborists, and consumers are looking to find you. But, how do consumers of tree services find and choose you and your business over others who claim to be the so-called tree experts or qualified that are not members of the Ohio Chapter?

The answer for you to have more clients is...

### **Be a Part of the Ohio Chapter's Marketing Message on [Trees4ohio.org](http://Trees4ohio.org)**

No matter if you are a tree removal contractor, a consultant, utility line-clearance arborist, municipal arborist, plant health care provider, expert witness, an arborist, or a consulting arborist, consumers are hungry and looking for qualified, knowledgeable ISA Certified Ohio tree experts like yourself. The Ohio Chapter ISA wants to help you grow your business and help you advance in your profession by connecting consumers to YOU.

### **Signing Up for "Find An Arborist" is a Free Member Benefit**

But to grow your business and connect you with potential customers, you need to enroll at the Ohio Chapters website (<https://www.ohiochapterisa.org>) so that potential clients can compare and find you by the click on an electronic device. Take advantage of your yearly \$45 Chapter membership benefit that costs you just a mere 12 cents per day for YOU to be put forth as an industry leader and a "True" Ohio Tree Expert by being part of [Trees4Ohio.org](http://Trees4Ohio.org).



**At Asplundh**, we have always equipped our workforce with the tools, knowledge, and support to ensure a strong safety culture and secure workplace, including:

- **Safety Management Process**
- **SafetySuite**
- **TapRoot®**

**ASPLUNDH.COM ■ 1-800-248-TREE**



# TREE Fund Update

## 2019 Year in Review

By Kevin Jones, Team Ohio Captain

Greetings Ohio Chapter ISA and TREE Fund supporters! Winter has set in, and for many of us it is a time to reflect on the year that we had as we move into 2020. As I reflect on the activities of TREE Fund and the Ohio Chapter, we have a lot to be thankful for. This year was a big change for me as a TREE Fund volunteer. Beth Buchanan, who many of you know well, asked me to take over the reigns as the Captain of Team Ohio. She wanted me to oversee our fundraising, support the TREE Fund's message, and organize others in our Chapter to join the team. To say that Beth is great at fundraising, at supporting the TREE Fund, and organizing others is quite possibly the understatement of the year. She is not only great at those things; she is the best. And so, to start our update, it's important to understand that I had some big shoes to fill, and the bar had been set high. But the great thing is that Beth left me a great support system that she had built over the last several years. We have a Chapter membership that understands the importance of professional tree care and believes in the mission of the TREE Fund and how it advances our industry. The TREE Fund supports research and educational programs that benefit commercial arborists, municipal arborists, utility arborists, parks departments, community engagement in our urban forests, and the list goes on.

We started the year with the Ohio Tree Care Conference in Sandusky during a crazy winter windstorm that threatened tree failures all over the state. Despite the weather, we had generous contributions from exhibitors and Chapter members at the conference. Maggie Harthoorn from the TREE Fund came to Sandusky to give our membership an in-person update on their strategic plan including education and research grants, many of which involve our Chapter and benefit Ohio.

As spring rolled in, our group of Tour des Trees riders and TREE Fund volunteers for 2019 took shape. Dave Staats the recently retired supervisor with the City of Upper Arlington, Lisa Meranti with the Cleveland Metroparks and One Tree Love, Laurie Skul with Davey and Kent State University, Jeff McMullen with Denny Lumber in



*The TREE Fund's Professor Elwood Pricklethorn with future Arborists during the 2019 Tour des Trees.*

Middletown all signed on for the adventure to support the TREE Fund as riders in the 2019 Tour des Trees. This group of TREE Fund volunteers spent hours of their Spring and Summer training for the tour, but more importantly fundraising for the TREE Fund.

In June, the Ohio Chapter fielded a group of golfers in our annual Summer classic – Ohio ISA Golf Tournament. This group could be described in words ranging from “semi-pro” to “mainly came to drink beer on a golf cart”. The weather cooperated and the OSU ATI staff were excellent hosts. The participants all generously supported the TREE Fund and had fun in the process.

The beginning of fall brought the Tour des Trees. Our Team did great, as I'm sure you read all about in the last issue.

As we close out the year, I'd like to thank everyone that took part in any of these events. Our Chapter raised \$27,770.00 that will go to support our industry and our urban forests. Our Chapter is still one of the biggest advocates in the nation for the TREE Fund. I think a great deal of that is due to the stage set by Beth and others on our Team Ohio over the last few years (but mostly Beth, haha).

We have great support from the Chapter Board of Directors, we have support from arborists at the ODNR, city arborists across the state, privately owned tree care businesses, large tree care companies, utility arborists, business owners, educators, community leaders, and more. We have a lot to be thankful for. We are grateful for your support.

To close our TREE Fund news for 2019, it is important to mention that Eric Smith, TREE Fund CEO retired. He was a great resource and leader for the TREE Fund over the last several years. His successor, Russell King has started in earnest. More on that in the next issue. Onward to 2020!

## SAFETY IN NUMBERS

**SAFETY IS MORE THAN JUST A NUMBER. BUT IF WE STRIVE FOR ONE, IT'S 0.**

Programs like Davey Performance Excellence and The Road to Zero focus on holistic training, team goal setting and encouraging our industry professionals to proactively identify and correct unsafe behaviors and conditions towards achieving annual injury-free workplace goals.

[daveyutilitiesolutions.com/safety](http://daveyutilitiesolutions.com/safety)

ASSET  
MANAGEMENT

ECO  
CONSULTING

LINE  
CLEARANCE

STORM  
RESPONSE

VEGETATION  
MANAGEMENT

TELECOM  
CONSTRUCTION

# Safety Corner

## Avoiding Slips, Trips, and Falls Outdoors

By Keith Pancake, Safety Manager, ACRT and Bermex

Slips, trips and falls together represent one of the most frequent causes of injury at work and at home. Falls alone comprise a large percentage of work-related injuries and an increasing proportion of accidental deaths in later life. Since we have little or no control over our reflex actions when we fall, it's wise to be aware of objects and conditions that cause falls.

### Uneven Terrain

Uneven terrain can be dangerous due to areas with severe slope, holes, tree roots or rocks in your path. Sprained ankles and knees are a painful price to be paid for not keeping a sharp eye out while on uneven terrain.

- There's one primary tip that can help: Keep an eye on the ground. This sounds overly simplistic but foresters who are cautious about their foot placement are most likely to avoid ankle and knee injuries.
- When walking downhill/downslope, walk perpendicular to the hill, taking shorter strides and going slowly while remaining cautious of obstacles.
- Watch for the "step and fall." This occurs when the front foot lands on a surface lower than expected, like stepping into a hole or when stepping onto an object, turning the ankle, or injuring the back.
- Hiking sticks can also help provide stability on hills, relieve stress on the back, knees and legs, help move aside brush and branches, and help test unknown ground before walking.

### Weather Conditions

Many injuries are the result of falls on ice-covered or slippery ground, streets, and sidewalks.

- Be sure your boots have adequate tread and the soles aren't worn. Shoes that have smooth surfaces increase the risk of slipping.
- Walk cautiously on wet or frozen areas. Use your arms to keep you balanced and avoid carrying heavy loads that challenge your sense of balance.
- Walk consciously. If icy conditions exist, use boot cleats, chains or traction-enhancing shoe gear. They slip on and off easily and allow you to walk safely on ice, wet leaves, mud and snow.

### What Types of Behaviors Lead to Falls?

In addition to wearing the wrong footwear, specific behaviors can lead to slips, trips, and falls. Walking too fast or running is a major problem. Rapid changes in direction create a similar problem. Other problems are distractions, not watching where you're going, carrying materials that obstruct view, wearing sunglasses in low-light areas, and failure to use handrails. These and other behaviors—caused by lack of knowledge, impatience or bad habits developed from past experiences—can lead to falls, injuries or even death.

### Three-Point Contact Rule

The Three-Point Contact Rule is a simple and effective way to minimize the risk of falling. This can be used in many situations: entering/exiting a truck cab, climbing into/out of the bed of a truck, using stairways and ladders, and climbing or descending steep slopes. Essentially, the Three-Point Contact Rule states that three out of four critical points of your

body (hands and feet) are touching the area you are climbing into or out of, or are in contact with, at all times.

To note:

- This could be two hands and one foot or two feet and one hand.
- Break three-point contact only when you reach the ground, are on a stable location or when you're safely in your vehicle.

### How Could the Three-Point Contact Rule be Used When Getting Into and Out of a Truck Bed?

When getting into the bed of a truck, grab the gate and/or sidewall of the truck bed with both hands. When getting out of a truck bed, hold onto the gate and/or sidewall of the truck with both hands and step down backward. Never jump or fall down forward.

### Knowing How to Avoid Falling is Important. How Can You Protect Yourself from Injury if You're in the Act of Falling?

Your goal naturally is to not slip, trip or fall; however, the possibility of a fall always exists. There are correct ways to fall that can limit your chance of injury:


- Tuck your chin in, turn your head and throw an arm up. It is better to land on your arm than on your head.
- While falling, twist or roll your body to the side. It is better to land on your buttocks and side than on your back.
- Keep your wrists, elbows, and knees bent. Do not try to break the fall with your hands or elbows. When falling, the objective is to have as many square inches of your body contact the surface as possible, thus, spreading out the impact of the fall.

*Keith Pancake is a safety manager serving ACRT and Bermex. He has been involved in the UVM industry for 10 years. He is an ISA Certified Arborist and Utility Specialist with a Bachelor of Arts in Geography/GIS from Keene State College and a Bachelor of Science in Wildlife, Fish and Wildlands Science and Management from Tennessee Technological University.*





# Preventing Falls Outdoors



A hiking stick adds stability and relieves stress on your back and knees.

Wear boots with adequate tread and cleats or chains in icy conditions.

Take short strides when going downhill.

Slips

Trips

Falls

Falls Account For:

17% of all accidental deaths

2<sup>nd</sup> leading cause behind motor vehicles

27%

of total occupational injuries

nearly

35,000

total accidental deaths annually at home and at work

Be Cautious Of:

Uneven Terrain

Slippery Conditions

Wet, Muddy or Greasy Shoes

3-Point Contact Rule

Always have **three limbs in contact** with the area you are climbing.

Only have **one limb in motion** at any time.

Minimize Your Fall

1

Tuck in your chin, turn your head and throw out an arm

2

Twist or roll your body to the side

3

Do not try to break your fall with your hands or elbows

Get more tips and information to work safer at [ACRT.com/articles](https://www.acrt.com/articles)

Source: Bureau of Labor Statistics 2017



# Local Roots, Global Reach

## Ohio Tree Care Conference

February 25 - 27, 2020  
Dayton, OH



# OTCC – Something for Everyone

What better time of year than February to learn, collect continuing education credits, and network. If you have not signed up, it's time to make that commitment.

With the help of our gracious sponsors, the OTCC planning committee worked hard to prepare for your visit to Dayton. This year's sponsors include:

- Altec (Field Day)
- Asplundh (Registration Lanyards)
- Davey Tree Expert Co. (Municipal and Utility Track Sessions)
- Midwest Arborist Supplies (Wednesday Beverage Stations)
- Rainbow Treecare Scientific (Keynote Session & Commercial Track Sessions)
- Russell Tree Experts (Transportation to/from Buckeye Beer Bash)
- Tree Care Inc. (Buckeye Beer Bash)

On Monday, February 24, field workers are encouraged to attend the Altec Field Day featuring field equipment demonstrations and safety training covering the practicality using Kbooms and grapple saws in modern arboriculture. Following the field presentation, a class will be presented by Mike Poor, the Godfather of Kboom use in Arboriculture. Mike is a 25-year veteran and currently operates one of the largest Effer Kbooms used in the USA for tree work.

On Tuesday, attend the Certified Arborist Review/Arboriculture Plus all day session or spend an afternoon with Dr. David Nowak learning about i-Tree. Note – the Electrical Hazard Protection Awareness course is sold out.

While you learn on Tuesday, exhibitors will be preparing for the grand opening of the exhibit hall. Some of the most popular exhibitors include:

- Altec
- Arborjet
- Arborwear
- Mauget
- Midwest Arborist Supply
- Nelson Tree
- Green Velvet Sod
- Rainbow Treecare Scientific
- Sonic Knife
- Speak Easy Communications
- Stanley Insurance
- Tracked Lifts
- Vermeer Heartland
- Woody Warehouse

On Wednesday, Dr. Nowak will present a keynote session, The Future of Urban Forestry. Following the keynote, concurrent track sessions offered are divided by commercial, municipal, utility, and climbers. Following the afternoon sessions, Ohio Chapter past president Eric Davis will open his local shop, Tree Care Inc., for the 2nd annual Buckeye Beer Bash.

On Thursday, you won't want to miss the annual breakfast meeting; this year featuring ISA credits! Following the four track sessions after the meeting, the day will end with two combined sessions – Emerging Invasive Insect Pests and Managing Invasive Pests.

Continuing education credits (CEUs) have been approved by ISA, Ohio Commercial Pesticide Recertification, Ohio Certified Nursery Technician, and New Jersey Board of Tree Experts.

Don't delay – register today!



## GROW YOUR CAREER



Whether you're looking to kick-start your career or further it, ACRT Arborist Training offers classes designed for entry-level and advanced arborists.

- Get hands-on training customized to meet your learning needs
- Prepare yourself for career advancement opportunities
- Learn from the only company offering line clearance certification

Take the next step – visit [training.acrt.com](http://training.acrt.com) or call (800) 622-2562.



*At ACRT, we're the only independent national vegetation management consulting firm—giving us the freedom to put our clients first.*

# **Wedgle® Direct-Inject™ TREE INJECTION SYSTEM**

Our advanced technology  
for tree treatment  
allows you to

**INCREASE THE  
NUMBER OF  
TREES YOU  
TREAT IN  
A DAY!**



- ◆ No drilling damage
- ◆ No mixing at job sites
- ◆ No guarding or return trips
- ◆ No waiting for uptake
- ◆ Treats most trees in five minutes or less!
- ◆ Successful and most profitable add-on service

**Multiple injection tips designed for all types of trees, conifers and palms**

**Insecticides • Fungicides • PGRs • Antibiotics • MicroNutrients**



**888-557-2455**  
**BannerSales360@gmail.com**  
**www.bannersales.net**





# Ohio Tree Care Conference Schedule

## Monday, February 24, 2020

1:00 pm – 6:00 pm	<b>Altec Field Day</b> (Off Site) ISA A-5, U-5, M-5, Bp-5, TWc-5, TWa-5
-------------------	--

## Tuesday, February 25, 2020

Exhibit Hall/Decorator Move In – Hall 102			
8:00 am – 12:00 pm	<b>Certified Arborist Review / Arboriculture Plus</b> Room 305		<b>EHAP</b> Ernie Brinker Room 307-309  ISA A-8, U-8, M-8, Bm-8 CTSP-7.5
8:30 am – 9:45 am	<b>Tree Biology &amp; Anatomy</b> Jim Chatfield ISA A-1.25, U-1.25, M-1.25, Bs-1.25, TWc-1.25, TWa-1.25		
9:45 am – 10:20 am	<b>Tree Diagnostic &amp; Plant Disorder</b> Jim Chatfield ISA A-0.5, M-0.5, Bp-0.5 TWc-0.5, TWa-0.5; 6A-0.5		
10:20 am – 10:50 am	<b>Tree Soil &amp; Water Management</b> Jim Chatfield ISA A-0.5, M-0.5, Bp-0.5		
11:00 am – 11:45 am	<b>Tree Identification</b> Dawn Sherman ISA A-.075, U-0.75, M-0.75, Bs-0.75, TWc-0.75, TWa-0.75		
11:45 am – 12:00 pm	<b>Tree Selection – Part 1</b> Dawn Sherman ISA A-0.25, M-0.25, Bs-0.25		
12:00 pm – 12:30 pm	Lunch – Room 306		
12:30 pm – 12:50 pm	<b>Tree Selection – Part 2</b> Dawn Sherman ISA A-.025, M-0.25, Bs-0.25		
12:50 pm – 1:30 pm	<b>Plant Health Care</b> Dawn Sherman ISA A-0.75, M-0.75, Bp-0.75; CORE-0.5		
1:30 pm – 2:30 pm	<b>Tree Pruning, Tree Installation &amp; Establishment</b> Andrew Petrarca ISA A-1, U-1, M-1, Bp-1, TWc-1, TWa-1		
2:30 pm – 3:00 pm	<b>Trees &amp; Construction</b> Andrew Petrarca ISA A-0.5, M-0.5, Bm-0.5	<b>1:00 pm – 4:00 pm</b> General Session Room 106 <b>I-Tree Session</b> David Nowak ISA A-3, M-3, Bm-3	<b>EHAP Continued</b>
3:00 pm – 3:45 pm	<b>Tree Nutrition &amp; Fertilization</b> Brian Kralovic ISA A-0.75, M-0.75, Bp-0.75		
3:45 pm – 4:30 pm	<b>Tree Risk Assessment &amp; Management</b> Brian Kralovic ISA A-0.75, U-0.75, M-0.75, Bm-0.75, TWc-0.75, TWa-0.75; CTSP-0.75		
4:30 pm – 5:15 pm	<b>Urban Forestry</b> Brian Kralovic ISA A-0.75, M-0.75, Bm-0.75		
5:00 pm – 7:00 pm	Grand Opening of Exhibit Hall – Hall 102		

## Wednesday – February 26, 2020

Friday, February 16, 2018				
Trade Show Open (Breakfast Pastries) – Hall 102				
8:00 am – 5:00 pm	<b>Certified Arborist Review /Arboriculture Plus</b> <b>Continued</b> – Room 202-203		9:30 am – 10:30 am	<b>Tree Climbing &amp; Tree Work</b> Roy Montan ISA A-1, U-1, M-1, Bp-1, TWc-1, TWa-1; CTSP-1
8:30 am – 9:15 am	<b>Tree Support &amp; Lightning Protection</b> Andrew Petrarca ISA A-0.75, M-0.75, Bp-0.75, TWc-0.75, TWa-0.75		10:30 am – 12:00 pm	<b>Tree Worker Safety &amp; First Aide</b> Roy Montan ISA A-1.5, U-1.5, M-1.5, Bm-1.5, TWc-1.5, TWa-1.5; CTSP-1.5
9:00 am – 10:30 am	<b>Keynote Presentation</b> – Room 106 <b>The Future of Urban Forestry</b> David Nowak ISA A-1.5, M-1.5, Bm-1.5			
	<b>Break</b> – Hall 102			
	<b>Commercial</b> Room 305-306	<b>Municipal</b> Room 307-309	<b>Utility</b> Room 302-204	<b>Climbers' Corner</b> Exhibit Hall 102
11:00 am – 12:00 pm	<b>The Use (and misuse) of Tracked Lifts in the Tree Industry</b> Mike Hrycak ISA A-1, U-1, M-1, Bm-1, TWc-1, TWa-1; CTSP-1	<b>A New Method to Compensation for Tree Loss</b> David Nowak ISA A-1, M-1, Bm-1	<b>Wildlife Awareness</b> Geoff Kempter ISA A-1, U-1, M-1, Bm-1, TWc-1, TWa-1; CTSP-1	<b>Compatibility ... Good Functional Interaction Part 1</b> Timothy Bushnell Philip Kelley ISA A-1, U-1, M-1, Bp-1, TWc-1, TWa-1; CTSP-1

11:30 am – 1:30 pm	Lunch with Exhibitors – Hall 102			
12:30 pm – 4:00 pm	ISA Certification Exams – Room 310			
1:30 pm – 2:30 pm	<b>Diagnostic Challenges: A Series of Unfortunate Events</b> Joe Boggs ISA A-1, M-1, Bp-1; 6A01	<b>On the Front Lines: Dealing with Difficult People</b> James Lassiter III ISA A-1, U-1, M-1, Bm-1	<b>Right-of-Way Disease Management</b> Jim Chatfield ISA A-1, U-1, M-1, Bp-1, TWc-1, TWa-1; 6A-1	<b>Compatibility ... Good Functional Interaction Part 2</b> Timothy Bushnell Philip Kelley ISA A-1, U-1, M-1, Bp-1, TWc-1, TWa-1; CTSP-1
2:30 pm – 3:30 pm	<b>Be Alert to BYGL: A Look Back to Look Forward</b> Joe Boggs ISA A-1, M-1, Bp-1; 6A-1	<b>What You Need to Know About Ticks</b> Glenn Needham ISA A-1, U-1, M-1, Bs-1, TWc-1, TWa-1; CTSP-1; 10D-1	<b>Incidental vs Utility Line Clearance: Updates in the ANSI Z133 Part I</b> Craig Murk ISA A-1, U-1, M-1, Bm-1, TWc-1, TWa-1; CTSP-1	<b>Fundamentals of Gear Inspection Part 1</b> Timothy Bushnell Philip Kelley ISA A-1, U-1, M-1, Bp-1, TWc-1, TWa-1; CTSP-1
3:30 pm – 4:00 pm	Break – Hall 102			
4:00 pm – 5:00 pm	<b>User-Friendly Tools for Predicting Pest Phenology Based on Degree-Days and Biological Calendars</b> Dan Herms ISA A-1, M-1, Bs-1; CORE-1	<b>Tree Risk Management Plans for the 21<sup>st</sup> Century</b> Grant Jones ISA A-1, U-1, M-1, Bm-1; CTSP-1	<b>Incidental vs Utility Line Clearance: Updates in the ANSI Z133 Part II</b> Craig Murk ISA A-1, U-1, M-1, Bm-1, TWc-1, TWa-1; CTSP-1	<b>Fundamentals of Gear Inspection Part 2</b> Timothy Bushnell Philip Kelley ISA A-1, U-1, M-1, Bp-1, TWc-1, TWa-1; CTSP-1
4:30 pm – 5:00 pm				UAA Meeting
5:00 pm – 7:00 pm	Buckeye Beer Bash – Tree Care Inc. (Transportation Provided)			

#### Thursday – February 27, 2020

8:00 am – 9:30 am	Annual Breakfast Meeting & Speaker – Room 103			
9:00 am – 1:00 pm	Trade Show Open – Hall 102			
	<b>Commercial</b> Room 305-306	<b>Municipal</b> Room 307-309	<b>Utility</b> Room 302-304	<b>Climbers' Corner</b> Exhibit Hall 102
10:00 am – 11:00 am	<b>Oak Wilt &amp; Other Diseases</b> Jim Chatfield ISA A-1, M-1, Bs-1, TWc-1, TWa-1; 6A-0.5; 4A-0.5	<b>Navigating in Municipal Government: Uncharted Waters or Smooth Sailing Ahead?</b> Stephanie Miller ISA A-1, M-1, Bm-1	<b>Customer Relations and Customer Service</b> Geoff Kempter ISA A-1, U-1, M-1, Bm-1	<b>Tie in Points and Certifying Anchors for Life Support</b> Timothy Bushnell Philip Kelley ISA A-1, U-1, M-1, Bp-1, TWc-1, TWa-1
11:00 am – 12:00 pm	<b>Soil Management and Tree Health</b> Dan Herms ISA A-1, M-1, Bp-1, TWc-1, TWa-1; CORE-1	<b>Comprehensive Urban Forestry and Other Duties as Assigned</b> Jennifer Milbrandt ISA A-1, M-1, Bm1	<b>Relationship Management: Utilities and Municipalities</b> Stephanie Miller ISA A-1, U-1, M-1, Bm-1	<b>How Does Component Interaction/Compatibility, Gear Inspection and Tie In Points Pertain to Aerial Rescue</b> Timothy Bushnell Philip Kelley ISA A-1, U-1, M-1, Bp-1, TWc-1, TWa-1
12:00 pm – 1:00 pm	Lunch with Exhibitors – Exhibit Hall 102 Reserved tables (1-Past Presidents, 1-Education/Public Outreach Committee)			
1:00 pm – 5:00 pm	Exhibitor & Decorator Move-out – Hall 102			
1:00 pm – 2:00 pm	<b>All Tracks Combined</b> Room 106 <b>Emerging Invasive Insects Pests of Trees (other than EAB)</b> Dan Herms ISA A-1, M-1, Bs-1, TWc-1, TWa-1; 6A-0.5, 4A-0.5			
2:00 pm – 3:00 pm	<b>Managing for Invasive Pests: What's New and Not So New?</b> Tom Macy ISA A-1, M-1, Bs-1, TWc-1, TWa-1; 6A-0.5, 4A-0.5			
<b>CEU Legend</b> ISA A–Arborist; M–Municipal, U–Utility, TWc–Tree Worker Climber Specialist, TWa–Tree Worker Aerial Lift Specialist, Bs–BCMA Science, Bp–BCMA Practice, Bm–BCMA Management <b>CTSP: Ohio Commercial Pesticide Recertification</b> Commercial Categories as listed – 6A, CORE, 10D, 4A; <b>OCNT</b> 1 credit per day/self-reported; <b>BTE</b> – New Jersey Board of Tree Experts self-reported				

# Ohio Tree Care Conference

February 25-27, 2020

## Location

Dayton Convention Center  
22 E. Fifth St.  
Dayton, OH 45402

## Headquarters Hotel

Crowne Plaza Dayton Downtown  
33 E. Fifth St., Dayton, OH 45402  
Reservations: (800) 689-5586  
www.cpd Dayton.com

Group room rate \$112 per night plus applicable taxes. Block Name: Ohio Chapter ISA

## Program

### Monday, February 24 Optional Workshop

1:00 pm – 6:00 pm

#### Altec Field Day

Field equipment demonstration and training with Mike Poor, “Godfather of Kboom use in Arboriculture”.

### Tuesday, February 25

8:30 am – 5:00 pm

#### Electrical Hazard Awareness Program (EHAP)

Presenter: Ernie Brinker

Electricity is a serious and widespread hazard to arborists. In fact, electricity causes about 15 percent of all fatalities in the tree care industry, making it the leading cause of worker fatalities. EHAP helps you meet the OSHA 1910.269 safety standard, which requires employer-certified training and on-the-job training and verification. Employers must certify that employees who work 10 feet or closer to energized conductors are trained in the special hazards involved in such work. EHAP training also meets the ANSI Z133.1 training requirements. This session is not available for municipal employees.

8:30 am – 5:15 pm

8:30 am - 9:45 am

#### Arboriculture Plus / Certified Arborist Review Course

Tree Biology & Anatomy

Presenter: Jim Chatfield, Ohio State University Extension

Overview of terminology, structures and functions of the buds, leaves, wood, and roots of trees. The concept of Compartmentalization of Decay in Trees (CODIT), and various other aspects of biology and anatomy.

9:45 am - 10:20 am

#### Tree Diagnostic & Plant Disorder

Presenter: Jim Chatfield, Ohio State University Extension

Overview of terminology, plant problems (caused by living and nonliving disorders), diagnostic principles, and a systematic approach to plant diagnostics.

10:20 am - 10:50 am

#### Tree Soil & Water Management

Presenter: Jim Chatfield, Ohio State University Extension

Overview of terminology, how water influences plant growth/ health, transpiration, and irrigation advantage/disadvantage plus other aspects of tree water management.

11:00 am - 11:45 am

#### Tree Identification

Presenter: Dawn Sherman, Werbrich's Landscaping

Tree Identification, chapter overview of terminology, plant classification, leaf arrangement, and morphology. Identification of trees without leaves using various parts of trees.

11:45 am - 12:00 pm

#### Tree Selection – Part I

Presenter: Dawn Sherman, Werbrich's Landscaping

Chapter overview of terminology, and benefits of trees in the landscape, site characteristics, selection of healthy vigorous planting stock.

12:00 pm - 12:30 pm

Lunch provided for all-day class participants only.

12:30 pm - 12:50 pm

#### Tree Selection – Part II

Presenter: Dawn Sherman, Werbrich's Landscaping

12:50 pm - 1:30 pm

#### Plant Health Care

Presenter: Dawn Sherman, Werbrich's Landscaping

Overview of terminology, philosophy of Plant Health Care (PHC), its relationship to/with Integrated Pest Management (IPM). Identification of the pest management options and the advantage and limitation of each.

1:30 pm - 2:30 pm

#### Tree Pruning, Tree Installation & Establishment

Presenter: Andrew Petrarca, Petrarca Landcare

Overview of proper tree installation, establishment, and tree pruning.

2:30 pm - 3:00 pm

#### Trees & Construction

Presenter: Andrew Petrarca, Petrarca Landcare

Overview of terminology, instruction on how trees can be injured or killed as the direct or indirect result of construction, and steps for preservation of trees during construction.

3:00 pm - 3:45 pm

#### Tree Nutrition & Fertilization

Presenter: Brian Kralovic, LaRoche Tree Service

Overview of terminology, essential elements needed by trees, and fertilizer advantages/ disadvantages.



- 3:45 pm - 4:30 pm **Tree Risk Assessment & Management**  
Presenter: Brian Kralovic, LaRoche Tree Service  
Overview of tree risk assessment and risk management.
- 4:30 pm - 5:15 pm **Urban Forestry**  
Presenter: Brian Kralovic, LaRoche Tree Service  
Overview of key elements and components of urban forestry practices and methodology.
- 1:00 pm – 4:00 pm **General Session: I-Tree**  
Presenter: Dr. David Nowak, United States Department of Agriculture  
i-Tree ([www.itreetools.org](http://www.itreetools.org)) is a suite of freely available software tools developed through a collaborative public-private partnership. The tools are designed to be accessible and easy-to-use, aiding urban and rural land managers, and the general public, in:
- Assessing and monitoring their local forest resource
  - Understanding the services and values provided by trees and forests
  - Evaluating risk to forest and human populations
  - Developing sustainable forest management plans
  - Improving environmental quality and human health
  - Selecting appropriate tree species and locations
  - Engaging stakeholders and public audiences
- The vision of this program is to improve forest and human health through easy-to-use technology that engages people globally in enhancing forest stewardship and resiliency.  
This presentation will present the latest information on the various i-Tree tools, including how and why to use these tools.
- 5:00 pm – 7:00 pm **Trade Show Grand Opening**
- Wednesday, February 26**
- 8:00 am – 7:00 pm **Trade Show Open**
- 8:30 am – 12:00 pm **Arboriculture Plus / Certified Arborist Review Course Continued**  
8:30 am - 9:15 am **Tree Support & Lightening Protection**  
Presenter: Andrew Petrarca, Petrarca Landcare  
Overview of terminology, tree installation support, limitation of cabling/bracing, and the usages of lightening protection.
- 9:30 am - 10:30 am **Climbing & Working in Trees**  
Presenter: Roy Montan, Davey Tree Experts  
Overview of terminology, current industry standards and safety regulations. Includes knots, appropriate tools and their usages, principles of rigging techniques/equipment, etc.
- 10:30 am - 12:00 pm **Tree Worker Safety & First Aid**  
Presenter: Roy Montan, Davey Tree Experts  
Overview of tree worker safety and first aid.
- 9:00 am – 10:30 am **Keynote Presentation: The Future of Urban Forestry**  
Presenter: Dr. David Nowak, United States Department of Agriculture  
Urban forests are constantly changing and will face various threats in the coming years. This presentation will discuss various forces of change, projections of urban forest change, and 10 things that urban foresters and arborists could do to help urban forests become more relevant to society. Enhancing the relevance of urban forests will be essential to sustaining these forests and their ability to improve human health and well-being.
- 11:00 am – 12:00 pm **Compatibility ... Good Functional Interaction – Part 1 (Climbers' Corner)**  
Presenters: Tim Bushnell, The Davey Tree Expert Company & Phillip Kelley, North American Training Solutions  
Misconfigurations are becoming more common as the variety of ropes, connectors, arborist saddle hardware and pulleys continues to increase. We'll set up the common misconfigurations, discuss the reason and review alternatives. This session will be interactive and fun.
- 11:00 am – 12:00 pm **The Use (and Misuse) of Tracked Lifts in the Tree Industry (Commercial Track)**  
Presenter: Mike Hrycak, Tracked Lifts Inc.  
Tracked lifts have become normal tools in the tree industry in the past few years. They offer versatility, expand capabilities, and can greatly increase the safety of arborists needing to access hazardous trees in backyards and other difficult access areas. However, the misuse of these valuable tools is also on the rise leading to expensive repairs, injuries and even fatalities. In this session, learn the do's and, more importantly, the don'ts of tracked lift use in your operation.
- 11:00 am – 12:00 pm **A New Method to Compensation for Tree Loss (Municipal Track)**  
Presenter: Dr. David Nowak, United States Department of Agriculture  
When healthy trees are removed, common methods of compensation are either monetary or replanting new trees. Accurate monetary compensation for large healthy trees is difficult to ascertain and often uses formulas based on tree attributes such as species, size, location and condition. Compensation based on leaf area is more direct as most tree values are related to healthy leaf area. Using leaf area, a tree compensation rate can be determined (how many new trees are needed to compensate for the removal of a healthy tree). However, compensation also needs to consider the future benefits provided by both the removed tree and newly planted trees. This presentation discusses a new method of tree compensation based on comparing the net present value of leaf area between a removed tree and planted replacement trees.

- 11:00 am – 12:00 pm **Wildlife Awareness (Utility Track)**  
Presenter: Geoff Kempter, Asplundh  
Utility arborists work wherever the power lines go. The vegetation we work on is often habitat for wildlife. This often brings utility arborists close to – or too close to – wildlife, from ticks the size of a period to a 1,500-pound bull moose. This presentation describes safety concerns and legal obligations when utility arborists encounter animals while on the job.
- 11:30 am – 1:30 pm **Lunch with Exhibitors**
- 12:30 pm – 4:00 pm **ISA Certification Exams**  
Requires separate registration through [www.isa-arbor.com](http://www.isa-arbor.com).
- 1:30 pm – 2:30 pm **Compatibility ... Good Functional Interaction – Part 2 (Climbers' Corner)**  
Presenters: Tim Bushnell, The Davey Tree Expert Company & Phillip Kelley, North American Training Solutions
- 1:30 pm – 2:30 pm **Diagnostic Challenges: A Series of Unfortunate Events (Commercial Track)**  
Presenter: Joe Boggs, Ohio State University Extension  
Plant problem diagnostics is a high-pressure proposition. An accurate diagnosis fulfills your client's expectation; after all, you're the "plant professional." An incorrect diagnosis can threaten your credibility and lose clients. Fact is, even the most seasoned plant professional has made diagnostic mistakes; it's part of gaining hard-earned knowledge through experience. This "been there, done that" presentation uses real-life diagnostic case studies to illustrate diagnostic pinnacles ... and pitfalls. As Einstein said, "The only source of knowledge is experience."
- 1:30 pm – 2:30 pm **On the Front Lines: Dealing with Difficult People (Municipal Track)**  
Presenter: James Lassiter III, Cleveland Metroparks  
20 Expert tactics for dealing with difficult people.
- 1:30 pm – 2:30 pm **Right-of-Way Disease Management (Utility Track)**  
Presenter: Jim Chatfield, Ohio State University Extension  
Managing plant diseases involves utilizing an understanding of the disease triangle: What is the host range of the pathogen, what is the biology and virulence of the pathogen, and what are the environmental conditions conducive to disease? From a range of importance of oak wilt to tar spot of maple, we will cover a wide range of disease problems, their diagnosis, and how to utilize the power of the disease triangle.
- 1:30 pm – 2:30 pm **Fundamentals of Gear Inspection – Part 1 (Climbers' Corner)**  
Presenters: Tim Bushnell, The Davey Tree Expert Company & Phillip Kelley, North American Training Solutions  
When inspecting tree climbing equipment, if you can't say "YES" to passing a component or assembly, then the answer is "NO". It is important to educate yourself as much as possible; because a high level of gear inspection knowledge often leads to an increased ability to say "YES". Believe it or not, we can have fun talking about gear inspections.
- 2:30 pm – 3:30 pm **Be Alert to BYGL: A Look Back to Look Forward (Commercial Track)**  
Presenter: Joe Boggs, Ohio State University Extension  
The top tree and shrub pests reported through Buckeye Yard and Garden Live (BYGL) Alerts in 2019 with an eye towards 2020. It's a look back to look forward! Management strategies will be presented with a focus on what works, and what doesn't work! Learn what you need to know to get prepared for the upcoming season.
- 2:30 pm – 3:30 pm **What You Need to Know About Ticks (Municipal Track)**  
Presenter: Glen Needham, The Ohio State University  
Arborists and those caring for trees are at some risk of being exposed to tick bites. Blacklegged 'deer' ticks are now well established in many Ohio locations but especially in deciduous forests and wood lots. This tick's requirements for high humidity (provided by canopy and abundant leaf litter) and hosts (rodents and deer) make you especially at risk for being infected with Lyme disease following a tick bite. This species is active 12 months out of the year so there is no 'off season'. Most folks get Lyme disease in the summer months from a poppy-seed sized nymph that feeds for only three days. So what is your personal risk in the state and locally? How do you protect yourself, your family and pets? I will dispel one myth about ticks jumping out of trees. Come get the latest information so you can function with confidence in outdoor Ohio.
- 2:30 pm - 3:30 pm **Incidental vs. Utility Line Clearance: Updates in the ANSI Z133 Part I (Utility Track)**  
Presenter: Craig Murk, ACRT  
This presentation will walk attendees through ANSI Z133 2017 Section 4 in detail and discuss some of the changes made from prior publications.
- 4:00 pm – 5:00 pm **Fundamentals of Gear Inspection – Part 2 (Climbers' Corner)**  
Presenters: Tim Bushnell, The Davey Tree Expert Company & Phillip Kelley, North American Training Solutions  
One hour is not enough time for this complex topic...so let's continue the conversation for another hour.
- 4:00 pm – 5:00 pm **User-Friendly Tools for Predicting Pest Phenology Based on Degree-Days and Biological Calendars (Commercial Track)**  
Presenter: Dan Herms, The Davey Tree Expert Company  
Plant phenology can track degree-day accumulation and predict insect development. Research has shown that the phenological sequence of insect emergence and blooming of trees and shrubs varies little from year-to-year regardless of variation in the weather. Degree-day models for each species generated the "Growing Degree-Day and Phenology for Ohio" website ([www.oardc.ohio-state.edu/gdd](http://www.oardc.ohio-state.edu/gdd)), which provides real-time or historical degree-day data and phenological predictions for any location in Ohio. By scrolling up or down the Biological Calendar, it is possible to see what events have occurred, and what has yet to occur. The phenological sequence provides a user-friendly Biological Calendar for anticipating and timing pest management decisions for the diversity of pests affecting trees in Ohio.

- 4:00 pm – 5:00 pm **Tree Risk Management Plans for the 21st Century (Municipal Track)**  
Presenter: Grant Jones, City of Bowling Green  
The City of Bowling Green created a Tree Risk Management Plan based on TRAQ principals for three years to help manage the risk of their city trees. Those attending will learn the components of Bowling Green's plan and considerations made during its creation, how the plan was implemented, and lessons learned during its three years of use. These experiences will be beneficial for other communities as they consider developing their own tree risk management plans.
- 4:00 pm – 5:00 pm **Incidental vs. Utility Line Clearance: Updates in the ANSI Z133 Part 2 (Utility Track)**  
Presenter: Craig Murk, ACRT
- 5:00 pm – 5:30 pm **UAA Member Meeting**
- 5:00 pm – 7:00 pm **Buckeye Beer Bash at Tree Care Inc.**
- Thursday, February 27**
- 8:00 am – 9:30 am **Annual Member Meeting Breakfast**
- 9:00 am – 1:00 pm **Trade Show Open**
- 10:00 am – 11:00 am **Tie In Points and Certifying Anchors for Life Support (Climbers' Corner)**  
Presenters: Tim Bushnell, The Davey Tree Expert Company & Phillip Kelley, North American Training Solutions  
An in-depth discussion on what qualifies a life support anchor and how we differ from other industries when doing so!
- 10:00 am – 11:00 am **Oak Wilt & Other Diseases (Commercial Track)**  
Presenter: Jim Chatfield, Ohio State University Extension  
Oak wilt disease is present in Ohio. We will discuss management strategies, the biology of oaks and their susceptibility, the biology of the fungal pathogen and of the insect vectors and other modes of transmission of the pathogen. We will also cover other oak diseases in Ohio, from Tubaki leaf spot, anthracnose and oak leaf blister, and oak disease not in Ohio, such as bur oak blight and sudden oak death.
- 10:00 am – 11:00 am **Navigating in Municipal Government: Uncharted Waters or Smooth Sailing Ahead? (Municipal Track)**  
Presenter: Stephanie Miller, Ohio Department of Natural Resources Division of Forestry  
Stephanie will look at some current trends in urban forest management and their potential implications.
- 10:00 am – 11:00 am **Customer Relations and Customer Service (Utility Track)**  
Presenter: Geoff Kempter, Asplundh  
Utilities spend billions of dollars on maintaining trees to maintain a safe and reliable supply of electricity to the public. The benefits of these efforts to our economy and in prevention of injuries and death are immeasurable, yet utility arborists are frequently the targets of media scrutiny and public scorn. This presentation examines how utilities and contractors can improve public acceptance of utility vegetation management activities.
- 11:00 am – 12:00 pm **How Does Component Interaction/Compatibility, Gear Inspection and Tie In Points Pertain to Aerial Rescue (Climbers' Corner)**  
Presenters: Tim Bushnell, The Davey Tree Expert Company & Phillip Kelley, North American Training Solutions  
We will wrap up with discussion on how the previous sessions pertain to aerial rescue.
- 11:00 am – 12:00 pm **Soil Management and Tree Health (Commercial Track)**  
Presenter: Dan Herms, The Davey Tree Expert Company  
Healthy trees require healthy soil, and soil health is strongly dependent on organic matter and its effects on soil microbes, which in turn regulate nutrient cycling. This presentation will explore effects of organic matter on microbial activity, nutrient cycling, and tree physiology, including implications for integrated pest management. General principles are developed that can be used to predict how organic matter and fertilization practices influence ecological processes and plant health, with an eye towards sustainable landscape management.
- 11:00 am – 12:00 pm **Comprehensive Urban Forestry and Other Duties as Assigned (Municipal Track)**  
Presenter: Jennifer Milbrandt, City of Strongsville  
Limited budgets and manpower are often an issue in municipalities. As urban foresters we are being pulled in more directions and asked to wear more hats. Jennifer will be sharing her experience and some others from around the state.
- 11:00 am – 12:00 pm **Relationship Management: Utilities and Municipalities (Utility Track)**  
Presenter: Stephanie Miller, Ohio Department of Natural Resources Division of Forestry  
Finding common ground with local communities and officials is helpful in building support and avoiding conflicts. Stephanie will discuss some of the shared and diverging concerns of local governments and utilities and actions that bring them together.
- 12:00 pm – 1:00 pm **Lunch with Exhibitors**
- 1:00 pm – 2:00 pm **Emerging Invasive Insects: Pests of Trees (All Tracks Combined)**  
Presenter: Dan Herms, The Davey Tree Expert Company  
We are all familiar with the devastation wrought by EAB. But there are other invasive insects that also threaten Ohio's urban forests and landscapes. These include hemlock woolly adelgid, spotted lantern fly, and Asian longhorned beetle. This presentation will provide updates on the biology and management of these and other emerging pests.



2:00 pm – 3:00 pm

### Managing for Invasive Pests: What's New and Not So New? (All Tracks Combined)

Presenter: Tom Macy, Ohio Department of Natural Resources Division of Forestry

Some tree pests have been in Ohio for many years and some are new arrivals. Some are a major concern, and some aren't. Some are easy to manage, while others are a bit more difficult. This session will be an update on the biology, identification, and management options for several important tree insect and disease pests that you should know about.

### Meet the Presenters

**Joe Boggs** specializes in tree and shrub diagnostics and pest management. He averages over 100 teaching presentations per year and has published articles in the Tree Care Industry Association magazine, Landsculptor (Michigan Green Industry Association), The Buckeye Arborist, the Society of Commercial Arboriculture newsletter, and the Canadian Groundskeeper. He is a frequent contributor to the Buckeye Yard and Garden Live (BYGL) blog [bygl.osu.edu]. His weekly radio segment, "Buggy Joe Boggs Report," runs from April through October on the Saturday morning show, "In the Garden with Ron Wilson," (iHearthRadio: WKRC, Cincinnati; News Radio 610 WTVN, Columbus). The Cincinnati show is syndicated to 34 radio stations in 12 states.

**Tim Bushnell** started in the tree care industry in 1985 and with Davey in 2018. He's been an ISA Certified Arborist since '92 and is a TCIA Certified Treecare Safety Professional. Tim chairs the ANSI A300 committee, participated as a voting member for the current and 2012 editions of the Z133 and sits on several ANSI Z133 tasks groups. Tim was head technician from 2005-2011 for ISA's International Tree Climbing Championship and has been certified by Petzl America as a competent person regarding personal protective equipment (PPE). He is also a competent person in climbing/ rigging gear inspections to the United Kingdom standards and North American Training Solutions recognizes Tim as a qualified chainsaw technician and trainer. Tim brings with him an unparalleled passion for trees and safety.

**Jim Chatfield** is an associate professor and extension specialist at The Ohio State University Extension. He provides extensive green industry extension workshops throughout the United States. Topics include but are not limited to plant problems, diagnostics, plant materials, plant selection, and plant pathology.

**Dan Herms** is vice president of research and development for The Davey Tree Expert Company. Prior to joining Davey, Dan was a professor in the Department of Entomology at The Ohio State University from 1997-2017. His research and outreach programs focus on the ecology and management of trees in forests, urban forests, and ornamental landscapes, including interactions with insects, soils, and climate. He received his B.S. in Landscape Horticulture from Ohio State University, his M.S. in Horticulture and Entomology from Ohio State University, and his PhD from Michigan State University in Entomology. Prior to joining Ohio State University, he worked at The Dow Gardens in Midland, MI for 13 years where he directed the pest management program. He has been elected a Fellow of the Entomological Society of America and the American Association for the Advancement of Science.

**Grant Jones** is the arborist for the City of Bowling Green. He oversees the management of trees on city properties, parks and rights of ways. Additionally, he manages line clearance operations for the city's electric utility. He is a Board-Certified Master Arborist and has his Tree Risk Assessment Qualification. Previously, he worked as the IPM specialist at Longwood Gardens and was a technical advisor for The Davey Tree Expert Company. He has a master's degree in Horticultural Science from Michigan State University and a bachelor's degree in Agricultural Science from the University of Nebraska-Lincoln. He is a member of the Ohio Chapter ISA, the International Society of Arboriculture, Society of Municipal Arborists, and the American Society of Consulting Arborists.

**Phillip Kelley** started his arboriculture career at Wright Tree Service in 1994 performing line clearance in northeast Iowa and worked up the management ranks before moving to Georgia in the year 2000 where he served as operation manager and safety coordinator for Arboguard Tree Specialists and Downey Tree Service. In 2009, Phil joined North American Training Solutions and served as vice president there until coming back to Wright Tree Service in the Spring of 2018 where he is leading the safety training and field development of the company. He has 25+ years in the industry including serving as head judge of the North American Tree Climbing Championship (2014-present) and served as the head judge/technician for multiple ISA chapter tree climbing championships.

**Geoff Kempter** is technical services manager for Asplundh with 30 years of experience. He is co-author of Utility Arboriculture, the Utility Specialist Study Guide, and author of the ISA BMP for Utility Pruning. Geoff teaches tree risk assessment qualification (TRAQ) for the ISA. He is currently vice president of the Utility Arborist Association, a member of the ANSI A300 committee, and has served on the ISA board of directors, the TREE Fund board and as ISA certification chair. He holds a degree in Natural Resources from the University of Michigan.

**Brian Kralovic** is an ISA Certified Arborist and Municipal Specialist. He was formerly with the City of St. Clairsville as their city arborist where he managed the city vegetation in the public right-of-ways. He is currently employed by LaRoche Tree Service. Brian is skilled in public speaking, contracting, tree trimming, tree removal, stump removal, storm cleanup and plant healthcare.

**James Lassiter, III** is currently and has been forestry manager with the Cleveland Metroparks for the past 8 years. He holds an MBA in Business Administration with a concentration in Applied Management from Indiana Wesleyan University. James also holds a BA in Business Administration from Defiance College. He has been an ISA Certified Arborist since 2005 and TRAQ since 2017 and has been a CDL instructor at Cuyahoga Community College since 2015.

James' experience spans 24 years in the arboriculture field; specifically, 2 years in the private tree care industry and 22 years in the public or government sector of the tree care industry.

**Tom Macy** is the forest health program administrator for the Ohio Department of Natural Resources Division of Forestry. In this role, he oversees monitoring, surveying, and management of insect, disease, and invasive species pests impacting Ohio's forests and trees, as well as education and outreach. Tom earned his bachelor's and master's degrees in Forest Science from Ohio State University. He has previously worked with invasive species in positions with the U.S. Fish & Wildlife Service and USDA Forest Service Northern Research Station.

**Jennifer Milbrandt** is the coordinator of natural resources for the City of Strongsville. She is an ISA Certified Arborist, Tree Risk Assessment Qualified and FEMA – USFS Strike Response Team.

**Stephanie Miller** is the northwest Ohio regional urban forester with the Ohio Department of Natural Resources Division of Forestry. Most of her time is spent providing technical and organizational assistance to communities in her 19-county region. She is originally from central Indiana where she learned to love the outdoors. After receiving her BS in Forestry from Purdue University, she worked as a utility forestry supervisor in Michigan for ACRT. Her marriage to Greg brought her to northwest Ohio in 1993 where she continued in the utility and urban forestry private sector.

Stephanie began her career with the Ohio Division of Forestry in 1997 as a service forester working one-on-one with private forest landowners. A year and a half later, she transferred into the urban forestry position. She is an ISA Certified Arborist, Municipal Specialist and is active in the Society of American Foresters and International Society of Arboriculture.

**Roy Montan** is a senior regional safety specialist with The Davey Tree Expert Company. He has over 29 years of service with the past 13 years in safety. Roy is a Certified Tree Care Safety Professional (CTSP) and a Certified Red Cross First Aid/CPR Instructor.

**Craig Murk** has been involved in the tree care industry since the early 1990's. Starting in residential/commercial tree care, he transitioned to line clearance in 2001, and earned his journeyman card in 2003. Shortly thereafter, he took a job as a vocational instructor with ACRT, and taught tree-trimming as a vocation for the Job Corps for almost eight years. He returned to line clearance in 2010, and after a short stint running a crew, became a general foreman. Disheartened by the perpetual gloom of the PNW, he and his family moved to Arizona in 2012, where he continued in line clearance, but took a brief break to run a mule string in the Grand Canyon, before returning to instruction for ACRT full-time in 2016.

**Glenn Needham** is an OSU associate professor emeritus where he was on the faculty for 35 years, retiring in 2013. A year later, the US Air Force at Wright-Patterson AFB hired him to help validate a DNA test for multiple tick-borne pathogens. His formal education was in entomology, earning a Masters and Ph.D. from Oklahoma State University where he studied tick salivary gland physiology. Glenn is past president of the Acarological Society of America, co-organized an annual OSU Acarology Summer Program, and is a member of the Ohio Public Health Association. He is a co-author of more than 50 tick-related publications and co-edited three books on mites and ticks. In 2010 he found the first established Ohio population of blacklegged 'deer' ticks in Coshocton and Ashtabula counties. Since then he has been raising awareness about the emergence of tick-borne diseases in the state.

**David J. Nowak** is a senior scientist and team leader with the USDA Forest Service in Syracuse, NY. Dr. Nowak received a B.S. and M.S. from SUNY College of Environmental Science and Forestry, and a Ph.D. from the University of California, Berkeley. His research investigates urban forest structure, health, and change, and its effect on human health and environmental quality across the world. He has authored over 325 publications and leads teams developing the i-Tree software suite that quantifies the benefits and values from vegetation.

**Andrew Petrarca**, Petrarca Landcare, Inc., is an ISA Certified Arborist. He is skilled in cabling/bracing, landscape services, tree pruning, tree protection, pruning and tree removal.

By Joe Boggs, Assistant Professor OSU Extension, Hamilton County, OSU Department of Entomology

## Asian Longhorned Beetle (ALB)

Asian Longhorned Beetle (ALB) (*Anoplophora glabripennis*, family Cerambycidae) is potentially the **most devastating non-native tree pest or disease** to have ever arrived in North America. The beetle kills trees belonging to 12 genera in 9 plant families. This includes *Acer* (all maple species); *Aesculus* (horsechestnuts and buckeyes); *Ulmus* (elms); *Salix* (willows); *Betula* (birches); *Platanus* (Sycamore/Planetrees); *Populus* (Poplars); *Albizia* (Mimosa); *Cercidiphyllum* (Katsura); *Fraxinus* (ashes); *Koelreuteria* (goldenraintree); and *Sorbus* (mountainash).

Maples appear to be the most preferred host. The loss of all native maples would be disastrous to nursery and urban forestry interests as well as the forest products industry. The ripple effect of losing native maples across many forest ecosystems also means the potential loss of other plant species as well as animal species that are dependent upon those ecosystems.

### Figure 1 - ALB Adult

ALB is native to eastern China and Korea. The beetles were first discovered in North America in Brooklyn, NY, in 1996. Since that time, infestations were found in other New York City boroughs as well as in New Jersey, Massachusetts, Illinois, Ohio, and Ontario in Canada.

ALB larvae burrow deep into the xylem where they feed and pupate. It's well documented that conversion of the infested wood into packing material for shipping such as pallets provides an excellent way for ALB to hitchhike out of its Asian territory to distant parts of the globe.

### Figure 2 - ALB Larva Inside the Xylem

### Figure 3 - Pallets Infested with ALB



USDA APHIS image

the beetles found in Ontario come from Illinois. The Ohio beetles did not come from Massachusetts or anywhere else in North America.

Also, the rate of spread of ALB is relatively slow compared to our other well-known Asian import, Emerald Ash Borer (EAB) (*Agrilus planipennis*). Although ALB adults are good flyers, they tend to remain with their host trees until larval resources are depleted. ALB has never been observed spreading naturally over great distances within the U.S.

### Figure 4 - EAB

However, ALB has been commonly moved around in infested material before core infestations were discovered. Their accidental spread



© Joe Boggs, OSU Extension



© Joe Boggs, OSU Extension

In fact, DNA analysis has shown that all of the North American infestations arrived directly from Asia. The Illinois beetles did not come from New York, nor did



© Joe Boggs, OSU Extension

gives rise to so-called *satellite infestations* that may range from a few miles to several miles from the point of introduction. The common occurrence of satellite infestations is one reason discovering new ALB infestation is so important.

Unlike EAB that has become so widespread there is no hope for eradication, ALB infestations have remained relatively small and distinct allowing for successful eradication efforts. Indeed, the Illinois infestations (seven found in and around Chicago) have been eradicated as well as the infestations in New Jersey; the infestations in the New York City boroughs of Brooklyn, Manhattan, and Queens; and one of the two **Canadian infestations**.

The dedicated professionals with the Ohio ALB Cooperative Eradication Program have also scored their own victories. The program is a cooperative team effort between the USDA Animal and Plant Health Inspection Service (APHIS) and the Ohio Department of Agriculture (ODA).

ALB was first detected in Ohio near Bethel in Tate Township, Clermont County, in June, 2011. Satellite infestations were found in Monroe Township in September and in Stone Lick Township in 2012; both were declared eradicated in 2018. Work is continuing on eradicating ALB from Tate Township and the adjoining East Fork State Park / East Fork Wildlife Area.

Early detection is critical to the successful eradication of ALB both in terms of time and money. Past experience dictates that we should remain vigilant for ALB not only in the immediate vicinity of a known ALB infestation, but also elsewhere in the U.S. Never believe ALB is "somewhere else." ALB can pop-up anywhere, even in our own backyards.

### ALB Life Cycle

As with all beetles (order Coleoptera), ALB undergoes a developmental process called *Complete Metamorphosis*. This type of insect development includes 4 stages: egg, larva (plural – larvae), pupa (plural: pupae), and adult. The larva that hatch from eggs are called 1st instar larvae. These larvae molt into 2nd instar larvae which molt into 3rd instars and so on. ALB passes through at least 5 larval instars. It may take 1 to 2 years for ALB to complete its development.

ALB adults are very large beetles commonly measuring more the 1" long with the females often slightly larger than the males. Both have very long antennae. This feature is responsible for the common name *longhorned beetle*, a name that applies to all members of the Cerambycidae beetle family.

### Figure 5 - ALB Adult with Ohio Quarter for Size Comparison

ALB females lay 45–60 eggs in their lifetime. Unlike many other beetles, including EAB, the ALB females are very deliberate in their egg-laying behavior. They spend time chewing through the bark, phloem, and cambium to deposit a single egg on the surface of the xylem. Egg laying activity is disclosed by the appearance of the *oviposition pits* created by the females. The pits will sometimes ooze sap until trees close the wound.



© Joe Boggs, OSU Extension



**Figure 6 – ALB Female Chewing an Oviposition Pit**



**Figure 7 – ALB oviposition Pits**



**Figure 8 – ALB Oviposition Pits Oozing Sap**



Cerambycid larvae are generally referred to as *roundheaded borers*. This common name doesn't actually refer to the shape of the head; it's based on the appearance of the large, rounded first thoracic segment just behind the head. Of course, the *borer* part of the common name is accurate given that cerambycid larvae bore through trees.

**Figure 9 – ALB Larva**

### Borer Tree-Killing Behavior

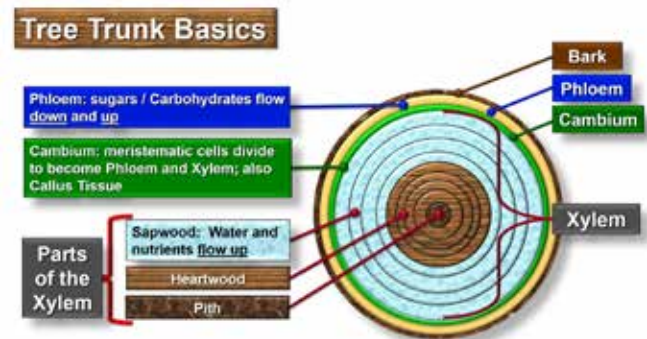
It's the wood boring activity of ALB larvae that kills trees. This is also true for EAB. However, that's just about the only thing these two non-native borers have in common: they are like apples to oranges. The speed with which these borers kill trees depends on differences in larval feeding behavior coupled with morphological differences in their host trees.



© Joe Boggs, OSU Extension

Figure 10 shows the basic structure of a tree in cross-section. Note that the annual ring structure of the xylem (wood) is divided into three regions: pith, heartwood, and sapwood. It's the sapwood that carries water and nutrients up the tree. The phloem is multidirectional carrying the "food" of the tree down from the leaves and up from storage in the stem and roots.

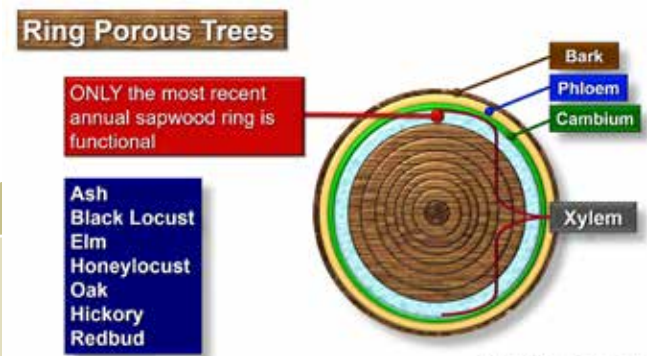
**Figure 10 – Basic Tree Structure**



Graphics by Joe Boggs, OSU Extension

The cambium is a very thin ring of *meristematic* cells. These so-called *undifferentiated* cells divide to produce the xylem to the inside and phloem to the outside; it's how trees increase in girth. The cells are also involved in wound closure. It's sometimes stated that various wood borers feed on the cambium. This is seldom true; the ring is just too thin to serve as a significant food source for borers of any size. It may be consumed, but not as a primary food supply.

**Figure 11 – Ring Porous Trees**



Graphics by Joe Boggs, OSU Extension



Figure 11 shows the structure of *Ring Porous* trees. Note that only the most recent annual sapwood ring is functional during a given season.

**Figure 12 – EAB Damage**



Figure 12 shows how EAB larvae feed on trees and their impact. EAB only attacks ash trees and all ash species are ring porous. Although EAB larvae are phloem-feeders, as the larvae gain size (girth), they start etching this critical outermost xylem ring. Consequently, trees may die quickly as EAB larvae girdle trees by consuming the phloem and etching the single functioning xylem ring to destroy the trees' "plumbing." The thinning of tree canopies is a key diagnostic feature of an EAB infestation.

**Figure 13 – Diffuse Porous Trees**

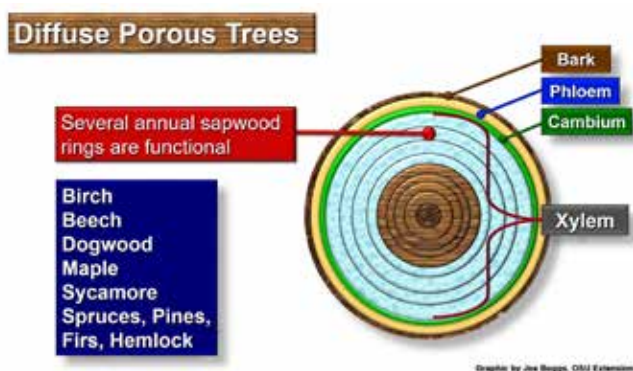


Figure 13 shows the structure of *Diffuse Porous* trees. Note that several annual sapwood rings are functional during a given season. ALB infests some ring porous trees; however, maples are most commonly attacked. In fact, over 98% of the trees found to be infested in Ohio have been maples.

**Figure 14 – ALB Damage**

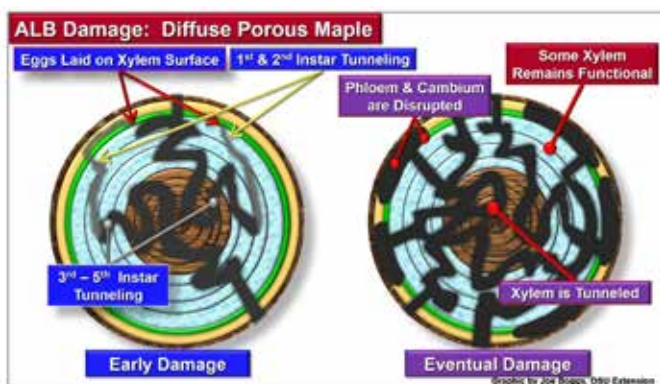


Figure 14 shows how ALB larvae feed on trees and their impact. All maples are diffuse porous which means water and nutrients flow upward through the trees in the four to five outermost xylem rings. Although ALB larvae bore into the xylem, their tunneling causes less disruption of the xylem vascular flow compared to damage caused by EAB in a ring porous tree. In the end, ALB larvae kill trees. However, *canopy thinning* which is a key diagnostic feature for detecting EAB is not a reliable symptom for detecting ALB.

On the other hand, the heavy xylem damage produced by ALB larvae feeding activity weakens the structural integrity of stems and branches. Branch breakage has become a key diagnostic feature for detecting ALB infestations.

**Figure 15 – Structural Weakening by ALB**



**Figure 16 – Wound Response**



Figure 16 shows the wound closure process where the undifferentiated meristematic cambial cells give rise to *callus tissue* which is also made up of meristematic cells that in turn produces *woundwood* which includes all of the morphological features (phloem, cambium, xylem) found in tree stems. Figure 17 shows these wound response tissues.

**Figure 17 – Wound Response Tissues**



Damage by wood boring insects often triggers a wound response. When the resulting woundwood forms beneath bark, the swollen tissue commonly causes the bark above the woundwood to crack. This symptom can be used to diagnose tree boring insect infestations including EAB and ALB as shown in Figures 18 and 19.



**Figure 18 – Bark Cracking from ALB**



**Figure 19 – Bark Cracking from EAB**



### ALB Eradication

Eradication is not the same as pest management. Eradication means the complete elimination of a non-native invasive insect pest. It involves using quarantines to prevent accidental movement of the pest along with using tools to destroy the pest.

**Figure 20 – ALB Quarantine Sign**



The eradication of ALB means that not a single adult, egg, or larva can be left behind. Eradication of ALB is declared only after surveys fail to reveal any form of the beetle over a number of successive years.

This level of suppression is not achievable using insecticides alone. It's rare for insecticide applications targeting any plant pest to consistently provide 100% suppression; particularly against wood boring insects on large trees. Adding to the challenge are differences in systemic insecticide efficacy between insects feeding in the phloem versus insects tunneling and feeding in the xylem.

EAB larvae tunnel and feed in the phloem making them susceptible to systemic insecticides. Thus, the impact of EAB can be effectively managed with systemic insecticides. However, the goal is to maintain full canopies; not eradication. A few EAB larvae escaping the reach of insecticide applications is not a problem as long as treated trees maintain full canopies.

Of course, this is not true for ALB. No stage of the beetle can escape eradication. Adding to the challenge, for reasons that are not clearly understood, cerambycid larvae feeding within the xylem are out of the reach of systemic insecticides. However, this does not mean insecticides have no effect on ALB.

A percentage of newly emerging ALB females may feed on phloem tissue in twigs and leaf veins shortly after emergence. The plant food is used to mature the female's eggs and is known as *maturation feeding*. This means some females are susceptible to systemic insecticides in the phloem. Indeed, applications of imidacloprid are being used in Ohio and elsewhere in North America in conjunction with other eradication tools.

**Figure 21 – ALB Female Maturation Feeding Damage**



The most effective eradication tool remains cutting and destroying infested trees. However, this presents another challenge. There are no tools for determining whether or not a tree is infested other than by visual inspections performed by surveyors on the ground or by surveyors climbing trees.

Research has shown that the rate of success on *lightly infested trees* for well-trained ground surveyors using binoculars is 20 – 40%. The rate of success for well-trained climbers increases to 65 – 75%.

**Figure 22 – ALB Ground Survey**





**Figure 23 – ALB Climber Survey**



A simple math exercise will reveal the challenge presented by lightly infested trees. Let's say that a woodlot has 160 trees and 100 are lightly infested. Of course, the exact number of infested trees can only be discovered through surveys. Let's use an average survey success rate of 30% for ground surveyors and 70% for climbers.

The ground surveyors will discover 30 of the 100 lightly infested trees leaving behind 70 infested trees. The climbers will discover an additional 49 infested trees (70% of 70) leaving behind 21 lightly infested trees in the woodlot. Thus, after the woodlot was surveyed using the best available surveying methods, the 21 lightly infested trees escaped discovery; they were considered not to be infested. In other words, the 21 trees are *false negatives*.

The false negative trees will eventually become heavily infested and discovered by follow-up surveys. However, this may take years. In the meantime, the false negatives represent a clear and present danger for the natural spread of ALB and for human assisted spread. Obviously, the trees will be within the ALB quarantine zone; however, the continued existence of infested trees places a heavy burden on effective enforcement of quarantine restrictions. A single night-time movement of firewood can undo all efforts.

This is why the most effective application of cutting and destroying trees is to include all ALB host trees. Although maples are known to be preferred by ALB, all of the trees listed in the first paragraph are capable of supporting ALB development from eggs to new adults. This is why trees belonging to the 12 genera are known as *high risk trees*.

Had all of the high risk trees been removed once ALB was discovered in our 160 tree woodlot would have eradicated ALB in the woodlot. There would be no false negatives; there would be no risk for natural or human assisted spread.

Effective eradication of ALB in terms of both time and money depends on early detection of unknown infestations. Thus far, no ALB chemical attractants have been discovered to bait detection traps, although research continues. This means visual inspections remain the primary tool for discovering new ALB infestations.

#### ALB Detection Tips:

1. **Host: Focus on Maples.** ALB will attack trees belonging to 12 genera; however, maples (*Acer* spp.) are by far the most preferred host.
2. **Branch Breakage.** ALB larvae tunnel through and feed on the wood (xylem) of trees. This weakens branches causing them to break.

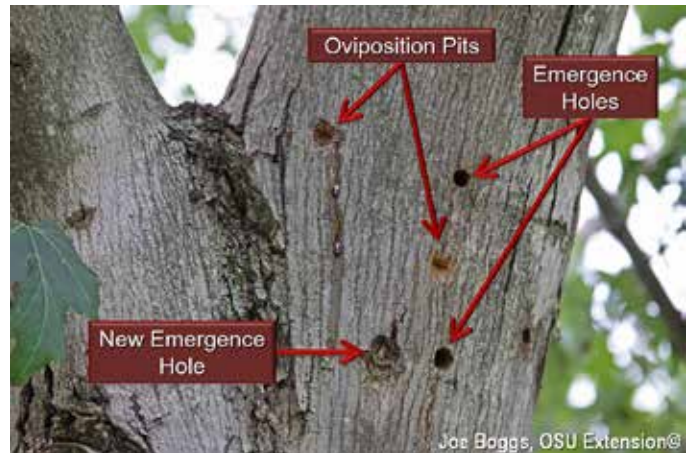
Unusually heavy branch breakage on living maple trees should be investigated!

**Figure 24 – ALB Larval Tunneling Shown in the Ends of Cut Branches**



3. **Holes: The "Pencil Test."** The big beetles typically emerge from deep inside the wood of a tree (xylem), so the round adult emergence holes extend deep into the tree. Inserting a #2 pencil into the holes will reveal the depth of the emergence holes. However, trees may close the exit holes with wound closure tissue.

**Figure 25 – ALB Holes**



**Figure 26 – Exit Tunnel from Within the Tree**





Figure 27 – Pencil Test



Figure 28 – Holes Closed with Wound Closure Tissue



4. **Pits in the Bark.** ALB females chew a concave pit through the bark to the xylem where they lay a single egg. The "oviposition pits" may weep sap during the season. However, usually close the pits relatively quickly, so you may only see rounded wounds.

Figure 29 – ALB Oviposition Pits



5. **Woodpecker Damage.** ALB larvae live deep inside the xylem. Woodpeckers excavate deep holes in search of these large tasty meat morsels.

Figure 30 – ALB Infested Branch with Heavy Woodpecker Damage



6. **Frass: Small Wood Shavings.** ALB produces small wood shavings as they emerge from trees or as the females chew oviposition pits.

Figure 31 – ALB Frass



7. **Bark Cracking.** Larval feeding damage may stimulate trees to produce callous tissue beneath the bark. The expanding callous tissue lifts the overlying bark producing cracks and fissures.

Figure 32 – ALB Bark Cracking



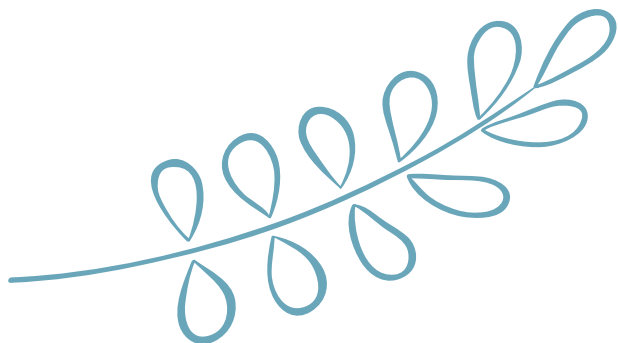
8. **Big Beetles.** ALB is a very large beetle. However, adults are only found during the summer; they are killed by the first substantial freeze.

### Stop ALB!

The regulatory agency in Ohio that is responsible for ALB eradication is the Ohio Department of Agriculture. On the federal level, it's the USDA APHIS. Both are working together with the Ohio ALB Cooperative Eradication Program.

If you find any of the ALB indicators listed above, report it. Give the ALB professionals a chance to investigate. In fact, if you find ANY suspicious signs or symptoms, report it! There is no harm if it turns out not to be ALB; there is great harm if it is ALB and it's not reported.

**You can report by phone by calling (866) 702-9938 or (513) 381-7180.**



**We are honored to recognize the following individuals who recently received new credentials. Congratulations to all!**

#### ISA MUNICIPAL SPECIALIST

Grant Jones, Bowling Green

#### ISA CERTIFIED ARBORIST

Tyler Crock, Hartville

Elizabeth Swaggerty,

Robert Firor, Cincinnati

Mount Sterling

Mark Fogarty, Milford

Joseph Thompson, Belmont

Michael J. Stacho, Chardon

#### ISA TREE RISK ASSESSMENT QUALIFICATION (TRAQ)

Betsy Anne Parks, Chardon

James Hopper, Broadview Heights

Peter Aldag, Columbus

Timothy J Ascher, Columbus

Ronald W. Becker, Galena

Kristopher S. Bruestle, Delaware

William Carr, Coventry Township

Gabriel William Dolce, Mansfield

Christopher Ellwood, Ostrander

Darius Alder Hardwick, Centerburg

Denise F. Harrison, Franklin

Brian D. Kennedy, Johnstown

Philip Knopp, Westerville

Alexander D. Lewis, Cincinnati

Michael A. McKee, Reynoldsburg

Dustin Moore, Westerville

Walter Reins, Powell

Kodi G. Riedel, Kent

Mariah Ritts, Painesville

Max Underwood, Delaware

**PROTECTING THE REPUTATION  
OF THE UTILITIES WE SERVE FOR  
100 YEARS**

**IT'S PART OF OUR JOB**

**100 YEARS**  
1919 Nelson TREE SERVICE, LLC 2019

**Vegetation Management Specialists**

See the videos  
  
800-522-4311  
[www.nelsontree.com](http://www.nelsontree.com)

©2018 Nelson Tree Service, LLC. All rights reserved.



# Earn CEU's at Home CEU Test Registration Information

**SUBMIT ONLINE -  
INSTANT RESULTS**

Must be completely filled out.

Name \_\_\_\_\_ Certification # \_\_\_\_\_

Company \_\_\_\_\_

Address \_\_\_\_\_

Phone \_\_\_\_\_ E-mail \_\_\_\_\_

Signature \_\_\_\_\_ Date \_\_\_\_\_



## Test Questions

To receive continuing education unit (CEU) credit for home study of this article after you have read it, circle the appropriate answers on the test below. A passing score is 8 correct answers. Next, complete the registration information above, *including your certification number & signature*, on this answer form and send it to **Ohio Chapter ISA, P.O. Box 267, Baltimore, OH 43105-9998**. The answer form must be postmarked no later than **February 29, 2020** to be valid. **You may also submit CEU Test Questions on-line at [www.OhioChapterISA.org](http://www.OhioChapterISA.org) under myProfile.** Only one test will be accepted. Please do not mail the test page if you submit it on-line.

**You must be a current member of the Ohio Chapter ISA for your CEU test to be processed.** You will be notified only if **you do not pass**. If you do not pass, you may not re-take the test. **This test qualifies for the following CEUs.**

### 0.5 ISA Credits – A, U, M, TWc, TWa, Bs

1. ALB is called a "longhorned" beetle because
  - a. It has two hornlike projections on each side of its thorax
  - b. It has very long antennae
  - c. Its head is shaped like a horn
  - d. It has white spots that form a horn-like pattern
2. Immature beetles (larvae) that belong to the Cerambycidae family are called
  - a. Roundheaded borers
  - b. Flatheaded borers
  - c. Metallic wood borers
  - d. Hornworms
3. Which of the following is true about reporting suspicious signs and symptoms to the proper authorities?
  - a. It's better for regulatory agencies to receive a report so they can investigate rather than not receive a report
  - b. You should always make certain it's actually ALB before reporting it
  - c. Regulatory authorities will not accept reports by phone
  - d. You should never waste the valuable time of regulatory authorities by making a potentially false report
4. Which of the following shows the correct order for the stages of development for ALB?
  - a. Egg, nymph, adult
  - b. Egg, pupa, nymph, adult
  - c. Pupa, larva, egg, adult
  - d. Egg, larva, pupa, adult
5. Which of the following is not an ALB host?
  - a. Maple (*Acer* spp.)
  - b. Birch (*Betula* spp.)
  - c. Elm (*Ulmus* spp.)
  - d. Oak (*Quercus* spp.)
6. Which of the following is most preferred by ALB?
  - a. Beech (*Fagus* spp.)
  - b. Hickory (*Carya* spp.)
  - c. Maples (*Acer* spp.)
  - d. Oaks (*Quercus* spp.)
7. Which of the following is true about diffuse porous trees?
  - a. Water and nutrients are carried up the tree through multiple xylem sapwood rings
  - b. Carbohydrates diffuse across the cambium to be transported through the xylem
  - c. Water and nutrients are carried up the tree through the most recent, outermost xylem sapwood ring
  - d. Oxygen diffuses through the cambial cells to support phloem tissue
8. Which of the following is true about eradication
  - a. It's the same thing as pest management
  - b. It means the complete elimination of a non-native invasive insect pest
  - c. Eradication does not apply to ALB in Ohio
  - d. No ALB population has ever been eradicated in North America
9. Why do woodpeckers create deep, conical-shaped holes in trees as they search for roundheaded borers including ALB larvae?
  - a. The birds store food to be eaten later in deep holes they peck deep into the xylem.
  - b. The birds must dig deep to extract roundheaded borers that are tunneling and feeding deep within the xylem (wood) of the tree.
  - c. Vibrations from pecking cause roundheaded borers to rise to the surface.
  - d. They are simply destructive birds.
10. Which of the following is true about the so-called "pencil test"?
  - a. It indicates the exit hole was made by a longhorned beetle.
  - b. It means the exit hole was made by ALB.
  - c. It means the hole was made by a woodpecker.
  - d. The pencil test has no meaning.



# The Buckeye Arborist

Ohio Chapter International Society of Arboriculture  
PO Box 267  
Baltimore, OH 43105-9998  
[info@ohiochapterisa.org](mailto:info@ohiochapterisa.org)  
[www.ohiochapterisa.org](http://www.ohiochapterisa.org)

PRSRT STD  
U.S. POSTAGE  
PAID  
COLUMBUS, OH  
PERMIT NO. 8755

CHANGE SERVICE REQUESTED



01/04/2018 OH-6515A  
Dawn Sherman  
Arborjet  
99 Blueberry Hill Rd  
Woburn, MA 01801

1\*\*\*1\_1

## Mark Your Calendar

February 25  
**Electrical Hazard Awareness  
Program**  
Dayton, OH

February 25-26  
**Certified Arborist Review Course**  
Dayton, OH

February 25-27  
**Ohio Tree Care Conference**  
Dayton, OH

February 26  
**ISA Certification Exams**  
Dayton, OH

February 27-March 1  
**ASCA Consulting Academy**  
Sacramento, CA

March 3  
**TRAQ Requalification Course**  
Columbus, OH

March 4-6  
**TRAQ Qualification Course**  
Columbus, OH

March 6  
**North Cost Urban Forestry  
Conference**  
Kirtland, OH

Visit [www.OhioChapterISA.org/Events](http://www.OhioChapterISA.org/Events) for details.

## Preserve Ohio's Greatest Green Resource – Trees!

By purchasing a *Trees4Ohio* specialized interest license plate for your vehicle, you help underwrite educational programs and services that directly benefit the trees of Ohio.

The plate provides one of the best **member benefits**; it directs readers to [Trees4Ohio.org](http://Trees4Ohio.org). This site is designed for consumer's looking for everything from proper pruning and mulching to how to find and hire an Ohio tree care professional. **Chapter members must login to [OhioChapterISA.org](http://OhioChapterISA.org) and update their profile. You must check "available for hire" and each of the services you provide.** Your email address associated with your membership record is your user name. If you forgot your password or have not logged in before, use the "forgot my password" and an email will be sent to you with instructions. If you have questions or problems logging in, please contact the Chapter office.

The new specialized interest plate is available under Organizational **Plates at <https://www.bmv.ohio.gov/vr-sp-organization.aspx>.**

**Show your support** by purchasing new plates and don't forget to **update your profile** so that consumers can find you!

