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Happy anniversary! Yes, this association is 80 years old! Back in 1938, an intrepid group of arborists decided a new organization should form to advance and protect the interests of the businesses providing tree care. It was a small group then, and it grew and grew and grew to the thriving association we have today.

The size has changed, the headquarters has moved, the benefits have expanded and the staff and board have turned over. But the mission, to advance tree care businesses, remains the same.

Speaking of staff, some of you may have heard a rumor that I am retiring this spring. Well, I’m here today to say … the rumor is true. The Board has hired a new president, David White, to help write the next chapter of your association. Welcome him aboard.

Nine Winter Management Conferences ago, I stood up here and spoke to you for the first time. I wondered if that speech would be my last. It was 2010, and the association was experiencing the same financial issues you all faced in the Great Recession. I was the interim president then, and we were in negotiations to merge with the landscape industry. Everything was on the table. A lot sure has changed since then.

Looking further back, when I started at the National Arborist Association in 1996, we had only one email address, so we weren’t that far behind.

The year I started, we celebrated a TCI EXPO that sold out 100,000 square feet of exhibit space in Charlotte. This fall, again in Charlotte, we’re very close to selling out 240,000 square feet of space. Sachin is still getting it done.

When I started, we had 1,500 members and total revenues of $1.8 million. Today, we have 2,400 members and closed the books on 2017 with revenues of almost $7.5 million.

Of course, back then, Tree Care Industry Magazine and TCI EXPO were relatively new. There was no Accreditation, no Utility Contractor Accreditation, no CTSP program, no ArborMax insurance plan, no Arborist Safety Training Institute and no Voice for Trees political action committee.

Speaking of politics, when I started in 1996, one of the hottest issues in Washington was immigration reform. Good thing they solved the immigration issue back then!

So, we’ve come a long way. More specifically, and more relevant for the State of the Association today, is what did 2017 look like for you as members, and what new programs and benefits did the association launch to help you run your businesses more profitably?
Where are we today on February 5, 2018?

In 2017:
- We launched a Crew Leader Qualification program to help new and veteran crew leaders grow their leadership, communication and personnel-management skills. Early feedback from the workshops is that this may be the best new program we’ve launched in years.
- We launched a pilot apprenticeship program in Maryland. The arborist trade was determined to be “apprentice-able” a year ago, and last month TCIA finalized a National Apprenticeship Program with the U.S. Department of Labor to make apprenticeship available in all 50 states to any organization that hires arborists. Unlike most apprenticeships, TCIA – a trade association, not a labor union – registered the program. This means the employers control the standard, not a union.
- In 2017, we turned the switch on a new website, OutsideCareers.org, launched with career information, posters, brochures and tremendous videos that will help us – and you – educate people about this great profession of arboriculture.
- The membership has been vocal about needing more business-management education options, especially for those smaller but growing companies that can’t be here at Winter Management Conference for a week. In 2017, we developed the Executive Arborist Workshop – two days of business-education sessions, roundtable discussions and networking opportunities for business owners. The first of many will be held in early April in New York.
- Through the Arborist Safety Training Institute and Susan Harwood grants, in 2017 we funded 61 safety workshops around the country covering EHAP, aerial lift, chipper and chain saw safety. That’s more than one every week, with a total of more than 2,000 arborists attending.

So, what is the state of your association? Where are we today on February 5, 2018?
- We have the most CTSPs … ever
- We have the highest number of accredited companies … ever
- We have the highest revenue … ever
- We have the highest number of social media followers on multiple platforms
- We have the highest level of financial reserves … ever
- We have the most grant applications to fund safety training … ever
- We have the most arborists studying Tree Care Academy safety manuals … ever
- We have the most TCI EXPO booths and the largest show floor … ever
- We have the highest level of vendor sponsorships and partnerships … ever
- We have the largest endowment for the Arborist Safety Training Institute … ever
- We have the most people at Winter Management … ever

At its most basic, root level, a trade association exists to serve its members. Some associations have long mission statements, but TCIA’s is very short and simple – to advance tree care businesses. That’s it. Everything we do, every program, every meeting, every publication, every service – even every phone call or email – should serve that purpose: advance tree care businesses.

Programs are nothing without members who support them.

I’ve had the pleasure of working with some amazing Board volunteers: Scott Packard, Terrill Collier, Randy Owen, Tony Gann, Erich Schneider, Scott Jamieson, Steve Sylvester, Will Maley, Ben Tresselt, Kevin Caldwell, Jack Guffey, Bill Weber, Phil Chambers, Steve Marshall, Andy Ross and, of course, your current Board.

I’ve had the pleasure of working with some amazing staff who are here today. Most of you know Peter Gerstenberger, Bob Rouse, Don Staruk, Brigitte Orrick, Amy Tetreault, Diane Morgan and – especially if you’re an Associate Member – you know Sachin Mohan! I’ve worked with some of them more than a decade, with others two decades. As members, you are indeed fortunate to have this dedicated cohort working for you – and I have been blessed to work with them.

I encourage you to remain committed to this community and support our new leadership moving forward. TCIA and the tree care industry have been around for a long time. We’ve gotten through good and bad times, and together we’ve emerged, I believe, stronger than ever before as an association and as an industry.

Bob Felix hired me in 1996, and I’m leaving the association 22 years later in the hands of Bob’s son, Andy Felix, the new chair of the Board. Something about that seems right. I feel very fortunate to have worked with Bob – for too short a time – and with my predecessors, Cynthia Mills, for almost a decade. I’m confident that I’m leaving this association in the very capable hands of your Board of Directors and your TCIA staff.

While this is my last State of the Association address, today’s story isn’t about me. It isn’t even about the association. This is about you, as members, one by one, building stronger businesses and a more prosperous industry. We’ve come a long way over the last 80 years as an industry. We have a lot to be proud of. I’m proud that you have allowed me to be a part of it.

I’d also like to thank your year’s Board for their commitment to a year that has been full of questioning everything we do, how we do it and where we’re going. I’d like to thank all of you for your support, encouragement, commitment and, yes, occasional criticism these past two decades. Working in this industry – and with you – has been a true pleasure.

Mark Garvin
president & CEO, retired

The 2017-18 TCIA Board of Directors, posing at WMC 2018 in Hawaii, are, from left, Mark Garvin, Mundy Wilson Piper, Tim Gamma, Peter Sortwell, Andy Felix, Tom Presser, Jason Showers, Alan Jones and David Fleischner.
The Official Publication of the Tree Care Industry Association

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ON THE COVER: A Platform Basket Arborist 89-foot compact lift from Tracked Lifts enables safe access to the crown of this dead tree. For a look at what to consider when shopping for a compact lift, see the story starting on page 10.
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There are many factors to consider when purchasing a compact lift. UP Equip’s Easy Lift 87-48 AJ, shown here, is the company’s most popular compact lift for tree care. “A lot of competitors offer warranties of one year or 500 hours. We also give three years’ structural warranty, regardless of the hours,” says UP’s Alain Pare.

By Rick Howland

I f I am going to spend tens of thousands of dollars on a compact tracked lift, what’s my ROI (return on investment)? And how do I choose which one is right for me?

According to manufacturers and distributors spoken with for this article, contributors to ROI include:

- increased speed of work
- reduction in the size of a crew needed to get a job done
- potential to get new business
- increased safety on the job
- extended careers for valued workers

How to select the right machine is a bit more complicated.

Size and working height
“Selection of the right tracked lift is the most important factor,” says Mike Hrycak of Tracked Lifts. “Getting the most from it should start long before you purchase your machine. This is the most critical thing you can do to maximize your return on investment.

“The factors to be assessed include the lift’s working height and identifying what your tree company’s main focus is. Are you a removal company, or do you do mostly preservation work? Maintenance? Trimming … and so on?” Hrycak says. “One of the things we hear time after time is users buying a machine that is too small, often due to cost constraints. That (undersizing) can expose a machine to damage and safety risk.

“Also, it is critical to select the right-size machine for your geographic location and type of work. The size of trees varies throughout the U.S.,” Hrycak explains.

“Knowing the average size and kind of work you will be doing most often will determine the size of your lift to a large extent.”

He declares, “For a company focused largely on tree preservation, you probably will want a smaller, lighter and more nimble machine. That could be a 60-foot unit, likely enough to do all of your tree maintenance work and even some medium-size removals. However, if you specialize in tree removal, in the same area where a 60-foot machine is enough to do pruning, maybe a 72- or even 90-foot unit might be preferred.”

Hrycak and others are quick to point out that the working height of a lift is usually measured in ideal, straight-up conditions. But safe working height is affected by side-reach, the combination of up and over. “It is important to be familiar with
the average tree height in your area to recognize typical up and outreach, which will determine your minimum size requirement and therefore the optimum unit,” Hrycak says.

In a related observation, he cautions, “Recognize also that anything you cut might fall on the machine, endangering the unit and the operator. So, a taller unit than you might consider at the outset can allow you to stay some distance back from potential trouble.

Hrycak says, “From our experience, we found that the optimum size for most tree companies would be at the 85- to 95-foot work height for most geographic areas away from the coast, at least for New England, the Upper Midwest and interior southern states.”

Ebbe Christensen, president of Reachmaster, adds to that. “Certainly, the first thing I would tell a customer is to evaluate carefully what work height is needed, but then combine that with access needs. Will you be doing a lot of backyard work? Entering through single or double gates? And what do you anticipate your average work height to be? To me, those are the first two factors in looking to get the most from a lift.”

He also puts side reach high on the list. “Look carefully at the side reach of any unit at your desired work height. When we talk to customers, they say they typically cut to 75 feet.” The presumption, according to Christensen, is that a 75-foot lift is needed. “With a 75-foot (cut), I think a customer would need to be in a 95-foot lift category or higher. Once the lift goes into a horizontal reach, it loses vertical height,” he says, noting that not considering the lift’s side reach often results in a big purchasing mistake. “The best way to make a selection is to make sure you have a lift that fits normal work situations – height and reach.”

Lenny Polonski of All Access Equipment also recommends going a bit larger when selecting a lift. “Guys will tell me they have a 60-foot bucket, ‘So I need only a 60-foot compact lift.’ But they think small. I say be a big thinker, not a small thinker. If you have a 60-foot bucket, just getting the next size up on a compact tracked lift will take you to the next level in your business, leading to bigger and better, more profitable jobs. To my way of thinking, if you are running a serious tree company, you need a serious machine.”

“If we look at the bucket truck, the sweet spot for tree care is 70 to 75 feet,” says David Kesser, president and CEO of Teupen USA. “I think what happens typically is that someone will get a smaller, entry-level machine because the product is new to them, and they may go for a 50-foot, which they do not see on bucket trucks,” Kesser recounts. “But they come back at the end of the week of working with the new compact lift and say that they like it and it feels good using it, but that they still need the 70- to 75-foot working height.”

Operating system

High on the list of most important purchasing decisions is the operating system, according to Hrycak and Christensen, both noting that diesel is more often the preferred option.

“Obviously, the major engine options are diesel or gasoline. Some buyers figure they run mostly diesel-powered equipment, so it is better for them to buy a diesel lift. Some prefer to run gas. One advantage of gasoline over diesel is the noise. Diesel is noisier,” Christensen maintains. “Then there is the lithium battery (electric) option, which is favored around noise-sensitive areas, but that is less than one percent of the business.”

According to Christensen, to get the most from their lift, most customers will opt for the two – fuel and battery in a hybrid unit. (The second system also can function as a backup in the event of a system failure.)
Diversity and ROI

As far as getting more from a lift, Hrycak says, “A compact tracked lift can be an effective way to diversify what a company does in order to generate more revenue. Whereas a diesel engine means the machine can be used only outdoors, a hybrid with a secondary electric power source means the machine can be used inside a building. Using the lift in the off-season or during regular seasonal down times, such as for architectural repair or maintenance, very high lighting changes and repair or window washing, means you can increase the bottom line.”

“Getting the most out of a lift is a matter of efficiencies,” according to Teupen’s Kesser, “and with a compact lift, it is efficiency versus what was done in the past. In tree care, that is specifically climbing. Using our lift where one used climbers in the past will improve efficiency, and jobs will go quicker and safer and more efficiently than with climbing. That’s where the arborist gets the most bang for the buck!

“We will not replace all climbers,” Kesser is quick to note, “but the lift is a definite advantage for the tree care company. Instead of throwing a rope into a tree, you simply drive in and lift the worker into position.” Kesser adds that it’s very advantageous when “you can drive in and work on multiple trees from a single location. That’s how to get quicker, safer work done. We know this because we go out to work sites and set up in one location to work multiple trees or shrubs to ensure the promise of speed and efficiency.”

Christensen says the way to get the most out of a compact tracked lift is “to use it wherever you can.

“Sometimes you might have a tree job that will still require a climber, and while we do not recommend putting a climber in a tree with a lift, it sometimes is actually safer to do so,” Christensen says. [The operator must make sure to use an OSHA-compliant fall protection system while in a lift, and the typical arborist saddle doesn’t meet OSHA’s criteria – Ed.]

For companies with experienced and valued employees, Kesser says there is often an under-appreciated benefit. “Being able to use these compact lifts means you can keep someone in the trees and extend his or her career. When someone no longer can climb, you have to go through the process of hiring and training. Any time you can keep a good employee in the role they are good at, it’s worth it.”

Kesser says extending the life of the lift itself is another way to get the most from your capital investment. That includes, he notes, the value of a service plan and making use of the operating manual. “I can’t stress enough pre-use maintenance and safety inspections. They are the most imperative steps and often the least performed on aerial lifts.”

He agrees that there are ways to keep the lift busy and generating business dollars off-season and out of the tree care business, for example, hanging Christmas or community holiday lights and signs. “These all are good options to keep your equipment and people busy off-season.” However, Kesser sounded a warning alarm. “Make sure your tree care business insurance covers your lift for other business activities.”

Alain Pare of UP Equip, headquartered in Canada and serving North America, says that who you purchase your lift from plays a significant role in getting the most from your equipment. One of the prime values of the seller is to educate the customer about the equipment, says Pare.

“We at UP Equip know the tree business, so we will tell customers the facts of what they can do and how our different lifts might best fit into their business so they can get the most out of them.”

Part of that is helping customers see how the lift might open them up to new business.

“Obviously, people look for these machines to solve a particular problem. We let them know that, while they are buying for specific needs, the lift can be used to generate income in other applications,” Pare says. “I have heard many times that the happy owner did not see the extra business coming.”

While that happens on a regular basis, Pare says, “More often than not, it is much more simple. For example, owners may purchase one for getting into backyards and soon discover the lift’s speed over traditional climbing situations, even in front yards or curbside, because of the quick setup and safety. They buy the machine initially for tight or awkward spaces but soon discover the benefit of increased production even in unrestricted areas.”

Utility One Source recently underwent a name change, essentially a re-branding, and is now know as Custom Truck One Source. “The name reflects that we offer custom equipment and specialize in truck and heavy equipment sales, rentals and
EXTENDED REACH REMOTE CONTROLLED TREE REMOVAL.
aftermarket parts and service,” says Bob Dray, Custom Truck marketing and sales vice president. “Plus, we remanufacture equipment and can dispose of equipment via auction.

“We stock the Super Arborist, a SkyLift product, both the Super Arborist 64- and 53-foot models,” Dray says, explaining that SkyLift builds its own tracked carriers and utilizes different lifts, including Terex and VersaLift units, mounted on SkyLift carriers.

“We deal only with insulated units at this time,” Dray explains, adding that they sell a great number of machines to large-production tree care companies. “Selecting the right lift and getting the best return on investment depends on one’s market,” Dray says. “The insulated ones are more expensive but can work around power lines. Non-insulated units are less expensive. They can go higher but not near power lines. So, when making a decision that’s best for your company, I would start with that.”

Dray also warns that even at lower heights, “there are safety concerns as well. Even with residential work, there is power around houses that one needs to be mindful of, even though most companies have approach-distance rules – operating so many feet away from voltage.”

**Priority use and training**

“If you are a larger company doing a lot of work, I strongly recommend you have a dedicated crew to run just that unit,” says Hrycak. “Also, consider a backup crew – at least a secondary operator. We find owners get the best results and the longest machine life with crews who are familiar with the lift process. Being able to run the lift is one thing. Being able to run it safely, efficiently and most cost effectively is another,” he maintains.

“There are intricacies in approaching any of these machines that, because of the variances on each job site, a crew can gain only from experience,” Hrycak says. “This crew will know how to enter the site, position the machine and do the safest, most-efficient work and minimize the chance for damage to a client’s property and the machine. Crews assigned on an as-needed basis once a week or month never develop the necessary proficiency, and that can pose damage to the unit.”

To that end, Hrycak and others promote professional, programmed training of not only the lift crew.

“I think it is important for a tree care company’s sales force to be proficient in how a compact lift operates and what it takes to get it to and from a job site. That helps determine a proper, accurate job estimate,” Hrycak observes, “and a decision whether or not to assign the tracked lift to a specific job. The day-to-day operation of a tracked lift can be a major expense, and the machine needs to be utilized in the most efficient way.”

Essentially, he says, “The crew should be seen as a specialty, concentrating only on jobs where the tracked lift can and should be used safely and proficiently. Also, the crew’s time should not be wasted; they should be leapingfrogging from job to job, leaving waste cleanup, chipping and grinding to others. This is how you best maximize your returns.”

Alain Pare agrees that getting the most from one’s compact lift comes from using it wisely. “A lift like these will increase productivity 50 to 70 percent when you get used to it,” he maintains. “It will be more productive if limited to maintenance and take downs, leaving someone other than the lift operator and crew to bring out chips and stumps.”

Others also agreed with the need for good training.

“Go with a manufacturer with a history of providing good training, one that has a good program and which trains you directly,” says Christensen, adding that proper outrigger deployment is a classic example of getting the most out of a machine at setup. “You have to learn to be precise with setting outriggers. Good training will show you how to correctly and quickly set up the lift and use it.”

Lenny Polonski was returning from delivering a new machine in Connecticut and effecting the training that supports it when interviewed. “In my opinion, the first thing you want is good instruction on how to use the lift,” he says, “This applies to all manufacturers.

“Make it a point to have the person you buy from spend time familiarizing you with and training you on the machine. You are spending a lot of money. Even though you likely know how to run lifts, each is different. If you get good instruction, you will get the most out of your machine.”

Polonski urges, “Get the training, and get the certificate!”

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The Omme 3000 from Tracked Lifts has a working height of 96 feet and a width of 44 inches. The working height of a lift is usually measured in ideal, straight-up conditions. But safe working height is affected by side-reach, the combination of up and over, says Tracked Lifts’ Mike Hrycak.
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“I have heard of folks who have bought a compact, tracked aerial lift but not known how to use the machine properly, and it sat, becoming, in essence, an expensive paperweight,” says Polonski. “When we train a customer, we train for a minimum of four hours at no additional charge. We find that when we explain all about the machine, the customer can hit the ground running and make more money.”

He quips, “This goes for any piece of equipment, from a chain saw to a stump grinder. You have to have a good operator, otherwise production falls off and the machine risks damage. With proper and complete training, everyone wins,” Polonski says.

**Durability**

“The next point regarding getting the most out of your compact aerial lift is to get a heavy-duty lift,” says Polonski. “Tree work is one of the roughest industries, so get a heavy-duty machine, not a cheap, wimpy machine, because you will destroy it. I have heard this, too; people will buy cheap machines and then complain to the manufacturer because the machine does not stand up. Save yourself time and trouble and get a heavy-duty machine for heavy-duty work.”

Christensen agrees with Polonski and with Pare when he says the selection of a manufacturer plays a role in getting the most from your compact tracked lift. “Tree care is a rough industry, so it is important to look at maintenance and repairs and the availability of parts. Because equipment like this is designed to be on the edge, with the best balance of height and weight, it is important not to experiment (with off-brand repair parts),” he warns. “Go to your manufacturer of choice and use their equipment designed to repair your machine specifically.”

For Christensen, an important consideration in getting the most out of a machine is to buy a lift with a good safety record. “Thankfully for most major players serving the tree care industry, we offer good machines with good safety systems. In the long run, it pays to have good safety systems that are designed to work in the tree environment.”

Speaking of units that do well in rough environments, Altec recently introduced what it terms a “rugged, compact tracked lift,” the TDA58, designed specifically for the rigors of tree care work as well as other heavy-duty applications. This unit offers a 58-foot platform height (63-foot working height) and 36-foot, 2-inch horizontal reach, among other features.

“Our lift was put through extensive testing to ensure the safest possible product for our customers,” says Andy Price, Altec’s market manager for tree care.

UP Equip’s Pare, whose company specializes in the Easy Lift made in Italy, agrees that durability and dependability are important. “We are partners in the Americas, where we do final assembly and customization in Montreal,” he says. “We spend 25 to 45 hours on each machine from the time it arrives by container until it is shipped to our customer. We are not just flipping machines we purchased in Europe,” he states, adding that his company tests machine stability and operability and electric and hydraulic fittings.

“For tree care, our experience and feedback help us improve structural compo-
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Pare says that warranties are important if one is to get the most from purchasing machines like a compact tracked lift. The UP Equip model most popular among arborists is the 87-48AJ, he says. “We offer a full one-year warranty, regardless of the meter (number of metered hours recorded on the machine). A lot of competitors offer warranties of one year or 500 hours. We also give three years’ structural warranty, again, regardless of the hours.”

Features
“It is very important to look at how selecting specific features will affect performance, such as the ability to climb versus operate primarily on flat terrain,” says Ebbe Christensen. “What is the machine capacity for the terrain you are working on? Some are not designed for a 10- to 15-degree slope.

“There are a range of lifts available,” Christensen says, some with features easier to operate than others. “The key is to ensure that the customer gets proper training and is comfortable with operating the machine.”

Polonski says it is important to “get a machine with versatility. You need to be able to work many situations, and so does your lift. It needs to be capable of setting up on uneven ground, not just in a parking lot, and it needs to have a fast operating speed. If the machine is too slow, people will get aggravated and perhaps not use it to its fullest.”

Andy Price points to ease of setup as contributing to optimizing operation. Altec’s TDA58 has “fully hydraulic controlled outriggers. What this means,” Price explains, “is that all four outriggers can be deployed by the operator from one spot at the back of the machine.

“Other units are not fully hydraulic, meaning you have to manually pull the outrigger out and pin it in position, then use the hydraulic system to set them. The Altec machine setup is faster, and the operator avoids having to walk around the machine, not only saving time but also helping to minimize fall hazards.”

Picking up from Polonski’s point, ground speed is another thing to consider, Price says. “Most competitors have engines under 25 horsepower. Ours has 48,” says Price. “The reason for that makes for one of our biggest advantages – a ground speed of two miles per hour.” Price says this is fast for a machine like this, making it much quicker for an operator to move it long distances prior to setup.

“One of the important things on a carrier (tracked chassis), at least for us,” says Custom Truck’s Bob Dray, “is proportional hydraulic valving, which allows the operator to ‘feather’ operation of the tracks to make a slow turn and then another without tearing up the terrain.”

Another thing to think about is the trailer, says Dray. “Will it handle the lift? The big thing right now is to try to keep the tracked unit under 10,000 pounds to keep it non-CDL, although there is no way to get around that with the very large lifts.

“A lot of compact lifts come from over-
seas. And parts are stocked from overseas. With Skylift being built in the U.S., as are the Versalift and Terex lifts, spare parts to get you back on the job quickly are readily available,” Dray maintains.

He also touts the benefit of relationships with the lift seller. For example, he points to Custom Truck’s in-house financing and units that are stocked at locations throughout the U.S., which results in quicker delivery of lifts and parts and lower delivery expense.

Safety 

Andy Price says that when the company develops any new equipment, “Altec always goes to the safety aspect first.

“The most important thing for safety with this unit (TDA58) is that it is fully insulated. What that means is that there is insulation protecting not only the operator but also the ground crew,” Price states. In terms of getting the most from one’s lift, Price says the insulation capability allows for more jobs, especially those near power lines.

Continuing his point that safety enhances getting the most from one’s lift, Price adds, “I would look for safety in operation; for example, the TDA58 has protection built in to ensure that the outriggers are in place before the boom can lift.”

In the end, Polonski agrees that safety will help get the most from your machine, minimizing lost time, lost crew and related costs. So, he advises, “Get a machine with the most advanced safety features.”
Utility One Source announced in February a major rebranding effort, changing the company’s name to Custom Truck One Source. The rebrand unifies all company platforms under the Custom Truck One Source name.

Providing customization across a wide range of industries and a vast array of products, Custom Truck One Source positions itself as a one-stop-shop for customers. Company officials say the new name sends a clearer message about what the company does.

“With our focus on custom in the name, it can work for every industry we serve, whether it’s utility, forestry, rail, construction, propane, oil & gas or other heavy equipment industries,” says Fred Ross, CEO. “We think Custom Truck One Source does a good job of that.”

The transition to the new name has already begun and became official April 1.

“Our industries are moving fast, and it takes speed, skill and ingenuity to meet the changes,” says Ryan McMonagle, COO. “We think the new brand reflects that and will help keep us headed in the right direction.

**Arborjet buys Ecologel Solutions to expand eco-friendly PHC products**

Arborjet has acquired a majority interest in Ecologel Solutions, LLC, an Ocala, Florida-based developer and manufacturer of products for water conservation, dust mitigation, plant nutrition, pond and lake management, and anti-fungal coatings.

Ecologel’s portfolio features a broad range of environmentally friendly products serving multiple markets such as landscape and ornamental, golf and sports turf, nursery and agriculture and more. Its flagship technology, Hydretain, is a soil-moisture management product also used to improve plant quality and increase uptake of essential nutrients. Ecologel products will continue to be available through their existing distribution partners with additional support from the Arborjet team.

“Ecologel’s products broaden and strengthen Arborjet’s existing catalog of unique offerings that provide environmentally responsible solutions to serious issues,” says Russ Davis, Arborjet president and COO. “We are eager to explore how Ecologel and Arborjet technologies can benefit each other, and we are particularly excited to expand Hydretain’s reach into the horticultural and agriculture industries to reduce water usage around the world.”

**Dan Herms joins Davey Tree**

Daniel Herms, Ph.D., in February joined The Davey Tree Expert Company as vice president of research and development. “As one of the premier theoretical and practical tree-sciences researchers in our industry, Herms complements the technical quality and capacity of the Davey Institute,” the company said in a release.

Herms, a past presenter at TCI EXPO and contributor to TCI Magazine, has more than 30 years of experience and leadership in arboreta and academia, beginning in 1984 as director of pest management at Dow Gardens in Midland, Michigan. Most recently, Herms served as a professor and chair in the Department of Entomology at The Ohio State University.

In 2014, Herms was elected as a Fellow of the American Association for the Advancement of Science (AAAS), an honor received by few scientists nationwide. He was chosen for “his distinguished research, teaching and outreach contributions to the science and application of tree-insect interactions, including ecology, impact and management.”

The range of Herms’ research promises to grow the green industry and support Davey’s corporate responsibility initiatives, the statement said.

“Dan is well known in the green industry for his expertise and ability to translate technical concepts into practical applications. His research on the emerald ash borer led to the development of numerous industry practices that are still being utilized today,” said Greg Ina, executive vice president of the Davey Institute and employee development. “Dan’s decades-long research on how plants allocate and balance their resources between growth and defense has enormous implications on pest management and nutrition programs, central to Davey’s plant health care approach.”

Herms holds a bachelor’s degree in landscape horticulture from Ohio State University, a master’s degree in horticulture and entomology from Ohio State and a Ph.D. from Michigan State University in entomology with a specialization in ecology and evolutionary biology.

**New England Grows dissolves**

The Board of Directors of New England Grows in February announced that the annual green industry event of the same name, held every winter in Boston for the last 25 years, will no longer be held and that they had dissolved the organization.

“After 25 years, the award-winning horticultural tradeshow New England Grows (trademarked GROWS) is discontinuing operation. The Grows board of directors, representing the four founding partner organizations, made the unanimous decision to dissolve and disband both the Grows event and the organization,” read a statement from the group.

“The decision to dissolve New England Grows was difficult, but we all believe...” (Continued on page 74)
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Bandit XPC-Series of hand-fed chippers

Bandit Industries’ new XPC Series of drum-style, hydraulic-infeed chippers are designed to be as capable as their XP counterparts. They feature Bandit’s slide-box feed system and all steel-welded construction. The Intimidator 12XPC is intended for professionals focused on trimming, yet to be rugged enough to chip 12-inch-diameter material. Designed to be maneuverable with cost-effective performance, it’s compact for easy towing and positioning, and has a feed rate of 120 feet-per-minute to quickly convert large quantities of brush into dimensional chips. It offers gasoline and diesel engine options up to 89 hp. The Intimidator 15XPC is a 15-inch-capacity drum chipper featuring a 24-inch-diameter chipping drum, weighing 7,198 pounds and using the highest-quality components. The Intimidator 19XPC is designed to handle big limbs, forked material and whole trees, with one large, 15 3/4-inch-diameter top feed wheel, and to be extremely versatile. Intended as a high-capacity chipper that’s easy to maneuver, it features a proven feed system, durable components and chip-throwing technologies. (www.banditchippers.com; 1-800-952-0178)

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Branch Manager 38 Special stump-grinder attachment

Branch Manager’s 38 Special stump-grinder attachment is designed for mini and full-sized loaders. The 38 Special has a 35-hp Kohler gas engine with a four-groove, direct-drive belt to provide 3700 rpm to the cutting wheel with a 20-inch cutting depth. The single, hydraulic auxiliary hookup provides power to the stump grinder’s swinging motion, designed to allow an operator to arc the cutting wheel instead of the loader, reducing wear and tear on a customer’s yard. In addition to the chip guards around the cutter wheel, it has 6-foot-wide adjustable chip guards that, when collapsed, reduce the overall width to 35 inches. Branch Manager offers three different choices of wheels including, but not limited to, The Revolution wheel by New River and the Quadwheel and the Green-wheel, both by Green Manufacturing. (612-400-3479; info@branchmanagerusa.com)

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Jarraff All-Terrain Tree Trimmer with rotating head

Jarraff Industries’ new Jarraff All-Terrain Tree Trimmer has an updated design, a new look and is designed for higher power output and improved efficiency. It features a patent-pending rotating saw-head design that allows the operator to rotate the blade assembly 180 degrees, an industry exclusive, according to the company. A new touch-screen information center is intended to provide the operator unmatched control with engine monitoring, a high-definition camera display and more. It features a Cummins 130-horsepower, Tier 4 engine that meets all environmental emission standards and mandates. A rotary manifold offers a 360-degree plus range of motion as a standard feature. The unit also provides lateral tilt and 75-foot cutting height. Two four-way joysticks and fingertip controls are designed for optimal precision. In addition, the cab is completely ROPS, FOPS and OPS certified. (800-767-7112; www.jarraff.com)

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NV Earth Products bio-based lubricants

Dynamic Green Products’ new NV Earth is designed as a line of high-performance, bio-based outdoor-power-equipment lubricants that can replace conventional petroleum oils in everything from hand tools to riding mowers to tractors. NV Earth OPE lubricants include Bar & Chain Bio-based Oil, a certified nontoxic product that is ultimate biodegradable, water-safe and produces no VOCs at high temperatures. It’s a proprietary blend of American-grown seed oils and performance additives designed to deliver a high level of lubricity, superior tack and lower bar temps. The 2-Cycle Engine Bio-based Oil is designed to offer reduced emissions and carbon buildup. This is a high-performance synthetic formulation using renewable content intended to prevent sludge, abate smoke and smell and maximize throttle response. The 4-Cycle 10W-30 and 10W-40 Bio-based Oils are for larger equipment, including riding mowers. This nontoxic, full-synthetic engine oil is intended to extend drain intervals beyond OEM recommendations. It is designed to deliver advanced metal protection through proprietary Clean Base technology and high-temperature stability with enhanced anti-wear additives. The ISO 32/46/68 Hydraulic Bio-based Oil is a full-synthetic, biodegradable and oxidatively stable oil designed for greater shear prevention. It is VGP (Vessel General Permit) compliant and meets strict OEM standards. (nvearth.com)

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Industry Almanac

April 3-4, 2018*
TCIA Executive Arborist Workshop
Doral Arrowood Resort, Rye Brook, NY
Contact: www.tcia.org/events

April 13, 2018
EHAP Workshop – full-day, Spanish**
Arboretum Botanic Garden, Arcadia, CA
Contact: www.tcia.org/training

April 13, 2018
EHAP Workshop – full-day, Spanish**
UF/Miami-Dade County Extension, Homestead, FL
Contact: www.tcia.org/training

April 14, 2018
Crane Safety Climber School Crane Takedowns
The Crane Man, Inc., Blue Bell, PA
Contact: Kimberly, info@thecranemaninc.com

April 14-15, 2018*
Sherrill Tree ArborFest
Charlotte, NC
Contact: www.StarborFest.com

April 17-19, 2018*
Texas Tree Climbing Championships
Waxahachie, TX
Contact: John Giedraitas; jpg@isatexas.com

April 18, 2018
NJ Committee for the Advancement of Arboriculture – 10 Day Climbing School
Manalapan, NJ
Contact: www.caanj.org/training.php

April 18-19, 2018
Certified Treecare Safety Professional/CTSP Workshop
Vacaville, CA
Contact: www.tcia.org/training

April 20, 2018
Electric Hazards Awareness Program/EHAP Workshop – full-day, Spanish**
San Diego Botanic Garden, San Diego, CA
Contact: www.tcia.org/training

April 23-26, 2018*
Western Chapter ISA Annual Conference
Santa Rosa, CA
Contact: www.WCISA.net

April 27, 2018
Electric Hazards Awareness Program/EHAP Workshop – full-day, English**
Hunt Valley, MD
Contact: www.tcia.org/training

May 2, 2018
NJ Committee for the Advancement of Arboriculture – First Aid/CPR
Manalapan, NJ
Contact: www.caanj.org/training.php

May 8, 2018
Georgia Arborist Assn. Bi-Monthly Training & Meeting
Decatur, GA
Contact: georgiaarborist.org/event-2778604

May 15, 2018
Aerial Lift/Aerial Rescue Training Program
Maumelle, AR
Contact: vermeermidsouth.com/events

May 17, 2018
Tree Climber Specialist***
Madison, WI
Contact: www.streamsidegreen.com

May 18, 2018
Aerial Rescue Training***
Brookside Park, Ames, IA
Contact: www.tcia.org/training

May 31, 2018*
Plant Health Care Workshop
The Morton Arboretum, Lisle, IL
Contact: www.tcia.org/training

June 10-12, 2018 *
Trees Florida
Fort Myers, FL
Contact: www.floridaisa.org

June 29, 2018*
Plant Health Care Workshop
Encinitas, CA
Contact: www.tcia.org/training

July 10, 2018
Georgia Arborist Assn. Bi-Monthly Training & Meeting
Lawrenceville, GA
Contact: georgiaarborist.org/event-2778604

July 12, 2018*
Plant Health Care Workshop
Massachusetts Horticulture Center
Wellesley, MA
Contact: www.tcia.org/training

More almanac online! For the most up-to-date calendar information, visit www.tcia.org ⇆ events ⇆ industry-calendar
Send almanac listings to editor@tcia.org, or post them yourself on TCIA’s Industry Calendar – follow the directions above.

What’s Coming in TCI?

Each issue of TCI Magazine contains a variety of articles tailored to the specific needs, concerns and interests of arborists. TCI solicits a number of articles from outside writers to keep its editorial content fresh. Do you have a story for TCI? The editor will be happy to review your idea or manuscript and discuss it with you. Here are some of the upcoming topics for the next two issues:

MAY

Machinery & Equipment: Chippers
Tools & Supplies: Spray Equipment, Tree Planting
Services: Education
Safety: Hazard Tree Assessment, CEU Quiz

June

Machinery & Equipment: Cranes, Attachments/Grapples
Tools & Supplies: Herbicides/Pesticides
Services: Fleet Management
Safety: Climbing Safety

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July 12, 2018*
Plant Health Care Workshop
Massachusetts Horticulture Center
Wellesley, MA
Contact: www.tcia.org/training

Contact editor@tcia.org
Advertising opportunities: Sachin Mohan, smohan@tcia.org

* Indicates that TCIA staff will be in attendance
** Susan Harwood Grant-funded workshop; does not include lunch
*** ASTI grant supported workshop

Contact: 1-800-733-2622; www.tcia.org
Thanks to a new OSHA rule, covered companies have until July 1, 2018, to submit their OSHA Form 300A injury and illness summary information on a secure website OSHA provides. If you go to this link, you will see a radio button in the upper-right corner of the page that will take you to a secure site where you can set up your account: https://www.osha.gov/injuryreporting.

In what is a change from the original proposed rule, covered establishments with 250 or more employees are only required to provide their 2017 Form 300A summary data. OSHA is not accepting Form 300 and 301 information at this time.

OSHA announced it will issue a notice of proposed rulemaking (NPRM) to reconsider, revise or remove provisions of the “Improve Tracking of Workplace Injuries and Illnesses” final rule, including the collection of the Forms 300/301 data. OSHA is currently drafting that NPRM and will seek comment on those provisions.

Covered establishments in our industry include any with 20 or more employees. We are among the “certain industries” (NAICS 5617) with historically high rates of injury and illness that OSHA has targeted.

This new electronic reporting rule is in addition to the requirement to post your completed 300A form in a conspicuous location where employees can review it from now until April 30, 2018. This rule applies to establishments with more than 10 full-time employees.

Peter Gerstenberger is TCIA’s senior advisor for safety, compliance & standards.

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TREE CARE INDUSTRY – APRIL 2018
When it comes time to shell out big bucks for a major piece of tree care equipment – say, a new bucket truck, compact lift, chipper or grinder – the cost can be daunting, especially for the small-business owner. That’s why it pays to research your various financing options before diving into the process. Beyond the obvious need to weigh your overall costs of renting or leasing versus buying a piece of equipment, you’ll also want to consider maintenance, tax deductions, flexibility and more. In some situations, the cost benefits of one option might strongly outweigh the other.

First, let’s clarify some of the terminology. Generally speaking, a rental is any usage agreement of 12 months or less, while a lease is an agreement of more than 12 months. So if you’re a small-business owner who only needs a piece of expensive equipment for a two-day job, it makes the most sense simply to rent it for $2,000 rather than consider any kind of lease or purchase, according to Joe Leonard, owner of Oakmont Capital Services, LLC (OCS), a TCIA associate member company based in West Chester, Pennsylvania. On the other hand, if you’ll need that equipment on a regular basis, you’ll want to consider leasing or purchasing it outright – which is the basis for this article.

“It all comes down to evaluating whether the tax advantages of leasing are greater than those of purchasing the equipment,” says Leonard. “Think of leasing as another way of borrowing money, often with a lower monthly payment.”

“However, for the last 12 years, we’ve seen the tax advantages lean toward purchasing equipment,” he continues. “In fact, for the past decade, 95 percent of our customers have purchased and only 5 percent have leased, due to tax incentives and low interest rates. Now, with the new Tax Cuts and Jobs Act, it would appear that the advantages of purchasing might not be as great.”

“There’s not enough data yet to determine this definitively, but I project the trend will be toward leasing gaining in popularity,” notes Leonard. “This is due to a rising inflation environment, meaning interest rates are rising and the cost of equipment is increasing due to the Tier 4 F (Final) engine, which has to be in place by 2019. Our clients, especially the local and family-run tree care companies, will need to look at their monthly expenditures and determine whether purchasing is still their best option compared to leasing.”

According to Leonard, the most important point he’d stress to TCIA members is that the increased cost of equipment due to emissions regulations is going to create sticker shock over the next couple of years. “We’re looking at close to a 20-percent increase in equipment cost, so the monthly payment is going to be the bottom line,” he notes. “The lower monthly cost for leasing will mitigate some of that sticker shock.”

Leonard says that tree care is a very active segment of his business, which is why OCS caters to its tree care customers. “We favor the tree care industry because we have so much invested in it, by being a TCIA PACT partner and associate member, plus being regular exhibitors at national and regional trade shows, including TCI EXPO. Tree care accounts for 27 percent of our business.”

Paul Rotter, marketing director for OCS, agrees. “I would add that a lot of our staff are extremely familiar with tree care equipment through the relationships they’ve built up with vendors. This has come through years of involvement and time spent at trade shows and other events. Also,
we can help our customers determine what they can afford, get them pre-approved, and then have them go shop around and explore their equipment options. That's just one more path they can take.”

Phil McClurkin, an account representative with Liberty Financial, a division of Navitas Credit Corp. and a TCIA associate member company based in Hatfield, Pennsylvania, says that 15 to 20 years ago, the most common way for small businesses to obtain capital equipment with little or no money down was through commercial leasing. Over the years that has changed, with more commercial financing options, he says, and now he sees about 90 percent of his customers financing rather than leasing.

“On the down side, leasing locks you into a monthly payment for the term of your lease, so there’s no advantage to paying it off early,” he notes. “We now offer our clients 100 percent financing with little or no money down, deferred payments and seasonal schedules. Clients can now take advantage of all the tax benefits with minimum out-of-pocket expenses.”

According to McClurkin, spikes in the purchasing of large equipment tend to follow dramatic weather events, such as this past fall’s hurricane season. “We definitely saw a bump in land-clearing equipment such as grapple trucks,” he explains.

“Also, we’ve seen an increase in the purchase of self-drive lifts. When they first came out 10 or so years ago, few recognized the cost-versus-benefit from them. Now that there are nearly a dozen manufacturers of these and similar style lifts, they have become much more popular.”

As a longtime TCIA associate member and a PACT partner, Liberty Financial is highly vested in the tree care industry, according to McClurkin. “Tree care is our forte,” he says. “I joined the company in 2005, and we have participated in TCI EXPO every single year. We’re very committed to the industry.”

Northern Atlantic Financial, LLC, a longtime TCIA member and a PACT partner based in Souderton, Pa., specializes in tree care and landscape equipment, and deals exclusively in financing rather than leasing. According to owner JoAnn Cucciarre, the advantages of owning far outweigh those of leasing.

“With a lease, the customer doesn’t have ownership until the end of the term, following a buyout, so the equipment can’t be considered a business asset until then. That could be five years down the road,” she notes. “Also, there’s rarely an early-payment benefit. You must almost always pay the balance of remaining payments. We do all our contracts with a principle-balance payoff option. Plus, the equipment is in the customer’s name and they have full ownership, so it becomes an asset. As assets, equipment such as cranes and bucket trucks hold their value and actually can become more valuable over time, if well maintained.

“From a tax standpoint, ownership also makes more sense,” she adds. “Under the new tax law, the section 179 depreciation deduction was just raised from up to $500,000 to $1 million.”

Cucciarre says that specializing in tree and landscape equipment has proven a special niche for her company. “The average person comes to us to buy one piece, such as a bucket truck, and then they need even more equipment,” she says. “We’ve started relationships with customers who were buying their first chipper, and now we finance their entire fleet. We understand the terminology. We also understand the value of a crane that is 10 years old and has been well maintained. Some banks don’t understand that.

“Especially with the section 179 write-off, I see more people buying equipment rather than spending that money on taxes,” she notes. “And they can take the full write-off in the same calendar year rather than over a five-year period. So all year long, people can purchase the equipment they need for the 2018 calendar year and make better business decisions.”

According to Cucciarre, more and more people are buying bigger and better equipment to become more efficient. “I hear time and again from folks at trade shows, ‘Equipment shows up on time; people don’t always.’ We have preferred vendors we work with, such as Morbark, Rayco and Jarraff, and their salespeople know to call us when they need financing. We’ve been in the industry 22 years, we have a great reputation and we always do what we say and follow through.”

Steve Garvey, senior vice president of Priority Capital, a TCIA associate member based in Melrose, Massachusetts, says that 90 percent of the financing he does is with tree care companies. “We do what is called an Equipment Finance Agreement (EFA) where you own the equipment from
“We saw a lot of small companies scrambling to buy used equipment after Irma. I also work with one of the premier tree care companies in Atlanta, and they bought two new $250,000 trucks – heavy-duty, all-terrain bucket trucks that extend to 75 feet – in advance of the fall hurricane season. Many of our clients bought additional equipment and sent it down to Florida and even to Puerto Rico.”

Of course, a run on equipment means that certain items may not be available in the current market. “What last fall did was take away a lot of used inventory,” says Garvey. “I probably still have a half-dozen people looking for grapple trucks. But once the cleanup is finished in Puerto Rico, a lot of that equipment will come back here, and that could be good for small- to medium-sized companies. They may be able to pick up some equipment at a pretty good cost.”

Jeff Parker, a co-owner of Priority Capital, says the decision to become join TCIA as an associate member was an easy one, since tree care accounts for 15 to 20 percent of Priority’s overall business. “Obviously, TCIA is the premier association representing tree care,” he adds. “We plan on getting more involved now with TCIA; it helps us support the tree care industry and gives us credibility as well.”

So, what’s the bottom line when it comes to leasing or buying that major piece of equipment? Do your budget homework, weigh your equipment options and consult a trusted financial partner for the advantages and disadvantages in your particular situation. Before you know it, you’ll be well on your way to that next big contract.
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Tree Care Industry Association
STORM WORK: WITH TREES DOWN, HAZARDS ABOUND

A recent study by Rutgers University confirms what many in the industry already knew or suspected, that many workers involved in tree care – especially after storms like the recent Nor’easters – are untrained for this hazardous work and lack personal protective equipment. The result contributes to the approximately 80 worker deaths and 23,000 chain-saw injuries seen annually, the study found.

The study presents recommendations from tree care experts on how consumers can know they are hiring a qualified tree removal company and what they can do to improve the safety of these workers. It also details ways companies can make workers safer.

The following piece was written for Rutgers news service.

As climate change increases the risk to trees from severe storms, insects, diseases, drought and fire, a recent Rutgers University study highlights the need for improved safety in tree care operations.

According to the study’s findings, which are published in the *American Journal of Industrial Medicine*, workers employed by tree care experts and licensed arborists were more likely to receive health and safety training and to use personal protective equipment than those employed by companies that are not part of the professional arboriculture network. The research also shows that Spanish-speaking day laborers often had little training or use of personal protective equipment.

Tree care workers have one of the most dangerous jobs in America, regularly encountering heights, slippery conditions, falling limbs, sharp equipment and electrical wires. The incidence of injuries increases after storms when unqualified “storm-chasers” with chain saws and landscaping companies offer their services to uninformed homeowners. Some municipalities also struggle to handle tree damage with inadequately trained labor and old equipment. Annually, tree care injuries account for about 80 worker deaths and at least 23,000 chain saw injuries treated in emergency departments. Many of those injuries result from inadequate training and equipment.

“There is a popular misconception that tree removal is low-skill work, but nothing could be further from the truth,” says Michele Ochsner, formerly with Rutgers School of Management and Labor Relations. “Handling storm-downed trees without injury to people or property involves an array of technical skills and knowledge of how different species of trees respond in different seasons and weather conditions.”

Since Hurricane Sandy in 2012, Ochsner, along with Elizabeth Marshall, an environmental and occupational epidemiologist at Rutgers School of Public Health, and Daniel Lefkowitz at the New Jersey Department of Health, have been analyzing surveillance data after storms to assess injury risks related to tree work. They also conducted interviews with private and municipal tree care experts to understand the Sandy experience and suggest ways to improve safety.

Storms and the ensuing long hours exacerbate the job’s significant risks.

“Tree care crews handle thousands of downed trees in the wake of a hurricane or even the recent snow storms. It takes knowledge, proper equipment and coordination to do that safely,” Marshall says.

Although there is no current Occupational Safety and Health Administration standard for tree trimming, employers are required to comply with all general industry standards set by a network of national, regional and state associations, says Marshall. She noted that New Jersey recently passed a comprehensive licensing law to assist consumers in hiring a tree care company that upholds the state’s standards.

“Our interviews with tree care workers revealed a number of recommendations to plan ahead for major storms,” says Marshall. “For example, companies and municipalities should ensure equipment is well maintained, employees are properly trained in their native language and provided with personal protective equipment. Consumers should work with a licensed tree care professional to identify damaged or improperly planted trees and remove dead trees and limbs before the next big storm. Then, they will be ready when bad weather arrives and trees come down.”

To view a copy of the Rutgers study, go to http://rdcu.be/ILxQ.
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Circle 35 on RS Card
Tier 4 has been a while in the making. Rayco introduced its RG130TX, a 130 horsepower stump cutter on rubber tracks and powered by a 3.8-liter Cummins Tier 4 Final engine, at TCI EXPO 2014 in Hartford.

By John Fischer

Having identified “non-road,” or off-road, engines – several variations of which are used in tree care products such as chippers and stump grinders – as being a significant source of emissions, what sounded good to the EPA (Environmental Protection Agency) some time back was the need to find ways to reduce such emissions. As we know, that has been done to an extent that many hardy individuals in the engine and related industries might never have thought possible, though certainly not without a few bumps and bruises along the way.

But what’s really of interest is the significant number of other benefits that resulted from all the considerable work that was necessary, which we’ll have a look at here. After all, when you lift the covers and have a look inside, it’s often quite interesting what you’ll find.

Small gasoline-engine basics and selections

Serving as a continuing and wonderful source of power for numerous products are those little one- and now two-cylinder engines fueled on straight gasoline, and still readily available from a number of renowned manufacturers and from some new names as well.

The EPA took a look at these early on and determined that they were a significant source of pollution and needed their own set of regulations, and established the category:

- Non-Road Spark-Ignition Engines 19 Kilowatts and Below

Two initial points: First is that 19 kilowatts is about 25 hp, and second is that this “upper” value is a little misleading, as we’ll see later.

But these products have now gone through several “phases” of reduced-emissions levels – evaporative-emission values have been included – and anything offered these days on new products should all be Phase 3.

Some benefits?

Verified useful life (hours) is now a matter of compliance registration, not wishful thinking, and the engines will be labeled as such, with the highest value being a full 1,000 hours. A check of this (label) on a particular product will provide an indication of its potential longevity.

With the need to operate the engines as efficiently as possible to meet emissions targets, they run better than ever. Further, it’s now not uncommon to find EFI (electronic fuel injection) offered on some models. And don’t despair in those cases where an engine user or manufacturer is reluctant to provide a horsepower value. With a tighter need to measure output carefully, there have been some legal issues with stating values that didn’t quite hold up under all operating conditions. The displacement of an engine will be a good indicator as to what you’ll be seeing at the crankshaft.

These engines work just fine in the smaller/lighter versions of chippers and stump grinders offered by a number of companies.

Large gasoline-engine enhancements and selections

In time, the EPA got around to having a closer look at the larger – basically
automotive-based and liquid-cooled – engines being used for off-road products and established the category:

- Non-Road Large Spark-Ignition Engines

Often identified as “LSI” and covered thoroughly in a prior article (“Gas Engines Hot Again with Tier 4 Diesel Restrictions Pending,” TCI, September 2014), these engines have proven to be quite effective power sources recently in the tree care business. They cost considerably less than the latest diesel engines, which we’ll address later, and offer substantial useful life, again, as needing to be verified as part of the certification process, which has reached Phase 2.

Some benefits?

Required to stay emissions-compliant for seven years or 5,000 hours, one can expect a lot of work from one of these beasts.

Actually available from fairly low horsepower, the ones being used today in tree care range from 89 hp to as high as 213 hp. Though not having quite the torque of diesels, the advanced EFI systems now fitted in place of basic carburetors provide for quick response and have assured even better (good) overall performance under the wide range of operating conditions the engines work within.

And, fitted with a simple catalyst similar to the ones used on automobiles, the cost of emissions compliance is fairly reasonable.

Further gasoline opportunities and the newest model

In establishing these two categories, the EPA wrote something into the regulations that has proven quite beneficial for those who like stuff running on gasoline. Specifically, that:

- Engines with displacement at or below 1,000 cc (cubic centimeters) and maximum power at or below 30 kW (kilowatts) may be certified under the program for small spark-ignition (SSI) engines.

Wow! If only one could produce an engine of less than 1,000 cc that could produce as much as about 40 hp and only be held to that useful life period of 1,000 hours, rather than the challenging one of 5,000 hours!

Of course, about the time that the regulation was proposed by the EPA, the savvy engine companies got to work and have now done just that.

Some benefits?

Offered as a compact package with lots of power and capable of quite some hours of solid productive work, these engines are now finding their way onto more and more equipment. Whether offered as an option for a smaller-horsepower engine on a machine to provide a little more vigor or used on a machine recently developed around its sweet spot in the horsepower world, these are offered by numerous manufacturers, and the applications just seem to keep growing.

Early diesel decisions and selections

Having suggested early on that we’d be confronting that anxiety-invoking term, “Tier 4,” the time has at last arrived to do so.

The EPA, having noticed all the diesel-driven trucks running on the highways, had passed emissions regulations for them. In time, they got around to passing a similar set of requirements for the products subjected to the somewhat rougher off-road lifestyle, specifically for the category identified as:

- Non-Road Compression-Ignition Engines

An interesting aspect of these products is that there are so many of them. Unlike trucks, which tend to be similar in configuration and produced in high volume – meaning there are just a few variations to develop and certify – the non-road world consists of hundreds of variations.

Sound like a challenge to keep the industry supplied with engines? It was and continues to be.

So how to best have a sound look at these?

Well, the EPA initially divided the requirements into a number of values based on the horsepower produced. Smaller-horsepower engines tended not to be required to be as “clean,” while the expectation of their larger colleagues tended to be more strict.

And the two constituents of particular interest for the diesel-combustion process were particulates, visible as soot, and nitrous oxides ($\text{NO}_x$), not readily seen but very much lurking in the exhaust, and damaging as well.

Unfortunately, that wonderful diesel combustion process – compress the air in the cylinder to heat it up and then inject the desired amount of fuel to create the desired amount of power – produces fewer particulates at high temperatures but more $\text{NO}_x$ and vice versa, the familiar tradeoff known so well these days.
Specific diesel solutions
In cleaning things up to satisfy the folks at the EPA, there are two ways to comply.
First would be to minimize the production of the undesirable products’ in-cylinder solutions. This includes adopting such technologies as HPCR (high-pressure common rail) injection for better fuel atomization, EGR (exhaust gas re-circulation), where some of the inert gas is re-injected to bring down combustion temperatures, and turbocharging, whereby a little extra air is injected to mix things up better and make sure every possible molecule of precious fuel is burned.
Second would be to do something with that exhaust gas to clean it up a bit before releasing it into the real world, i.e., after-treatment solutions. This includes such things as a DPF (diesel particulate filter), which collects the soot, or, better yet, a DOC (diesel oxidation catalyst). The latter collects the particulates and burns them off without needed occasional regeneration to burn them off thoroughly, or complete removal from the machine for cleaning, as necessary with a DPF. And, of course, the big gun is an SCR (selective catalytic reaction) system, whereby DEF (diesel exhaust fluid) is injected into the exhaust gas to change that unwanted NOX into benign components – basically nitrogen and water.

The individual engine manufacturers are able to use any combination of technologies they desire to actually comply with the EPA regulations.
All well and good. Sounds great. But where does that leave the tree care industry these days?

A look at the full lineup
For tree care purposes, we’ve got three basic EPA categories of engines that we’re interested in that have reached the Tier 4 requirements:
• First is up to 75 hp or so.
• Second is from 75 hp up to 175 hp or so.
• Third would be above 175 hp.
But wait. Wasn’t it suggested earlier that the EPA is not as tough on smaller engines? Wouldn’t it be great if an engine at that 75-hp level wouldn’t need as much emissions hardware and should therefore cost less? Well, yes. And, yes.

Sounds like a sweet spot for engines alright, and it has very much proven to be. Sound advice would be to look at product offerings using these engines, as quite often their only true emissions device is a DPF requiring periodic cleaning and in some cases just a DOC that doesn’t need any maintenance at all.
Further, the HPCR fitted to these allows for injection of fuel at any rpm, and the engine manufacturers are taking advantage of this to pump in much higher torque values than ever before possible. And, to top it off – literally – turbochargers are often fitted to provide compensation at altitude so that reductions in output from thinner air is not as drastic as with older engines.

And, just as with those large gasoline engines offering special benefits, the tree care manufacturers are finding more and more spots for employing one of these engines, whether as an alternate-horsepower offering or in designing a new product around its strong power level.

Moving upward, always upward
Should one need more power than that 75 hp or so, you will be looking at an engine fitted with an SCR system, as the laws of the EPA and the laws of physics just don’t allow for anything else at this time to keep the required emissions output below required levels.

Sounds dire?
Well, not necessarily. In adopting this technology, the engine companies are able to increase engine combustion temperatures – a desired undertaking of theirs, as it increases overall fuel efficiency – and then treat the NOX that is produced. So there are real-world consumption savings to be had. Perhaps not as easily measured as by the truck companies, but they are there nonetheless.
Keep your engine supplied with that clean DEF stuff, and you can keep feeding your machines with tree stuff.

And, similarly, at 175 hp, we find a transition in the regulations. So engine companies are producing versions just shy of this value so the benefits of lower-emissions requirements can be a benefit to the ultimate users of these products, just as has been done at 75 hp or so.

Winding things up
Whether overseen by Phase 3 (small SI), Phase 2 (large SI) or Tier 4 (Non-road diesel) requirements, as they come to life at busy work sites all around the country each precious workday, we can safely say that the sound from these well-tuned engines can only be described as harmonious once again.

John Fischer is an engine consultant based in Palatine, Illinois.
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The consulting life: Socks, shoes (and sometimes pants) optional. All photos courtesy of the author.

By Howard Gaffin

Ah, yes, another day in my coffee-stained pajamas intermittently working on a report while playing a variety of stringed instruments at my disposal. The banjo is my current muse, guaranteed to clear the household after a few plucks.

It has been a long journey to this stage, and I have been most fortunate. Old age is not pretty for a tree worker. Pre-crane, loader and chipper, in my time “PPE” would have referred to a bodily function. Seeing the future in the form of my predecessors’ bent – mangled anatomy and the funny way they walked – was a tad disconcerting.

Hard purchases in the form of dump trucks to chippers to bucket trucks kept me in the game, but I eventually began to realize my limitations. Fully aware of an increasingly cranky musculoskeletal situation, a change was due. I would have to employ the small, rarely used muscle in my head, as it had the least miles of all body parts.

As a Massachusetts Certified Arborist, I had always tried to keep abreast of changes in the industry and provide professional, educated advice to my clients. Choosing to remain a small independent brought great freedom. Eventually, winters became a time for rejuvenation, education and mental mastication. BCMA and RCA acronyms were earned, and a lofty status finally realized.

Tree removals became rare, and preservation became a focus. My first paid consulting job in the mid-’90s netted 150 bucks to assess a large oak. Like most of you, I had been consulting for much of my career, only without reparation. With that $150, I had just been compensated more for my time with a computer, camera and cranium than with a crane, climber and cutting contrivance. No doubt it takes a while for the ole squash to get cooking, but eventually I began to smell the butternut. That brings me here, to this comfy chair, contemplating how to remove the cookie crumbs amassed in the keyboard.

The consulting life has not been quite as glamorous as I had hoped it would be. Many of my more esteemed colleagues ply their craft for fine specimens of arboriculture across ivy-league campuses, historical parks and arboretums. While an occasional assignment such as protecting a worthy specimen pre-calamity may come my way, much of my work involves poor-quality border trees in unspectacular settings. More often than not, I am asked to assess risk or appraise value based on a stump. I have seen a lot of stumps.

A recent assignment serendipitously came my way via a well known mentor (Thanks, Carl).

Too enamored of the Arizona climate (hot outside, cold inside) to take on a project here (cold outside, hot inside), Carl passed the buck on to me. A seemingly simple assignment, I agreed to take on the job. Little did I know the shenanigans that would unfold.

Early in my career, it became apparent that neighborly disputes concerning trees are often not about trees. They’re about ownership and trespass and NIMBY (not
in my backyard). It’s personal. I would wager that most folks never gave a hoot about the tree until it, and therefore they, were violated. I am often more psychologist than arborist, and quite poor at it.

A proposal for a multi-unit dwelling in a prestigious area was before the town. Abutters, understandably upset, hired lawyers and consultants to halt or at least reduce the size of the project. An arborist was hired to assess trees on or close to the property lines, and opine on the effects the proposed project would have on them. These trees would become a focal point, and for a few glorious moments in time, I would become “The Man.”

Wooded corridors following utility grids are common in the area, and this site was no different. Trees and shrubs – native, introduced and invasive – grow untended in these urban forests and often become the subject of contention.

The arborist representing the abutters was familiar to me and highly respected. After studying related documents, I scheduled a visit to the site. Data was gathered and a fine document, complete with pictures and graphics, highlighted with circles and arrows and describing the meaning and relativity of each image, was delivered. My job is done here.

Nope. More than assessment would be required of me. Plans for a Tree Protection Zone (TPZ), along with a critique of the proposed landscape plan, were requested.

With the outside temperatures remaining below 20 F for more than a week, supplementary pajama-clad work was welcomed, and I warmed to the task.

A large part of the abutters’ proposed TPZ was located well within my client’s property, under an 8-inch slab of asphalt. Land prices here make every inch of space invaluable. The location of the TPZ would be critical to the proposal. Further root investigation would be essential to provide evidence of root activity here.

My colleague’s report used a one-size-fits-all ratio of 1.5-foot-radius-per-inch diameter for establishing a TPZ. Almost all information I have acquired on roots suggests that they are opportunistic. Concentric, uniform root systems may be found in areas with consistent soil conditions, but not likely the case in an urban environment, where conditions are variable and more unpredictable. Three test pits were designated near subject trees to be excavated for root investigation. Results of this would be used to help determine the TPZ in the construction zone.

Another issue would be the boundary lines. Many of the trees were close enough to be disputed. An updated, highly accurate survey would become prudent, eliminating the possibility that some trees may not belong to the abutters.

Given the recent stretch of frigidity, no excavating would seem feasible. I figured it was back to annoying anyone in earshot with my banjo playing, but, alas, it was not to be. It was beginning to dawn on me the huge investments being made on this proposal. A meeting with principles of the project inferred that lollygagging was not looking like an option. I’s
were being crossed and T’s dotted.

Traditional “open cut” excavation would extend too far into the proposed TPZ and would not be an option. Instead, a temporary soil-retaining structure would be installed, with steel piles drilled into the ground and timber lagging installed between them, adding $150,000 to building costs.

Another lesson you will learn as a consultant: When trees are but pawns in emotionally charged settings, rationale becomes a scarce commodity. If/when this project goes through, there are far better solutions to achieve the desired screening. Removal of the subject trees would provide space and site conditions to allow for large, quality trees and shrubs that would be an improvement over the existing vegetation. Freed from protecting these marginal trees, more resources could be allotted to achieve this goal.

A Tree Protection Plan was required now, and plans to excavate ensued. Fortune smiled down upon us. After almost two weeks of temperatures below freezing,

Another fine specimen for the archives. Yes, there is value to this indomitable catalpa.

And then there were none. Imagine the horror experienced by the owners of this line of pine trees removed from the property without consent.
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the following week highlighted a warming trend. The day of reckoning featured 60-degree temps, the wild swing of weather patterns a reminder of what is real.

Asphalt up, the exposed earth revealed a thin layer of pea stone, or pea gravel, on top. Small rootlets snaked through the air spaces. It soon became evident that the laws of physics were holding up, and that weeks of frigid temps would indeed result in frozen ground. Knowing what was riding on this, I roused my co-workers to the task. A jackhammer, air tool and hand tools were carefully employed to loosen the sandy sub-soil and expose the roots, which were then documented and backfilled.

Interest amplified over my holes. Folks with suits, ties and nice shoes came to visit. I spoke with them in my Tyvek attire, eyes raccoon-like from where the air-spade dirt did not adhere. Returning to the bat cave, I showered off wayward soil and mycorrhizae particles from areas where I was astonished to find them. Donning the proper pajamas, another fine document was created, with cool images of roots and dirt.

Time to tune up the banjo, but wait ... a critique of the Tree Protection Plan has been submitted and will require a response – before the town meeting this evening. More research ensued, and a response was submitted.

The evening brought on the celebrated
town meeting and another learning experience in the theater of humanity. The folks I worked with produced a fabulous presentation, focusing on how far they had come in meeting the desires of the community, reducing the overall footprint and occupancy rate. That presentation was followed by peer reviews of various facets of the project, most of which were positive. Finally, my favorite part, the “Airing of the Grievances” commenced. A bit peeved by the old ruse, folks pointed out that the original proposed structure was ridiculously large for the ’hood, so no kudos for bringing the size into the realm of reality. On the other hand, the emotional appeals made on behalf of the previously unheralded specimens of arboriculture were rather heartrending.

I’m not sure how long I was out, but my 15 minutes of fame had arrived, and I was roused to address the concerned citizenry. I was doing OK until a slight, melodramatic, elderly gentleman with a fabulous shock of snow-white hair addressed me. The absurdity of the question coupled with his eccentricities elicited what only could be described as a reflexive guffaw from deep within me. Alert to the look of horror on my client’s consortium, I quickly and humbly apologized. Another lesson learned: No matter how ridiculous the statement, keep a poker face during public proceedings. The rest of my performance went without incident, and I got the thumbs-up on the way out the door.

Despite personal financial gain, the 1 a.m. ride home was subdued by the absurdities of the situation. These trees, pawns in a NIMBY scuffle, will cost thousands in project changes and tree protection that would be far better spent on creating a plant community of greater benefit to all parties. Perhaps this is why I keep a boot in the tree care industry. Rejuvenating an old apple tree, transplanting a specimen plant or performing difficult removals are definitive tasks with discernible results. Akin to my ongoing banjo massacre, results from consulting assignments are often intangible.

Howard Gaffin, BCMA, RCA and Massachusetts Certified Arborist, is owner of Gaffin Tree, a TCIA member-company located in Rowley, Mass.
Safety in tree care encompasses many aspects, from electrical hazards to equipment operation and general skills at and around the job site. In an effort to promote safe practices in the tree care industry, TCIA’s Arborist Safety Training Institute (ASTI) provides grants to help fund half- or full-day workshops across the country, and at a reasonable cost to working arborists.

According to Amy Tetreault, TCIA’s director of development & special programs, any tree care company that places a premium on safety can apply for an ASTI grant to present a workshop. Some examples of recommended ASTI workshops that use approved TCIA Tree Care Academy (TCA) training materials are Aerial Rescue, Chipper Operator Specialist and Chain Saw Specialist. But Tetreault stresses that the ASTI committee would like to expand on its current workshop offerings and is looking for ideas from interested arborists.

“One of the things about ASTI is that folks seem to apply for the same workshops again and again,” she notes. “Chain Saw Specialist and Chipper Operator Specialist are by far our two most popular – they’re basically ‘plug and play.’ But we want folks to know they can apply for training that goes beyond using our TCA materials. As long as they provide the key workshop details on the grant application, such as where the workshop is to be held, who the instructor will be and what educational manuals and materials they’ll be using, we can consider other safety topics.

“The topic idea and application details, obviously, need to be reviewed by TCIA to ensure they are important safety topics and meet our grant parameters, but non-TCA workshops are eligible for funding (including manuals) just like TCA workshops.”

A few new ideas the ASTI committee has recommended, which are supported by ISA manuals or other outside materials, are Rigging in Arboriculture, Tree Felling and Hazard Tree Identification. In fact, it was professional arborist Steve Chisholm, Jr., of Aspen Tree Expert Company, a 31-year TCIA member company based in Jackson, New Jersey, who recently hosted his own ASTI-funded Hazard Tree workshop. Chisholm is a Certified Treecare Safety Professional (CTSP), an ISA Certified Arborist and a New Jersey licensed tree expert. His full-day workshop was held in September 2017 at the Forest Resource Education Center (FREC) in Jackson, N.J.

According to Chisholm, the Hazard Tree topic should be of concern to all arborists. “It’s always important that people recognize the conditions they’re working under in order to be safe,” he says. “During the class, I covered co-dominant stems, included bark, cavities, decay fungi and other signs of a hazard tree.

“I teach this same class twice a year at Rutgers University,” he adds. “So essentially, the 19 or so attendees I had got the same information at a lower cost than the Rutgers class. It seemed to attract more of the small-business owners in the area, rather than the large commercial and municipal people.”

In the last round, the ASTI committee awarded nearly $45,000 in grants to 27 national organizations following the August 2017 deadline.

“In addition to providing funding and highlighting new workshop topics, the committee also wants to encourage new grant applicants in different areas of the country,” Tetreault adds. “The Pacific Northwest is one area from which we haven’t had a lot of applications for grant-funded workshops, but we know we have a big need there. So we’re going to pursue more active outreach in that region.”

The most recent grant cycle, which ended March 1, was for workshops taking place between August 1, 2018, and January 31, 2019. Those grants have yet to be awarded. The deadline for the next round of grants is August 1, 2018, for workshops to be held February 1, 2019, through July 31, 2019.

To apply for an ASTI grant online or register for an upcoming workshop, go to tcia.org/asti, or call the ASTI Grants Office at 603-314-5380.
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Here we go again, and this might be the big one.

Spotted lanternfly (*Lycorma delicatula*) is yet another invasive insect imported from Asia that is threatening our native forests, ornamentals and agriculture. In a seemingly endless parade of exotic invasives, this newcomer has established a beachhead, started to spread outward and proven to be quite complex and difficult to control.

It displays a combination of traits that make it a particularly alarming threat: Few predators will feed on it, it is relatively large in size (about an inch), it exhibits a need for near-constant feeding on plant phloem (like giant aphids) and it freely moves between and feeds upon more than 70 known (to date) hosts (Dara et al., 2015). As such, it has the potential to kill trees and shrubs outright by “bleeding” them to death or, possibly even worse, the potential to vector a pathogen. It’s also important to mention that it has a predilection for grapes, stone fruits and pomes (Dara et al., 2015).

First discovered in rural Berks County, Pennsylvania, (45 miles north of Philadelphia) in 2014 (Barringer et al., 2015), spotted lanternfly (SLF) has since spread to and been discovered in 13 counties and several other states, despite attempts by the Pennsylvania Department of Agriculture (PDA) to quarantine areas and eradicate the pest.

An established SLF population (adults and egg cases) has been found in Virginia, and it appears to be contained within one area. SLF has been detected in New Jersey, Delaware and Maryland. Officials have not found any established populations in any of these states, but they are continuing to conduct surveys. A single, dead SLF was found in New York, apparently associated with commercial transport of goods from the Pennsylvania quarantine area.

**Biology and lifecycle**

Spotted lanternfly is a planthopper native to China, Vietnam and Indonesia. It also has been imported into Korea, where...
it quickly overran the peninsula and has proven to be devastating to vineyards (Han et al., 2008). It is classified in the order Hemiptera (like aphids – remember that later) in the family Fulgoridae. SLF is an univoltine insect, having only one complete life cycle per season. It begins its life in spring when hatching out of eggs laid the previous fall that have overwintered in masses stuck to trees, rusty metal, stones, pallets, vehicles or any other hard surface that the adult females might have encountered (Dara et al., 2015). Its proclivity to lay on man-made objects that can become mobile has certainly helped to speed its spread.

The hatch seems to be temperature dependent (Park, 2015), with a timespan of several weeks to months for eggs to develop and emerge from the individual egg masses, depending on localized temperatures and exposure. When the young larvae hatch, they are wingless nymphs that are jet black with white spots. Early instar nymphs are easily overlooked in the landscape, as they are not much larger than deer ticks.

They will feed on plant phloem and undergo two molts, growing in size while looking the same, before molting a third time into the fourth instar, still as nymphs. What is different for the fourth instar is the striking red color that is added to the black and white mix of the exoskeleton. Generally, in Pennsylvania, we start seeing the fourth instars in late June through July, but they have been observed as late as October. This is when many people first notice that something is amiss, although nymphs can still easily be confused with boxelder beetles or other native insects by the untrained eye.

They are extremely strong hoppers, making this a trait of SLF that is a good indicator for recognizing nymphs. If you goose one and it “pops” away with amazing speed, it is an SLF.

Beginning in late July, the majority of fourth-instar nymphs molt and emerge as flying adults that are difficult to mistake for nearly any other insect in our environment, as the adults are relatively large with bright and colorful wings, and they begin to disperse.

Females’ abdomens begin to swell as eggs develop, and the bright yellow banding on the abdomens becomes much more evident. Eventually, adults mate and females lay one to three clutches of 30 to 50 eggs each before being killed by freezing weather, starting the cycle again for the next year. Eggs are lined up in rows and then covered with a waxy, putty-like substance that protects them through the winter, and that is an amazing camouflage on tree bark.

How it spreads
SLF is believed to have arrived as an egg mass or masses stuck to shipping material from China. Judging from early egg-case remnants, it was probably in 2012, but they went unnoticed until the fall of 2014.

SLF has shown to be unpalatable to birds (including domestic chickens, which usually will eat any critter they encounter), and only a few general predators such as spiders, wheel bugs, stink bugs and praying mantis have been observed eating them (Barringer & Smyers, 2016). Why they are so unpalatable to birds has yet to be determined, whether it is due to a self-produced defensive chemical or as a result of the SLF feeding on its favor-
Ailanthus altissima, commonly known as tree of heaven. Lacking any predators of great number, the population growth has been exponential.

Despite PDA’s attempts to eradicate SLF through a combination of sticky bands around tree trunks to catch flightless nymphs and the establishment of systematically treated “trap trees,” the population really made itself known this past summer of 2017, when simple tasks like walking into the local big box store was not possible without being pelted by crashing lanternflies. They don’t land gracefully; picture the title character from the 1980s TV show “Greatest American Hero,” right down to the red and black colors.

On days with high populations of adults flying, you can often hear them “thudding” into objects such as cars and buildings. As for how well they fly, that’s still an ongoing discussion. They are not agile like a dragonfly, but more like a native cicada. They fly much better and farther than grasshoppers, and they have reproduced and spread to many more square miles as adults.

Don’t forget about the egg masses. SLF females lay their eggs on any hard surface, including vehicles and yard debris. They seem to particularly like slightly rough surfaces such as rusty metal and concrete. The eggs can be under a rock in a fence-row wall or as high as 30 feet up a tree on the underside of a limb. They blend well with natural surfaces, and sometimes you have to stare for several minutes before the egg mass becomes apparent to your eye, kind of like those 3D pictures of sailboats that were popular in malls in the 1990s.

**And it’s really nasty**

As mentioned, SLF feeds like an aphid, on the phloem of trees. They also feed nearly constantly, like aphids, and create massive amounts of honeydew (excrement) like aphids. Except these would be inch-long aphids that create volumes of honeydew that rains down from trees. Literally. It actually looks like it’s drizzling under an infested tree canopy on a sunny day. With the sugar-rich honeydew comes any number of sugar-feeding insects including bees, wasps and ants.

The honeydew also leads to sooty mold. Sooty mold is a black fungus that grows on the substrate provided by the sugar-rich honeydew. When it grows on agricultural products such as grapes and tree fruits, it blocks photosynthesis on leaves and stains the fruits, making them unsellable. But the fungus also permeates decking materials, both synthetic and natural, coats cars and outdoor furniture and blackens understory plants.

**What’s really, really nasty?**

Again, as mentioned earlier, *Ailanthus altissima* (tree of heaven) is one of the favorites of SLF (more on that connection...
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later), and this past summer there was a large increase in occurrences of alcoholic slime flux noticed on Ailanthus trees with heavy SLF feeding. The slime fluxes smelled like the rancid odor of Ailanthus sap that has been distilled into a high-test spirit. Why only Ailanthus (to date) has been observed to produce these slime fluxes and what the connection is to SLF is yet to be determined, but it’s fairly safe to say that the connection is more than a coincidence.

What’s at risk?

First and foremost, quality of life. Not being able to enjoy your own backyard without being pelted by crashing insects, wearing a raincoat to deal with the rain of honeydew from your shade trees and picking lanternflies out of your burger when grilling is tiresome and mentally draining. Beyond that, the long-term stakes are huge, with SLF having been shown to host on more than 70 species of trees and shrubs to date. SLF does prefer grapevines (wine) and hops (beer) and will feed on many hardwoods. Pennsylvania is the largest exporter of hardwood products, fifth-largest grape producer and fourth-largest apple producer in the country. Unchecked feeding by high SLF populations has begun to kill branches and, seemingly, some trees. The summer of 2017 was one of the wettest on record in our region and may have masked potential damages caused by unchecked sap loss.

It’s not the mosquito’s bite, but the malaria it’s carrying

SLF may have the potential to vector pathogens. Remember the aphid reference? It’s been documented that aphids have a salivary enzyme that they inject into plants to soften the tissue and increase the sap flow, much like mosquitoes inject us with an anticoagulant enzyme to keep the blood flowing. That saliva is where the pathogens are transferred. SLF feeds much like an aphid. It has a fused beak that contains two styli (hair-like feeding tubes) that it seems are inserted into stomata and lenticels (tiny gas-exchange openings in the plant surface). Observations of SLF feeding sites on trees seem to indicate feeding damage similar to what the aphid enzymes cause.

Trees have been observed to “weep” for days after the lanternflies are cleared by insecticides or a branch is removed. If this turns out to be the case, and given that the salivary ducts are nearly 5 microns in diameter (more than large enough to pass viruses and phytoplasmas), and also given that SLF adults move from tree to tree and species to species, we could have a serious problem on the scale similar to that of blue-stain fungi in the west. These observations have initiated research by scientists at Penn State University who are working to characterize SLF saliva and test SLF’s potential to vector pathogens.

How many are we talking about?

Last year, a large, 46-inch DBH silver maple, Acer saccharium (also a preferred host in many situations), was treated. The canopy fills most of the residential backyard that it is in, and it had previously shown to be a “hot” tree in 2016. Beneath the canopy is a patio, and on the patio resides a retired research scientist and wonderful customer who is committed to help learn about SLF. She swept the patio clear of dead SLF every 24 hours. Before sweeping, she would take a representative sample of patio blocks and count the dead bodies that had fallen out of the tree. By extrapolating out the square footage of the patio, she generated a representative calculation of how many lanternflies had been killed by feeding on the systemically treated tree in a 24-hour period. The customer then documented in a journal how many she had counted. The final result? Approximately 48,000 adults killed between August 5 and October 5. The implications of that sort of population feeding on a single tree, had they gone unchecked, are that SLF feeding will be damaging, if not deadly, to a tree, as the sap loss prevents the tree from being able to store carbohydrates.

What’s being done about it?

First, the community buy-in and assistance has been overwhelming since the first announcement that this invader was in town. Homeowners have engaged in egg scraping (30-50 fewer adults per egg
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mass scraped), logged egg-scraping numbers and locations with the Pennsylvania Department of Agriculture and employed “sticky bands” of every type, shape and homemade configuration around tree trunks to catch nymphs. Residents have largely welcomed government representatives by granting access to private lands and voluntarily complying with the quarantine that has been enacted.

Most of the work that has been done to kill lanternflies has been done by the PDA, and much of that work has focused on the connection to *Ailanthus altissima*. Since its first discovery in Pennsylvania, there has been a strong association made between SLF and Ailanthus. Ailanthus is definitely a preferred host, and there was an early hypothesis that SLF required Ailanthus to complete its life cycle. Whether that is an absolute requirement has yet to be proven definitively.

Regardless of whether the connection is absolutely required, SLF’s penchant for Ailanthus has been employed in the control strategy with a “trap tree” methodology. This idea involves the killing (either mechanically or chemically) of most of the Ailanthus on a property, but leaving several male trees that are then treated with a dinotefuran product. The idea is that the lanternflies will seek out the Ailanthus trees and feed on a systemically treated tree, thus ingesting a lethal dose of insecticide.

The trap-tree method seems to work well where it is employed, and we are awaiting quantified results of the work. Unfortunately, the sheer volume of land needed to be evaluated and treated is staggering. The core area of the infestation is rugged, wooded and of relatively steep terrain. PDA has been contracting private tree care contractors to do the trap-tree work on both private and public lands. The flipside of this massive undertaking has been that PDA has not been able to address landscape trees and the effects that SLF is having on them.

Since the population really exploded in 2017, homeowners have begun taking matters into their own hands. Some are concerned with the health of their trees, some are trying to do their part to stop the spread of lanternflies and some are flat out obsessed with killing every lanternfly they encounter, even counting how many they have gotten with a fly swatter (some getting into the thousands with their counts). Spraying kerosene on adult SLFs on trees has been one of the worst home remedies
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reported. Bleach, rubbing alcohol and cases of wasp spray follow closely behind. Some have reached out to licensed, professional pesticide applicators for help.

As with any natural disaster, the scam work has begun. Unscrupulous businesses (including at least one national company) have been selling SLF treatments for building foundations, spraying trees long after a heavy freeze killed all living adults and preying on homeowners’ fears and lack of knowledge.

To date, dinotefuran as a bark-banded application or injection has been the most effective strategy tested. Imidacloprid has provided very mixed results, depending on the application method, size of the tree and timing. Further studies will be re-examining pesticide efficacies again this year. Contact insecticides work well enough, but lack the systemic qualities of dinotefuran, and these bugs just keep coming. Once the dispersal behavior begins, it’s not uncommon to have a tree cleared by insecticide treatment in the morning and six hours later have it covered by hundreds, if not thousands, of newly arriving adults. They seem to move in waves, often with a day or two or three in between movements. That dispersal time runs roughly from the beginning of August through early October, when the egg-laying behavior is in earnest and cold weather slows them down.

Where we are now

One side effect of the hyper-localized invasion and the focus on Ailanthus and agricultural commodities early on has been a lack of funding for studies to determine the effects of SLF on other trees. This past summer saw branch diebacks, some tree death and some very strange symptoms in trees that were heavily fed on, but those observations have to be qualified scientifically. Thankfully, lawmakers are waking up to this threat and funding is becoming available to start really ironing out many of the lifecycle, feeding and movement details of SLF, and to ramp up efforts on the ground.

What you should do

Be aware of and on the lookout for this insect. It is very probable that, despite best efforts, spotted lanternflies have hitched a ride out of the quarantine. They may have moved as egg masses on materials, or there may have been a bred female who took a ride on a vehicle. Early detection and subsequent action may prove beneficial in containing new outbreaks. Penn State Extension has a tremendous amount of information available on the web. ([https://extension.psu.edu](https://extension.psu.edu), enter “spotted lanternfly”)

If you find this bug, capture one for positive I.D. or at least get a picture, and immediately notify your appropriate state agency and the U.S.D.A. Don’t assume that the person you speak to will understand what you are talking about. If you need non-bureaucratic assistance, reach out to us.

Bark banding or trunk injection with systemic neo-nicotinoids has been the best option to date to kill both nymphs and adults. This organic injection of a neem derivative showed good results as a feeding disruptor.
The upside
This bug doesn’t sting, bite or do structural damage to buildings. Perhaps it could be worse?

References


Brian Walsh is owner of Salix Springs Landscaping, which specializes in environmentally responsible landscaping and plant healthcare, based in Barto, Pennsylvania. A graduate of Paul Smith’s College, he serves on the Penn State Extension Advisory Council.

Dr. Julie Urban is a senior research associate in the Department of Entomology at Penn State University. She holds a Ph.D. in Evolutionary Biology with experience in performing a variety of DNA-sequencing-based investigations of insects. She is currently conducting research investigations of the invasive spotted lanternfly in Pennsylvania funded by the Farm Bill (FY2015, FY2016, FY2017) in order to determine origin(s) of the Pennsylvania introduction, and to assess spotted lanternfly for bacterial and fungal, associates and impacts and control of SLF on grape.

Bud swelling was observed in maples that were heavily fed on by lanternflies while the trees were in full leaf. While a correlation is not yet proven, treated trees and trees not fed on did not exhibit this response, which is reminiscent of a defoliation event.
Peter Gerstenberger, TCIA’s senior advisor for safety, compliance and standards, was invited to testify in Washington, D.C., February 27, 2018, before the House Committee on Education and the Workforce’s Subcommittee on Workforce Protections. The hearing was titled “A More Effective and Collaborative OSHA: A View from Stakeholders.”

“The gist of my presentation was that OSHA could be much more effective at improving safety and saving workers’ lives in our profession if they would adopt some rules specific to our industry,” says Gerstenberger.

The Subcommittee hadn’t held a hearing on OSHA in more than two years and felt it was time, particularly in light of the new administration, President Trump’s executive order calling for two rules to be rescinded for every new one introduced and changes to OSHA’s budget.

The hearing also featured J. Gary Hill representing the National Association of Home Builders; Dr. David Michaels, former Assistant Secretary of Labor (head of OSHA); and Eric Hobbs, representing the Chamber of Commerce.

Following here is Gerstenberger’s written testimony:

On behalf of the 2,400 members of the Tree Care Industry Association, we thank Chairman Byrne and the members of this committee for the opportunity to comment on a topic that couldn’t possibly be any more important to us – worker safety.

To give the committee’s current members the briefest history of TCIA’s collaboration with OSHA: We had an OSHA Alliance for six years. We petitioned federal OSHA for a separate standard for arborists 12 years ago, and in the intervening period we have worked collaboratively with State Plan OSHAs in California, Maryland and Virginia to enact or revise robust yet sensible regulations for our profession.

OSHA’s mission is to assure safe and healthful working conditions for working men and women. TCIA’s mission is to improve workplace safety and reduce accidents in our profession. The question is how OSHA and TCIA can be most effective in what is essentially a shared mission?

From our perspective, federal OSHA could be most effective if it would adopt a rule specific to our industry. Such an undertaking is slated for long-term action on the DOL (Department of Labor) most recent semi-annual regulatory agenda.

TCIA has about 2,400 member companies in the U.S., but there are likely between 12,000 and 15,000 tree care employers who would be affected by an OSHA rule. In terms of safety and accidents, TCIA has to look at the tree care profession in its totality. The employers most in need of OSHA’s and TCIA’s guidance are, ironically, the ones least likely to have any interaction with our respective organizations. The real challenge is not coming up with the training or guidance needed. For example, our industry has had a consensus safety standard in place for more than 40 years. In calendar years 2015 and 2016, TCIA’s Arborist Safety Training Institute funded 34 training workshops and trained more than 1,000 arborists. We have collaborated with both federal and State Plan OSHAs as well as various FACE (Fatality Assessment Control Evaluation) programs on a variety of fact sheets, quick cards, etc., detailing the hazards of tree work. The most recent example of our collaboration is federal OSHA’s Solutions for Tree Care Hazards Info Sheet, produced this year and depicted above.

The challenge is getting small employers to pick up this sort of information, take it to heart and use it. In terms of the need, we have barely scratched the surface.

In our view, an OSHA arborist standard would be a significant instrument for change. A regulation communicated through outreach activities and enforced through citation and penalty will give some employers the impetus they need to become more vigilant about safety procedures and training.

Federal OSHA, together with its state partners, has approximately 2,200 inspectors responsible for the health and safety of 130 million workers, employed at more than 8 million work sites around the nation – which translates to about one compliance officer for every 59,000 workers.

TCIA will not comment on the adequacy of OSHA’s budget.

Click here to watch the video of Peter Gerstenberger testifying in front of Congress.
of OSHA’s budget or size of its workforce in the fulfillment of its mission. Stating the obvious, an OSHA inspection at a tree care work site is a relatively low-probability event, especially considering that tree crews don’t work at fixed locations. Therefore, OSHA’s mission would be best served if OSHA could leverage the self-policing conducted by conscientious employers.

We do not feel that non-regulatory guidance alone has sufficient impact. As we mentioned previously, we have collaborated with both federal and state OSHAs as well as FACE programs off and on over the past 15 years on various projects and, candidly, we haven’t seen a significant improvement in outcomes as a result. Tree work is still unofficially the third or fourth most dangerous occupation in the U.S., with approximately 80 percent of the fatal accidents occurring among what we estimate to be about 20 percent of the employers.

What better way for OSHA to help the employers and employees it may never meet than to publish a sensible rule that has the force of law, along with the non-regulatory guidance that typically accompanies it? A regulation will inform and empower every OSHA CSHO (Certified Safety and Health Official) to identify hazards and control measures unique to tree work, and to intervene to prevent accidents.

An arborist-specific regulation will increase OSHA’s effectiveness by guiding field compliance personnel to proactively look for profound hazards unique to this work in their inspections, thus preventing accidents and saving lives.

TCIA reviewed all OSHA inspections of tree service companies over the past two years. We compared cases where inspections were conducted: 1) in the absence of any accident or complaint, 2) after a formal complaint had been lodged, and 3) in the aftermath of an accident.

- Group 1 consisted of 20 inspections and 35 citations. OSHA went for low-hanging fruit. Fifty percent of the citations were PPE violations, and another 30 percent were for failure to wear fall protection in an aerial lift. There was one general-duty citation.
- In the complaint cases (Group 2: 8 inspections, 21 cites), citations clearly focused on the substance of the complaint. They were: PPE – 25 percent, lockout/tag-out – 25 percent, and an assortment of unsafe conditions such as failure to inspect crane, unsafe operation of crane, aerial-lift fall protection, and electrical-hazard violations. Again, there was one general-duty citation.
- When there was a smoking gun; i.e., an accident resulting in either a referral or an employer-reported fatality or injury (Group 3: 37 inspections, 67 cites), there was a dramatic shift. Among post-accident citations, two-thirds addressed the direct cause of the incident with some degree of specificity, and 30 percent were general-duty citations, which means they were likely researched in the tree care industry’s consensus safety standards to address the accident causation with even greater specificity. The very generic OSHA standards used in 80 percent of the no-accident inspections were used in less than one-third of the post-accident cases.

We compared this result with the State Plans in Maryland and Virginia that have robust rules for arborist safety. We used the same search criteria and time period. In those two states, arborist-specific unsafe work practices were cited in 37 percent of the no-accident inspections and 50 percent of the post-accident cases.

To summarize: In random and planned inspections where federal OSHA rules were cited, field compliance personnel tend to look at workplace conditions in our industry very superficially. When there has been an accident, field compliance is in many cases forced to do more extensive research to characterize what the employer should have known or done differently to avoid the accident.

By contrast, with an industry-specific rule in place, field compliance (officials) are more empowered to readily spot unsafe conditions unique to arborists’ work and make corrections. Regardless of whose data we look at, the big five causes of serious and fatal accidents remain the same. The data suggests that the focus for new regulatory language should be on falls from trees, struck by trees, and struck by tree limbs. Existing standards already address electrical contacts and falls from aerial lifts to some extent, but more specificity could be provided in a new standard. Chipper accidents comprise another relatively narrow topic worth addressing. Finally, a new rule must address arborists’ use of cranes. This is a subject unto itself that merits lengthy discussion; but we will summarize by saying that cranes used by arborists are saving lives virtually on a daily basis, and that the standard OSHA now uses to regulate crane use in general industry is now more than 40 years old.

Thank you again for this opportunity to comment on a very important subject for our profession.
With the emerald ash borer (EAB) having arrived in Colorado and knocking on Denver’s door, Rob Davis, Denver’s city forester, and the city officials have come up with a catchy slogan and innovative programming to mobilize residents for the battle.

Combining big data, ash trees and a city government hell-bent on winning the attention of its residents, the “Be A Smart Ash” movement, an unexpectedly irreverent, city-driven, five-year campaign launched in 2016, has rallied citizens to protect Denver’s ash trees from EAB. The goal? To encourage residents to be smart about their ashes – take action, identify ash trees and treat, when necessary, or replace them. In short, to embrace their inner “Smart Ash.”

The campaign came about as a result of a Colorado State Forest Service report estimating that the economic damage caused by EAB to metro Denver alone could total $82 million. EAB, which feeds on ash trees, has devastated ash populations in Michigan, Wisconsin and other states since it was first discovered in the U.S. near Detroit in 2002.

To prepare for the inevitable EAB infestation, Denver first used an innovative approach to assess its risk – using satellite technology to conduct a tree census. An enterprising data scientist for the city then combined information gathered from that assessment and tree inventory with equations coming from peer-reviewed papers explaining how quickly EAB spreads and how long it takes infested trees to die.

Focused on the potential costs to the city of Denver if it did nothing, the data team worked with the city forester’s office to overlay the data with real-life experiences of municipalities devastated by EAB. This included visits to Chicago, Illinois, and Milwaukee and Madison, Wisconsin, to see the devastation first-hand.

“We’ve had overwhelming support...
from city officials at all levels – from city council to the mayor’s office – which enabled us to not only anticipate the emerald ash borer’s arrival in Denver but work to reduce its impact,” Davis says. “Through this support, we are now advising Denver residents to “Be A Smart Ash,” not just because we need to heighten awareness, but also because we need community support to effectively battle EAB. Through this campaign, we strive to give residents the information they need to be part of a movement that will have a significant and long-term impact.”

Two years after its launch, citizens, community leaders and tourists alike have fallen in love with the campaign. The campaign includes an original song and music video sponsored by Be A Smart Ash and produced by the Denver Botanic Gardens and Jonny 5 of The Flobots; an interactive map created using tree inventory data that allows citizens to quickly assess whether there is an ash tree on their property; bus tails advertising “Big Ash, Small Ash: No matter the size, it’s time to get your ash in gear”; tree tags stating “This Ash Is Covered” following treatment by the city; tree wraps that are winning hearts; and a playful but informative Twitter handle: @BeASmartAsh.

These initiatives have led to 4,500 free tree plantings on private property. The city also plans to replace all small ash trees on city-maintained land, and a rigorous treatment schedule is in place for some of the historic ash trees on city property. But most importantly, the tree census enables residents to use an interactive map to identify trees on their property, and residents can request a free replacement tree to go in the right-of-way on their property, through

These EAB traps are used to identify the presence of EAB. The traps were used only temporarily in Denver, and they did not result in the location of EAB.

The tree wraps were used at the kickoff of the campaign to identify ash trees that had been treated for EAB. Program organizers have used them since during special events in public spaces (think festivals, etc.) to identify ash trees and raise awareness about the campaign.
a public-private partnership.

“Properly administered treatments are 90-percent effective and tree removal and replacement can be dangerous work, so the campaign highly recommends that residents work with a reputable tree care professional such as those listed on our website, no matter which course of action residents choose to take in battling EAB,” Davis says.

The campaign simply can’t stress enough how important it is for residents to take action when it comes to identifying, treating and/or replacing their ash trees as soon as possible. The best treatment for ash trees depends on a variety of factors, and it really comes down to property owner preference, according to Davis.

Davis advises residents that, “Step one has to be educating yourself – gain an understanding of the options and then make a decision about what’s best for you. In reality, the best place to start is with a good arborist.”

As part of the Be A Smart Ash campaign, the city has compiled a list of Certified Smart Ash tree professionals, all of whom have the right mix of know-how and tools to safely and effectively protect ash trees from EAB. Becoming Certified Smart Ash is open to all tree care companies that show they have or can acquire the established credentials. The list is posted on their website along with relevant credentials of each. One credential on the list is TCIA Accreditation.

Licensing by the city forester occurs after the applicant has successfully passed both a written and a field exam, and has provided written documentation of minimum insurance requirements. Licensing does not guarantee quality of work. On the website, “L” denotes a company that may leave the ground to do tree work and “O” denotes that all work must be performed from the ground. The city does not endorse any one company on the list. The city recommends that before residents enter any contractual agreement, they get at least three written and detailed bids and check references.

Although the EAB was discovered in Boulder, Colo., in September 2013, as of February 2018 it hadn’t yet been detected in Denver. “One in six trees in the city and county of Denver is an ash tree, so it’s vital that residents understand how they can treat, remove or replace their ash trees and protect the city’s urban forest,” says Davis.

For more information on the emerald ash borer and the Be A Smart Ash program, visit BeASmartAsh.org or follow the program on Twitter, @BeASmartAsh.

Sara Davis is urban forestry program manager in the Office of the City Forester at Denver Parks and Recreation in Denver, Colorado.
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Teddy Hildebrandt got his start in tree services working with his father, Ron Hildebrandt, at his father’s company, Shady Tree Service, in Parker, Colorado. “My dad taught me to work hard, and to be honest with myself, and my employees and my customers,” Hildebrandt says.

Hildebrandt went to work in the oil fields in Colorado and later began doing tree work part time. As the oil-field work decreased, his tree work increased. In 2010, he started his own company, T4 Tree Services, in Grand Junction, Colo., as a full-time business.

T4 Tree Services is the only TCIA member on the Western Slope of Colorado. Hildebrandt is a CTSP and a Board Certified Master Arborist (BCMA), and has his Tree Risk Assessment Qualification (TRAQ) credential. His wife, Jayleen, is the company bookkeeper.

As president-elect of the Rocky Mountain Chapter of the ISA, Hildebrandt is in charge of putting the 2018 annual conference together. It will be held September 17 and 18 in Grand Junction for the first time ever.

“Grand Junction used to be a pretty booming town,” he says. “It was an oilfield town in the 1980s and then it crashed. GJ slowly reestablished itself over the years and then another recession hit in 2008. Ten years later, we are coming back stronger than ever. Today, many diverse companies are moving here, many people from larger cities who want to get away from the chaos, and it seems like the town is bringing in more retired people.”

The company serves approximately a 50-mile radius around Grand Junction. Close to 70 percent of its customers are residential and 30 percent commercial.

“We’re on the edge of the desert, in a bowl surrounded by three mountain ranges,” Hildebrandt says. The winters are quite mild and dry, and the area receives approximately seven inches of snow annually. Summers are also dry and the temperatures reach 100 degrees a couple of times each year. The soil has high pH levels and ranges from clay to very sandy near the Colorado River. The only native trees are junipers and cedars, and cottonwoods down by the river.

“Most of the trees you see here were brought in from somewhere else,” he says. “Some of them struggle. A lot do well.”

In many cases, trees need supplemental nutrients to thrive because of the pH of the soil. T4 Tree Services does custom fertilization, including deep-root fertilizing, trunk basal sprays, trunk injections and topical drenches. They also do pest and disease control. Whenever possible, they use systemic pesticides, which can be more environmentally friendly, according to Hildebrandt.

About half of the company’s work is removals and trimming, but they are doing more and more consulting and providing advice on how to care for trees. Photos courtesy of T4 Tree Services.

Accreditation Profile

About half of T4 Tree Services’ work is removals and trimming, but they are doing more and more consulting and providing advice on how to care for trees. Photos courtesy of T4 Tree Services.
crown thinning and pruning for structural clearance. They also do tree cabling.

In the summers, customers use their own irrigation systems to water their trees, but because the sprinklers freeze for four or five months in the winter, the company provides winter watering to keep the trees healthy.

T4 Tree Services is doing more and more consulting, Hildebrandt says, especially appraisals, tree-risk assessments, tree identification and providing advice on how to care for trees.

They have 10 employees for 10 months of the year, and five for two months in the winter.

Safety is the company’s specialty, Hildebrandt says. They encourage their employees to become educated, especially through TCIA’s Tree Care Academy manuals, and to become ISA Certified Arborists. Employees get promotions and raises when they complete the applicable Tree Care Academy programs.

T4 Tree Services sends its employees

Teddy Hildebrandt encourages employees to become educated, especially through TCIA’s Tree Care Academy manuals, and to become ISA Certified Arborists.
to local annual conferences held by the City of Grand Junction and by the ISA. They also send employees to Colorado State University extension courses, which promote professional tree care and safety, including the hiring of ISA Certified Arborists.

Approximately 70 percent of their business is from repeat customers and referrals.

“We do quite a bit of advertising,” he says. “About 60 percent of our advertising is online and about 30 percent is TV commercials.”

They advertise their safety standards, their TCIA Accreditation and the fact that they have three of the four Certified Arborists working within the more than 20 independently owned tree service companies in the Western Slope region.

The company earned TCIA Accreditation in 2015.

“My cousin Casey (Hildebrandt, owner of Hildebrandt Tree Tech in Lubbock, Texas, which is also accredited) and I got acquainted with TCIA six years ago,” he says. “We started with Tree Care Academy and we always talked about Accreditation. We researched it and thought, ‘Why not?’ We can afford it and we think it’s valuable. We also thought it would bring in more customers.”

Hildebrandt says the hardest and most time-consuming part for his company to get accredited was thinking about everything TCIA required. They started working on their business plan, which helped get the ball rolling, he says, and then expanded their safety manual, created their injury and illness prevention program and improved their policies and procedures.

“Accreditation definitely helped with the company’s organization, goals, safety meetings and how our crews progress through their education,” Hildebrandt says. “When the employees have questions about policies and procedures, it’s all written down now. It helped make us more professional.”

Accreditation also helps him feel safer, he says. “I’ve always been safety-minded, but now I’m more prepared if there’s an emergency. Having the right policies and procedures in place, if something goes wrong, I have the paperwork and I know where to go.”

While the city realizes the importance of Accreditation, most area residents don’t yet know about it, he says. The company mainly gets calls asking if they have a certified arborist on staff.

“We’re getting the word out,” he says. “When we do bids, we bring up Accreditation and tell people why we did it. It helps close some deals.

“We have been growing every year since we started and will continue to grow in the future. I credit a lot of our growth and success to having chosen to actively participate in so many programs with TCIA and ISA. Those are huge for us. People see those and they’re willing to pay more than they’d pay the guy with the pickup truck and a ladder. They want someone professional and knowledgeable.”
Join us!

Our mission is to advance tree care businesses while increasing safety and professionalism, and raising the profile of the industry.

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Whether on the national or state level, America’s parks and forestlands have developed into a rich public resource. In fact, all 50 states maintain a robust network of parks and forests, providing both residents and visitors with opportunities to enjoy the great outdoors.

The state of Indiana is a bit unusual in that its network of 34 state parklands is largely self-sufficient. That owes in part to their sheer popularity, which translates into a valuable stream of visitors’ fees. More critically, the state also earns a robust income from inns and lodges at its parks – something many states subcontract out, if they have any at all.

“Parks are something that Indiana does very, very well,” says Terry Coleman, deputy director of operations for Indiana’s state parks. “We now have 16 million visitors a year, and that number is increasing. Our parks have become a point of pride for the Hoosier State.”

Yet, as with most any large operation, the Indiana State Parks system is always looking to do something different – and to add value to the service they provide. The thousands of park volunteers are a key element of that – and recently, arborist Mike Cieply was named Indiana Parks Volunteer of the Year for 2017, for a project he informally calls “Mike’s Mission.”

It all started four years ago when Cieply, owner of Arbor Pro Care Tree and Lawn, a TCIA member company based in Valparaiso, Ind., began lending his expertise to three state parks in northern Indiana. He’s since recruited other arborists to “adopt” their own state parks, and he’s building ties with arborists in the central and southern portion of the state.

“My ultimate goal is to do this for all the state parks in Indiana – which will enable the people who live in or visit Indiana to see just how beautiful our state truly is,” says Cieply.

Most park volunteers are generalists who perform a variety of helpful tasks – whether acting as interpretative guides, cleaning up litter, performing repairs on park buildings or assisting at campsites. “They are so critical to our operation, by enabling us to stretch our dollars and do more for the people who visit the parks,” Coleman says.

“When it comes to the highly specialized work, that’s what we appreciate most about Mike’s continued efforts,” he adds. “He has the expertise to go in and get the work done quickly and safely. Every time he takes down a tree, we
save several thousand dollars. And even more so, he’s a real champion of our parks system and is now actively recruiting other arborists to do the same.”

**Northern exposure**

Cieply’s hometown is Valparaiso, a city of 30,000 that is 15 miles from the south shore of Lake Michigan and an hour south-east of Chicago. He has focused his volunteer efforts thus far on three state parks close to home: Potato Creek, Tippecanoe and Dunes. The latter is considered an especially critical resource because it is one of the most-visited among Indiana’s state parks. It is surrounded on three sides by the Indiana Dunes National Lakeshore, a national park, and together the area draws approximately 1.7 million visitors each year.

“This is one of the most-visited parks in the Chicago area, and is a massive ecosystem with dunes that reach heights of several hundred feet,” Cieply points out.

While magazine photos focus on the towering dunes near the lakeshore, much of the parkland is heavily forested. *Liriodendron* – commonly known as tulip trees – predominate, reaching heights in excess of 120 feet. Species of *fraxinus* (ash) are also prevalent. “Most trees here are more than 100 years old,” Cieply notes.

The park nearest to Cieply’s home is Potato Creek, a 3,840-acre park that combines woodlands with prairie and wetlands. Because of its proximity, it has been the scene of many family picnics, hikes and camping trips for Cieply, his wife, Dawn, and their six children. Farther afield is Tippecanoe River State Park, which sprawls over 2,761 acres including old, undisturbed white-pine forests and riverine wetlands.

The first time Cieply volunteered at Potato Creek, the head ranger there offered him pay for his efforts. “I told him I wanted to keep it on a volunteer basis – and that I’d be back again,” Cieply says.

Volunteers are a self-effacing lot, humbly performing labor for the sole purpose of doing good and giving back. Yet, even the most modest volunteer will tell you it feels great to be recognized for those efforts.

Indiana arborist Mike Cieply was recently named the Volunteer of the Year by the Indiana State Parks commission, in recognition of his work at Dunes, Potato Creek and Tippecanoe River state parks.

The state recognized Cieply for removing 60 hazardous trees as well as pruning dozens of other dangerous trees. It noted that his efforts have greatly helped the state keep up with its increasing need for tree care and maintenance. “My mission is to make all state parks safer and more beautiful places to visit,” says Cieply.

“Our parks volunteers are a wonderful group of people who provide help with virtually anything we need doing,” says Terry Coleman, Indiana Parks deputy director. “They truly provide so many selfless acts that benefit the public. So it was truly special to have someone with Mike’s skills and passion working with us, helping to make our parks more beautiful and safer places to visit.”

**An Arbor Pro Care Tree and Lawn crew works at Potato Creek State Park. All photos courtesy of the author.**
Cieply and at least one other volunteer now visit each of the three state parks at least twice per season, at the season’s beginning and at its end. The team will usually cut about 16 trees, weather permitting. In addition, they will hike through each park’s trail system to ensure there are no obstructions from either downed trees or large branches. In the process, they either load the debris on their truck or move it to an unobtrusive spot off the trail.

Cieply brings a bucket truck on most visits to the park. All totaled, he has removed more than 100 trees thus far at the three parks.

Love of outdoors

It almost goes without saying that Cieply and his family are all outdoors enthusiasts. One recent family adventure involved hiking the Lake Michigan dunes at night without flashlights. These three parks are family favorites, but the Cieplys are known to go much farther afield as well. Cieply and his two oldest sons have hiked the North Rim of the Grand Canyon as well as Hawaii’s perilous Na Pali Coast on the island of Kauai.

That love of the outdoors began during Cieply’s childhood in suburban Philly. Early in his working years, he worked on the construction crew for a builder of luxury homes. This helped convince him that office work was not his forte.

When he moved to northern Indiana 25 years ago, he turned that passion into reality by establishing a commercial lawn-mowing service. Eventually, the business grew to the point where he numbered several huge enterprises as clients. One corporate facility sprawled across 40 acres.

“That’s a lot of grass to mow in one day,” Cieply muses. He built a successful business — but for someone with a passion for plants and landscaping, lawn care wasn’t enough to satisfy Cieply’s appetite for a challenge. So he got involved in arboriculture. He ultimately went for training and became certified, and added tree care to the array of services offered by his firm.

Tree care has often been described as a labor of love by most people who pursue it as a vocation. It’s also one occupation in which the fruits of one’s labors are immediately apparent, Cieply notes. As a hiker, Cieply appreciates his own ability to make outdoor spaces safer as well as beautiful. In a larger sense, his work benefits an enormous group — the 6.6 million men, women and children who call Indiana home.

Reaching out

“I tell the volunteers I recruit, this can be done in your downtime,” says Cieply. “Our state parks are an extremely valuable resource, and because I’ve used them and enjoyed them so much, I see doing this work as a great way of giving back to our state.”

Cieply attended the annual conference of the Indiana Arborists Association — a chapter of the International Society of Arborists — January 23-25, 2018, in Indianapolis. In addition to providing useful industry knowledge, the event was perfect for networking — and an opportunity for Cieply to recruit more volunteers.

“A gentleman who works for a utility company came up to me after the meeting and said, ‘I can climb,’” Cieply relates. “I said, ‘Great — let’s team you up with a guy with a bucket truck!’” They will focus on parks near Indianapolis.

Cieply plans further outreach to other volunteer, nonprofit groups. One likely for consideration would be the Boy Scouts and its Eagle Scout candidates eager for worthwhile projects. Cieply will be assisted in his outreach efforts by Purdue University instructor Lindsey Purcell, who also serves as executive director of the Indiana Arborists Association.

“We don’t just have to be about state parks, either — volunteers could choose any public area with a need for tree work,” Cieply says. “My goal is to reach out to more and more arborists, to see what we’re doing and where we can make a difference, then pick a spot and go to work.”
SUPPORTING TCIA’S MISSION
AND CHAMPIONING THE GROWTH
AND DEVELOPMENT OF THE
TREE CARE INDUSTRY.

OUR PACT PARTNERS.
The relationship between you and the person you choose to do your accounting and taxes is far more important than you may realize. In a small business, the right accountant functions almost like a partner. Chances are that you look to your accountant for advice and help with business decisions, so it’s crucial that the relationship be comfortable and trusting, particularly in today’s volatile and complex economy.

“CPAs can be more than just individuals who do your yearly taxes,” says Maria Marsala, a business consultant and author in Poulsbo, Washington. “The right accountant can advise you on a long list of other services, which may include advice on your accounting system, financial performance, estate/tax planning, retirement and payroll management. CPAs are a crucial part of a business owner’s professional team, along with a banker and a lawyer.”

Here are seven tips that can help you determine if your present accountant is the person best suited for you and your tree care business, or, if not, to find the one who is.

Do a careful search for prospects
While you may be lucky in going with a recommendation from a friend, you should do your homework first. “The best way to locate a compatible accountant is to ask around the community,” says Genevia Gee Fulbright, a CPA and tax advisor in Durham, North Carolina.

Ask bankers, insurance agents, small business owners – even other local business owners. “If it is not a direct conflict,” says Fulbright, “consider using the same CPA. The information you share with your accountant is strictly confidential, and licensed accountants are bound to strict non-disclosure requirements.”

“One of the most important factors in selecting an accountant is the quality of the customer service he or she provides,” says Vincent G. DiAntonio, CPA, J.D., with Hass & Co. in Media, Pennsylvania. “This is reflected in everything the accountant does, from how quickly the client gets a return telephone call to the accuracy and reliability of the advice provided.

“Sometimes a recommendation from a friend is the best way to find a good accountant, since some do not advertise. Many, in fact, acquire new clients solely through word of mouth. That gives them a strong incentive to provide quality customer service.”

Verify your prospect’s credentials
“Some individuals working as bookkeepers or accountants have no formal license or education in accounting,” cautions Navin Sethi, CPA and tax manager with Rothstein Kass in Walnut Creek, California. “That’s why you should do a thorough investigation before you hire an accountant. The best way to protect yourself is to hire a certified public accountant (CPA).

“In order to earn the CPA credential, an
applicant must meet the requirements of the state or jurisdiction in which they practice. The CPA applicant must also pass the national CPA exam and, depending upon the state, have some actual practical work experience before receiving their license. Finally, a CPA must adhere to requirements to take specified amounts of continuing professional education annually to retain their license to practice. Your benefit is that you will be working with a professional who is required to keep up to date on the latest and best accounting methods.”

Check references
Checking an applicant’s references is one of the most important steps in the hiring process. While it may be rare, even professionals can misrepresent their backgrounds and credentials or simply leave out important information.

Checking references takes a little time, but human-resource professionals know that it’s a simple step that could save you from hiring someone who is woefully unqualified.

Find out if you’re comfortable with the person
Fulbright emphasizes the importance of the chemistry between you and your accountant. “Make sure that you have clear goals for your business and that your prospective accountant understands them,” she says. “Go to lunch, have a conversation. That will help you to decide if you’re both on the same page.”

Every expert interviewed for this story agrees with the need to have an at-length personal interview before hiring an accountant.

Use the 60-percent rule
Keep in mind that there is a wide range of specialties open to CPAs, from individual taxes to large corporate clients to small businesses and everything in between.

“Look for a CPA who has 60 percent of his or her business coming from small business owners like you,” says Marsala. “They’re more apt to keep up with the laws regarding clients they deal with most often. Your business is probably incorporated or is an LLC, so you want to make sure that the person specializes in corpo-

Is It Wise to Use Your Business Accountant to Do Your Personal Taxes?

“I would certainly advise that only one accountant be used for both business and personal purposes,” says Carol Katz, CPA. “This is because the two are invariably intertwined. Year-end planning for a business impacts personal tax situations and vice versa. In addition, as a business grows, the accountant can advise and assist with additional services, such as pension planning, estate planning and buy/sell planning.”

Consider your special needs
If you have or are anticipating unusual accounting problems in your business, you should look for an accountant with specialized training or experience.

“If you are in need of an outside audit for your business, additional designations such as CFE (certified fraud examiner) would be helpful,” says Fulbright. “If you need a business appraisal/valuation, someone with an ABV (accredited business valuation) designation or CVA (certified valuation analyst) designation would be an advantage.”

Perhaps you have limited experience in personal financial management and would like to explore the possibility of increasing your investment portfolio. “An accountant who is also a certified financial planner (CFP) would be a good choice when you need investment/portfolio advice,” says Fulbright.

“The biggest problem many small business owners have is stepping back to take the time to evaluate their business,” says Carol Katz, a CPA in Baltimore, Maryland. “They are so busy running the business and keeping up with the paperwork that they do not allow enough time to plan ahead. You should always consult with your accountant before entering into any significant business or financial transaction. Undoing a poorly thought-out transaction or removing assets from an entity without causing unnecessary taxes can cost much, much more than the time spent on a planning meeting and document review.”

“The nature of small businesses requires owners to consider succession planning,” says DiAntonio. “Generally succession planning consists of either transferring the business to the next generation, selling the business outright to a third party or, perhaps, selling to an employee. This will often be one of the most significant life events of a business owner and should be planned appropriately by a trusted advisor.

“Typically, a CPA who knows the business and its assets can bring additional value to a potential sale or transfer. Also, once the business is converted into cash or a revenue stream, a financial planner can assist the client in maintaining and growing the client’s wealth.”

Don’t be afraid to make a change
Despite your best efforts, it’s always possible that you will find yourself working with an accountant who simply isn’t right for you and your business. If you should find yourself in that position, say our experts, you should not hesitate to look for a replacement. Your accountant is too important to your success for you to compromise.

Business owners should continually review where they are in the life cycle of their professional careers. “They may need to change the business form of the entity as their business grows,” says Katz.

Some entrepreneurs may need tax-savvy ways to bring in family members to whom the business will eventually be transferred. If there is no succession planned, there probably should be a proposed structure for eventual sale of the business, including buy/sell agreements among partners.

“If the accountant used when the business was small no longer seems effective, then it may be time to move to another with more expertise, says Katz.”

Finding the right accountant for your business may take a special effort, but the time you spend on that job may well prove to be among your most profitable investments.
Homeowner killed cutting tree
A man was killed February 5, 2018, when he was struck by part of a tree he was trying to remove in Dry Fork, Pittsylvania County, Virginia.
Robert “Bob” Pollock, 73, of Dry Fork, was using a chain saw to cut the tree when a portion of the tree fell back on him. He died at the scene, according to a WAKG report.

Man dies after stuck-by injury
A man died February 20, 2018, two weeks after he was struck on the head while cutting a tree in Bethel Township in Branch County, Michigan.
Brian Thompson, 56, of Fremont, Indiana, sustained a fractured skull February 6, 2018, when he was hit in the head by a falling tree or tree part. Thompson was flown from the scene by an air ambulance and was taken to Parkview Regional Medical Center in Fort Wayne, Ind., for treatment. Thompson died at Parkview, according to a Herald Republican and kpcnews.com report.

Lift operator killed in struck-by
A lift operator was killed in an apparent struck-by incident February 21, 2018, in Ocala, Florida.
Charles Lindsey, 70, of Ocala, was found slumped over on the platform of the lift while it was in the air.
Sheriff’s deputies had responded after a woman called 911 to report seeing Lindsey on the elevated platform and his body slumped over the safety cage. The woman said she called to him, but he did not respond. Deputies said the platform was approximately 30 feet in the air, and it appeared Lindsey had been doing tree work.
Firefighters lowered the platform and pronounced him dead at the scene. An autopsy concluded that cause of death was blunt head trauma.
Deputies who examined the area found two ropes, one of them secured to a tree with a chain and hook. The other rope had a hook attached to it. Deputies believe the ropes may have been used to provide tension to the area of the tree Lindsey was trimming. Investigators believe a portion of the tree Lindsey was trimming struck him on top of his head and his face struck the

Man pleads guilty to trying to throw co-worker into wood chipper
An Oregon man who worked for a tree service was sentenced to prison after he pleaded guilty to trying to push his co-worker into a wood chipper, headfirst, according to a February 8, 2018, report by KATU News 10.
Officers arrested Scott Iverson of Stayton, Ore., on attempted murder and attempted assault charges on May 1, 2017. The incident occurred April 26, 2017, in Keizer, Ore.
Iverson’s co-worker at R&R Tree Service, Austin Crawford, told police they were working at a property when Iverson put him in a choke hold and tried to push him into the running wood chipper. Another employee intervened and stopped Iverson.
Crawford told KATU that Iverson attacked him out of nowhere.
“I don’t want to die this way,” Crawford said he remembers thinking.
Iverson pleaded guilty to the attempted assault charge and was sentenced to 70 months in prison.
As reported in the June 2017 TCI Magazine Accident Briefs, Iverson and several other workers were working at a job site when he approached the victim, who was loading brush into the wood chipper, from behind. Iverson was accused of putting the man in a choke hold and pushing his upper torso onto the feed table of the machine.
The victim told police he struggled with Iverson, who made a second attempt to throw him headfirst into the machine before another employee saw the struggle and pulled Iverson off of the man.
Iverson walked away from the scene, but police found him the next day.

Accidents in the tree care industry that occurred during the month of February 2018. Graphic compiled from reports gathered by, or submitted to, TCIA staff.
safety-cage bar, according to an Ocala Star Banner report.

Tree worker dies after fall with broken tree

A tree service operator died February 23, 2018, when he fell from a tree in Hueytown, Alabama.

Patrick Snider, 44, of McCalla, Ala., who had his own tree service, was up in a tree while he and his crew were using a loader to remove a dead limb when the limb broke off at the trunk. Snider fell an estimated 35 to 40 feet and suffered massive head trauma.

Snider was pronounced dead at the scene, according to a report in The Birmingham News.

Operators and crew avoid injury when crane topples

An aerial-lift operator, a crane operator, tree workers and residents avoided injury when a crane being used for tree work tipped over onto two homes February 23, 2018, in Chattanooga, Tennessee.

A tree service crew was removing a tree from a residential yard when the truck fell onto the residence while lifting a log. The neck of the crane fell into the house next door. No one was in either home at the time of the incident.

A worker was on a compact tracked lift by the crane when the truck started to turn over, and fellow crew members assisted in getting that worker to safety as the incident occurred, according to a Chattanooga Times Free Press report.

Climber electrocuted

A climber was electrocuted while trimming trees in the backyard of a home February 26, 2018, in San Jose, California.

Emergency crews were dispatched to the scene on a report that the man was dangling from the tree, about 30 feet from the ground. When first responders arrived, they found the man dead, the victim of electrocution after somehow coming in contact with a high-tension power line.

It was breezy in the neighborhood at the time, but it had not been established whether winds played a role in the accident, according to an ABC 7 News KGO-TV report.

Looking for accident examples to use in your training? Get them from TCI’s online accident archive.

Go to www.tcia.org, click Publications, then Accident Briefs and find the searchable Word document “List of Accident briefs published in TCI for 2010 through 2017.”
Cutting Edge News
(Continued from page 74)

it is the right decision at the right time,” said Michelle Harvey, Grows president. “Changes both within and outside of the industry contributed to the decision to close Grows, but this does not diminish the significant and positive contributions Grows has made to the local green industry over the past 25 years.”

Founded by New England Nursery Association, Massachusetts Arborists Association, Massachusetts Nursery & Landscape Association, and Massachusetts Association of Landscape Professionals in 1993, New England Grows’ mission was to educate, elevate and support the region’s commercial horticulture industry.

Held in early February for most of its tenure, the trade show was often disrupted by snowstorms. The show moved to early December in recent years, but that time frame brought other issues, such as being sandwiched between busy holidays for its attendees and exhibitors.

Bandit expanding in 2018

Bandit Industries recently announced two major building additions to expand production capacity and add a new, state-of-the-art parts and service facility at its Remus, Michigan, headquarters.

Bandit will invest $1.4 million in the two expansions. Both are expected to come online in 2018. This is the second round of expansion in as many years.

“We added manufacturing space 18 months ago and revamped our assembly lines in anticipation of the increased demand,” says Jerry Morey, Bandit president. “We continue to invest in our future, not only in facilities and gear, but in our workforce, including training.”

The new parts facility will also house a central receiving and distribution area, improving the flow of parts and materials to the six major manufacturing facilities. This will free up extra manufacturing space to further increase Bandit’s production capacity. Bandit has added more than a dozen dealers with over 30 total locations in the past two years.

“As our dealer network expands, the need for parts expands right along with it,” said Jamie Morey, Bandit parts manager.

Bandit added three-quarters of a million dollars of new cutting and steel processing equipment in 2017 to keep up with the demand for parts for its expanding production areas.

Jarraff appoints new COO

Jarraff Industries recently announced the appointment of Steve VanRoekel as its new chief operating officer. He most recently served as president and CEO of animal feed company Ridley Inc., Mankato, Minnesota.

“We are very excited to welcome Steve to our team. His executive experience and team-building skills are an ideal fit and welcome addition to Jarraff Industries,” says Heidi Boyum, Jarraff president/CEO.

In his 12 years with Ridley, VanRoekel led a team that created more than $400 million in shareholder value culminating in the acquisition of Ridley by Alltech in June of 2015.

Manitex names Steve Kiefer president and COO

Manitex International, Inc., an international provider of cranes and specialized industrial equipment, recently named Steve Kiefer its president and chief operating officer.

Kiefer, who was promoted to Manitex president, North America in September 2017, has held key senior management roles with Manitex and affiliated companies since 2015 and brings with him more than 25 years of experience in the industrial equipment sector.

“Steve is uniquely qualified to help us execute our global strategic growth plans, with a focus on innovation, operational excellence and execution,”
says David Langevin, chairman and CEO. “We look forward to continuing to leverage his knowledge of, and experience with, the industrial equipment industry for the benefit of all of our stakeholders.”

**Palfinger to co-brand with Reading Truck**

Omaha Standard Palfinger, a division of Palfinger North America, entered into a co-branding relationship with Reading Truck Group, Reading, Pennsylvania, in March. The agreement includes a range of Palfinger telescopic crane models ranging in size, in both electric and hydraulic configurations.

This partnership aims to allow both companies to collectively expand their geographical footprints within North America and several key industry segments. The cranes will be co-branded and are intended for installation on Reading Master Mechanic Series crane bodies starting in early 2018.

According to Jason Holt, president of Omaha Standard Palfinger, “This relationship represents a resounding vote of confidence in our crane offerings from one of the leaders in the truck body industry. The investment is the result of a positive ongoing relationship with Reading Truck Group.”

**ACRT Services formed as holding company for ACRT**

ACRT has become part of ACRT Services, a new holding company made up of three wholly-owned subsidiaries: ACRT, ACRT Pacific and Bermex.

The creation of ACRT Services allows the company to deliver new offerings to utility customers, provide tailored and versatile expertise to regions throughout the United States, and continue its significant, ongoing growth, according to a statement from ACRT.

“Our company is still growing – and now we’re changing,” said Mike Weidner, ACRT Services CEO. “We’re making this transition in order to prepare ourselves for continued growth and success, while strengthening our commitment to our customers, old and new.

ACRT remains the same independent vegetation management company, but the ways in which ACRT brings enhancements and new services will only grow. ACRT remains the largest independent utility management consulting company in the U.S., according to the statement.

ACRT Pacific, founded on the same independence as ACRT, will concentrate on business within the state of California.

Bermex continues to offer professional metering services to utilities throughout the gas, water and electric industries.

This transformation also includes a new brand identity for ACRT, including a new family of logos inspired by the company’s history, its people, and its continued dedication to being the industry authority. Through the new brand, ACRT’s core values – People, Dedication, Process, and Education – are represented front and center.
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3. **Introduce your company.** Who are you? Candidates should get a sense of your size and, more importantly, your company culture.

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TCIA’s Bob Rouse, second from left, and Pat Wait, third from left, TCIA’s new West Coast Accreditation Auditor trainee, during an Accreditation site visit at Foothills Tree Service in Placerville, California, in early February. They are with Chad Dyskstra, fourth from left, Foothills’ president, and several members of the Foothills’ crew.

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The TREE Fund announced in February nearly $225,000 in new awards for urban tree research and education for 2017. With these grants, the 501(c)3 charity has provided more than $3.4 million in funding since its inception in 2002.

Two of the awards are centered on improving worker safety. The new Safe Arborist Techniques Fund grant line is looking at current safety standards, and the Frank E. Gamma, Sr. Arboriculture Education Fund supports TCIA’s Arborist Safety Training Institute, which brings high-quality, local and affordable safety training to working arborists.

“The wide array of grants that TREE Fund awarded in 2017 demonstrates the extensive impact that we and our research partners can have on communities within and beyond the tree care industry,” notes J. Eric Smith, TREE Fund president and CEO. “From the broad quantification of human health benefits gained from city trees to approaches for battling tree disease on a microbial level, we are seeking to empower tree care professionals at all levels, and to educate lay people and policy makers alike on the economic, health and aesthetic benefits of healthy urban canopies around the world.”

2017 TREE Fund Hyland R. Johns Research Grant recipients:

Richard Hauer, Ph.D., University of Wisconsin – Stevens Point, is creating an easy-to-use tool to evaluate and track progress within urban-forestry programs. Ultimately, the “Sustainable urban forestry planning models and decision-making dashboard” project will help urban-forest planners create a story of the current state of their urban-forestry program and identify areas to improve, thus leading to a sustainable urban-forest program and tree population.

Kathleen Wolf, Ph.D., University of Washington, seeks to extract research about human health benefits specific to city trees and forests and conduct an economic valuation of such benefits. The “Urban forests for human health: a focused economic valuation” project will provide professionals in arboriculture, urban forestry, landscape design, etc., with additional data for justifying the costs of tree planning, planting and management.

2017 Safe Arborist Techniques Fund Grant recipient:

Brian Kane, Ph.D., University of Massachusetts - Amherst, is collecting and analyzing safety standards from around the world in the “Arboricultural safety around the world” project. It will serve as a foundation for future studies into safe working practices in arboriculture.

2017 Directed Research Grant recipients:

Eric Wiseman, Ph.D., Virginia Tech, and co-investigator Sarah Gugercin, Virginia Department of Forest Resources and Environmental Conservation, are cataloging organizations involved with arboriculture/urban forestry educational grant-making programs in recent years. The “Education Review Program” project will provide a thorough analysis on such programs to guide decision making on future TREE Fund Arboriculture Education grants.

Andrew Kooser, Ph.D., University of Florida - Gulf Coast REC, and co-investigator Rich Hauer, Ph.D., University of Wisconsin – Stevens Point, aim to conduct a comprehensive review of all past TREE Fund-supported research in their study “Research Review Program.” Their work will gauge direct and indirect outcomes, outputs and impacts of the funded projects.

2017 John Z. Duling Grant recipient:

Nina Bassuk, Ph.D., Cornell University, seeks to improve tree-transplant success and ultimately provide greater tree-species diversity in the nursery industry via root manipulation. In the “Enhancing Tree Transplant Success...
through the Manipulation of Root Hydraulic Conductance” project, Dr. Bassuk will manipulate root growth to increase the rate and efficiency of water uptake, resulting in a production practice that can improve a tree’s ability to respond to transplant shock.

2017 Jack Kimmel International Grant recipients:

Kimmel grants are supported by Canadian TREE Fund and its riders in the Tour des Trees outreach and fundraising event.

Rachael Antwis, Ph.D., and co-investigator Stephen Parnell, Ph.D., both with University of Salford, U.K., are exploring natural microbial communities of trees as a way to address emerging infectious diseases such as the chalara fungus infecting ash. The “Fighting microbes with microbes to protect our native trees” study aims to identify microbial signatures of ash resistance to chalara and markers of host gene expression to identify resistant trees for cultivation and reforestation.

2017 Arboriculture Education Grant recipients:

Friends of the Urban Forest, San Francisco, California: The “Green Teens – Vocational Skills Job Training” initiative provides practical job-skills training to low income, high school-aged youth. It is an integral part of the organization’s plans to expand and preserve San Francisco’s tree canopy, while empowering at-risk youth.

TreeFolk, Del Valle, Texas: With the “Youth Tree Climbing Initiative,” TreeFolks will expand its active and educational urban-forestry activities for underserved youth in Austin to include tree climbing.

2017 Frank E. Gamma, Sr. Arboriculture Education Fund recipient:

Tree Care Industry Association Foundation (TCI AF), Londonderry, New Hampshire: This grant supports the Arbor-
The Whispering of the Trees

Do trees talk with each other? Do they have feelings? Memories? Controversial German forester, Peter Wohlleben, says yes. Wohlleben is the author of The Hidden Life of Trees: What They Feel, How They Communicate. An article in Smithsonian’s March 2018 issue, “The Whispering of the Trees,” explores how Wohlleben and his ideas are shaking up the scientific world. The following is an excerpt from the Smithsonian article.

Since Darwin, we have generally thought of trees as striving, disconnected loners, competing for water, nutrients and sunlight, with the winners shading out the losers and sucking them dry. The timber industry in particular sees forests as wood-producing systems and battlegrounds for survival of the fittest.

There is now a substantial body of scientific evidence that refutes that idea. It shows instead that trees of the same species are communal, and will often form alliances with trees of other species. Forest trees have evolved to live in cooperative, interdependent relationships, maintained by communication and a collective intelligence similar to an insect colony. These soaring columns of living wood draw the eye upward to their outspreading crowns, but the real action is taking place underground, just a few inches below our feet.

“She are calling it the ‘wood-wide web,’” says Wohlleben in German-accented English. “All the trees here, and in every forest that is not too damaged, are connected to each other through underground fungal networks. Trees share water and nutrients through the networks, and also use them to communicate. They send distress signals about drought and disease, for example, or insect attacks, and other trees alter their behavior when they receive these messages.”

Scientists call these mycorrhizal networks. The fine, hairlike root tips of trees join together with microscopic fungal filaments to form the basic links of the network, which appears to operate as a symbiotic relationship between trees and fungi, or perhaps an economic exchange. As a kind of fee for services, the fungi consume about 30 percent of the sugar that trees photosynthesize from sunlight. The sugar is what fuels the fungi, as they scavenge the soil for nitrogen, phosphorus and other mineral nutrients, which are then absorbed and consumed by the trees.

For young saplings in a deeply shaded part of the forest, the network is literally a lifeline. Lacking the sunlight to photosynthesize, they survive because big trees, including their parents, pump sugar into their roots through the network. Wohlleben likes to say that mother trees “suckle their young,” which both stretches a metaphor and gets the point across vividly.

Once, he came across a gigantic beech...
stump in this forest, four or five feet across. The tree was felled 400 or 500 years ago, but scraping away the surface with his penknife, Wohlleben found something astonishing: the stump was still green with chlorophyll. There was only one explanation. The surrounding beeches were keeping it alive, by pumping sugar to it through the network. “When beeches do this, they remind me of elephants,” he says. “They are reluctant to abandon their dead, especially when it’s a big, old, revered matriarch.”

To communicate through the network, trees send chemical, hormonal and slow-pulsing electrical signals, which scientists are just beginning to decipher. Edward Farmer at the University of Lausanne in Switzerland has been studying the electrical pulses, and he has identified a voltage-based signaling system that appears strikingly similar to animal nervous systems (although he does not suggest that plants have neurons or brains). Alarm and distress appear to be the main topics of tree conversation, although Wohlleben wonders if that’s all they talk about. “What do trees say when there is no danger and they feel content? This I would love to know.”

Monica Gagliano at the University of Western Australia has gathered evidence that some plants may also emit and detect sounds, and in particular, a crackling noise in the roots at a frequency of 220 hertz, inaudible to humans.

Trees also communicate through the air, using pheromones and other scent signals. Wohlleben’s favorite example occurs on the hot, dusty savannas of sub-Saharan Africa, where the wide-crowned umbrella thorn acacia is the emblematic tree. When a giraffe starts chewing acacia leaves, the tree notices the injury and emits a distress signal in the form of ethylene gas. Upon detecting this gas, neighboring acacias start pumping tannins into their leaves. In large enough quantities these compounds can sicken or even kill large herbivores.

Giraffes are aware of this, however, having evolved with acacias, and this is why they browse into the wind, so the warning gas doesn’t reach the trees ahead of them. If there’s no wind, a giraffe will typically walk 100 yards – farther than ethylene gas can travel in still air – before feeding on the next acacia. Giraffes, you might say, know that the trees are talking to one another.

Trees can detect scents through their leaves, which, for Wohlleben, qualifies as a sense of smell. They also have a sense of taste. When elms and pines come under attack by leaf-eating caterpillars, for example, they detect the caterpillar saliva, and release pheromones that attract parasitic wasps. The wasps lay their eggs inside the caterpillars, and the wasp larvae eat the caterpillars from the inside out.

“Very unpleasant for the caterpillars,” says Wohlleben. “Very clever of the trees.”

A recent study from Leipzig University and the German Centre for Integrative Biodiversity Research shows that trees know the taste of deer saliva. “When a deer is biting a branch, the tree brings defending chemicals to make the leaves taste bad,” he says. “When a human breaks the branch with his hands, the tree knows the difference, and brings in substances to heal the wound.”

To read the entire article, go to https://www.smithsonianmag.com/science-nature/the-whispering-trees-180968084/

Also, see a related article, “The Wood Wide Web,” by John Ball, Ph.D., in the February 2018 issue of TCI Magazine, available in our online archive at www.tcia.org, under the Publications tab.
A few summers ago Clint Eastwood’s movie Grand Torino was filmed in Southeast Detroit. Grosse Pointe Park borders the east side of Detroit. Unfortunately, this area of Detroit has seen better days. Now, vacant lots far outnumber houses. This used to be a thriving, clean, vibrant neighborhood, or so I’m told. Now some blocks don’t even have a single house on them.

The crew set up on one of these vacant lots to film a scene, just blocks away from where my office is. The location director approached me. He was concerned about poison ivy being present and, being from California, wasn’t sure what it looked like. He was a nice guy who was sincerely interested in trees. He saw “three-leaved” plants and was wary of the adage, “leaves of three, let it be.”

Poison ivy (Toxicodendron radicans) is a three-leafed woody vine that is noxious to humans. It occurs in all states except Alaska, Hawaii and California. Western poison oak (Toxicodendron diversilobum) is a three-leafed plant that is noxious to humans. It is found only on the Pacific Coast of the United States and Canada. Wild strawberry (Fragaria virginiana) is plentiful in Michigan and looks very similar to poison ivy and poison oak, but is not harmful.

I knew I wouldn’t find any poison oak. I didn’t see any poison ivy but walked the lot and diligently checked it out anyway. This lot was overgrown with weeds, but they weren’t any types of noxious plants I was worried about. All sorts of trash littered the place. Homeless people use this lot to store their life possessions. Old grocery store carts were scattered throughout loaded with all sorts of human-made trash: Toilet paper, broken glass, an occasional ripped up sleeping bag – it was disgusting. I was careful where I stepped.

“Nothing poisonous in here,” I said.

“What can you tell the boss yourself please?” asked the assistant who drove me to the site. “He’s very concerned about his workers’ safety.”

“Sure,” I replied, convinced that by the “boss” he meant the location director I had met earlier. I was escorted through the crowd on the set to a lone director’s chair perched in the shade of a boxelder tree (Acer negundo, irrationally called the poison ivy tree by some). When I looked up it was Clint Eastwood himself – legs crossed, dressed casually, looking absolutely great for an 80-year-old man.

I have to admit I was tongue tied at first. A part of me didn’t believe it was him. (I’m a big fan of all of Eastwood’s movies). Then he slowly and deliberately raised his head and in his Dirty Harry voice asked, “Well ... are any of my guys going to get a rash in there?”

Immediately I was certain it was really him and confidently replied, “Mr. Eastwood, the only thing your team has to worry about is stepping on broken liquor bottles.”

He laughed, shook my hand, thanked me and I went back to work.

Brian Colter is city forester in Grosse Pointe Park, Michigan.
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