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Volume 14
Number 6

UTILITY ARBORIST NEWSLINE

FOCUS ON UVM PAST AND FUTURE

LESSONS LEARNED FOR A SAFER FUTURE
SAFETY TOOLS

YOUNG PROFESSIONALS
THE BRIGHT FUTURE OF UVM'S NEW GENERATION

THE EVOLUTION OF TECHNOLOGY IN UVM
HOW WE HAVE BRANCHED OUT

ARBORICULTURE HISTORY
THE EMERGENCE OF AN INDUSTRY

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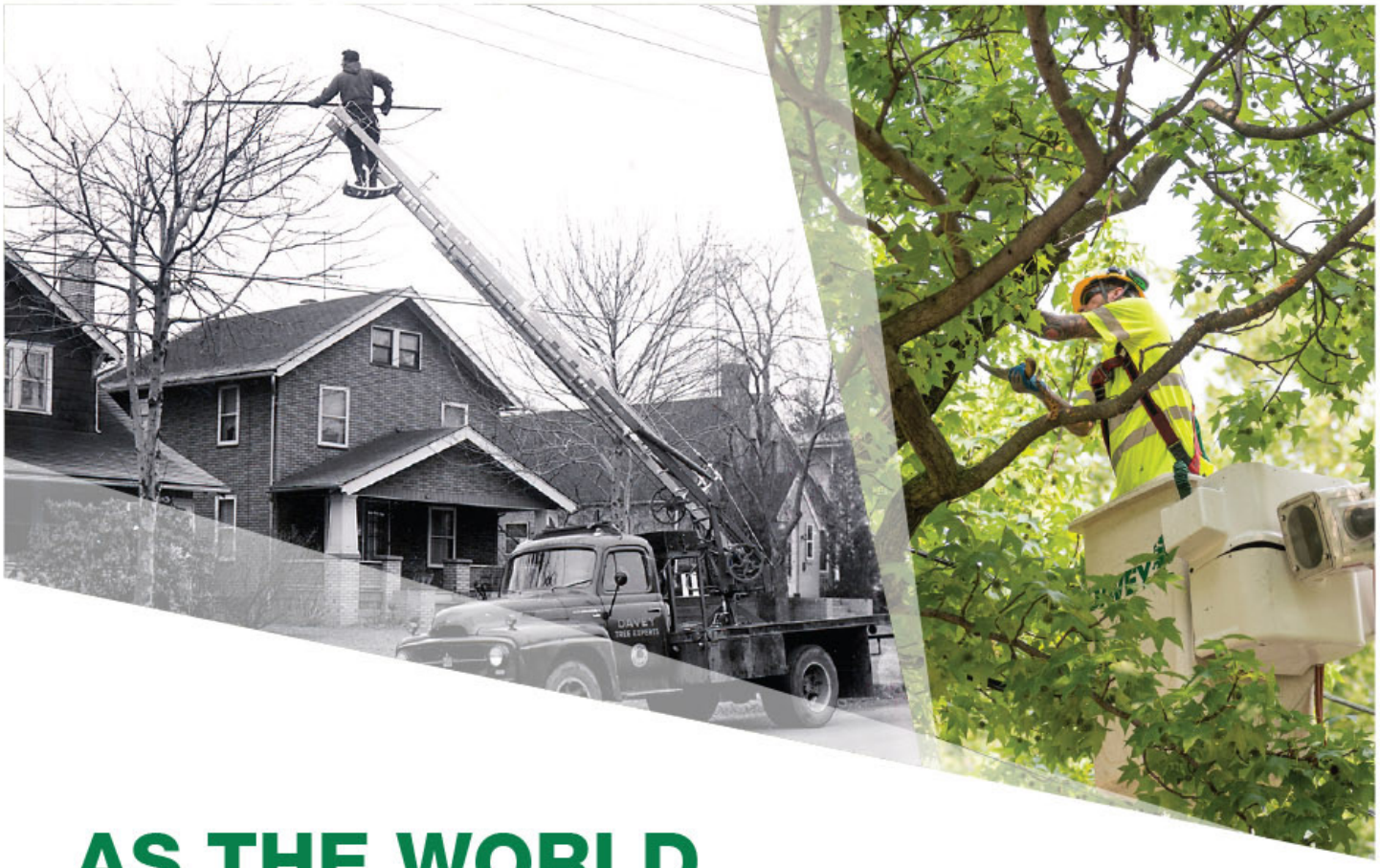

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Turn to **page 12** to read about this year's UAA Award recipients!

Read what insights industry experts have regarding the future of UVM on **page 20**.

Revisit the evolution of technology in UVM throughout the years on **page 32**.

This is a list of common industry terms and acronyms frequently used in this magazine.

- Artificial Intelligence (AI)
- Best Management Practices (BMPs)
- Environmental, Social, and Governance (ESG)
- Integrated Vegetation Management (IVM)
- Light Detection and Ranging (LiDAR)
- Occupational Safety and Health Administration (OSHA)
- Personal Protective Equipment (PPE)
- Rights-of-Way (ROW)
- Subject Matter Expert (SME)
- Utility Vegetation Management (UVM)
- Vegetation Management (VM)

PRESIDENT'S MESSAGE

Brandon Hughson

> From its early days to the present, the industry has overcome numerous challenges and evolved to meet changing needs. As we look to the future, we see a continued focus on biodiversity, sustainability, and safety.

In our May/June *UAN*, The utility vegetation management industry plays a pivotal role in ensuring the safe and efficient delivery of basic utilities, underpinning our modern way of life. Over a century old, the history of modern arboriculture is a testament to the dedication of trailblazing individuals driven by the scientific advancements of the twentieth century. Though the pioneers have passed on, they have bequeathed to us an honorable profession and a tradition of pride in our craft.

Arboriculture's early days witnessed several challenges, including the Great Depression, the emergence of new tree diseases, the impact of World War II, the introduction of chainsaws and early mechanized equipment, the advent of chemicals and spraying, and the development of pruning techniques. These challenges pushed the industry to adapt and evolve.

In the 1980s, the groundbreaking research conducted by Bramble and Byrnes marked a significant turning point. Their work, coupled with evolving regulations and compliance measures, revolutionized the way we perceive utility rights-of-way. Selective chemical treatments to control undesirable vegetation, while preserving beneficial species, were once considered novel; today, they are the industry standard. The future of UVM places a strong emphasis on biodiversity and the restoration of nature to our green spaces.

Environmental, social, and governance has gained prominence in our industry. Environmental, social, and governance evaluates a company's governance mechanisms and its ability to manage environmental and social impacts. As sustainability and social responsibility disclosures become more critical, utilities are increasingly motivated to promote biodiversity programs to enhance their ESG scores. Collaboration is paramount as we collectively strive to improve our industry's ESG standing.

Throughout our careers, we can draw inspiration from recent industry leaders and their contributions. Figures like Will Nutter, who championed safety, and Nelsen Money, who passionately mentored and shared tacit knowledge, serve as legends from whom we can learn and build upon. These individuals transcended company affiliations, donning the industry hat to propel us forward. Together, through collaboration and enrichment, we can push the boundaries of our industry.

Safety has always been paramount, from the inception of the first insulated bucket truck and chainsaw. Today, the industry adheres to the ANSI Z133 standard, which outlines safety requirements for arboricultural operations, including tree care and maintenance. Safety remains a cornerstone of utility vegetation management.

The establishment of annual managers summits serves as a testament to our commitment to collaboration and progress. These gatherings provide a platform for professionals to discuss matters impacting our industry and drive us forward collectively.

The history of UVM is a story of resilience and innovation. From its early days to the present, the industry has overcome numerous challenges and evolved to meet changing needs. As we look to the future, we see a continued focus on biodiversity, sustainability, and safety. Through collaboration, education, and shared knowledge, we can ensure the safe and efficient delivery of essential utilities while preserving our natural environment for generations to come.

Brandon Hughson

P.S. If you really want to invest in our future industry, invest in our future people. Consider donating to the Nelsen Money Scholarship Fund today.

President Brandon Hughson (left) receiving the gavel from Past President Tim Walsh (right).

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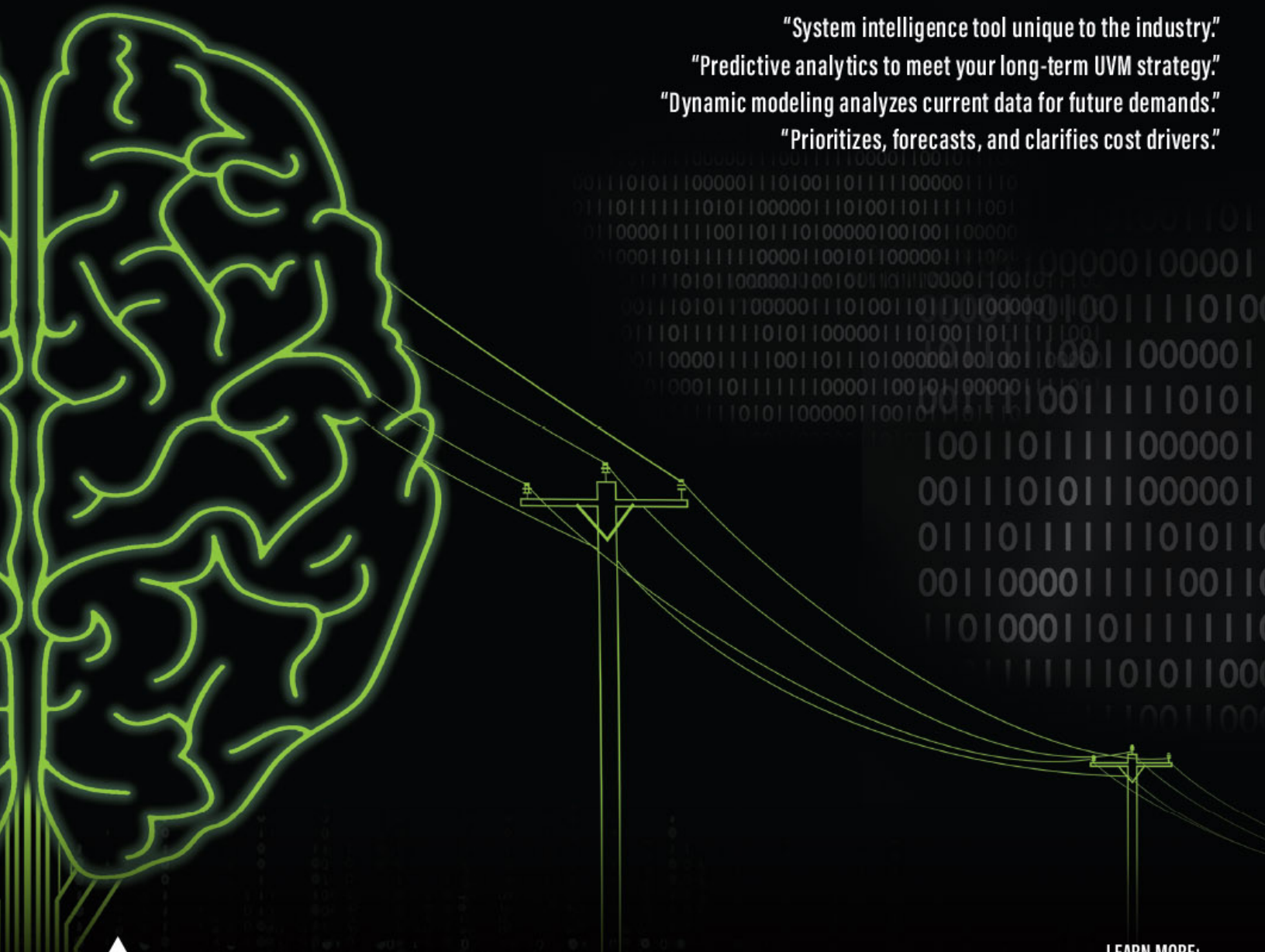

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EXECUTIVE DIRECTOR MESSAGE

Dennis Fallon

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Technology is moving leaps and bounds in the UVM space, with communications getting faster and more reliable. There was a time when colored highlighters and a paper circuit map were a planner's or forester's must-have tools. Prework planning used different colors to describe access, equipment, and even crew complements. Notebooks were loaded with notes that coincided with an identifier number on a paper map to help crew leaders make the best decisions they could, with potentially no access to ask immediate questions. Simple things like *Drop chipper on road; Not enough room to turn around at end of tap; or Combination to gate lock is...*were crucial nuggets of information that could save a crew significant time. Pick-up trucks acted as offices, with pens, highlighters, staplers, maps, extra sets of maps, navigation tools, and envelopes were all nestled in nooks and crannies—waiting precariously to go flying with sudden braking or rough access routes.

The efficacy of the system was also dependent on the user's knowledge of the system. Colors were not always consistently used by every planner. Abbreviations could mean different things to different folks. Important information was often relayed in person via a planner taking a crew leader to a site in advance to decipher the notes. When people took time off or were assigned to other tasks, sometimes the information exchanged did not get to the newly assigned team. The system was also dependent on hand passes of information. Utility foresters would assign work to GFs; GFs would assign maps to planners; planners would pass the work they planned to crews; then crews would do the work they were assigned, and hand the paperwork back the other direction. Knowing what was and wasn't done could have up to a two-week lag in reporting.

Today we have work planning systems that can be preloaded with access information derived from remote sensing or historic work. Planners can leave explicit notes and even images on tasks for crew leaders to use. Crew leaders often have reliable communication, where questions and information can be exchanged quickly. Progress can be tracked with every upload of data into the main systems, often occurring every night. Maps are not relegated to the cab of a planner's truck until the whole map is planned. Hand-offs are virtual and can be near instantaneous. Utilities can see progress as the work occurs. The ability to create, analyze, and share information in the UVM space is tremendously better that it has ever been. So, right now must be a vegetation management utopia, right? Maybe.

Development of new technologies is often a slower task than we would prefer. One of the key parts to developing technologies is access to subject matter experts and, more importantly, their feedback. Artificial intelligence is advancing through use—ChatGPT, autonomous driving vehicles, and system algorithms are all dependent on feedback loops. *Is this paper grammatically correct? Is this a fire hydrant? Does this tree have the risk profile the system thought it had when the data was reviewed?* These systems require folks who can inform the machine learning system when the assessment was and was not correct. The machine learning part of AI is exactly that, learning from errors identified by SMEs used to inform the next assessment.

For perspective, think about how many people there are who can accurately identify a fire hydrant, a traffic sign, a crosswalk, or anything else an autonomous driving vehicle may sense while traveling about. Then think about how many people can accurately identify risk profiles of vegetation near energy facilities that a utility arborist may encounter. Some folks cannot spot cellular antenna towers designed to look like trees from real trees. If everyone could differentiate a fake tree from a real one, no one would agree to the extra expense of building a tower that attempts to look like a tree.

As the industry presses forward into the future, we will need to build feedback loops into our machine learning algorithms in a way where SMEs work together to inform the systems. We are at, or very near, a point in time where we need to begin sharing assessment feedback with larger audiences who have unique talents within our field. The longer we take to inform technology on where assessments are off, the slower the journey towards having confidence in the machine-based assessments. The UAA has a track record of building networks around complex issues that transcend competitive bounds, and now is the time for all of us to work together to frame the future of UVM.

Dennis Fallon

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EDITORIAL COMMITTEE UPDATE

Renée Bissett

Michelle Vignault

By Renée Bissett and Michelle Vignault, Chair and Co-Chair of the UAA Editorial Committee

The UAA Editorial Committee focuses each month on delivering a well-rounded, people-centric variety of articles that inspire, promote, and highlight the trends and goals of our industry. The Editorial Committee is tasked with creating publications for UAA Members and the public. Our two primary publications are the *Utility Arborist Newsline* and the *Transmission and Distribution World Vegetation Management* supplement, typically circulated in June of each year. This committee includes volunteers from utilities and a variety of industry vendors. This variety of stakeholders gives unique points of view that represent the global UAA Members. The ongoing mission of this committee is to be the voice of our UAA Members.

In 2023, we worked on identifying new areas of interest as they relate to industry trends, including safety, environmental stewardship, and remote sensing. Other trends include technology, biodiversity studies, diseases impacting vegetation, regulations, and compliance, as well as many other people-related issues. We continue to diversify our committee by onboarding new members on a cyclical basis. The *Newsline* is published six times annually and is the official magazine of the Utility Arborist Association, which includes a distribution reach to over 5,000 members.

Each year, we review our content calendar and themes to ensure a variety of topics are offered to our readers and to provide advertisers a sense of which issues are ideal for their needs. In 2024, our themes will include environmental stewardship, safety, climate response, and education. The Editorial Committee thanks each of our contributors and advertisers who help produce a high-quality and informative magazine year after year.

Do you have an article idea you would like to include in a 2024 issue? Please submit your ideas to *Newsline@gotouaa.org* and we'll make sure to share them with the Editorial Committee. On behalf of Renée Bissett, Chair (ACRT), Craig Kelly, Champion (PG&E) and Michelle Vignault, Co-Chair (Clearion), we thank you!

2024 EDITORIAL CALENDAR

JAN/FEB
Workforce Retention and DEI

MAR/APR
Environmental Stewardship

MAY/JUN
The Safety Issue

JUL/AUG
Climate Change and Disaster Response

SEP/OCT
Legislative and Educational Outlook

NOV/DEC
A Year in Review

EDITORIAL COMMITTEE MEMBERS

Craig Kelly, Champion (PG&E)
Renée Bissett, Chair (ACRT Services)
Michelle Vignault, Co-Chair (Clearion)
Michelle Dungan (Wright Service Corp.)
Amy Fischbach (T&D World)
Stephen Hilbert (Asplundh)
Amanda Huisman (Wright Service Corp.)
Frank Keenan (Iapetus Holdings)
Steve Lach (T&D World)
Vince Mikulanis (Davey Resource Group)
Randy Miller (CNUC)
Katie Moehn (Wright Service Corp.)
Elizabeth Murray (Lewis Services)
Steven Powell (Lewis Services)
Diona Neeser, Program & Operations Manager (UAA)
Renée Phillips, Member Services Manager (UAA)
Dennis Fallon, Executive Director (UAA)
Nadia Geagea Pupa (Pique Pub.)
Lindsay Denney (Pique Pub.)

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SAFETY TOOLS

UVM Safety: Taking Lessons into the Future

By Dewey Goss, ISA Certified Arborist, ISA Certified Utility Specialist, Project Manager–Application Services, Townsend Tree Service

January 19, 2004, the air was cold, fresh, and crisp. With a light layer of snow on the ground, it was my first day in the field as an upcoming vegetation line clearance worker. The previous week had been spent training at the corporate office learning the safety rules and company polices, all fresh in my head. I was confident that I was going to absolutely crush the day in my new career path.

The foreman, an old, 20-year veteran, pulled the massive chipper truck to the edge of a remote county road and said, "Here we are, boys. Now let's get this mess chipped up." Those were all the words of encouragement, safety, and knowledge he would share with us that day. Wanting to make a good first impression, I jumped out of the truck, ready to start chipping and wanting to prove myself. I came around the side of the truck and stepped out into the sleepy back road when a vehicle came rushing by, nearly clipping me. The foreman in the truck hit the horn, yelled some choice words at the speeding vehicle, then at me for almost getting hit. I knew then that encouragement, safety, and knowledge were going to be self-taught.

Looking back on my early years in the UVM industry, I realize it was a delicate balance of trial and error—what worked and accomplished the task versus what left us in disbelief as to how we executed the task or didn't become a morbid statistic. Our industry's past is littered with stories like this, both professional and private. Back then, the ideas of "good catch" or "near miss" reporting was in its infancy for us. Things like command and response, all stop, selective herbicide applications, and modern rigging and climbing were reserved for only when the boss showed up. The old veterans of the day would complain about wasted time filling out good catch/near miss reports, however they had no problem filling out disciplinary write-ups, or how it was a waste of money to buy and use anything other than the bare minimum because "That's how it was back in my day." No one realized that the data being collected would be analyzed for trending patterns and utilized when looking into the future of safety, products, and equipment. So many things went unreported due to fear of being disciplined or thought of as unnecessary. I can't help but wonder how much safer we'd be, what kinds of products and new tech we'd have right now, had we just been honest about things sooner.

As a new generation is now becoming the 20-year veterans, I've watched a new way of thinking and teaching in our industry evolve alongside a rapid development of task-specific equipment. What our fellow coworkers have learned through success and failure combined with the ability to communicate with anyone, anywhere, at any time has created a new era in UVM. The tools of our trade are not just limited to a simple climbing saddle with a single buck strap and rope, or non-selective herbicides with only one way to apply them. Now we have a wide variety of equipment, herbicides, educational tools, and techniques at our disposal. Tools as ordinary as taller, more reflective traffic cones to using UAVs with LiDAR to complete ROW inspections have all come from

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our need to work safer and analyze our past.

One of the most impressive changes is safety in the workplace. Back in the day, if you messed up, you were terminated. Rather than being motivated by fear of losing your job, now we have shifted to creating a new culture in the workplace—one that uses our basic human need to keep ourselves and others safe as the trigger to accomplish our tasks, making sure we all go home each day. As far as we've come, our industry is still suffering from injury, lost time on the job, and the loss of life for a variety of reasons. Is the equipment not yet good enough? Are the herbicides not environmentally stable enough? Is the current technology failing us? Or is this new workplace safety culture breaking down? Honestly, I think it's just ourselves standing in our own way. By not using all the tools, technology, and available education, we are denying ourselves the ability to reach that next level—the result of "That's just how we used to do it" mentality. Even with positive advancements we have made, we are still suffering losses of all types.

The speed at which the world and our industry are evolving is getting faster. Perhaps we will soon take a picture of a jobsite with AI examining the safest way to proceed with the work. Maybe vegetation line clearance workers will have advanced robots to climb and cut trees, altogether removing us from danger. We will evolve into in-field programming and maintenance techs for such advanced equipment. Herbicides could advance and become "smart" by using a type of nanotechnology, programmed to target exact plant species within an exact area of treatment, perhaps continuing to the next site with different target vegetation without remixing, just reprogramming. Even the utility powerlines themselves could become self-aware, knowing that something is encroaching into an exact area, whether it be vegetation or something made of flesh. This would give us the ability to quickly mitigate it and have unprecedented reliability.

None of this will happen if we do not take lessons from our past, teach it to our present, and look to the future with a new way of thinking. Within the UVM industry, our past is spotted with lessons learned and tales from the grave; our present is moving fast with tools, tech, and education; and our future is remembering to teach all that we know to the upcoming round of 20-year veterans, so they can cross that finish line of having zero accidents and zero injuries as the world advances. If we can do this, then no one will have a first day out in the field like I did, and the industry will all the better for it.

Alaina Zieglar

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Alaina Zieglar's CV reads like a master class in safety: Certified Safety Professional with more than 18 years of experience in human performance training, employee safety, and continuous process improvement; recognized leadership in developing and leading safety programs across a 21,000-employee enterprise; and successfully spearheaded behavior-based safety initiatives within distributed workforces in multiple industries.

Zieglar's impressive credentials serve as the foundation of a safety-centric career that is dedicated to results and driven by continuous improvement. Asked about her goals as Lewis' new Director of Safety, Zieglar promptly replied, "Best in Class. To provide leadership that engages staff at all levels and continues Lewis' well-earned distinction as Best in Class for safety and service."

If Zieglar was looking for exceptional standards and continuous improvement, she's found her home at Lewis. One of the largest vegetation management companies in the United States, Lewis' 85-year success story can be attributed to a relentless commitment to safety that has resulted in the development of industry-leading safety practices, including the launch of the "New View of Safety" in 2018. Lewis' New View is motivating to Zieglar because it represents safety in ACTION—a live practice embedded into the culture of the organization and executed with fidelity throughout the entire company.

With more than 4,000 employees across 27 states, that's a tall order to fill—but Zieglar has never shied away from a challenge. A champion of lifelong learning, Zieglar's penchant for discovery is evident in both her professional and personal life. Whether she's trekking the globe for sport or visiting worksites across the country, Zieglar brings a boots-on-the-ground energy that shows no sign of slowing down. That's how Best in Class is done.

For more information about Lewis leadership and our commitment to safety, visit *www.lewisservices.com*.

2023 UAA Awards

The annual UAA Awards recognizes individuals who have earned the admiration of their peers by demonstrating their talent and skill in fulfilling the mission of the UAA throughout the year. These award recipients have stood out as leaders and passionate promoters of VM best practices, guiding the industry and the UAA to continued success. These awards signify official UAA Member recognition of how their influence has advanced the UAA mission, vision, and values.

★Will Nutter Silver Shield Award

In 2021, the Silver Shield Award was renamed to memorialize the contributions made by Will Nutter, a passionate advocate of safe practices. An individual must demonstrate a significant amount of dedication to advancing safety as top of mind in every action of every job to receive this award. The UAA awards the Will Nutter Silver Shield to two recipients. The 2023 recipients of the award are **Adrienne Jones** (ACRT) and **Jerry Staton** (ACRT).

Adrienne Jones has immersed herself in the utility vegetation management industry in just a few short years. She strives to make sure every employee returns home safely at the end of each day and uses several platforms to encourage safe practices throughout the family of companies she serves and the industry, including face-to-face meetings, presenting at industry events, including the annual Trees & Utilities Conference; contributing to industry publications, such as the *Newsline* and *T&D World's Vegetation Management Insights*; hosting safety-related webinars; and more. Jones is a Tree Care Industry Association (TCIA) Certified Treecare Safety Professional (CTSP) and a National Safety Council (NSC) Certified Defensive Driving Course Instructor. She also serves as an NSC First Aid/CPR/AED Instructor, is a member of the UAA Safety Committee, and has completed the 30-Hour General Industry Safety and Health training through the Occupational Safety and Health Administration (OSHA) Education Center.

Jerry Staton has been one of the UVM industry's biggest advocates, whether it's preparing for inclement conditions, practicing situational awareness, or overseeing storm response as the manager of a team of personnel that can be anywhere in the country in a short amount of time to assist utilities with storm response and restoration efforts. Through his various

Adrienne Jones
Will Nutter Silver Shield Award
(*left*, Executive Director Dennis Fallon)

roles, Staton has used his voice to author several articles that have been featured in industry publications, such as *T&D World's Vegetation Management Insights*, where he emphasized the importance of having weather reporting tools handy, stocking vehicles with safety supplies, practicing situational awareness, and so on.

Staton has served on the UAA Safety Committee and is also a former member of the ACRT Services Board of Directors—a role he used to advocate for his peers and safe practices throughout our organization and industry.

Jerry Staton is not shown in a photo, as he was not able to attend this year's T&U Conference.

★Rising Star Award

The 2023 Rising Star Award was given to **Phil Swart** (Rainbow Tree Company/Growth Solutions), who is in the first five years of his UVM career and has already risen to an executive role. It is not due to this title that he deserves the Rising Star Award, but rather his broad-reaching involvement with the utility and tree care communities, and the relationships he has built across the industry. In addition to the extensive list of organization involvements in his biography, he is a bridge builder between utilities and different aspects of the tree care industry, advocating for safety and science-based tree care practices. Swart is dedicated to improving his own understanding of utility arboriculture, but is equally enthusiastic to share his expertise with others in the industry.

Swart first became involved in utility arboriculture in 2018 as a TGR applicator. Within a year he became the first field supervisor for his region, where he developed lines of communication with utility program managers, which allowed him to start learning more about the bigger picture of managing trees in the right-of-way.

He has developed into a TGR expert and is a proponent for viewing utility-pruned trees as a long, contiguous forest, which is an asset to the electric utility. He is an advocate for tree care in service to the community and has been the site leader of the Oklahoma Saluting Branches volunteer event since 2019.

As a co-chair of the UAA Professional Development Committee, he is especially vocal about spreading the word to industry professionals about the UAA programs and services that are available to them. To make resources more accessible to his local region, Swart worked in collaboration with the Midwestern ISA to bring a utilities tract back to the MWISA Conference for the first time in several years. He focuses on personal ongoing improvement and is in the final stages of completing the UAA Certified Utility Vegetation Management Professional Program, which has helped provide him unique insight into the challenges UVM managers face. When not working, Swart enjoys spending time outdoors with his wife, Cody, and their two young sons.

★Education Award

The UAA Education Award winner has been educating UVM professionals formally and informally for more than 15 years. **Dr. Robert Vanderhoof** has been a key facilitator and contributor to the UAA/UVMA Pro-UVM Program, facilitating seven courses for the program since its move to UWSP in 2020. He has been instrumental in the revision of the Pro-UVM Scope, Cost, and Procurement course.

A colleague said of our Dr. Vanderhoof, "He offers the most thorough certification test prep of which I am aware. His structured, interactive approach challenges students so they have command of the subject matter and confidence when

Phil Swart
2023 Rising Star Award

Dr. Robert Vanderhoof
Education Award

★ President's Award ★

The UAA President's Award is given by the outgoing president to recognize individuals they felt assisted them or the industry in extraordinary ways before, during, and after their term of office. This year's recipients, put forward by Past President Tim Walsh, are **Diona Neeser** (UAA Program & Operations Manager) and **Renée Phillips** (UAA Member Services Manager).

(left to right)
Dennis Fallon, Craig Kelly, Renée Phillips, Diona Neeser, and Tim Walsh.

they sit for the exam. The success rate of his students speaks for itself. If you are serious about advancing your career and earning your certifications, his program is for you."

An ISA Board Certified Master Arborist and Certified Utility Specialist, Dr. Vanderhoof is currently employed as a Certification Specialist at Tall Tree Learning, LLC. He has written several articles on the application of technology in natural resource management and routinely speaks on UVM issues.

★ Utility Arborist Award

The Utility Arborist Award is presented to an individual who has made significant contributions to the field of utility arboriculture. This year, the award was presented to **Troy Ross** (ACRT).

Troy Ross graduated from college with a Ranger Services and Fish and Wildlife degree in 1998. He quickly realized that being a forest ranger was not his path, and after a friend recommended the UVM industry, he fell in love with the like-minded, hardworking, intelligent, and passionate people. Here, Ross found the industry to be leading the way in safety, environmental stewardship, efficient operations, and reliability across the world.

As an avid contributor to articles, webinars, and conference presentations, Ross believes in giving back to the industry. He never turns down an opportunity to collaborate in the industry, bringing together seemingly unlikely pairings for the greater good. He has worked his way up through leadership over the years, and recently was promoted to Executive Vice President of parent company ACRT Services. Some people stay with the same organization for their whole career like him, but few have had the opportunity to look inside so many different utilities.

Dan Marsh
Lifetime Achievement Award

★Lifetime Achievement Award

The UAA Lifetime Achievement Award celebrates a person who has reached many milestones during their utility arborist career. This year's recipient, **Dan Marsh** (FPL), began his career in utility arboriculture immediately after graduating from Penn State University in 1992. He worked at West Penn Power, which led to promotions and his guidance led to a highly successful vegetation inventory project—and was the first and largest vegetation pole and vegetation inventory ever completed. In 1999, Marsh began a career with FPL in the Transmission Vegetation Department and was quickly promoted to Vegetation Leader over the entire Transmission Vegetation Group. He pioneered many processes while at PG&E, most notably the Transmission Vegetation Management Certification, which is being developed for a national certification.

Marsh also created the Marsh Process, as it is now known at FPL, which is a huge help in completing ground patrols at FPL. He is also very active in the Florida Vegetation Management Association, holding the president's title for two years and continues active participation in the group. He worked very closely on the creation of the original FAC-003-1 with his mentor, John Tamsberg, and created a highly successful LiDAR program at FPL. Marsh has spent his professional career focused on UVM and has spoken at many UVM events. He has been lauded over the years for his tireless efforts at educating his employees and his kindness in dealing with everyone he encounters.

Congratulations to all our 2023 UAA Award recipients! The future of UVM is reflected in your knowledge, example, hard work, and dedication—and it looks bright.

Troy Ross
Utility Arborist Award

UAA
UTILITY ARBORIST ASSOCIATION

Nelsen Money

SCHOLARSHIP PROGRAM

Your donation to the UAA Nelsen Money Scholarship Program supports students looking to pursue various careers in utility line clearance, UVM, arboriculture, forestry, urban forestry, or related fields to help boost our fields for our ever-changing industry!

Thank you to all who participated in the 2023 Trees & Utilities Silent Auction. We raised $8,930.58 as a result of your support and generosity!

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Young Professional Profiles

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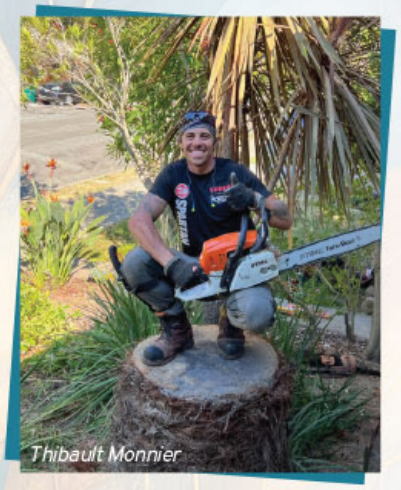
THIBAULT MONNIER


Thibault Monnier

My name is Thibault Monnier. I was born and lived in France for most of my life. I now reside in California, where I am enrolled in the landscape horticulture program at Merritt College in Oakland. The program contains classes from basic horticulture to tree climbing. I am most interested in trees and am studying to obtain the TCIA Tree Care Specialist certification.

The more I learn about trees and other plants, the more fascinated I become. I cannot keep my eyes away from trees, and often comment about the tree shape, health, or other details. My interaction with trees breaks the daily craziness of life and makes me feel more grounded and connected to nature's offerings.

I moved to California in 2020 after spending a decade in Miami, chasing celebrities and covering news stories as a paparazzo. The closest I came to working in a tree had been climbing them to snap photos of celebrities by the pool. Eventually, I wanted to change paths and focus on cultivating a healthier lifestyle, to slow down. This led me to California with the idea of working in the cannabis industry, where I started as a weed delivery driver and eventually worked in security in dispensaries in the Bay Area. Meanwhile, I started growing cannabis and other edible crops, taking advantage of the California weather. This is when my curiosity about plants turned into a passion.

After a couple seasons growing food in a community garden as a hobby, I started taking classes to expand my knowledge and interest, which led me to become focused on arboriculture—an infinite source of wonder. Working night shifts as a security guard, I was able to study for exams. After a semester at Merritt College, I got hired by one of the instructors who teaches tree climbing and owns a local tree service company. This was my first experience in the world of arboriculture, climbing and pruning trees. Merritt College also offered me a paid student position on the grounds. I still work for the college and the tree service company, supervised by experienced professionals and masters of their craft, who I now call friends.

I am now in the process of creating a small tree and garden care business. I enjoy the flexibility of working for myself and the excitement of being in a new location every day. I can be weeding one day, climbing and pruning a tree the next day, and planting one the following day. The variety of tasks is entertaining and I get to be outdoors—a good source of happiness.

I graduate from Merritt College this year and, after that, am preparing for the ISA Certified Arborist test. Being new to the industry, I have much to discover and master; however, I feel lucky for these new experiences. One of my long-term dreams is to move out of the Bay Area, where I can afford a small piece of land with trees and a place to grow vegetables and fruits—a peaceful home. I would eventually like to work with big timber, in forestry. Why not dream big and split life as an arborist between the U.S. and France? That way I could see my family and friends in France, whom I miss. As of now, I enjoy every single day and feel very grateful to learn and work in something I love. Long live the trees!

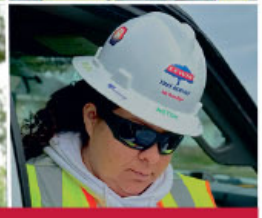





AGILITY +ABILITY





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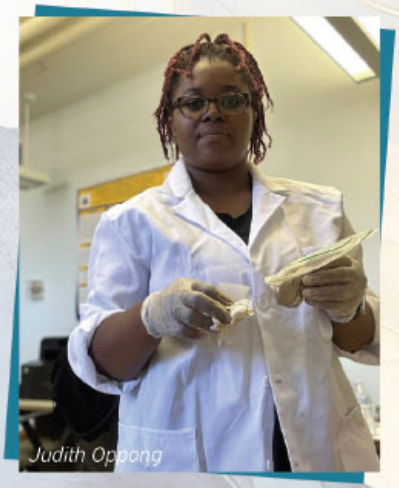
JUDITH OPPONG

My name is Judith Oppong and I recently received my PhD from the Southern University and A&M College (SUBR) Department of Urban Forestry, Environment, and Natural Resources. My doctoral research focused on evaluating the impacts of the soil amendment biochar on physical (compactness and water holding capacity) and chemical (nutrient profile, organic matter, and carbon content) properties of soils, especially in urban areas where soil degradation is rampant. With this research, I aim to increase knowledge and understanding of the importance of bioenergy and bio-based products in reducing the human carbon and ecological footprint on the environment.

I earned my undergraduate degree in geography and natural resources with a minor in dance studies from the University of Ghana, and I earned a master's degree in geography/planning from the University of Alabama. I was actually a doctoral student in an urban and regional planning program when I discovered and applied to the SUBR Urban Forestry program. I was skeptical at first because the urban forestry field was very new to me. However, after my first couple of classes, I fell in love with the program. The fact that urban forestry combines elements of geography and planning (among so many things) makes it even the more fun and rewarding.


Judith Oppong

My years in the SUBR Urban Forestry program have nurtured my desire to help bridge and enhance the human-nature relationship, especially in urban areas where individualism and social isolation is the norm. Growing up as I did in an agrarian community in Ghana, social cohesion was a common practice—so much so that we had communal labor Sundays, where both the young and old came to work together on community cleanliness. This was one way for new residents to integrate themselves into the community, enhancing their sense of belonging.

Until the pandemic, most urbanites had little or no relationship with their immediate environment; they were missing that human-nature bond. I'm hoping to get into the environmental services field where I can contribute to both research and implementation of programs and policies that will bridge the gap between urban dwellers and their environment. My ideal work environment will be where I get to be in the field, implementing programs to enhance the safety, health, and overall well-being of people.

I am an avid Korean (K-) Drama fan who makes yearly lists of dramas to watch. I am also a fan of romance books. And of course, as someone who minored in dance, I love dancing. I am a rural girl through and through—you can take the girl out of the rural community, but you cannot take the rural life out of the girl!


Christiean Todd Smith

CHRISTIEAN TODD SMITH

My name is Christiean Todd Smith. I was born in Los Angeles, California, but raised in Baton Rouge, Louisiana. Trees have been a part of my life ever since I can remember. As a young kid, I was always outside playing in nature and around trees. A single tree even changed my life. During Hurricane Gustav in 2008, a gigantic water oak (*Quercus nigra*) came crashing down on our house while my entire family was inside. The tree was so massive that it destroyed the whole house plus two cars—it was terrifying. My family had to separate. My brother and I moved in with my neighbor and my parents moved across town.

Eventually, I decided to attend Southern University and A&M College. My major was in civil engineering, but eventually I decided it wasn't for me. I considered leaving college to become a firefighter when, last minute, I had a life-changing conversation with my academic counselor. She told me about the field of urban forestry and how I could stay in college and do wildland firefighting—so I took the opportunity.

Currently, I am an Urban Forestry PhD student studying with Dr. Zhu Ning at Southern University, where I also recently accepted the position of Program Coordinator of Urban Forestry for the Urban Forestry and Natural Resources Department.

This field has allowed me to see the world and helped me grow so much. I studied abroad in China at the Chinese College of Forestry Science for three consecutive summers, taught intro-level urban forestry at my university, been an arborist for Bayou Tree Service, worked for the U.S. Forest Service PNW FIA as an urban forest technician, and even became a firefighter—and wildland firefighter—while serving in the Army.

I recently started an urban forestry consulting firm called Urban Green Assets, based in Baton Rouge. Among our services are Urban Forestry Analysis and Planning, Tree Risk Assessment, Tree Care, Species Selection guidance, and Environmental Education—all with the goal of making this information more available and accessible to the Baton Rouge community. We work on both residential and commercial sites, and we also provide a media outlet for leaders, trailblazers, and illuminating figures in the urban forestry, environmental science, and agriculture fields. The idea of Urban Green Assets is to take our knowledge and connections over the years in the field of urban forestry and create a platform for all green/eco-friendly information.

Ironically, I wouldn't be where I am today if it weren't for that single tree that came down during Hurricane Gustav. It led me on a path to urban forestry, a path that has been filled with opportunity. I feel that it is my duty to help spread the word about urban forestry and teach others how one tree can change your life!

SPONSOR SPOTLIGHT GROW WITH TREES BOOTS TO THE BOARDROOM

Silver LEVEL

Meet Lindsey Wall: New Program Manager of GWT Boots Branch

Grow With Trees (GWT) is pleased to share that Lindsey Wall is now Program Manager of our Boots Branch, which provides training and other tools and resources to utility vegetation management departments and crews in the field.

Wall joined GWT in 2019 and has assisted in growing our training department. She has developed training curriculum, created and managed several interactive online classrooms, and designed compatible plant identification tools, among many other integral activities at GWT.

Lindsey Wall

Wall's background is Montessori education, and she has always had a keen interest in plants and wildlife habitat.

In her new role, Wall will manage the Boots Branch creative team and oversee development of all GWT's training products, including online training modules, plant field guides, and the Let Grow plant identification app, to engage and assist field crews in identifying and appropriately managing compatible vegetation on rights-of-way and solar sites.

"We are excited for her to lead and expand this important area of our work with customers and continue to shape our training products with her unique and engaging style," said Grow With Trees President Stan Vera-Art.

Grow With Trees assists electric, gas, and solar utilities in enhancing wildlife habitat and sustainable vegetation management from the boots to the boardroom.

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Insights on the Future of UVM

By John Wasmer, Executive Vice President of Revenue, ACRT Services. All photos courtesy of ACRT Services.

Utility vegetation management as an industry has been part of the broader story of U.S. energy for decades. Every day, the many organizations that comprise our industry dedicate their teams, talents, technologies, and time to making the delivery of electricity, water, gas, and data more reliable, secure, and effective.

While we have built a solid foundation of service and accomplishments for our customers and the communities we serve, ours is an industry that cannot for one moment rest on its laurels. We must always be looking toward the future—seeking to identify and act upon the trends, challenges, needs, and risks that may hinder our progress.

To that end, we spent time with subject matter experts in utilities, related service providers, and our own organization to gain insights into what they foresee for our industry in the months and years to come. This is by no means a comprehensive summary. We have a great deal of work to do and, as the pandemic taught us, the unexpected can still occur.

DEMAND ON THE GRID

Demand for electrification is growing as industries seek to reduce reliance on coal, oil, and natural gas. From the forthcoming elimination of small gas-powered engines in California to the continued growth of electric vehicles and the systems that support them, the demand for electric power is rising. Utility vegetation management will play a role in supporting how utilities expand their capacity to support this demand.

IMPROVING RESILIENCY

As we monitor the climate, we have to monitor the impact on the industry. Consider the downstream harm that weather-related events—from the damage of hurricanes to the demand of extreme temperatures—can have, not only on our industry but also on those we support. Key geographies, when impacted, have an influence from fuel prices to food supply. Great progress has been made here, such as with storm hardening, but this will continue to be a strong focus for utilities and the UVM industry.

WEATHER AND CLIMATE IMPACTS ON SAFETY

Climate influences how we protect our workers. In areas with a high heat index, we need to be proactive and do all that we can to keep workers in the field safe when temperatures rise. As with all proactive safety measures, this will always be a priority. We as an industry will need to give more and more consideration to how climates impact our daily safety practices.

ENERGY TRANSITION

The transition to more renewable sources of power—solar, hydro, wind—will trigger a variety of changes. For example, we will see greater regulation around these sources to keep them reliable, manageable, and secure. This will require our industry to stay ahead of the curve, to always be watching the data and trends around them, and to invest heavily in training and education about them so our people and others in adjacent industries are empowered to support the transition to these types of energy.

POPULATION SHIFTS

One of the persistent effects of the pandemic has been a shift in how and where people work. With remote work still prevalent, people have moved where they desire, where they can continue to work, or where they can find the kind of work they want. As a result, the need for expanded energy infrastructure has grown. With commercial real estate still struggling and people continuing to work remotely, this demand on our grid will continue to require attention for years to come. States like Florida and Texas are seeing major increases in population growth, unlike states like New York and California. We have to be aware of the demand, and where.

REGIONAL GROWTH

Different areas of the country have seen exponential growth following the pandemic. As a result, we need to increase education in those communities as to why UVM is important. People aren't always familiar with why we do what we do, but the moment an outage or incident occurs, its value will be clear. We need to help them understand the value and importance up-front so we reduce pushback, increase reliability, and keep communities safe.

PROGRAM CONVOLUTION

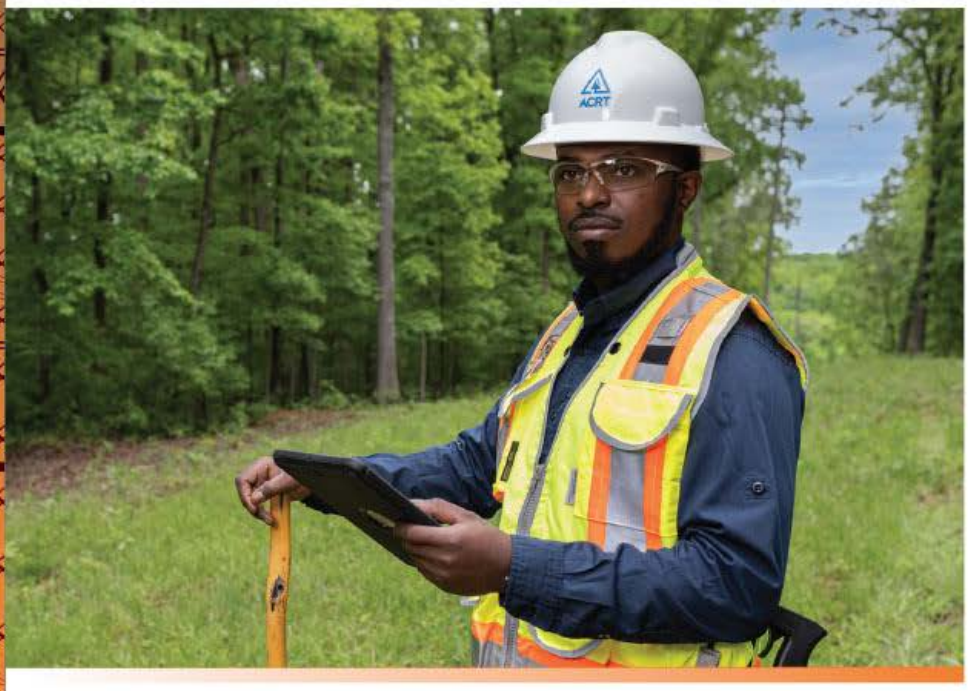
Integrated vegetation management has become convoluted. We apply herbicides to clear out undesirable vegetation, but there's far more to IVM than that. It's about being holistic land stewards—improving the greenness of our processes, improving habitats for wildlife, and protecting endangered species. The industry has already been increasing its focus on this, and we'll continue to see it grow.

SUBJECT MATTER EXPERTS

While there will always be shifts and events that impact our industry (e.g., the COVID-19 pandemic, growing regulation, M&A, etc.), the UVM industry will always be here. Energy infrastructure will always continue to cohabitate with nature. Energy providers and related organizations will always need experts for strategic guidance to balance that. People will be the driving factor in this. We have always been an industry focused on people and safety, and we always will be.

TECHNOLOGY AND AI

Remote sensing technology has been on a fast track over the past decade as it has moved from aircraft to satellites with more flexibility, improved visuals, and better data. Additionally, while proactive and predictive tools are available, artificial intelligence will continue to grow in UVM.



However, it's critical to not allow shiny, new objects such as AI to deter us from the foundation of UVM and what it's all about. These tools can help us in our goals, but they should not become the goal.

REGULATION AND COMPLIANCE

The amount of regulation is expected to continue growing, particularly with aspects such as climate change, wildfires, grid stability, cybersecurity, herbicides, and more. Utility vegetation management is directly involved in many of these, or involved with them. Addressing compliance and risk is a significant focus for utilities, but the impact of that focus is becoming more apparent as utilities seek to reduce that risk in more immediate and permanent ways.

EXPRESSING OUR VOICE

As industry practitioners, regulations are handed down to us. However, we need to be influencers in that space. We need to have more of a say. We want regulations; they provide helpful, protective boundaries. However, they need to be pragmatic and realistic. We need to step up more in the years ahead and have a voice.

WORKFORCE RESILIENCE

With so much change happening in the industry and greater pressure to be more sustainable and compliant, it follows that there would be more pressure and stress on the workforce. We as an industry will need to pay close attention to this to maximize worker retention and employee satisfaction. Data and technology can only go so far—we will always need people.

THE HUMAN MINDSET

While our industry was already heavily in the field, this is not the time to be centralizing teams in offices. We need to think about how and where our people work. Yes, we need to meet and see one another, but there are ways that the facilities in which we work can be reconfigured for greater collaboration and to support the way that people want to work at this time. Additionally, how this relates to safety will be critical. Accidents can happen anywhere, and because our industry is so heavily focused on safety, safety practices will need to adapt to how and where we work as well.

FOCUS ON BEHAVIOR

The industry is becoming more focused on data but needs to remain behavior-based. We need to reward doing our due diligence, mentoring those in the industry and those entering it, keeping accurate and detailed records, providing training and education, and being strong role models.

LET'S RISE TO THE CHALLENGE

It's clear that much change—and opportunity—lies ahead for our industry. While UVM has a strong past, we must take what we've accomplished and learn from it so that we are in an even stronger position as we face the years ahead. The people we serve, our customers, and the country are all relying on us. Let's not disappoint them.

I would like to thank the following individuals for their input into the future of UVM:

- Jason Richards, Vegetation Manager, Florida Keys Electric Cooperative
- Dr. Anand Persad, Director of Research, Science, and Innovation, ACRT Services
- Rich Alexander, Product Manager, ACRT Services

What do you see for the future of the industry? We invite your input and collaboration. Please reach out to *john-w@acrtinc.com* if you'd like to share any insights.

ABOUT THE AUTHOR

John Wasmer is the executive vice president of revenue for ACRT Services, a role in which he oversees the business development management group, the research science and innovation team, as well as the marketing and communications department. Prior to his promotion to the parent company ACRT Services, Wasmer served as president of ACRT Pacific. He began his career with ACRT in 2003 as a contract utility forester and, like many of our leadership team members, is a prime example of how employees can grow their careers within our organization. His focus is on strengthening communications throughout the organization while focusing on growth and diversification of revenue. Wasmer holds a bachelor's degree in forest resources management and a minor in public relations from West Virginia University. He also serves on the management committee in addition to his primary role as an inside director for our board.

Pat Paternostro

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Educating the Next Generation of Our Industry: Pat Paternostro

When it was time for Patrick (Pat) Paternostro to choose his college major, he set off on the path to become a teacher—like his father, who was an elementary teacher for 40 years. His father also inspired Paternostro's love for the outdoors, trees, and birds. Ultimately, his passion for the outdoors outweighed his desire to teach, so he changed his major and ultimately earned a degree in forestry.

Shortly after graduating in 1992, Paternostro saw an ad for a job at ACRT in Indiana—an opportunity that would define his career in vegetation management. Now, two decades later, Paternostro serves as an operations manager and mentor at ACRT.

Over the years, he's nurtured hundreds of employees and helped turn their time in this industry from a job into a career.

"It's important to enlighten them on the importance of what we do, the criticalness of this role, and the role ACRT provides to not just the utilities, but the utilities' customers. While this field entails using skills in trees, tree identification, assessing trees for health, and so on, we're also one of the first lines of people and entities that talk to the customers. This job is as much a customer service job as it is a forestry-related job," explained Paternostro.

Despite choosing to pivot his original career path, Paternostro's role as an educator has come full circle over the years.

"Ironically enough, I spend a lot of time teaching, so that early education portion of my college time helped aid me," he said. "I've seen a lot of people develop under me who have moved up into bigger roles—not just at ACRT but nationwide—and I really take that as a badge of pride for myself."

People like Pat are vital to our success at ACRT. Learn more about our family of companies at *acrt.com/careers*.

Changes, Constants, & Constant Changes

By Cory Edwards, Division Manager, Wright Tree Service, and Derek Sanders, Vegetation Program Manager, MidAmerican Energy Company. All images are courtesy of Wright Service Corp.

As the utility vegetation management industry has evolved over time, we have all worked together to champion progress and overcome obstacles.

With customers relying on us to do our jobs well every day, utilities and UVM providers know that we must remain adaptable in the face of change. The working relationship between Wright Tree Service and MidAmerican Energy Company was first established in 1940. We have traveled many roads and rights-of-way together, witnessing and influencing so many innovations along the way. The pillars of our work—**safety**, **growth**, and **collaboration**—have remained constant through every season of change.

SAFETY

It seems that safety is at the core of our industry's continued evolution—and rightly so. Utilities are required to ensure safety and reliability of electric and/or gas delivery systems. To do so, they rely on UVM providers to deliver crucial services, like ROW maintenance and line clearance. This work must be done safely in order to protect both the workers and the environment. Safety best practices, guidelines, and regulations are constantly improving as the world around us changes.

The increased emphasis on safety is reflected in every aspect of our daily work, and our tools are one of the most obvious examples. Improved safety features and enhanced ergonomic considerations facilitate safer practices and improved productivity on jobsites every day.

Technology has advanced at lightning speed throughout recent decades, and so has its role in the work we do for our customers. Digital data and insights make our teams and our tools better. Advancing technology has also introduced new safety challenges to our work environment. Many of us took our first job on a tree crew before mobile phones were commonplace. Today, distracted drivers on the road make it harder for our crews to get to the jobsite and back without incident. Can you imagine explaining this issue to your first foreman?

As an industry, we face rising costs at every turn. Safe, modern equipment requires modern budgets, and these modern budgets have been stretched further to make room for extensive training. Proper tools and thorough training help to curb unnecessary expenses in our operating budgets. True dedication to learning at all levels of the UVM industry helps *embed safety* into the culture of these programs.

When safety is considered first and foremost, safety dialogue takes a different tone in our industry. The days of examining "what went wrong" and "which rules were broken" are behind us. In our work, we have shifted from a compliance mindset to a training mindset, which helps us anticipate challenges more effectively. As a result, we have witnessed a major reduction in on-site incidents.

GROWTH

As an industry, we are serving more people today than ever before. Enhancements to productivity and safety enable well-established utilities to absorb population growth successfully. Wright Tree Service and MidAmerican Energy Company have experienced this population growth and its direct impacts on UVM needs. We know that the UVM industry will continue to face new challenges as the population continues to grow and the power grid expands into new territory. Together, we will face both new and well-known challenges, like wildfire prevention, endangered species protection, and urban forest protection.

As the world around us becomes more *energized* with electronics and electric vehicles, utilities will see increased demand for reliable service. In turn, UVM providers will push toward progress and enhanced productivity in pursuit of new work goals and expectations. Alongside our continued growth, we will all navigate changing consumer expectations, new models for accountability, and perpetually evolving regulations.

Our contracts and our companies cannot grow if we do not support the development of our employees. It is no secret that we are all facing unprecedented challenges in the workforce. Finding individuals to perform our daily job duties is much more difficult than it has been in the past. We continue to battle against misconceptions about our industry, and many folks do not realize the career opportunities available.

It's important to give our crews the tools and training needed to support true development and advancement. It takes more time than it used to, but we still find that if you invest in them, they will invest in you. A strong workforce is key to continued success. We must invest the time it takes to develop young talent and

the patience it takes to break potential bad habits of more seasoned employees.

The future of UVM depends on further implementation of technological solutions and mechanical equipment. These developments impact every aspect of our continued growth—the folks we are able to hire, the work we are able to do, and the services we are able to deliver to our end users. As our industry continues to struggle with recruitment and retention, advancements help us streamline the work. A shared commitment to continued innovation will help us succeed in the next generation of utility vegetation management.

COLLABORATION

The working relationship between utilities and their UVM providers has transformed over time. These days it feels like a team effort and partnership, with all parties working together to reach common goals. In order to have a successful partnership, both sides must be willing to plan, execute, measure, and correct. It is vital to keep an open line of communication and focus on shared priorities.

The public expects consistent and sustainable services from the utility. The utility expects safety and production from its UVM provider. As demand continues to grow, we expect the trend will continue toward higher expectations and continued innovation. We all know that the table is more crowded than it was in the past; we have more providers offering more services than ever before. The same technological advances that have improved our work have also evolved it.

The changes in how we work in this industry are numerous. In the beginning, we relied heavily on manual/bucket truck tree pruning and removal. These days, mechanical equipment leads the way. Not only do these modern methods improve safety, but they drastically reduce the time it takes to complete a project. Time savings is crucial in an industry where the to-do list continues to grow, both literally and figuratively.

We may all agree that we miss the old days sometimes. We remember less regulatory red tape and fewer hoops to jump through. We should also agree that progress is important, hoops and all. A shared commitment from leaders across the industry will push us all to be our best and propel our profession forward.

Wright Tree Service and MidAmerican Energy have realized many benefits through countless years of teamwork. We know the true secret to longevity is common ground, clear expectations, and continuous effort toward well-defined goals. Partnership is powerful.

CONCLUSION

Each day is a step toward the future. We will always have chainsaws and we will always maintain time sheets. New solutions like LiDAR, satellite imagery, and safe-driving software will become more available, more adopted, and more affordable; our programs and budgets will adjust accordingly. Through it all, our employees will continue to uphold the timeless standard of quality, safe work delivered on time.

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We want to take this time to congratulate and thank our 2022 PinE Award Recipients.

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> "The vast possibilities of our great future will become realities only if we make ourselves responsible for those realities."
>
> *Gifford Pinchot*
> *American forester, fourth chief of the U.S. Division of Forestry*

Tree-Caused Outage Terminology for Vegetation Managers

By Cindy Devlin Musick, Director of Vegetation Management Services–Rappahannock Electric Cooperative, and Dr. Gregory Dahle, Associate Professor of Arboriculture and Urban Forestry–Davis College of Agriculture, and Natural Resources and Design–West Virginia University

This is the first article in a three-part series about the topics covered at the 2023 UAA System Utility Vegetation Managers Summit in Akron, Ohio, hosted by FirstEnergy. This is an exclusive UAA Member event, tailored for electric utility employees who are system level managers with responsibilities and experience in developing and managing the entire scope of their company's vegetation management program—with the goal of bringing back intuitive ideas, concepts, and solutions to their organizations.

During the 2023 UAA Utility Vegetation Managers Summit in Akron, Ohio, attendees from a broad swath of United States utilities spent time discussing how vegetation is the leading cause of electric utility outages in the U.S. In a pre-survey sent to summit attendees, vegetation maintenance accounted for 14% of total utility budgets and 27% of operations and maintenance expenses for the represented utilities. Regardless of the size of the utility, vegetation management is an expensive but essential investment. There are continuous challenges to do more with less. In addition to vegetation being a leading cause of outages in the U.S., during the summit we discovered that reporting methods and benchmarks are not standardized. Thus, it is difficult to apply science to identify trends, such as leading causes of tree failures, geography, etc. in order to use the resources available most effectively. In short, how do we use our budgets to accomplish our common goal of reducing outages caused by trees if we don't know what the leading causes are?

Why is it so important to discuss tree-caused outages (TCO) among utilities? The idea is quite simple. If we knew, for example, most power outages were caused by pines which were 12–25 inches in diameter at breast height, 50–75 feet tall, and on 20–30% slopes, then we could approach our VM planning on a different level. What if we knew yellow-poplars caused the most damage to our grid from overhanging limbs, and most other species had little to no effect from overhanging limbs? This kind of information, shared collectively, could be an "industry uniter."

A Meeting of Leaders

The UAA called the summit to bring leadership from utilities together in one location to discuss a predetermined set of topics—one of which was tree failure reporting practices. There were breakout sessions of regional management preceded by a short presentation. Cindy Devlin Musick highlighted efforts made at Rappahannock Electric Cooperative in central Virginia using an internal-designed mobile app for collecting data, Microsoft Power BI dashboards, and examples of this research to develop a prescriptive approach to vegetation management. Dr. Greg Dahle, a leading researcher in utility forestry at West Virginia University, added to the discussion

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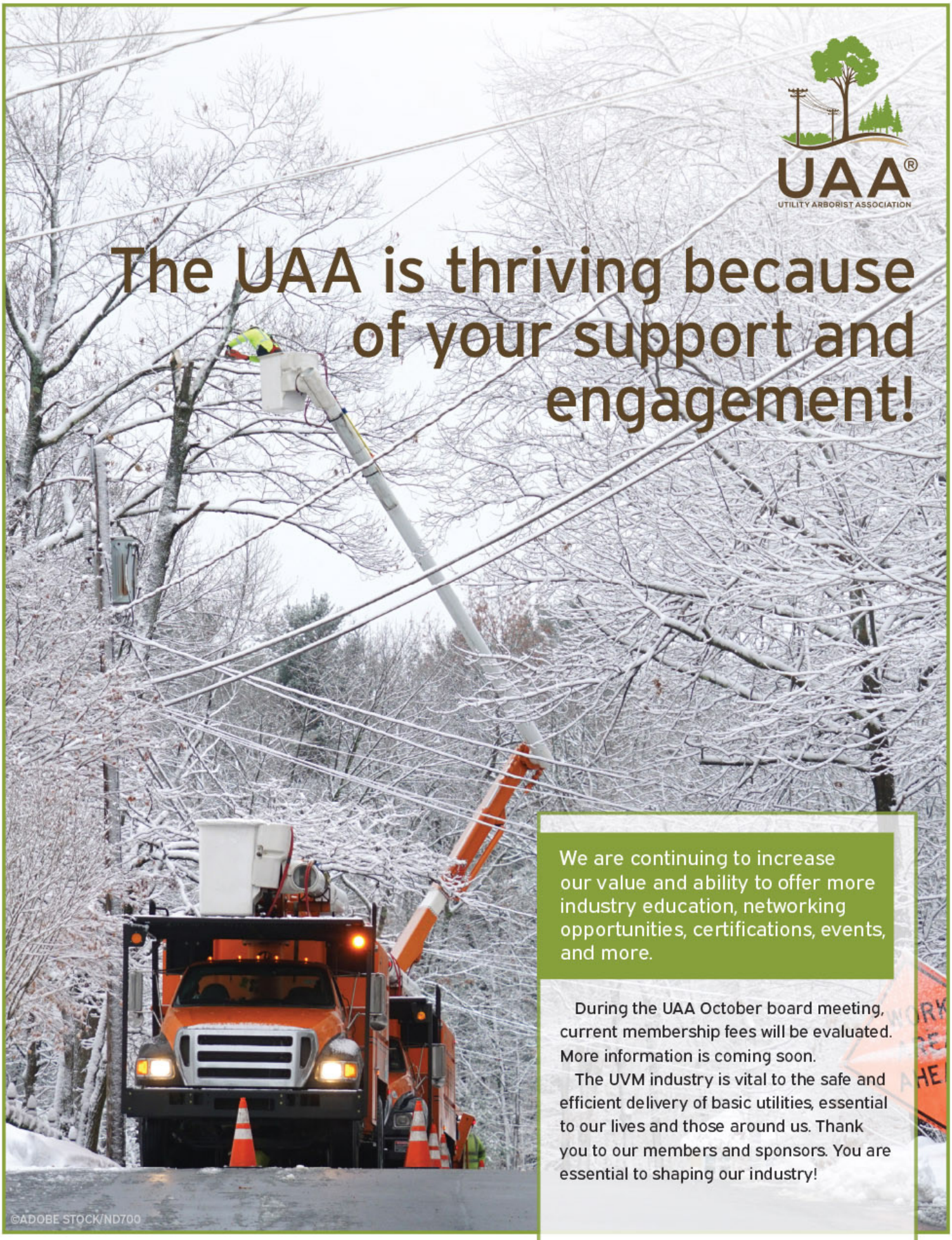


We are continuing to increase our value and ability to offer more industry education, networking opportunities, certifications, events, and more.

During the UAA October board meeting, current membership fees will be evaluated. More information is coming soon.

The UVM industry is vital to the safe and efficient delivery of basic utilities, essential to our lives and those around us. Thank you to our members and sponsors. You are essential to shaping our industry!

through a recorded video by explaining what researchers want to know and how we can push the industry forward.

Lessons Learned

A survey was sent out to the manager attendees prior to the meeting. Twenty-seven responses were received and processed by the UAA. Here are some things we learned:

- Average line miles for managers in attendance: 25,000 miles
- Managers reported an average of 3,200 TCO/year (Distribution)
- Average TCO investigated: 13% (Distribution)

In addition, we learned there are various reporting methods, including EPRI, EEI, and IEEE, and most respondents did not know which method their utility uses. We also learned that what constitutes a "reportable outage" varies. For some utilities, it is a two-minute sustained outage, while others do not include such outages in their analytics until it reaches fifteen minutes. This appears to be the ultimate apples-and-oranges comparison. We discussed whether major event days (MED) and planned outages are included in reporting metrics as well as momentary outages. Additionally, the managers discussed the definition of a momentary outage, which we generally agreed is less than five minutes. Major event days are often tracked differently depending on the utility. For example, some utilities consider any outages during weather events as MED outages, from the start of the first outage related to weather all the way through to when the last customer is restored. Contrasting this is the utility using a policy where 10% of customers out of power is the threshold, and when outage numbers drop below that threshold, the utility begins recording tree-caused outages once more.

Two breakout sessions focused on who investigates and reports a tree-caused outage and then how information is collected. Managers were broken into four regional groups, loosely based on where the utility's office is located: the South and Mid-Atlantic, Northeast, Midwest, and West (including Texas). The first breakout session focused on who investigates and reports a TCO and then how information is collected. The groups had three main questions to answer during their breakout sessions.

How many outages should foresters be targeting to investigate?

The attendees agreed that collecting information for at least 20% of outages caused by trees would be an excellent industry standard target. Yet there were some differences in utilities on whether MEDs were included by a given utility, and what really defines a TCO. We discussed whether a nonutility-contractor- or logger-caused outage counts as a TCO, from defying safety standards. Does a squirrel outage count because the squirrel would not be there without a tree in close proximity? Is an unknown outage automatically categorized as a tree failure if no other cause can be determined? Numerous answers to these and other questions were provided that impact TCO reporting.

Does *region* matter, whether geographically (South, West, Northeast, Mid-Atlantic), forest ecotypes, state boundaries, state regulations, and utility governance and ownership?

Many managers noted that geography and forest ecotypes are likely valuable in understanding TCOs. Additionally, state boundaries and regulation are also important. Yet we realized many of the utilities operate in multiple regions and thus incorporate multiple jurisdictions and ecotypes. The attendees introduced another idea to group TCO investigations by wholesale electric market group, such as PJM, CAISO, SPP, ERCOT, ISO-NE, MISO, or NYISO. We concluded as a group that sharing data amongst electric market group was important, especially if reporting methods can be standardized.

Data fields—what is feasible and *what matters*?

This question was an attempt to discuss what researchers probably want versus really need. Researchers will always tell you the more data fields that are collected, the more information that can be analyzed. Yet managers realize it takes time to collect the information, which directly relates to costs.

The failure of branch, trunk, and roots mattered most to the managers in attendance. Date, time, and whether the tree was living, dead, or in decline was also valuable. Some respondents were interested in whether the tree was a prior customer refusal, but this is unlikely to be determined by an initial responder. Also, tree access was noted regarding whether it was a back lot construction, an accessible right-of-way, a yard tree, as well as how close the TCO was to the nearest protective device. In addition, attendees desired outage metrics related to tree failure, such as the number of customers affected, construction standards, pole size, and voltage. Tree-specific information most likely worth collecting included tree height, diameter, species name, and slope. Finally, it would be great if a GPS (latitude/longitude) location could be collected.

Conclusion

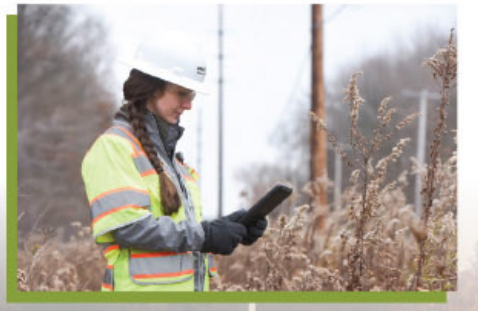
There are ways our industry can move forward regarding tree-caused outages. Firstly, as an industry, we should establish concise reporting methods, providing the information we need to know while creating buy-in within individual utilities, field personnel, and data collection metric entities. The second is to identify the wholesale market entities and begin a discussion about the standardization of reporting methods. An initial foray into this may be identifying "change ambassadors" within utilities, as well as industry leaders overall. It is important for most of these individuals to come from within varied electric utilities—cooperatives, municipalities, investor-owned, and governmental. Next, we need to lead the industry by agreeing on the best words to use to describe a tree-caused outage. Finally, we need to begin to collect information in a single not-for-profit or private depositary, similar to the California/Western Tree Failure Reporting database, which can be accessed by utilities, researchers, and others to help discover patterns, establish best practices, and collectively move the VM industry forward.

We want to learn from each other in this aspect of the work. We can do that by measuring the same things in the same way using the same terminology. So, what actions need to be taken by the industry? Will it be a working group? Answering an industry-wide survey? Funding a graduate student to help begin to bring all of this information together? This is the beginning of a discussion—and it is up to us where it will lead.

Branching Out: The Evolution of Utility Vegetation Management

By Jill Golden, Project Manager, Corporate Communications, The Davey Tree Expert Company. All photos courtesy of The Davey Tree Expert Company.

As the world continues to demand more reliable and resilient infrastructure, utility companies are challenged to consider risks to their own infrastructure, looking at what can be improved. Over recent years, utility vegetation management has seen significant advancements through the evolution of technology. The way vegetation management programs along utility corridors are monitored, planned, and maintained has been revolutionized by these achievements. Each new piece of technology through the years helped make the UVM process safer and more efficient, benefiting utility clients and households across the country. Let's review UVM's past, present, and future to explore the transformative advancements that have been achieved, and see what's to come.



ROOTS OF THE PAST

Before arborists had the power of today's technological advancements at their fingertips, they were on the ground inspecting and planning each span or circuit of a right-of-way. Eventually, the work was identified, planned, and recorded with pen and paper. This allowed utilities to track work and expenditures, however, it didn't make future planning and projections easy. Over time, and with the advent of database technology, utilities began entering that information into computers, which gave them the ability to compare past work and make future predictions.

"You can't manage what you don't know you have," explained Jack McCabe, vice president and general manager of Davey Resource Group (DRG), a subsidiary of The Davey Tree Expert Company. "With the lack of data in a vegetation management program, it is very difficult to make impactful future decisions on prioritization, planning, and cost cutting."

TECHNOLOGY IN TODAY'S UVM FIELD

At the core of most technological innovations is allowing the user to complete more work in a shorter period of time and capturing data that can be used later for analysis and future decision-making.

"It's really more of an efficiency and cost effectiveness measure that's driving technology," said Darik Warnke, project developer with DRG. "These technological advancements help capture a variety of information all in one place, which helps improve efficiency, data capturing, and data history, which all play a role in future decision-making."

While the new technology makes capturing the data much easier, there is still a need for arborists on the ground to verify and operationalize the data so that important decisions can be made. So while the number of people in the field

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may appear to be less, the arborists are now just performing other tasks with the additional data collected.

SATELLITE/REMOTE IMAGERY

Satellite imagery technology has been around since the 1940s, when the government began using it for space research. As technology became more accessible, private businesses began using it for more specialized uses in intelligence, space exploration, and warfare. Satellite imagery allows arborists to view the landscape from an aerial perspective and understand where vegetation is, which can help categorize vegetation types, clearances to key assets, and problem areas all while analyzing an image. This technology feat cut down on the time it took to scan over ROWs so there could be more time spent analyzing the data and targeting and correcting the needed areas. Satellite imagery is continually improving, allowing for gathering data in larger sets, which is beneficial because more data can lead to better decision-making for a VM program.

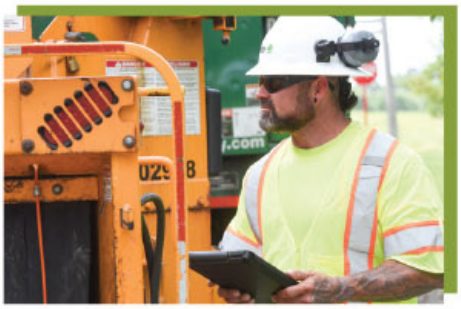
LIGHT DETECTION AND RANGING

Light Detection and Ranging has been around for some time and has given arborists the capability to build a digital twin model of their assets and surrounding vegetation. It helps arborists see where any threats could be and where any additional, more-detailed inspections need to be done. A real-life application for LiDAR that arborists use is finding trees that may not be directly in the ROW but still have potential to fall into the utility lines, causing an outage or other damage. One consideration that's important to point out related to LiDAR and satellite imagery is that LiDAR is still more accurate than satellite data. But the downside of LiDAR is that it takes longer to process the data, whereas satellite data can have a faster turnaround time but can be less accurate when compared to LiDAR.

DRONES

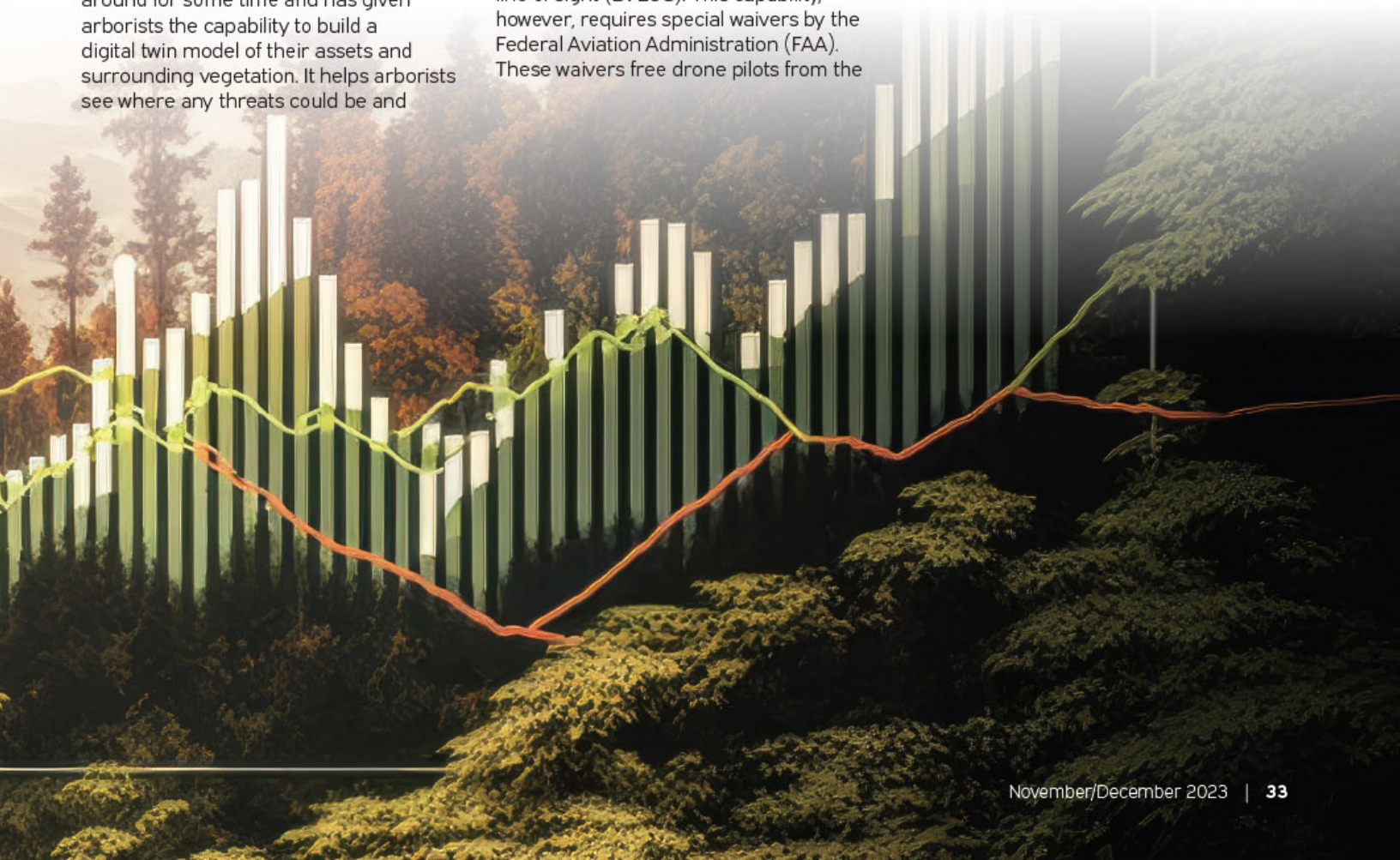
Drones are now seeing increased use as technology advances in the area of sensors, cameras, and other payloads that can be loaded onto a drone. The most basic use of drones in UVM is to see and inspect the landscape and ROW from the air, that would be difficult and time-consuming to inspect from the ground. Other applications that drones can be used for include applying herbicides in hard-to-reach areas and seeding from the air.

One of the newer applications of drones is the ability to fly beyond visual line of sight (BVLOS). This capability, however, requires special waivers by the Federal Aviation Administration (FAA). These waivers free drone pilots from the



usual FAA requirement that operators maintain visual line of sight with any drone they are operating, which may be only up to a range of one mile at a time from the pilot. In 2022, DRG became one of the first arboriculture companies to be granted an FAA BVLOS waiver, and is one of less than 300 flight waivers currently approved in the U.S. This allows drones to be used in a more efficient and cost-effective way to collect larger amounts of vegetation data

Drones, LiDAR, and satellite imagery can be used together to maximize data collection and analysis. Satellite imagery and drones allow arborists to see beyond the typical line of sight, and with added technology capabilities, they can see a different analysis of the project, including vegetation height, health, and encroachments.



SOFTWARE: BRINGING IT ALL TOGETHER

At the center of all this innovative technology is data. Data allows a utility to make better decisions on their VM budgets. Today, utilities need a place to store and analyze the data. Aerial and satellite imagery make obtaining and analyzing that data a lot faster.

A vital piece that ties all this technology together, though, is a comprehensive UVM software program. If you have a robust software, then you can effectively operationalize the data by bringing in satellite and drone imagery, LiDAR, and any analysis on vegetation encroachments. Then you can load that data into one software solution to build out a key workflow management process. This software will allow for a VM program that can plan, assign, prioritize, and report on the work effectively. And as predictive analysis improves, a robust software solution will allow for easier implementation of assigning work based on key prioritizations.

"Operationalizing all the data captured by this new technology is where plans are falling short for some. Implementation of software and use of the data can have significant impacts on efficiency and allocation of dollars for a UVM program," said Warnke.

THE FUTURE OF UVM

Technology is advancing at an increasingly rapid rate.

"The future is exciting, with workload management and predictive analysis offering the biggest opportunities," McCabe said.

Advancements in AI and advanced computing are currently at the forefront of technology. These advancements open a lot of possibilities for data analytics and running large-scale data queries so that more information can be analyzed at once—answering even more questions for utilities and clients that many never thought could be answered.

For example, in a DRG pilot project, arborists used data collections—including wind speed, number of customers, and historic outage rates—to predict where storm outages could be. Based on the data, utilities could both better understand the scale of customer impacts and pre-position crews for more efficient responses. By using the increased computing capacity to find where multiple large datasets connect, arborists are finding a wealth of knowledge to better perform their job.

Technology like AI and improvements in computing have the potential to streamline workload management.

"It's looking at opportunities to be predictive in terms of the cycle, like how often a tree should be pruned," McCabe said. "AI and big level computing offers the ability to bring in these factors and make better decisions."

In the past, a customer might call a utility company about a tree they think is a hazard to utility lines. The utility company then sends out arborists to inspect the tree and prune if needed. With the addition of AI and advanced computing, utility companies and arborists would be able to know that the tree was scheduled for maintenance next year based on predictive analytics. After assessing the risk, they could defer the work, saving the client's money and the arborist's time.

THE IMPORTANCE OF THE ARBORISTS

While past and future technological advancements make an arborist's job more efficient, the role of an arborist is always important. Technology isn't expected to replace an experienced professional; it just changes the way they do the work and collect data. Currently, the market is seeing a best-of-breed approach, and utilities are having to use multiple vendors to stitch a solution together, which is more expensive and takes more time to implement than using end-to-end solution providers.

Arborists from long-standing organizations have historical knowledge and experience with completing projects from beginning to end, having seen the "past" of the industry, and are driving with future advancements.

"Where Davey has a place to shine is understanding the true capabilities of the technology," Warnke said. "We'll see where it fits and where it makes the most sense, and recommend that to the client."

OUR LEGACY ONLY MATTERS IF WE LOOK FORWARD

For more than a century, we have been delivering innovative solutions and working with clients to achieve goals. As their needs and technology have changed, our solutions have evolved to match. Our consistent approach has not: we provide experienced professionals, proven logistics, creative solutions and resource stability that you can rely on.

Learn more about DRG's Vegetation Management Consulting Services by scanning the QR code.

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UAA MANAGERS SUMMIT OVERVIEW

The 2023 Utility Vegetation Managers Summit

By Renée Bissett, Chair of UAA Editorial Committee, Director of Marketing and Communications, ACRT Services

The Utility Arborist Association hosts a meeting in cooperation with a utility partner each year. The meeting's purpose is to bring together a group of utility vegetation managers and high performers with a variety of views and experiences to share knowledge and experiences in the field of UVM. This year's Utility Vegetation Management Managers Summit was hosted by FirstEnergy at the West Akron Campus in Ohio, May 16–17, 2023. More than 17 utilities and nearly 50 people were in attendance.

FirstEnergy generously shared insight into their program. Vice President of Distribution Support John Hawkins spoke of the need for tacit knowledge transfer and stepping out of the Stone Age. Staying ahead of the electrification of our world to be able to manage work and personal needs will be key. Leveraging technology to make systems better, sharing knowledge with one another, and modernizing for the future will ensure success.

LONE WORKER SAFETY AGAINST HOSTILE ATTACKS

We opened the week up with a safety discussion on lone worker safety against hostile attacks. Led by Virginia Bowman of FirstEnergy, the group talked about threats to planners, foresters, line patrollers, and others. Hostile attacks can be dog bites, threats of violence, muggings, gun violence, and more. Utilities with an enterprise alert system or warnings that come across all systems within an organization are proving the most effective. When systems within an organization don't talk, more manual measures and processes must be utilized to mitigate risk. In any situation, be aware of your surroundings and practice situational awareness. Have a system of check-in/out and ensure your teams are well trained. It is important to prepare for your departure on your arrival. No one should try to be a hero—leave safely and return another day.

Planning Committee, this year chaired by Adam Johnson (Duke Energy) and co-chaired by Virginia Bowman (FirstEnergy)

John Hawkins, Vice President of FirstEnergy

ARTIFICIAL INTELLIGENCE: PLANNING ADVANCEMENTS/ SATELLITE IMAGERY

Ted Allen of FirstEnergy shared their recent VM software project. Its objective is to implement a robust work management platform for vegetation operations that will improve overall operational efficiency and provide added value for customers. The operational benefit would assign and complete work in the field with mobile technology, allowing work assignments, scheduling, order completion, timesheet entry, etc. to be completed electronically.

Light Detection and Ranging is a key component of its success. Last year, 15,000 flight miles were completed to provide vegetation clearance information. The technology used increases safety and efficiency while validating and verifying compliance. Successes have included reductions in required aerial flights and large reductions in mid-cycle ground inspections. The next steps include upgrading from free imagery to paid satellite or aerial imagery to perform advanced analytics and assess vegetation risk to our distribution assets.

Building on these key areas to embed advanced analytics from high-resolution imagery into vegetation operations will enable the depiction of vegetation risk to reliability and optimize the use of spend. The operational benefit follows a risk-based approach to tree pruning, providing levers to strengthen costs with reliability value. This will help move from a cycle-based approach to optimizing a circuit-based approach. This risk-focused modeling will provide less cost, better reliability, and greater value overall. Processing high-resolution imagery combined with many risk factors and applied constraints determine whether planned trimming should be accelerated or deferred. Analytics can better inform field decisions by depicting risk at a span level and better project work volumes, equipment needs, and cost estimates across the system.

FirstEnergy is currently in the proof of concept and developing user acceptance. The goal would be to get within 15 centimeters of imagery every two years to evaluate the

UAA MANAGERS SUMMIT OVERVIEW *continued*

Kevin Puls (ACRT Services) leading a breakout session.

system consistently. Satellites can happen more frequently, but the trade-off is less resolution. What has been previously inaccessible cannot be assessed more safely and effectively. Understanding the volume of work with imagery will help tie costs with the historic information on record, driving down costs.

BREAKOUT SESSIONS

UVM Funding Challenges: Solutions for Current and Future State

Brian Sprinkle of Southern California Edison (SCE) introduced the first breakout session with a program overview of their system. The SCE program focuses on four main areas including compliance, drought relief initiative (DRI), hazard tree program (HTP), and supplemental inspections and mitigations.

For compliance, routine annual inspection and maintenance tree pruning or removal for distribution and transmission systems is key. A six-month follow-up inspection is conducted to identify any trees that will break the cycle or impact reliability. The annual inspection schedule is designed to ensure conformance to applicable regulations, including approximately 50,000 overhead line miles total.

The drought relief initiative includes frequent (quarterly to annually) circuit-based inspections in selected high fire risk areas (HFRA) to identify tree mortality and remove dead and dying trees affected by drought conditions, as well as bark beetle infestation. Circuit-based inspections of trees in HFRA that are not dead or dying but could impact electrical facilities and potentially lead to ignition and outages are all under the HTP. Tree hazards are identified by certified arborists with Level 2 Risk Assessments based on tree characteristics (deteriorated trunk, roots, limbs, dead palm fronds, etc.) and site conditions (soils, previous fire damage, high wind areas, etc.).

For overall wildfire mitigation and grid resiliency, SCE also performs supplemental patrols to ensure safety and reliability. These supplemental patrols encompass structure brushing, substation inspections, public safety power shutoff (PSPS) inspections, and Operation Santa Ana.

To spotlight how different utilities operate, Dominion provided additional insight into its program. Southern California Edison is on an annual growth-determined cycle that inspects and prunes 100% of overhead structures, while Dominion is currently on a four-year cycle. Each utility has a different climate and terrain impacting growth patterns, species composition, and mortality rates, as well as different regulatory constraints. Hiring for these utilities is vastly different because of the different labor markets and union requirements within each state. This opened up the discussion for the first breakout discussion on current and future factors impacting budget and resources. To start the conversation, thought starters were listed, including inadequate budgets, budget reductions, overspending, defining capital expenditures, storms impacting schedule, disease/death/decayed trees, public relations issues, environmental issues, workforce shortages, and wildfire threats.

Tree Failure Reporting Practices

Working together and preparing the discussion, Phil Ross, Marvin Mantos, and Cindy Devlin Musick consulted with Sig Guggenmous, Adam Johnson, Diona Neeser, and Dr. Greg Dahle. Musick presented a video interview of her and Dr. Dahle discussing the challenges of tree-caused failure and reporting practices. Vegetation is a leading cause of outages in the U.S., but reporting methods and benchmarks are not standardized, making it difficult to apply science to identify trends, leading causes, geography, etc.

An informal pre-survey was conducted to gather data regarding outages and reporting. Their findings were as expected, "all over the place," and very few companies investigated all TCOs. The question "What do we need to know?" was posed along with "How do we collect that information?" Overall, what we determined is that although reporting requirements vary from utility to utility, there is an underlying need for standardized reporting, accurate location from the actual location of the outage, not just device number as well as an understanding of what constitutes an outage and how that varies amongst utilities. This is the beginning of a conversation that will hopefully lead to best practices for reporting, sharing trends, and using information to further the science behind tree failure and TCOs. Musick has detailed this presentation in the article "Tree-Caused Outage Terminology for Vegetation Managers," found in this issue of the *Newsline*.

Summit breakout session

Virginia Bowman (FirstEnergy) discussing threats to worker safety

Mechanized Equipment Innovations

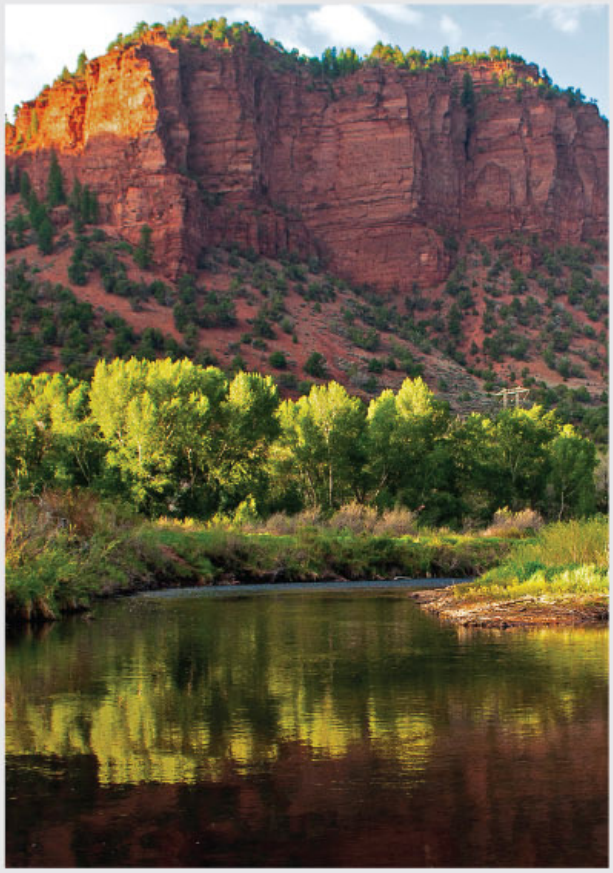
Hal Acree, national sales manager of vegetation/utility at Progress Rail Services, spoke about mechanized equipment innovations. He provided an overview of types of VM equipment commonly used in ROW maintenance activities, including tree trimmers and aerial saws, tree handlers for large limbers, articulating cranes or grapple saws, and mulcher/brush cutter equipment.

The presentation highlighted the pros and cons of each equipment type. Production tree trimmers can safely, efficiently, and quickly trim trees up to 75 feet, but are sensitive to snow, mud, and soft soil, and require wide-load transport. Aerial saws can efficiently trim ground to sky up to 150 feet with no disturbance to ROWs and provide access to difficult landscapes. On the other hand, side trimming helicopters have no direct site line to tree limbs and require "spotters" in constant communication, have rough tree cuts, and must work around FAA limits. Tree handlers and large limbers have high-capacity material, with a lift capacity exceeding 5,000 pounds over 60 feet. While they require significant investment and require a hard-packed surface for outrigger penetration, they have a compact footprint for capacity and have an independent outrigger.

Articulating cranes or a grapple saw are best where extended reach is required due to tree height or difficult access. They offer highly stable designs with overload sensing, but a fully deployed footprint can be disruptive due to size. A mulcher/brush cutter can convert brush, trees, and grasses to erosion-protecting ground cover that saves cost and labor to remove from a job site. Some can accommodate forestry attachments and have wireless remote-control models to keep operators safely out of the work zone.

With all of these high-capacity machines, operating them requires training. Typically, operators go through a classroom learning portion, machine inspection, and site assessment/operation. Keep an eye out for an extensive article regarding this mechanized equipment presentation in our next issue of the *Newsline*. The committee is working on white papers from each of their breakout sessions and hopes to have them available soon.

Next year's Utility Vegetation Managers Summit is hosted by Holy Cross Energy located in Garfield County, Colorado.



SAVE THE DATE

UAA UVM Summit 2024

MAY 14–16, 2024

UAA and Holy Cross Energy will be hosting the 2024 UVM Summit at the Morgridge Commons in Spring 2024 in Glenwood Springs, Colorado

If you're a Utility Vegetation Manager and are interested in attending, contact Diona Neeser at dneeser@gotouaa.org.

More information and formal invitation coming soon!

SPOTLIGHT ON THE ENVIRONMENT

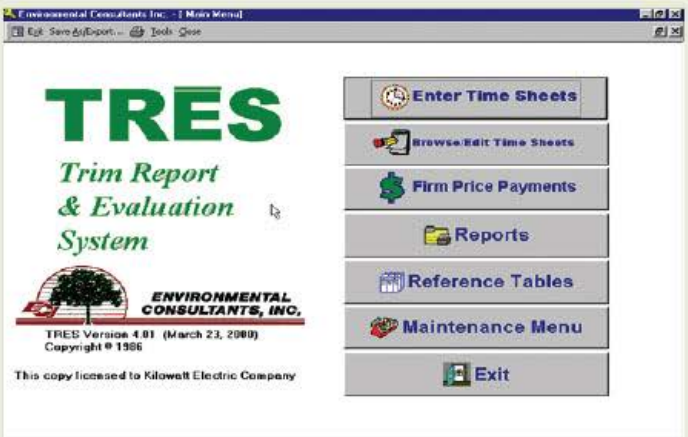
Reflecting on the Past to Shape Our Future UVM

By Kimberly Laing, Business Development Manager, ArborMetrics Solutions Canada, ULC

Over the past couple of decades our industry has faced growth on many levels. The sharing of information has become fast and effective. That momentum has created a growing interest in vegetation management within the utility space. Concurrently, the science and knowledge base within our discipline of utility arboriculture is expanding. We've seen a rise of organizations and technology, that helps us support our right-of-way management beyond targeted trees and beyond safety and reliability. There is now a paradigm shift towards holistic VM that crosses into likeminded and complementary industries, like computer science, wildlife management, environmental services, asset management, and reliability-centered maintenance, and many more. One thing is certain: our industry is always ready to grow and adapt.

When talking about growth, it's important to look to the past to illuminate and recognize the pivotal moments in our story and the evolution of UVM. These moments are often marked by the evolution of technology, such as the telegraph, the telephone, computers, portable technologies, GIS, and the Internet of Things (IoT).[1] These tools improve our human and electrical infrastructure. Stronger communication yields improvements in scientific information, standards, best practices, and facilitates strong, efficient, and practical growth.

When looking at the past, we can see why we have historically cut our ROWs, and it's important to note that when discussing past management practices, we faced challenges with



Example of the ECI TRIM program, circa 1986–2011. Image courtesy of ECI Environmental Consultants.

Tree crews equipped with technology. Photo courtesy of ArborMetrics Solutions, LLC.

permitting, record keeping, public relations, and more. These challenges allowed us to adopt stronger UVM programs and develop comprehensive budgets and processes over time, which are now part of our standard programs. This further validates how spending money yesterday can help us have more robust programs today.

We have also seen an interesting evolution of field staff from the early '90s to today. What started as a smaller group of arborists managing vegetation programs centered around the collection of vegetation inventory for larger electric systems has now expanded to thousands of field workers in utilities across the continent, ranging in size and collecting a variety of different types of data. This naturally helped UVM programs mature into what we see today.

Another key moment in our history was the Northeast Blackout in August 2003, which led to FAC-003. For the first time, utilities were required to have programs in place to prevent vegetation-related outages to protect the bulk transmission system. Before this, we managed our transmission ROWs differently, as our tolerance for vegetation clearances prior to this regulation were vastly different.

The mid-2000s could be described as the era of compliance. But as we move into the current era, we see our industry

[1] "Modern utility arboriculture dates back to the 1840s when the telegraph made instantaneous communication possible across great distances. From the start, practitioners of what is now known as utility arboriculture struggled to maintain these services despite the ongoing assault of wind and weather and a dearth of knowledge of safety and the science of tree care. Furthermore, their efforts were invariably met with misunderstandings and controversy on the part of the public. Over the decades, the technology and the science available to vegetation managers has improved. Standards, best practices, and credentialing programs for safety and for tree care have been developed and adopted by the industry; ...at the same time, the materials and equipment used to generate and distribute electricity have also evolved and been improved. As a result of these efforts, the safety and reliability of utility services has improved to the point where it is now considered to be essential by end users and government regulators" (Kempter, G, R. Miller, 2018. *The Utility Specialist Certification Study Guide on Utility Arboriculture*. Champaign, Illinois. International Society of Arboriculture).

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SPOTLIGHT ON THE ENVIRONMENT *continued*

branching out on several levels, with key growth milestones in safety and reliability, technology, knowledge and science, and networking within the greater industry at large.

Safety and Reliability

When talking about safety and reliability we'd be remiss to leave out several factors that have led to developments in this area. Some of these include:

- Aging and growing assets cause increased concern about the risk of facilities and staffing
- Rapid growth in infrastructure has resulted in a large increase in the number of transmission and distribution lines in operation around the world
- More restrictive requirements on providing a continuous and good-quality power supply, without a significant increase in the cost of the energy being delivered
- Weather-related outages cost utilities significant time and resources during recovery efforts
- Power outages resulting from wildfires continue to increase, impacting communities, assets, and power delivery

As a result of these factors, utilities have made significant investments to harden their systems to deliver safe and reliable power—and it's not just about working harder, it's about working smarter. Over time utilities are creating more robust power systems, infrastructure, and technology, and more recently focusing on ESG reporting. NextEra Energy, for example, has invested significantly in hardening their energy grid through smart grid technology to strengthen reliability and decrease outage times.[2]

Technology

There's been an abundance of growth in technology in the UVM space, particularly over the last two decades. Back in the early '90s there weren't many software tools to speak of except, for example, tabular dBase programs that were used to track man-hours. Although the crews still completed elaborate spreadsheets on paper, this was an example of an early system that gave us data-driven decisions to begin tracking production in the field.

Networking luncheon at the 2022 UAA Trees & Utilities Conference.

Example of a Columbia Gas ROW with IVM. Photo courtesy of ArborMetrics Solutions, LLC.

With the introduction of FAC-003, there was a move towards capturing LiDAR data to study assets like poles and substations and to analyze clearances, vegetation encroachments, vegetation fall in, grow in, and much more. The electrical utility T&D line managers require a multitude of data to effectively operate and maintain their system to ensure safety and reliability. To obtain this data in the present day, several methods could be used. Perhaps one of the greatest success stories of our time is having technology implemented at the tree crew level to allow for true data transparency and connection between the field and the office.

Today we have an abundance of choices when it comes to data, including LiDAR and remote sensing (photogrammetry, satellite, and common optical instruments), and means of collection, which includes UAS (drones); aircraft (fixed wing or uncrewed), helicopter, ground-based, vehicle-mounted, phones, tablets, and various other tools. We also see an advancement in data optimization, including advanced analytics and automation to supplement and speed up decision-making processes. The reality is in today's data-driven world where utilities are under more scrutiny to optimize and justify their budgets, some foresters are now making multimillion-dollar decisions based on the information collected and communicated through technology.

Knowledge and Science

Another key area of growth in our industry is the evolution of knowledge and science in the discipline of arboriculture. For example, we now see an increasing number of utilities, and consulting companies are implementing an IVM approach to create rich, biodiverse plant and animal communities by encouraging compatible vegetation.[3] Managing ecosystems and wildlife in forestry isn't new, but now the thought process is

[2] "Since 2006, [Florida Power & Light Company] has made significant investments in strengthening the energy grid to make it more resilient to severe weather. ... Another example of FPL's strategy is our extensive effort to harden the energy grid and deploy smart grid technology. In 2004–2005, FPL's service area was hit by seven major hurricanes over 18 months, including Hurricane Wilma, which caused extensive damage throughout FPL's service area, requiring a total restoration time of more than two weeks. Since 2006, we have made significant investments to strengthen the energy grid to improve reliability for customers. By the end of 2021, we had hardened or undergrounded more than 65% of all main distribution powerlines. We also have replaced wood transmission structures so that 94% of these are now concrete or steel" (NextEra Energy. 2022. Environmental, Social, and Governance Report. www.nexteraenergy.com/content/dam/nee/us/en/pdf/2022_NEE_ESG_Report_Final.pdf.).

making it to our ROWs in a substantial way and becoming part of our everyday nomenclature. In addition, we see utilities engaging their stakeholders and developing partnerships with Indigenous communities, environmental groups, and nonprofit organizations focused on sustainability.

A primary goal of our industry now is to support the ecosystems that will support the plants and animals that are endangered and threatened while still meeting the primary goals of delivering safe and reliable power. Integrated habitat management is being held side-by-side with integrated vegetation management. We are showing that this approach isn't just an environmental decision, but an economic one as well. We can see examples of this with how ESG reporting is tied into the Dow Jones Sustainability Index, providing a rating system and showing evidence of how IVM is increasing the value of the power system.[4] We can also see organizations supporting IVM by focusing on training and developing their workforce in important topics like biodiversity and habitat management.

Networking

One major benefit to growth in our industry is the number of forums available to network and share knowledge, stories, and information so we can share knowledge. The growing presence of organizations such as the UAA over the last decade is one example of how the industry is evolving.

As we look to the future and build more holistic UVM programs, there will be a continued focus on attracting new talent to join our industry, embracing the growing science and technology in our discipline, and an even greater effort to retain talented workers in an ever-competing space.

It feels like we are on the verge of another paradigm shift—an exciting time for our industry. The best-in-class utilities have good VM programs in place and have moved beyond reliability. We can see the expectations we set for ourselves a decade ago are already being surpassed. Now the conversations are moving to discussing long-term UVM programs and how the increased investments of time and money we put into our programs were well spent, not just saving money and improving our balance sheets, but creating a positive and lasting impact to our stakeholders and communities. And we now have years of data supported by technology to back that up, along with a history of lessons learned. The future is bright, and as we face new and evolving challenges, we will be ready to adapt.

[3] Utility Arborist Association. 2022. "UAA Environmental Stewardship: Biological Controls." www.youtube.com/watch?v=deAgCuK2ITI.

[4] "ESG reporting is voluntary but often strongly encouraged by investors, among others. The best-known global ESG indices are the Dow Jones Sustainability Index (DJSI) and the Global Reporting Initiative (GRI).... IVM programs that adopt the framework provided by ESG indices, like the DJSI and GRI, can utilize beneficial ROW-compatible vegetation to quantify biodiversity impacts across their system and engage their full teams in implementing sustainable vegetation practices" (Kortum, B., S. Vera-Art. 2020. *Boots to the Boardroom – Leveraging ESG Biodiversity Sections for IVM Programming.* www.growwithtrees.com/boots-to-the-boardroom-leveraging-esg-biodiversity-sections-for-ivm-programming.)

A Brief History of Utility Arboriculture: Part 1

Facts and Stories about the Emergence of an Industry

By Geoff Kempter, Technical Services Manager, Asplundh

Utility arboriculture can trace its roots back to the advent of the telegraph, which made instant communications across great distances possible. Since that time, there has been a need to maintain trees for overhead utility service reliability. From the start, the question of how best to manage trees and utilities has driven mistrust and misunderstanding. However, as the science of arboriculture and urban forestry advances and the electric grid is modernized, solutions that preserve both the benefits provided by trees and the safety and reliability of utility services may finally be in sight.

History of Tree and Utility Conflicts

The First Overhead Lines

In 1844, Samuel Morse announced that he would instantaneously dispatch a message from Washington, D.C., to Baltimore (Library of Congress). The question of whether lines should be underground or overhead dates back to this initial demonstration.

The first attempt buried the lines in a lead pipe, using a method invented by entrepreneur Ezra Cornell. Cornell struggled to insulate the line before recommending that the wires be affixed to glass insulators on wooden poles. The overhead line proved successful (Cornell University Library).

Quality Concerns and Contract Disputes

In 1846, the New York, Albany, and Buffalo Telegraph Company refused to pay for the installation of a line until quality concerns, including tree and brush cutting, were addressed. Cornell (the contractor) was not pleased, but agreed to fix the problems (Thompson 1947).

By 1850, contract language and specifications were being standardized to address concerns, such as number and placement of poles and the need for utility arboriculture:

"There shall be at least thirty poles to the mile... and shall be so placed that the wire or conductor shall not come into contact with trees or any other obstructions...." (Thompson).

Early Records of Tree-Caused Outages, Storm Work, and Hardships

As early as 1847, trees were causing problems for telegraph operators. Working on a line in Pennsylvania, John Hite wrote to his boss, "A tree has fallen on the wire on Alleghany and broke a post and thrown the wire off for a mile in length. [sic]" (Harlow 1936).

Living trees were often used as utility poles: "Poles for the wires consisted of trees easily accessible along the route..." (Green County Historical Society). However, attaching wires directly to living trees caused unique problems. On a line to New Orleans, "a slight exudation of gum from a pine tree formed a connection between the wire and the tree...." It took three days to find the fault (Reid 1879).

In 1852, an ice storm struck the South, affecting a new line to New Orleans. "Miles of the line lay in absolute ruin. Hundreds of poles broke..." (Reid).

Disease, especially yellow fever, was also a serious threat. In the summer of 1852, an outbreak "swept the South. Men died like sheep.... The line was kept up with great difficulty" (Reid).

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Standing the Test of Time: James Wilson

James Wilson

James Wilson, an England native, moved to the United States in 1992, where he first discovered the "little, niche field" of utility vegetation management. Shortly after, Wilson joined ACRT Pacific and has been rooted in the Bay Area ever since. Throughout his time with the organization, Wilson, an ACRT Pacific pre-inspection manager, has progressed from a consulting utility forester/inspector to a senior consulting utility forester, and now a pre-inspection manager. He's also an International Society of Arboriculture Certified Arborist Utility Specialist® and holds the ISA Tree Risk Assessment Qualification (TRAQ) credential.

How does one convert nearly a quarter century's worth of experience into guidance for industry rookies? Wilson says the first year or two are the "major learning times."

He explained, "It's easy to feel overwhelmed with the amount of information that's getting thrown at you. It takes a good year or two to really start learning the job properly—especially if you get the opportunity to go back over the work you did in the previous year, so you can see if different trees were correct or incorrect."

Once employees can find that grounding, Wilson encourages them to take every opportunity possible to advance their careers. "There have been so many different, yet great, experiences. Being out on the transmission easements, you get to go out to these beautiful places that not too many people get to see," he noted.

The part of Wilson's career over the years that has made the greatest impact is "being out in the parks near the cities and feeling like you're in the middle of nowhere, then being able to go home at the end of the day."

Take a step forward launching your career in the vegetation management industry by visiting *pacific.acrt.com/careers*.

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Benefits of Trees, Then and Now

In 1907, President Theodore Roosevelt proclaimed "A people without children would face a hopeless future; a country without trees is almost as hopeless" (Samuels 1999). By 1912, the government was promoting the benefits of trees to schools across the country. Benefits described included aesthetics, wildlife habitat, flood control, and drought prevention (Montana Department of Public Instruction). Today, these benefits and more have been documented and quantified, but these basic concepts have long been understood.

Line Construction and Clearance in Wartime

During the U.S. Civil War, reliable communications were integral to army operations. Union General W.T. Sherman noted, "On the field, a thin insulated wire may be run on improvised stakes or from tree to tree for six or more miles in a couple of hours" (Sherman 1891).

Reliable service required maintenance, including tree work. U.S. Army Signal Corps records recount a civilian's observation of the clearing of a telegraph line in Virginia during the Civil War:

> "...a repairman...with his pole-climbing irons, was high in a tree trimming branches. Below, watching him suspiciously, an elderly woman later reported: 'Whatever can't these damn Yankees do! One of them was walking up and down the trees just like the Devil!'" (Signal Corps Association).

Early Tree Conflict with Telecommunication Lines

As telegraph wires proliferated, conflicts with trees increased. In the 1850s, roadside construction by the British Telegraph Company sparked outrage due to the appearance of the lines and the damage to trees (Roberts 2012).

Conflicts were noted in Scotland, where "injudicious lopping of the branches of roadside trees" was performed by telegraph companies "...in the most ruthless way possible, many of the limbs being cut several feet from the main stem, and the bark often much torn by the weight of the falling branch" (McNab 1873).

The cutting and removal of trees offended the local parks commission in Worcester, Massachusetts, which decried "the reckless mutilation of roadside trees..." (Draper 1892).

Value of Shade Trees vs. Utility Service Reliability

As electric and telephone networks expanded, pushback from tree advocates continued. In a 1918 booklet, *A Shade Tree Guide*, New Jersey State Forester Alfred Gaskill wrote that "a shade tree has a value beyond that of its wood, or the cost of planting a new one," and insisted that trees and their benefits "must be accommodated." He decried the "butchery" of trees to make room for wires, while also acknowledging the necessity of electric service, and the high cost of putting lines underground (Gaskill 1918).

As utility systems were improved and safety became a greater concern, the need for clearance was increasingly emphasized. Still, in his 1940 textbook, *Tree Clearance for Overhead Lines*, G.D. Blair emphasized that "trees must be vigorous and beautiful; overhead line service must be continuous and dependable. In this measure of quality, each is essential to the happiness of civilized people" (Blair 1940).

Later in the twentieth century, with air conditioning, urban sprawl, and an economy evermore dependent on reliable utility services, some of the value added by trees seemed less important (Miller 2014).

Specialization of Services

With the proliferation of electric and telephone services, a market developed for specialized "tree expert" services during the installation and maintenance of utility lines. In addition to their residential services, Davey Tree Expert Company (founded in 1880) and Bartlett Tree Experts (founded in 1907) provided services to utility companies. However, the first company to specialize solely in providing tree services to utility companies was the Asplundh Tree Expert Company, founded in 1928. Other companies soon followed.

In early years, there was little scientific knowledge available about how trees responded to various treatments. In his 1940 text, Blair promoted the use of "natural pruning," which advocated directing growth away from the lines by reducing branches to nodes. However, many utilities continued to specify tree topping and rounding over—practices that encouraged rapid sprout growth and are now discredited. Most cutting was done with handsaws and felling axes. Early chainsaws were very heavy and designed for use by two operators. The safety practices of the time were—by today's standards—appalling.

In the first half of the twentieth century, nearly all work was done with hard physical labor. Ladders were used to enter trees, but manual climbing with manilla rope was how workers reached tree canopies. Bulky cut brush was dragged, stacked onto flatbed trucks, and tied down.

In the late 1940s, in an effort to improve safety and efficiency, Asplundh pioneered the use of brush chippers and developed insulated aerial lifts. Brush chippers greatly reduced the volume of debris, making disposal much easier. Fiberglass upper booms isolated workers aloft and on the ground from the line voltage potential. Asplundh manufactured these devices and sold them to arborists and utility companies for nearly five decades, before selling their manufacturing division. Descendants of these devices are still manufactured today.

Utility Arboriculture in the 21st Century: The Controversy Continues

Today, electric utilities routinely prune and remove trees and promote the idea of "right tree, right place." However, this phrase means different things depending on perspective. While some utility interests suggest that trees are valuable only when they do not interfere with overhead utility services, promoters of the benefits of urban forests are once again challenging the idea that trees and utilities are incompatible.

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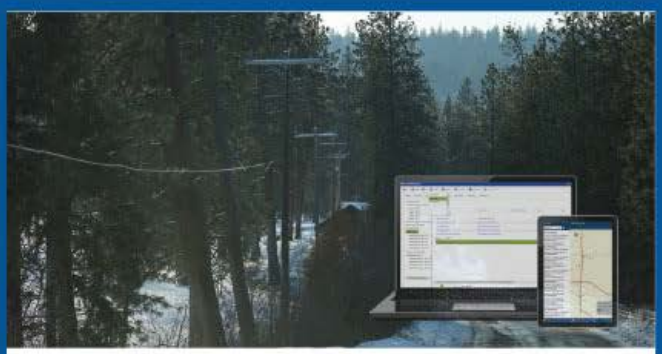

As utilities continue to modernize their vegetation management by replacing paper maps in the field, it is more crucial than ever to have the right vegetation work management software matched up with the preferred mobile computing hardware. With a wide range of options available, it can be overwhelming to decide which device and solution will best suit your needs. Making the right choice significantly impacts your productivity, efficiency, and overall experience in the VM industry.

In late 2023, GeoSpatial Innovations, Inc. and Bizco Technologies have come together to form a long-lasting partnership. This collaboration promises to not only benefit but help reshape the landscape of how utility companies, municipalities, and environmental organizations operate their vegetation management programs.

"We are thrilled to announce our partnership with Bizco to showcase our end-to-end vegetation management solution, GSI Forester. Through this collaboration, we can provide customers with a complete solution, from hardware to software. Bizco's best-in-class technology allows us to elevate our customer service beyond the competition," said Lisa Livingood, president and CEO, GeoSpatial Innovations, Inc.

GSI Forester, available on Windows, Android, and iOS, intuitively manages administrative tasks, such as vendor management, budget reporting, and planning workflows. The software makes map management and site searches easy to navigate through portals and dashboard settings. Bizco Technologies is a national value-added reseller that has been building utility-focused solutions for thirty years. Through this partnership, utilities can get access to the customizable GSI Forester software and get a mobile computing solution with affordable leasing options and volume discounts.

This partnership will allow the individuals in the vegetation management industry an opportunity to breathe a sigh of relief. The collaboration between GSI and Bizco promises to provide the tools needed to succeed while guiding the industry to be smarter, be more cost-effective, and increase environmental responsibility.

Benefits and Costs

As noted by Albert Gaskill in 1918 and George Blair in 1940, the services provided by both trees and utilities are essential. In fact, the numbers are staggering: trees add tens of billions of dollars annually in benefits, while electric service reliability issues cost tens of billions to our economy. It should be the goal of all involved to maximize the benefits while minimizing the negative effects of trees.

On the positive side, benefits of well-placed trees include:

- Carbon sequestration (especially for medium to large trees)
- Reduced peak electricity demand through cooling shade in summer and reduced wind speeds in winter
- Improved air quality by filtering particulates
- Increased property values and tax base
- Reduced stormwater loads on sewers and treatment facilities
- Lower crime rates
- Improved human health and vitality
- Habitat for wildlife

The first three directly benefit electric utilities by offsetting environmental effects of fossil fuel emissions, and by reducing the high costs associated with meeting peak demand for electricity. The rest are significant community benefits which indirectly benefit electric utilities.

On the negative side, trees carry liabilities, including:

- Potential to fail catastrophically, imperiling human lives, damaging property, and interrupting utility services
- Direct maintenance costs (for both utilities and tree owners)
- Indirect maintenance costs (e.g., leaf disposal, sewer blockages)
- Increased risk of wildfire

While the value of benefits provided by large trees is known to far exceed the basic cost to maintain them, less hard data are available that quantify other costs, especially the cumulative cost of utility service interruptions that can be attributed to tree failures.

Common Ground

Today, rather than renewing old battle lines, utilities and tree advocates have an opportunity to seek mutually beneficial solutions. The newly developed SFI Urban and Community Forest Sustainability Standard offers utilities and municipalities a comprehensive template for maximizing the value of urban and community forests over time. However, realizing these benefits will require all stakeholders to follow industry standards and best practices and to make certain commitments:

1. Fund programs (planting, maintenance, risk assessment, removals)
2. Select appropriate trees (consider size, site, local climate, community needs)
3. Install resilient utility infrastructure (including undergrounding critical lines)
4. Focus efforts on reducing risk, not just obtaining clearance
5. Invest in a capable and professional workforce, including training and credentials

Conclusion

Since Samuel Morse's 1844 demonstration, the benefits provided by trees have competed with the need for reliable utility services. Early on, many mistakes were made, due to hubris and a lack of information. Today, we have a far better understanding of the science of tree care, we have credentials and training backed by research, we can quantify the value of benefits provided by trees, and we can provide care and monitoring to minimize risk. However, Blair's 80-year-old vision of beautiful trees and dependable electrical service can only be realized if all stakeholders—governments, citizens, tree advocates, and utility service providers—actively seek a common goal: to deliver maximum value to the people of our communities and the customers of utilities, who are ultimately one and the same.

Sources

1. Blair, G.D., *Tree Clearance for Overhead Lines: A Textbook of Public Utility Forestry.*
2. Cornell University Library, "Ezra Cornell," https://rmc.library.cornell.edu/Ezra-exhibit/EC-life/EC-life-5.html.
3. Draper, J., "An Essay on the Preservation of Roadside Trees," *Library of Congress*, http://www.archive.org/details/essayonthepreser00drap.
4. Gaskill, A., *A Shade Tree Guide*, New Jersey Department of Conservation and Development.
5. Green County Historical Society, "The Old Wire Road..." http://www.rootsweb.ancestry.com/~gcmohs/3rd_level/wire_road.htm.
6. Harlow, A.F., "Old Wires and New Waves," D. Appleton-Century Company Inc, https://archive.org/stream/oldwiresandnewwa031775mbp/oldwiresandnewwa031775mbp_djvu.txt.
7. Library of Congress, "Today in History: May 24," http://memory.loc.gov/ammem/today/may24.html.
8. M'Nab, J., *Disfiguration of Roadside*, 453.
9. Miller, R.W., "Mesopotamia to Milwaukee," http://www.isa-arbor.com/events/conference/proceedings/2014/2014_Bob_Miller.pdf.
10. National Arbor Day Foundation, "The History of Arbor Day," http://www.arborday.org/arborday/history.cfm.
11. National Museum of American History: Behring Center, "HistoryWired," http://historywired.si.edu/detail.cfm?ID=324.
12. Reid, J.D., *The Telegraph in America*, 207–214.
13. Roberts, S., "Distant Writing," http://distantwriting.co.uk/technicaldetail.html.
14. Samuels, G.B., *Enduring Roots*, 34–35, 101.
15. SFI Urban and Community Forest Sustainability Standard, 2023.
16. Sherman, W.T., *Memoirs of Gen. W.T. Sherman, Volume 2*, 398.
17. Signal Corps Association, "Telegraph Folklore," http://www.civilwarsignals.org/pages/tele/wurules1866/telehumor.html.
18. State of Montana Department of Public Instruction, "Arbor Day Manual: May 14, 1912," https://archive.org/stream/arbordaymanualar28mont#page/n1/mode/2up.
19. Thompson, R.L., *Wiring a Continent*, Princeton University Press.

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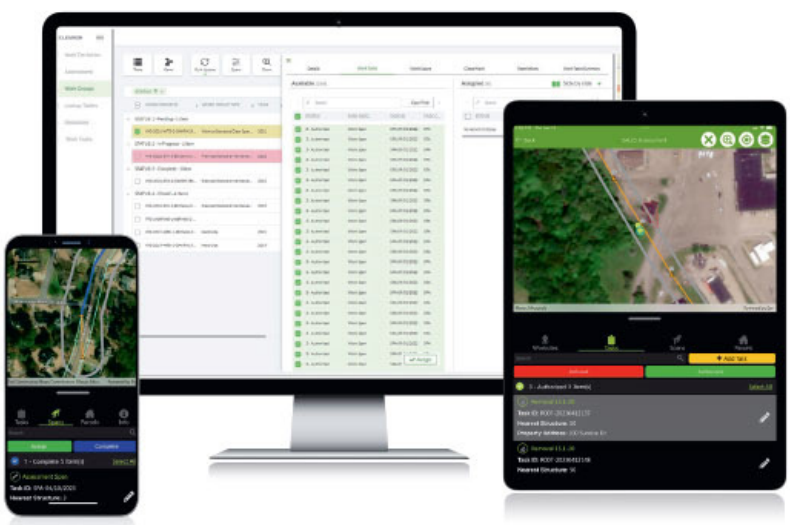

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OPINION EDITORIAL

The Future of Utility Arboriculture

By Amanda Opp, Certified Utility Vegetation Management Professional, Flathead Electric Cooperative

Amanda Opp

In the future, the challenges of managing vegetation around power infrastructure will be addressed through a fusion of data-driven strategies, innovative tools, and a commitment to environmental responsibility. Anyone who has been in the industry for a while will tell you that the landscape of utility arboriculture is undergoing a subtle but significant and impactful transformation.

We are living in a time where opportunities abound in utility arboriculture. The demand for qualified and trained personnel is soaring. I see this as an opportunity for each of us to seize every moment to train in our trade and seek out education opportunities and share that gift with others earlier in their careers. If you are looking to get into management, one of the best opportunities out there is at the University of Wisconsin–Stevens Point (UWSP). I have been through the program and can tell you that the Utility Vegetation Management Professional Credential has been the gift that keeps on giving in my professional career.

Speaking of education, one of the heaviest lifts that we have is educating the public. This isn't the glamorous, techy part of the future of utility arboriculture, but a fundamental part of it. I have seen an uptick in the investment that utilities are making to educate the public and stakeholders. Seeking collaboration and communication with stakeholders will become increasingly important in our efforts towards progress in the industry. While high-tech solutions take center stage, public awareness and collaboration remain cornerstones of successful utility arboriculture now and in the future.

Integrated vegetation management will continue to expand in the industry. This entails us devising imaginative approaches to utility arboriculture that boost reliability while safeguarding habitats. This could be heavily influenced by regulatory changes or environmental concerns. The good news is we don't have to wait for the future to begin to address these issues. We can be proactive by implementing different components of IVM in our current plans. One group that is already highlighting and supporting these efforts is the UAA Environmental Stewardship Committee. If you are looking for an opportunity to volunteer, the UAA committees are a great way to do that, and we need you.

Technology is providing us with a wealth of information that we can use to tackle problems, and automation is emerging as an important part of future utility arboriculture strategies. Close your eyes and imagine having the ability to monitor vegetation growth in real time and systems so intuitive that it could schedule and dispatch a forester, crew, or equipment to address the issue. The prospect of predictive maintenance is no longer confined to science fiction. With the emergence of machine learning, we are now able to create maintenance schedules and optimize resources.

The ability to gather more accurate and detailed data about vegetation growth and proximity to power infrastructure increases each year. We can gather this information through various mediums, including remote sensing and smart grid integration. In an era marked by technological progress and ecological concerns, I see all of us being agents of sustainable growth within the industry, working to leave a legacy of environmental stewardship and proactive vegetation management through maximizing our efficiency and minimizing our operational footprint.

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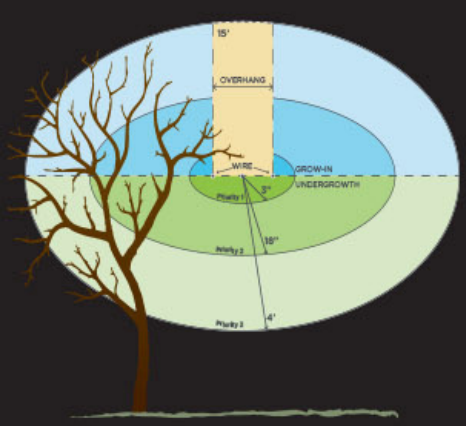

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