

SEP.OCT 2024  
Volume 15  
Number 5

# UTILITY ARBORIST NEWSLINE

FOCUS ON LEGISLATIVE AND EDUCATIONAL OUTLOOK

## FUTURE YOUTH IN URBAN FORESTRY

BUILDING SKILLS THROUGH JOB CORPS  
FOR AT-RISK YOUTH

## WILDFIRE MIGITATION

THE VALUABLE EXPERT  
WITNESS INSIGHTS FOR VM

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**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)
- Transmission and Distribution (T&D)
- Utility Vegetation Management (UVM)
- Vegetation Management (VM)

PRESIDENT'S MESSAGE



Brandon Hughson

## Navigating the Legal Landscape of Utility Vegetation Management: Education and Career Opportunities

By Brandon Hughson

Utility vegetation management is a vital field that ensures the safety and reliability of power distribution systems. It involves a complex interplay of legal requirements and regulatory frameworks, requiring professionals to be well-educated and well-prepared. Education prepares individuals for roles within the UVM industry, the variety of career paths available, and the importance of understanding the legal aspects of the field.

### Education and Scholarships

Education is the foundation of a successful career in UVM. To attract and develop talent, various scholarships are available to students pursuing studies in arboriculture, environmental science, forestry, and related fields. These scholarships not only provide financial support but also offer opportunities for hands-on experience through internships and cooperative programs with utility companies.

### Scholarship Programs

- **Utility Arborist Association (UAA):** The Utility Arborist Nelsen Money Scholarship Program provides financial opportunities in support of college students through scholarships to foster a greater appreciation of the utility arboriculture industry.
- **Tree Research and Education Endowment Fund (TREE Fund):** TREE

Fund offers scholarships such as the Will Nutter Memorial Scholarship, which supports the utility forestry and arboriculture industry by helping college students interested in those fields achieve high academic goals.

- **Arboricultural Research and Education Academy (AREA):** AREA was established to promote scientific literacy and further the knowledge and understanding of new technology as it relates to arboricultural practices.

By utilizing these scholarships, students can gain the education and skills needed to succeed in the UVM industry.

### Career Development Opportunities

The UVM industry offers a variety of roles that cater to different interests and skill sets. These roles range from field operations to management and regulatory compliance. Outside of these programs, many of the UVM contractors and utilities also offer in-house training opportunities from new employees to industry veterans. The UAA has also developed a video series highlighting “cool jobs” within our industry—take a look at <https://www.gotouaa.org/video-library>. Some key opportunities are:

- **University of Wisconsin–Stevens Point, Utility Vegetation Management Program:** To find out more, please visit their website at <https://tinyurl.com/UWSPprogram>.
- **Mid-State Technical College, Utility Tree Trimmer Technical Diploma:** Find out more by visiting <https://www.mstc.edu/programs/utility-tree-trimmer>.
- **Alpena Community College, Utility Arborist Line Clearance Certificate:** Find out more by visiting <https://tinyurl.com/AlpenaLineClearance>.
- **Butte College, Utility Line Clearance Arborist:** Please visit their website to learn more at <https://tinyurl.com/ButteTrainingPlace>.

### Understanding Legal Aspects

Navigating the legal landscape of UVM is crucial for professionals in the industry. Compliance with federal, state, and local regulations is mandatory to avoid legal repercussions and ensure the safety and reliability of the power grid. Tulane University Law School offers a curriculum in Energy and Environmental Law that helps prepare future attorneys

in the UVM space. Students from this program have had the opportunity to speak at the Trees & Utilities Conference to share their findings and engage with industry leaders (<https://dev-tu-law-d9.pantheonsite.io/energy-environment>).

### The Role of Technology and Innovation

Technological advancements are transforming the UVM industry, making it more efficient and effective. Tools such as geographic information systems (GIS), drones, and remote sensing technologies are increasingly used for vegetation management. Understanding the legal implications of these technologies, including data privacy and airspace regulations, is essential for compliance and innovation.

The litigious nature of the UVM field has intensified, particularly in relation to weather events like wildfires. As the change in our environment exacerbates the frequency and severity of these disasters, utility companies are increasingly held accountable for wildfire damages linked to vegetation management failures. High-profile lawsuits and substantial financial settlements highlight the legal risks utilities face when VM practices do not meet regulatory standards. This litigious environment underscores the critical importance of stringent compliance, thorough documentation, and proactive management strategies to mitigate liability and protect both the public and the utilities from devastating legal and financial repercussions.

### Conclusion

Education plays a critical role in preparing individuals for careers in the UVM industry, equipping them with the knowledge and skills needed to navigate complex legal requirements and regulatory frameworks. By leveraging scholarships, pursuing relevant educational programs, and staying informed about legal and technological advancements, professionals in the UVM industry can build resilient, compliant, and efficient utility systems. As the challenges posed by climate change and evolving environmental threats continue to grow, the need for well-educated and legally savvy utility arborists and managers has never been greater. †

Brandon Hughson

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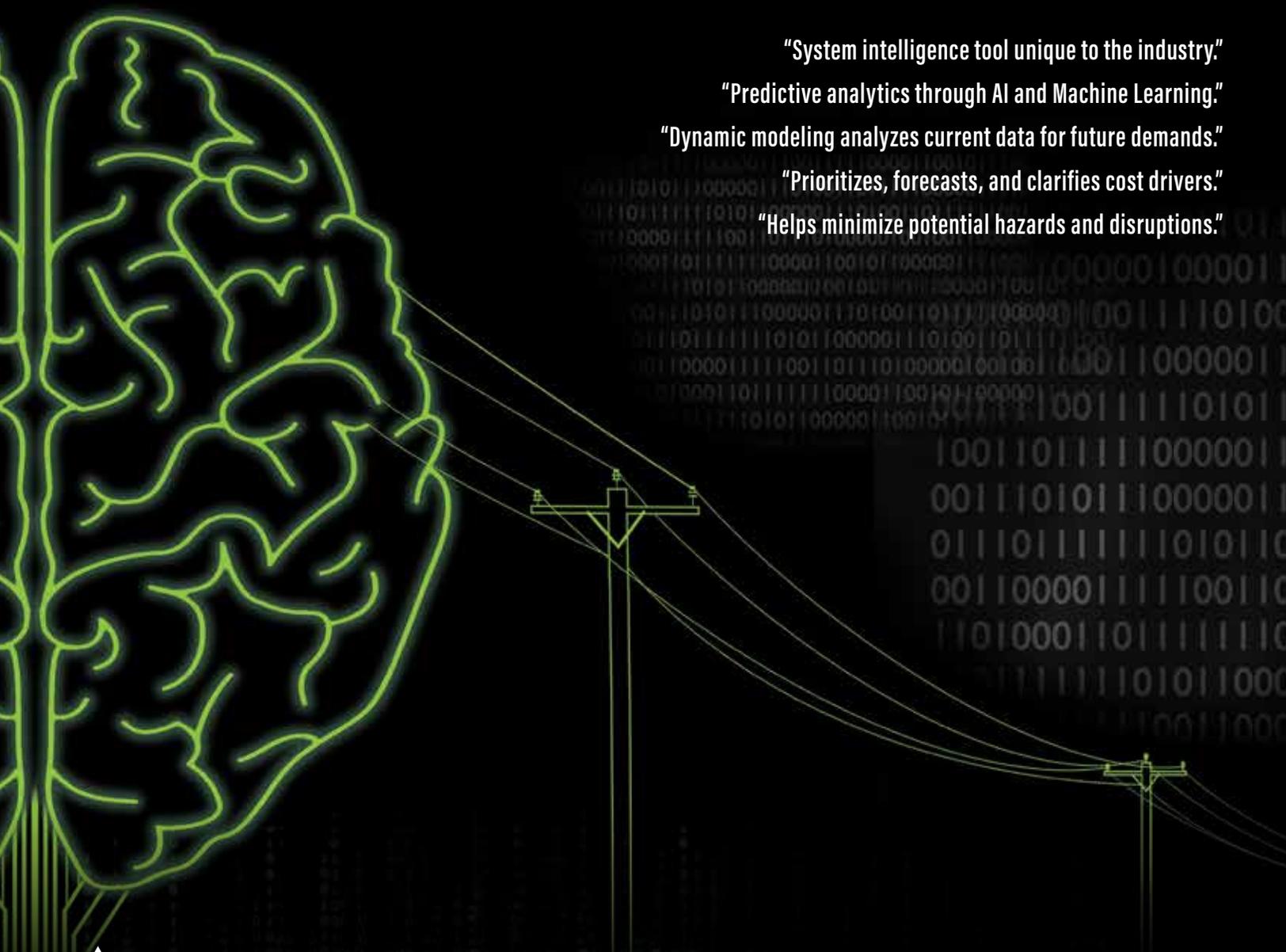
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## EXECUTIVE DIRECTOR MESSAGE



Dennis Fallon



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In 2020, the UAA Board of Directors and several volunteers set out to revisit the strategic vision of the organization. Some of the work is recapped in the 2021 January/February edition of the *UAN*, found on the UAA website at <https://tinyurl.com/UANJanFeb2021>.

The group reviewed the committee structure, the leadership structure, and the bylaws. One of the outcomes of this visioning exercise was for the board to mindfully undertake annual reviews of the organization's progress, industry opportunities, as well as industry disrupters to develop goals based off the results. In May 2024, the UAA Board of Directors and UAA team met face-to-face to perform this annual review again. Members of the group came prepared with perspectives from committee members and industry thought leaders on what opportunities and disrupters will be of concern for the next few years. Over the course of two days, the group identified the following areas of focus for the UAA and the UAA committees for 2025 and beyond.

#### Future Leaders

No different than any other organization, the UAA needs to constantly attract and retain members. We need utility arboriculture to be seen as a viable career choice and have more people pursue careers in our field. Recently, secondary education institutions have begun taking a more formal approach to integrating UVM into

their curriculums and programs. This is occurring both in the community college and the university setting. The UAA is working hard to partner with these institutions to help inform them on where educational gaps exist and what training could be developed to help us close them. Exciting and novel partnerships are being formed.

#### Growing Diversity of Thought

With the need for new members, recent advancements in our field have created a need to "grow our circle of friends." For example, our operations are capturing and creating data at historic levels. Many of us are formally trained in the natural resource sciences and excel at managing natural systems. Data management and data sciences often did not appear on a list of needed UVM skills or trainings. Data being gathered about the natural resources near our systems needs to be analyzed by both folks who understand the natural environment and folks who understand the data science and those folks should be working closely together to maximize effectiveness.

We also need researchers to help us quantify the impacts of our programs beyond financial results. Implementation of high-quality UVM through IVM approaches can have a positive impact on the environment. Often those positive environmental impacts go unmeasured and underreported. We are missing opportunities to help society understand the great work happening right in front of them.

#### Defining UVM Frameworks

In June, Phil Swart from the UAA Professional Development Committee utilized LinkedIn to ask for input from a large audience. His ask was seemingly simple: "Please write a definition for what a 'cycle' is in relation to utility vegetation management." Except it is not so simple, because the industry has yet to agree on a single definition for a cycle or what is or is not included in a cycle. The time has come to own our lexicon, processes, and definitions within our profession.

To be clear, this effort is not to drive how or when professionals in the industry make decisions for their programs and on their sites based on what each needs. Instead, this is an effort to level-set external understanding and increase access to our industry for folks like researchers interested in studying efficacy or programmatic outcomes at landscape levels and not be limited to a local-scale approach.

The annual strategic planning session concept bolsters our organization's vision and provides a framework to ensure we can continue to deliver on the UAA mission: "We will drive excellence, innovation, and improvement in utility vegetation management through professional development, outreach, research, and the use of best practices." If you have ideas or areas of interest you feel the UAA should be exploring, please share them with a board member, a committee chair, or the UAA team. ☘

*Dennis Fallon*

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## ENVIRONMENTAL STEWARDSHIP COMMITTEE UPDATE



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By Ryan Brockbank, Chairperson, and Caitlin Morrison, Vice-Chairperson, UAA Environmental Stewardship Committee

The UAA Environmental Stewardship Committee (ESC) provides opportunities for UAA members and industry experts to collaborate on environmentally sustainable solutions to utility vegetation management challenges. The ESC facilitates a culture of environmental sustainability within the UAA and throughout the UVM profession by providing environmental stewardship (ES) resources and working to fulfill the UAA Board of Directors' environmental vision.

The ESC continues another year of collaborative volunteer efforts focused on environmental sustainability solutions and resources to support the UVM profession. From our most recent survey results, we learned how important it is to keep producing and sharing informative ES materials. We will continue to deliver educational content based on the needs and interests of the UAA member base. The utility industry is ever-changing, and the ESC strives to identify and explore relevant topics to support you, the UAA members. We encourage and appreciate your feedback!

Below is a brief summary of our efforts over the previous year.

#### **Utility Arborist Newsline "Spotlight on the Environment"**

The ESC is responsible for providing the "Spotlight on the Environment" section for each *UAN* edition. Over the past year, experts from the committee or referred by the committee provided the following Spotlights:

- "Rights-of-Way the Right Way" by Amy Ferriter (September/October 2023)
- "Reflecting on the Past to Shape Our Future UVM" by Kimberly Laing (November/December 2023)
- "Are We Ready for Generation Z?" By Stan Vera-Art (January/February 2024)
- "How Thinking like a Blue Jay Can Support Your ESG Strategy" by Kieran Hunt (March/April 2024)
- "Environmental Stewardship and Safety" by Anna Davis

and Adrienne Jones (May/June 2024)

- "Utility Vegetation Management in a Changing Climate" by John Goodfellow (July/August 2024)

We will continue to deliver this column in each issue of the *UAN* and encourage anyone to reach out if they are interested in volunteering to write on a subject important to them and our profession.

#### **UAA Member Survey**

The ESC surveyed UAA members to reaffirm the perceived importance of ES in the UVM industry and to identify strategic and tactical priorities for the ESC to best support the UAA, its member base, and our profession over the next five years. Ninety-one members responded to the survey, which consisted of 15 questions and response rankings, including several questions related to respondent demographics, environmental reporting, and how respondents would prioritize ES initiatives. The results of the survey clearly reinforce that ES is important to our member base and that more information on best practices, resources, tools, and training for ES on rights-of-way is desired. The responses also indicate that members would like the ESC to help increase awareness and educate industry leadership, contractors, and the public on ES practices and benefits.

Thank you very much to those who took the time to complete the survey. The ESC is committed to delivering on many of these priorities and we look forward to continuing to update members on our progress, produce and share PSA videos, provide guidance articles, and work on ES best practices going forward.

#### **Public Service Announcement Videos**

The ESC is excited to announce that it is working with the UAA Board of Directors to produce two PSA videos over the next year and half: "Viewing ROW as Assets versus Liabilities" (2024) and "Business Case for IVM and ES"

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(2025). This year’s PSA videos will include interviews and success stories from utility companies who are managing compatible/incompatible vegetation for biodiversity in and along their ROW. We are eager to explore and share the different ways utility companies apply ES principles to manage ROW as assets versus liabilities and promote environmental sustainability. Please stay tuned for the production of the PSA videos, which will be posted in the online Environmental Video Library later this year.

**Guidance Document for Invasive Species Management**

Many vegetation managers are looking at shifting their IVM objectives to focus efforts on supporting structurally compatible plant communities on their ROW rather than focusing exclusively on preventing the encroachment of structurally incompatible vegetation to maintain minimum vegetation clearance distances. The UAA’s response to this request was to work with subject matter experts from the ESC to create a document that provides structure to the decision-making process. The decision tree provided in the guide is an excellent tool to determine control methods for non-native, noxious, and invasive species. The guide is titled “Considerations for Management of Structurally Compatible Species (Non-native, Noxious, or Invasive)” and can be found on UAA website at <https://tinyurl.com/UAASpeciesGuide>.

**Future Endeavors**

The ESC and UAA Board are collaboratively reviewing and discussing several strategic initiatives and future projects. We are utilizing the member survey results to help guide prioritization of these new endeavors. Below are several ES-related initiatives the committee is considering over the next five years:

- Develop industry ES standards and/or best practices.
- Provide strategies on how UVM/IVM programs can measure UVM-related ES performance to support broader utility sustainability or ESG commitments and reporting.
- Develop ES managerial tools (e.g., supporting business cases, success stories, long-term positive outcomes to stimulate ES and to aid those looking to engage in these activities).
- Develop and make herbaceous/woody shrub training and materials.
- Identify and/or develop tools and resources to map compatible and incompatible species on ROW.

This is an exciting time to be involved in the ESC! If you are interested in helping promote and improve environmental stewardship in UVM, please consider joining our committee. The committee meets virtually every six weeks and is a great opportunity to network and collaborate on common interests. Members are encouraged to join in on discussions and help produce relevant material published by the UAA. Please visit the UAA website (<https://www.gotouaa.org/uaa-committees>) for more information and to volunteer. †



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SAFETY TOOLS

# The Energy Wheel: Identifying Hazards and Closing the Gaps

By Paul Hurysz, Manager-UVM Human Performance Safety Consulting Services, Davey Resource Group, Inc.



There are a couple of facts that I believe that most safety professionals and operations managers in the arboriculture industry can agree on as it relates to the safety of their employees. The first being that hazard recognition is vital and/or critical to the safety of any crew or employee activity. Hazards certainly cannot be prioritized or controlled if they cannot first be identified. The second is that after decades of trying to improve work practices within our industry, we have not made enough headway as it relates to reducing serious injuries and fatalities. These types of unwanted outcomes are not only negatively impactful and devastating to the families involved, but also to the organizations in which these individuals are working. With that said, researchers have identified an opportunity for improvement in the arboricultural and, generally speaking, the construction industry that has the potential to make a difference when employees work in at-risk environments.

The opportunity has to do with high-energy-based hazard recognition and the utilization of a tool known as the

Energy Wheel (or in some circles, the STKY Wheel [Stuff That can Kill You]). Studies are revealing that workers are only identifying 45-percent of hazards in and around their work area before beginning work (Hallowell 2021). In other words, they identify and discuss fewer than half of the hazards that have the potential to affect them while they work. A study of a cross section of construction personnel, representing 23 different trades and worker experience levels ranging from zero to 43 years, revealed that hazards are typically missed for one or two reasons (Hallowell 2021):

1. The hazards are detectable but the individual cannot identify them.
2. The hazards weren't initially detectable given the information that they had available to them at the time.

To combat this problem, Dr. Hallowell and his team of researchers have created the Energy Wheel as a research-validated technique/tool to help us find high-energy hazards that we would naturally skip over for any number of reasons prior to beginning work. Almost all field work has at least one high-energy hazard present.

And when high energy is present and goes undetected, our potential to realize a significant injury or a fatality significantly increases. The Energy Wheel works by identifying potential sources of high energy during the pre-job briefing or before work begins. The wheel is intended to be used to prompt the brain to consider some hazards that would otherwise go unnoticed or unrecognized.

"The energy wheel has consistently improved hazard recognition skills by approximately 30-percent across industry sectors and trades" (Hallowell 2021).

Each of the ten high-energy sources that make up the Energy Wheel have the potential to create significant injuries or fatalities on our worksites. The objective here is to describe them in terms that we are all familiar with.

**GRAVITY:** The potential for objects (limbs, tools, logs) and for humans to fall. It is also known as the force that pulls things to the ground. For example, a human being can fatally injure themselves when falling with enough force from as little as four feet of height, or while

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standing on the ground.



**MOTION:** When objects or substances change position or collide during the course of work. Examples may include body position when bending, lifting, or straining. It may also include objects that move or collide with employees, such as vehicles, tools, equipment, trees, or limbs.



**MECHANICAL:** When the potential exists for an otherwise stationary piece of equipment or machinery to move. Examples may include when a chipper cutting head gets jammed up with debris, or when a rigging system (ropes/pulleys) that is under tension releases that tension.



**ELECTRICAL:** When the potential for electric shock or thermal burns exists. Examples may include induced voltage or electrical current flowing through conductive materials (and into our bodies causing internal damage and burns), such as powerlines, tree limbs, trunks, and root systems (ground potential), or even insulated tools in wet environments.



**PRESSURE:** When we have the potential for a liquid or material that is under compression/pressure or that could cause compression. Examples of these hazards could be hydraulic oil in hoses that are under pressure, or even soil next to a trench or an excavation area that caves in on an individual.



**SOUND:** The potential for hearing damage caused when energy is transferred into sound waves by force or by vibration. This potential exists because our jobsites are noisy and the threat of impact is underestimated over time. Without hearing protection, the average arborist will lose up to two-thirds of their hearing over their career.



**RADIATION:** The potential presence of harmful and invisible energy, such as bright light sources. Examples of these light sources can be sunlight, arc flashes, and welding arcs. Sunburns are painful, but skin cancer can be deadly.



**BIOLOGICAL:** The potential for living things to create health, safety, or security hazards. Examples of these types of hazards

may be wild animals and insect bites or stings (e.g., bees and ticks) that some of us may be allergic to. As humans, we may also be sensitive to certain plants, bacteria, or viruses. Physical attacks from others can also be considered a biological hazard.



**CHEMICAL:** The potential for physical harm or health hazards to occur to people or the environment. Examples of substances/products commonly used in our work environments include fuels (gas/diesel), oils (engine, bar, hydraulic), pesticides (which includes the use of herbicides), and cleaning products.



**TEMPERATURE:** The potential causes for heat or cold illnesses (heatstroke, frostbite, or hyperthermia) or other injuries related to temperature to occur. Examples include looking for hazards beyond weather, which might include when the friction between two objects leads to extreme heat that can cause burns (e.g., chain saw blades). Brush hog tractor blades, when they strike certain objects, can also cause wildfires, which can be very hazardous when combined with a sustainable fuel source.

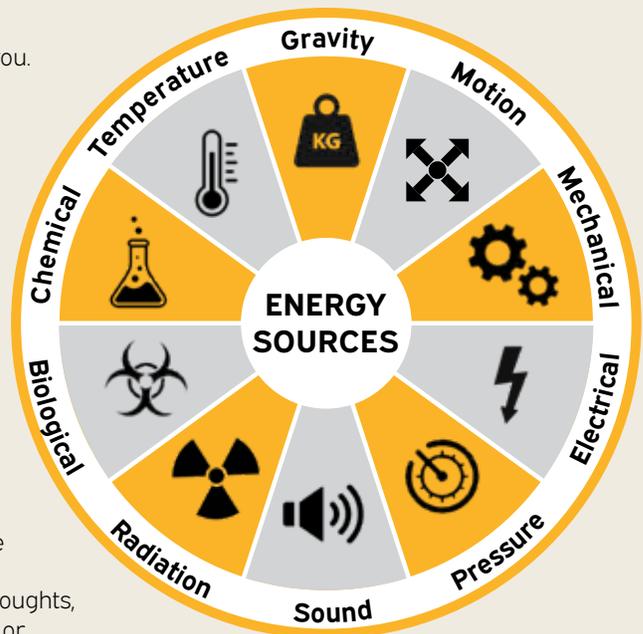
## HOW TO USE THE ENERGY WHEEL

**STEP 1:** Start by identifying the hazards that come easiest to you.

**STEP 2:** Use each slice of the Energy Wheel to close gaps, or identify unrecognized hazards when the easy hazards have been identified.

**STEP 3:** Prioritize and control the hazards found. Not all hazards and not all humans are created equally. As human beings, we all have different tolerances and susceptibility to different hazards (e.g., some people are more or less susceptible to temperature extremes, plant allergies, or even insect bites). Talk about those differences with your teammates as you build your control plans to mitigate the consequences associated with those hazards for the day.

Lastly, don't lose any sleep over which energy type each energy hazard actually is (e.g., Is it Radiation or Temperature?). The most important thing is that you identified it. Safety is not about the absence of events; it is about the presence of controls and defenses. The UAA Safety Committee wants to help you with these types of challenges, especially on important topics such as this one. If you have any questions, thoughts, or ideas, please feel free to reach out to the Safety Committee or directly to me ([paul.hurysz@davey.com](mailto:paul.hurysz@davey.com)).



Hallowell, M. R. (2021). "The Energy Wheel: The Art & Science of Energy-Based Hazard Recognition." *Professional Safety* 66, no. 12 (2021): 27-33. <https://onpetro.org/PS/article/66/12/27/473243/The-Energy-Wheel-The-Art-amp-Science-of-Energy>. †



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Our world and climate continue to change exponentially and are having a significant impact on rights-of-way. And because they provide habitat for a variety of desirable, native, and threatened species, the vegetation management industry looks to ensure their reliability and resiliency.

While oversight and regulations help, they are not enough. Each habitat is unique, with its distinct ownership paradigm, pollinators (compatible and incompatible), and migration season. So your VM focus and stewardship require an ongoing, deep commitment to understanding and supporting best practices with an emphasis on protection and compliance.

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At ARBORMETRICS, our mission is to improve the effectiveness of VM through safe, efficient planning, scheduling, and reporting services. And our PMI discipline and industry-leading technology help you balance government regulations with organizational requirements and environmental goals. Learn more by contacting (866) 685-1880 or [info@arbormetrics.com](mailto:info@arbormetrics.com). †

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## WOMEN IN VM



Jennifer Martin

## Jennifer Martin

### Branching Out: A Woman Who Sees Utility Vegetation through a Satellite's Eyes

By Jennifer Martin, Head of R&D, Satelytics, Inc.

**A**s a child, I was fascinated by all things science, especially what I could see when I looked up at night—stars, galaxies, constellations, planets. I was keen on science, but my gaze turned downward to rocks: geology. As I progressed through my undergraduate and graduate studies in geoscience, a deep fascination with remote sensing grew.

It is very typical for remote sensing experts to come out of the world of geoscience. I was just one who caught “the fever.” Thus, satellites and the science they could reveal resurrected my connection to space.

During my graduate studies, I focused on using remote sensing and spectroscopy to solve cross-domain problems, including vegetation management. Sometimes, a new spark of interest gets fanned into a flame; this happened in my case. I loved to explore what we could infer, measure, observe, and predict about vegetation just by looking at its spectral signature in satellite imagery.

I worked with well-known mentors in this field, including Dr. Quaofeng (Robin) Zhang, Dr. Haluk Cetin, and Dr. Lara Homsey-Messer. These Murray State University faculty helped me see infinite potential in studying chlorophyll through the eyes of a satellite-based sensor, 200–300 miles above the surface of the Earth.

Wise mentors throughout my life told me, “The secret of success is to take a passion, then make a career out of it.” After graduating with my Master of Science degree in geoscience from Murray State University, I taught others about geoscience and remote sensing as a professor at my alma mater. Then, I landed a job at Satelytics because of the curriculum I had been teaching.

In those early days, Satelytics was measuring the impacts of harmful algae blooms on Lake Erie—just another form of studying chlorophyll and its spectral signature from space. As the business grew, we expanded our offerings to water chemistry and vegetation measurements. These were natural extensions of what we did with tiny plants (algae) in water and the toxins they emitted. But, they also addressed a multibillion dollar need in the utility industry: vegetation management.

Fast forward to today, we now routinely measure tree species, tree height, tree health, and strike potential of trees in the vicinity of critical infrastructure, such as powerlines. I consider myself a good data scientist but not an expert arborist. Therefore, my education continues with our partners, ACRT Services, known as the utility industry’s tree experts. Together, we have taken satellite-based vegetation management to new heights (pun intended).

One of my passions now is to introduce the science of geospatial analytics and remote sensing to other budding young people, especially women, who are currently underrepresented in this field. Women in STEM face challenges, but that is mitigated by developing relationships with the right people who want to collaborate and see each individual as a valuable contributor.

At Satelytics, I work with a well-balanced team. I’ve found that success comes when one surrounds oneself with supportive colleagues, including managers and direct reports, mentors and mentees, advisors and those I advise. I aim to foster creativity, personal growth, and trust within my team. Without those ingredients, we couldn’t be defining the cutting edge of technology. †

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## OUTREACH COMMITTEE UPDATE

## Empowering Tomorrow: A Conversation with the Centre for Energy Advancement through Technological Innovation

By the UAA Outreach Committee

The Outreach Committee is publishing a series of interviews with organizations and individuals in utility vegetation management and affiliated industries. In this interview we spoke with Danielle McKay, marketing specialist with the Centre for Energy Advancement through Technological Innovation (CEATI), to learn more about CEATI and the important work they do.

CEATI is an international membership-based research organization focused on the current needs of the electricity industry. CEATI facilitates interest groups that cover various areas of the industry, including generation, transmission, and distribution. They host a vegetation management interest group that addresses environmental, public, and social issues related to UVM. The group emphasizes program management and development focusing specifically on regulatory requirements and compliance frameworks, strategies for public notification, program optimization, new materials and techniques, and responsible VM practices. The target audience for this group includes vegetation managers, arborists, line asset managers, and engineers.

The vegetation management interest group is just one of 23 specialized interest groups offered by CEATI. Other interest groups include energy and integration strategy, hydropower operations and planning, advanced distribution operations, asset management in T&D, health and safety, and others. These specialized groupings are one way CEATI members can benefit from the knowledge and experience of their peers.

CEATI also hosts a network of technical advisors that support each of the interest groups and offer

guidance to members. They guide the development of strategic plans for each group, validate the execution of group projects, and propose and review project ideas. The panel of technical advisors have extensive professional experience in key engineering and management roles in addition to having supported the industry through research efforts.

CEATI's mission is to address pressing operational and strategic needs in the utility industry with practical solutions and expert advice, and connect peers through knowledge exchange and collaborative R&D.

The following interview with Danielle McKay highlights the important work that CEATI does.

### Q1: What is your organization, where are you located, and why do you exist?

**McKay:** CEATI is a solution-driven network for power industry professionals. CEATI provides members with practical research, expert guidance, and forums for knowledge exchange. CEATI is headquartered in Montreal, Canada, but many staff work remotely throughout Canada and the U.S.

Utility-only interest groups offer a unique setting for members to share experiences and work together on issues spanning all critical areas of power generation, transmission, and distribution. CEATI facilitates collaborative R&D projects, customized workshops and training programs, benchmarking, webinars, and industry conferences that bring together leaders and practitioners to learn from each other and outside experts. Additionally, its library of 2,200+ technical reports and guidance documents reflects more than 35 years of client-driven research.

### Q2: Is there anything that you wish more people knew about your organization or the issues you are trying to solve?

**McKay:** Vegetation management is an area of critical importance to many CEATI members. It's Vegetation Management Interest Group supports utility members with vegetation program development and management, which includes justifying budgets, work planning, addressing regulatory issues, managing contractors, and setting standards and guidelines for work. You can see how CEATI helped one member improve their wildfire mitigation strategy here: <https://tinyurl.com/ManitobaHydro>.

With active participation from 4,000+ members at 155+ utilities worldwide, and supported by a team of technical advisors with decades of expertise in the energy field, CEATI's network gives members access to industry-leading intelligence and a cost-effective approach to inform and improve their decision-making.

### Q3: If I wanted to get to know the organization better, what are the best ways to learn more?

**McKay:** You can learn more at [CEATI.com](https://ceati.com). Sessions on vegetation management, as well as wildfire prevention and mitigation, will be featured at CEATI's 2024 Transmission & Distribution Conference, to be held November 19–20 in Palm Springs, California. The conference will focus on utility best practices, tools, and technologies to improve grid resiliency and reliability. 🌱





## A Journey in the UVM Industry: Brock Vinson

**B**rock Vinson's initial plans for college revolved around playing baseball. It wasn't until a couple of years later when a friend told Vinson about the Arthur Temple College of Forestry and Agriculture at Stephen F. Austin State University that he decided to make the switch and put his bat and gloves down.

Vinson recalls utility vegetation management careers being lightly advertised during career fairs but shared that he didn't understand the full scope of the industry until working in forestry for a few years postgraduation. He found his way to ACRT in 2015 and has found success along the way. Vinson, who now serves as a senior consulting utility forester II in Texas, was recently selected to participate in the ACRT Services Honors Program, a multiday leadership program dedicated to training up-and-coming employees throughout the organization.

Vinson credits his success to the seven individuals he works with daily. He shared, "Everybody on my direct team works well

together. I can depend on them, and they know that they can depend on me."

Often describing his duties as "organized chaos," Vinson has learned to embrace the ever-changing UVM environment by keeping stress to a minimum, acting on previous experiences, and using his talents to the best of his ability. He explained, "There's always something new and different to deal with. As soon as you start to expect something, it changes."

Working in the UVM industry on a large investor-owned system has given Vinson numerous opportunities to become familiar with different field operations. "If you are an operations-minded person, thrive on organized chaos, and like being out in the field, this industry is full of opportunities."

Learn more about our employee owners like Brock at [acrt.com](http://acrt.com). 🌱



Brock Vinson

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# Growing Futures: Job Corps' Impact on At-Risk Youth through Urban Forestry

By Jeremy Riemersma, Training Instructor, ACRT Services  
 Photos courtesy of ACRT Services



Jeremy Riemersma

As Job Corps marks its 60th anniversary in 2024, it's a momentous occasion to reflect on the incredible journey of transforming the lives of countless young individuals. As an urban forestry instructor at Northland Job Corps, I have witnessed firsthand the profound impact this program has had on students, particularly through the long-standing

partnership with ACRT. This collaboration has been instrumental in equipping our students with essential skills and providing invaluable community service.

## Rich History Rooted in the Civilian Conservation Corps

Job Corps' legacy can be traced back to the Civilian Conservation Corps (CCC) of the Great Depression era. The CCC was one of President Franklin D. Roosevelt's most successful New Deal programs, employing millions of young men in environmental projects. The CCC's achievements, such as planting over three billion trees and developing infrastructure in national and state parks, laid the foundation for modern

conservation efforts. Like the CCC, Job Corps has continued this tradition by offering at-risk youth the opportunity to acquire life skills, learn how to work cohesively, and thrive in various vocational fields.



## The Role of Urban Forestry in Job Corps

The Urban Forestry program at Job Corps is more than just a vocational training initiative; it's a comprehensive program that instills essential career success standards. These standards include communication, interpersonal skills, workplace relationships and ethics, multicultural awareness, information management, personal growth and development, independent living, and career and personal planning. These skills are critical in preparing students for successful careers and responsible adulthood.

Our program teaches students the fundamentals of urban forestry, from basic groundman duties to operating advanced machinery like bucket lifts and chippers. Safety is paramount, and students start with tasks such as job site cleanup before progressing to more complex responsibilities. This progression ensures they build the necessary physical and mental strength to perform their duties safely and effectively.

For organizations within our industry, the Job Corps program

is a way to give back, invest in the future workforce, and work towards making the industry safer.

## A History of Partnership and Support

For nearly two decades, ACRT has been involved with several Job Corps programs, providing not only expertise but also resources crucial to the program's training efforts. In previous years, this partnership enabled us to conduct the Job Corps Jamboree, an event comparable to a mini ISA Tree Climbing Competition, testing students' skills and resilience under pressure.

The jamboree was more than just a competition; it was a celebration of our students' hard work and dedication. Each center conducted its own local jamboree to select representatives for the national event. The competition featured six events designed to challenge students' abilities and professionalism. Employers, local officials, and the press attended, highlighting the importance of these skills in the professional world.

## Building Community and Practical Skills

Over the decades, Job Corps centers across the country have provided tens of thousands of dollars in tree services to their local communities. This community outreach not only enhances students' practical skills but also fosters positive relationships with the communities they serve.

## Empowering At-Risk Youth

Job Corps focuses on empowering at-risk youth, many of whom are referred to the program by local agencies. This targeted approach ensures that those in need receive essential support, guidance, and training to transform their lives.

Job Corps offers these young individuals an opportunity to escape negative influences. The program teaches disadvantaged and at-risk youth essential life skills crucial for personal and professional success. These skills range from basic communication and interpersonal abilities to more complex competencies, such as workplace relationships, ethics, and multicultural awareness.

## Preparing for a Bright Future

The demand for tree care professionals is growing, with an



estimated 173,000 new jobs needing to be filled by 2028, according to American Forests. Our urban forestry program prepares students to meet this demand by providing industry-recognized credentials from organizations like the International Society of Arboriculture (ISA), the Professional Landcare Network (PLANET), and the North American Board of Certified Energy Practitioners (NABCEP). Students also receive training in aerial rescue, basic first aid, and CPR, ensuring they are well-prepared for their careers.

Additionally, Job Corps provides a comprehensive support system for students, including career planning, job placement assistance, housing, health and dental care, and basic living allowances. This holistic approach ensures that students are well-equipped to succeed not only in their careers but also in their personal lives.

**Reflecting on Sixty Years of Impact**

As we celebrate Job Corps' 60th anniversary, it's important to



recognize the impact the Job Corps program has had on over three million alumni. The urban forestry program, in particular, has played a significant role in this legacy. Together, we have provided students with the skills, confidence, and opportunities they need to build successful careers and contribute positively to their communities.

Looking ahead, we are committed to continuing this legacy of excellence and expanding our impact.

With ongoing support from ACRT and other partners, we will strive to meet the growing demand for skilled professionals in the tree care industry, ensuring a brighter future for our students and the communities they serve.

**About the Author**

**Jeremy Riemersma** is a training instructor for ACRT Services at the Northlands Job Corps Center in Vergennes, Vermont. Riemersma has been with the organization since 2005 and holds an Associate of Applied Science in forest recreation from Paul Smith's College in Paul Smiths, New York. He's also an International Society of Arboriculture Certified Arborist and Certified Tree Worker Aerial Lift Specialist. 🌿



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**Elevating ECI's Comprehensive Employee Training Programs**

**E**CI is proud to offer comprehensive training programs designed to support employee growth and development throughout their careers. We are excited to enhance these programs further with the addition of Dr. Robert Vanderhoof, whose expertise in training and continuous education will bring valuable knowledge to our teams.

ECI currently provides a multitude of training programs to our employees, including:

- **Online Training Modules:** The mandatory training establishes baseline knowledge/skills on key safety and compliance standards, assigned annually to provide continuous refresher training.
- **New-Hire Training:** All new hires receive comprehensive training, both virtual and in-person, to lay a strong foundation for their careers at ECI. Training includes safety expectations, company policies, industry standards, and more.
- **Leader Training:** All leaders are trained annually to ensure they can provide high-quality support to their teams, receiving tools and resources necessary to help employees

develop the needed skills.

- **Certification Support:** Employees are encouraged to pursue additional certifications. ECI provides reimbursement for fees and materials to help employees prepare for and complete exams.

With Dr. Vanderhoof joining the ECI team, we are thrilled to enhance our ISA Certification Training Program in partnership with Tall Tree Learning, LLC. This program will be available quarterly to all employees looking to obtain their ISA certifications. This program includes study groups, additional learning materials, and personal guidance from Dr. Vanderhoof, reinforcing our commitment to professional development.

Dr. Vanderhoof will also conduct research to improve industry practices, focusing on using data to reduce tree-caused outages along utility rights-of-way. His findings will be shared at industry conferences and summits, positioning ECI as a thought leader and ensuring our employees are equipped with cutting-edge knowledge and skills. ECI is proud of its robust training program and eagerly anticipates Dr. Vanderhoof's valuable contributions. 🌿

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# The Impact of Winning the 2023 Nelsen Money

By Connor Neeser, Student at University of Wisconsin–Stevens Point

**W**inning a scholarship for college has been one of the most transformative experiences of my life. Beyond the financial relief, the scholarship has opened doors I never thought possible, and fundamentally reshaped my educational journey, personal development, and future aspirations—especially considering who is behind the scholarship I received: Nelsen Money.

## Financial Freedom

First and foremost, the scholarship alleviated the significant financial burden of college tuition. Like many students, I had concerns about accruing debt, and the prospect of graduating with a heavy student loan load was very stressful. With the scholarship covering a substantial portion of my tuition for a semester, I was able to focus more on my studies and playing college football rather than constantly worrying about finances. This financial freedom has allowed me to allocate resources toward essential expenses like books, supplies, and living costs, which has eased the stress of daily life as a college student.

## Access to Opportunities

Winning the Nelsen Money Scholarship has also granted me access to numerous opportunities that I would have otherwise missed. Many scholarships come with additional benefits, such as networking events, mentorship programs, and workshops. Through these resources, I have been able to connect with professionals in my field of interest, gaining insights and advice that have proven invaluable. This access has enhanced my understanding of industry dynamics from GIS, dendrology, and other advancing technology within the arboriculture and vegetation management industry, and has even inspired me to explore paths I had not previously considered. Like transferring



Connor Neeser

to the University of Wisconsin–Stevens Point, a UAA partner, and perhaps continuing with a focused certification in utility vegetation management. Moreover, the scholarship has encouraged me to seek leadership roles and internships. Knowing that I can represent an organization that believes in my potential has instilled a sense of responsibility and personal pride.

## Personal Growth

The journey to securing the scholarship also contributed to my personal growth. The application process was rigorous, requiring me to reflect on my accomplishments, aspirations, and values. Crafting essays that articulated my goals and experiences pushed me to think critically about my identity and future. This introspection has made me more self-aware and confident in my abilities.

Additionally, being recognized as a scholarship recipient has boosted my self-esteem. It validated my hard work and dedication, reminding me that others believe in my potential. This acknowledgment motivates me to strive for excellence in all aspects of my life, not just academics. I have adopted a mindset of continuous improvement, seeking out challenges and opportunities for growth.

## Career Aspirations

Winning the Nelsen Money Scholarship has significantly influenced my career aspirations. Knowing that I have the support of a reputable organization encourages me to pursue my goals with greater determination. Having been lucky enough to know Nelsen personally, his scholarship has inspired me to explore internships and research opportunities that align with my career interests. With financial support alleviating stress, I have the freedom to take risks and delve into fields that genuinely excite me.



# Scholarship

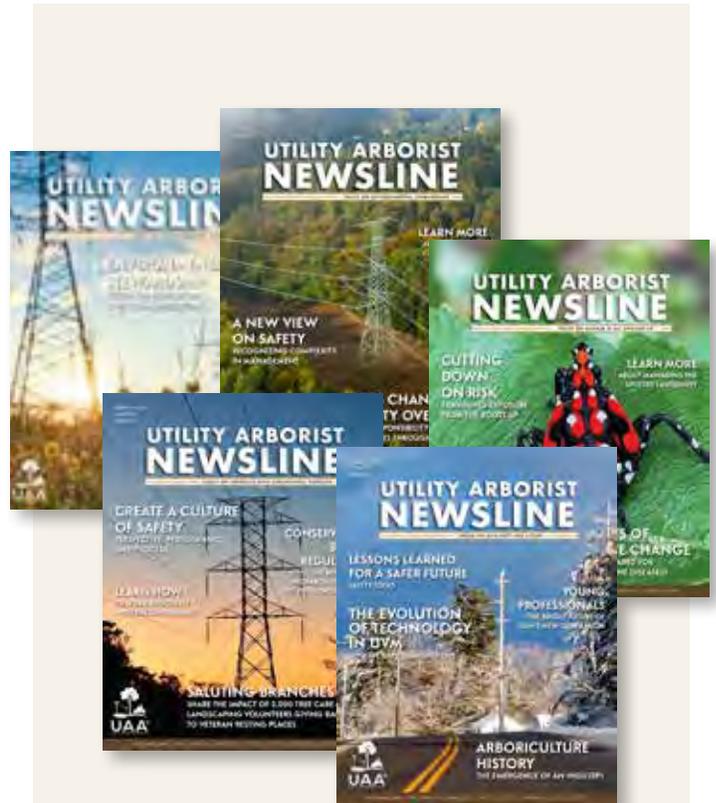
Moreover, Nelsen's scholarship has provided a solid foundation for my professional journey, not only because of financial aid but who he was as a person. A fierce employee who valued honesty and integrity—and an enjoyable, fun-loving fishing friend, too—and emphasized loving life and working in balance. I could see that even in my young eyes. The skills I have developed through leadership roles and networking opportunities have equipped me with the tools necessary for success in the workforce. As I prepare to enter the job market in the next year, I feel more confident and well-prepared, armed with both academic knowledge and practical experience.

## Conclusion

Being awarded the Nelsen Money Scholarship for college has had a profound and multifaceted impact on my life. From financial relief to personal growth, the scholarship has opened doors and fostered opportunities that have enriched my college experience. It has empowered me to pursue my passions, engage with my community, and prepare for a successful future. As I move forward, I carry with me not only the benefits of the scholarship but also a deep appreciation for the journey that has shaped me into the person I am today. 🌲



Nelsen and Pam Money



## Get your original photo published on the cover of the *Utility Arborist Newsline*!

We are encouraging members to submit their best photos representing professional utility arboricultural services, centered around the people who make up our incredible industry.

The selected photos, chosen by the UAA Editorial Committee, will be featured as the cover art for the 2024 *UAN* issues. Our goal is to showcase the diversity of the people and roles in the industry, whose commitment and dedication enrich the growth and practices of utility arboriculture.

These photos should be:

- Full page, measuring 7.5" x 9.875"
- Portrait mode, not landscape
- High resolution (300 dpi or higher)

Submit all photos to [newsline@gotouaa.org](mailto:newsline@gotouaa.org). The image deadlines for the remaining magazine issue are as follows:

NOV/DEC—September 23, 2024

We look forward to seeing your photos!



# Dynamic Partnership Equips Michigan's Returning Citizens for a Utility Arboriculture Career

By Mike Pittman, Assistant Business Manager, IBEW Local 17

Launched in 2019 at Parnall Correctional Facility's Vocational Village located in Jackson, Michigan, the DTE-IBEW Local 17 utility arboriculture program trains and equips incarcerated Michiganders for a skilled trades career in utility arboriculture to close the significant talent gap first identified by IBEW Local 17 and DTE Energy almost eight years ago. Standing up talent development pipelines help to fill this gap. These pipelines also open new career opportunities for people who haven't traditionally been electrical workers.

While there are systemic reasons for the lack of diversity in certain occupations, the opportunity to change this resulted in a first-of-its-kind utility arboriculture program for returning citizens. Together with the Michigan Department of Corrections (MDOC), IBEW Local 17, and DTE Energy founded a public-private

partnership that teamed up with Michigan utility arboriculture contractors to build out a program that addresses our workforce development needs, and simultaneously offers Michigan's returning citizens a second chance.

The MDOC's Vocational Villages—housed in the Parnall, Richard Handlon, and Women's Huron Valley Correctional Facilities—are a nationally sought-after model to support returning citizens that is reducing the staggering 50-percent national reincarceration rate average down to just seven-percent through skills-building and empowerment.

At its core, the Vocational Village concept is about finding the right returning citizen for the right employer at the right time. To complement this approach, our program offers day-one employment with a utility arboriculture contractor alongside immediate

placement in IBEW Local 17's Department of Labor registered line clearance tree trimming apprenticeship. Through this combination and a leap of faith by everyone, our program graduates have created prosperity for themselves and their families.

Corey Boerner graduated from the DTE-IBEW Local 17 program's inaugural cohort, and since then has achieved his journeyman card as well as additional industry certifications, including an ISA Certified Arborist credential.

"This program opened so many doors and led to so many opportunities for me," said Boerner. "I've created a career beyond what I ever imagined it could be, and now I'm doing the same for others in that position that I was in just years ago, and is what's important to me now."

While there were some initial concerns around creating a utility arboriculture training program in a prison, we addressed each challenge

and produced innovative solutions to each.

"There was concern about how to replicate the same high-quality training someone in the public would receive from IBEW Local 17 and DTE Energy," said Brian Friedman, principal of the Parnall Correctional Facility's Vocational Village. "A highly technical skill like utility arboriculture within the confines of a correctional facility had to be adapted to maintain the in-depth training required as well as ensure public safety."

Strict protocols for tool control and monitoring were established to prevent misuse/abuse in tandem with establishing a curriculum and student selection for such a program.

While our partnership inspired each member, the program demanded continuous improvement efforts to ensure this remained a win-win for our students, Local 17, the utility companies, and our Michigan utility arboriculture contractors.

"One significant finding we uncovered was the need for wraparound services was inversely proportional to the amount of family support, especially when it came to housing and transportation," said Terrell Lockhart, DTE Energy tree trimming manager. "In addition, we worked with the MDOC to educate our graduates' parole officers about the ins and outs of our industry, which resulted in adjusting



The program's outdoor climbing structure provides an additional, hands-on opportunity for students to apply their learning of knot tying and climbing.

© DTE ENERGY

© DTE ENERGY



The DTE | IBEW Local 17 tree trim training program's indoor climbing facility, featuring actual trees that are refreshed every few weeks, aims to provide students truly immersive learning opportunities to ensure a seamless transition into the real-world demands of the trade upon release.

regularly scheduled parole meetings to take place after working hours.”

Within the last year, MDOC, IBEW Local 17, and DTE Energy expanded their partnership to launch a returning-citizens mentorship program. By pairing successful graduates with recently released program participants, we are hopeful this will provide an additional layer of support in navigating the often complex path of rejoining society.

Since graduating in April 2020, Jeffrey Gunnells achieved his IBEW Local 17 journeyman card and additional industry credentials. Today, in addition to his utility arboriculture career, Gunnells volunteers as a mentor in the returning citizen mentorship pilot program.

“The MDOC’s investment in vocational training and

a mentorship program is more important than most understand. Advocacy is a key component for success in a returning citizen’s life. Many of those formerly incarcerated persons have had little to no support and it’s what allows them the opportunity to work and reconnect and provide for loved ones. This changes the lives of participants.”

Coordinating efforts among such a diverse group of partners demanded patience and a willingness to see things through.

“It takes time to foster and develop relationships with state agencies, organized labor, and large corporations like DTE,” said Friedman. “We agreed that the students’ instruction and training had to meet the safety and industry standards expected by IBEW Local 17 and the employers, which was balanced with this highest possible level of public safety.”

“Together with MDOC, DTE Energy, and our utility arboriculture contractors, we found common interests in providing quality training and employment opportunities for Michigan’s returning citizens,” said Mike Pittman, assistant business manager for IBEW Local 17. “When everyone works to achieve an agreed-upon goal, so much is possible.”

Participant learning journeys are individualized

to align with their release date, and program graduates gain immediate placement into IBEW Local 17’s U.S. Department of Labor registered apprenticeship program. Internal and external climbing structures support students’ real-world, hands-on learning as part of a utility arboriculture curriculum, that includes safety training and commercial driving license credentialing.

Graduates enjoy day-one, paid-to-learn employment with a Michigan utility arboriculture company and receive individualized wraparound services to equip graduates for successful futures.

Brian Finch graduated last fall, joining Lewis Tree Service in Mid-Michigan.

“I really felt lost in prison and wasn’t sure how I was ever going to make it,” said Finch. “When I saw the tree trimming program with opportunities to learn a trade and leave prison with tons of experience, I gave it one hundred percent.”

After working hard to complete advanced roping and rigging techniques, Finch went on to learn aerial rescue, first aid and CPR, EHAP, and became licensed through the Michigan Department of Agriculture and Rural Development in pesticide application.



Speaking to the current cohort of Parnall tree trim students, alongside DTE Energy program manager Terrell Lockhart (middle, behind), IBEW Local 17 journeymen Corey Boerner (left) and Jeffrey Gunnells (right) share their success since graduating from the program’s inaugural cohort in April 2020.

“Along with all of that, I also earned four ground operations certifications! All of this has given me a sense of pride in what I can accomplish, and I am so grateful for everyone involved in the Parnall tree trimming program for opening these opportunities for me to succeed.”

Participating in the training programs has had a profound impact on graduates beyond their careers. Gunnells attributes his IBEW Local 17 benefits to helping himself and his children heal from his long absence from his family while incarcerated.

“Being gainfully employed and the great IBEW benefits allows me to contribute to my children’s well-being and

© DTE ENERGY



IBEW Local 17 assistant business manager Mike Coates hears from Scott Steffes just before his successful completion of the program and release in January 2023.



IBEW Local 17 and DTE Energy teams building the exterior climbing facility inside Parnall Correctional Facility’s Vocational Village in 2019.

development,” said Gunnells. “My union benefits provide us the therapeutic support for our mental and emotional health as well as our healing. Knowing that my employment nurtures our relationships gives this second chance even more meaning—it allows me to make a difference in my children’s lives. I am profoundly grateful for the program that allowed this to happen.”

The numerous positive impacts on Michigan’s

economy all stem from pairing a returning citizen with employment, which increases their ability to achieve prosperity for themselves and their loved ones and decreases the likelihood of reincarceration. The rippling effect of this goes well beyond the returning citizens themselves and benefits both their community and our state.

Initiatives that remove barriers to employment and connect people to life-changing opportunities should be shared and replicated. The MDOC’s Vocational Village program was taken up in Alabama and in other states, such as Pennsylvania, who are running similar approaches to successfully transitioning returning citizens into contributive community members.

Creating these programs takes a lot of ongoing collaboration; however, it’s



© IBEW LOCAL 17

Recent Parnall tree trim graduate Brian Finch placed with Lewis Tree Service, which serves the greater Grand Rapids and surrounding communities.

some of the most satisfying work we do. Building out these types of initiatives demands an incredibly special kind of determination and commitment to navigating challenges. Yet in the end, the combination of our partnerships and perseverance has simultaneously addressed a workforce talent need and met our communities’ need

for prosperous employment opportunities. Win-win partnerships between labor, government, and business can bring about innovative solutions that can also address systemic, long-standing societal challenges. Our partnership is proud of all we have achieved, and we welcome sharing our learnings with others to empower the success of all. 🌱



Parnall Correctional Facility’s Vocational Village Principal Brian Friedman (right) tours DTE Energy Vice President Ryan Stowe through the learning facilities and program offerings.

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CONFERENCE 2025 | SEPT 9-11



## Trees & Lines Explores UVM Educational Programs across North America

“Everybody can find a space and a job that can bring them alive,” Butte College’s Annie Rafferty mused on the *Trees & Lines* podcast. “That’s our role as educators, and as employers as well—to tap that talent and find out, ‘What brings you alive?’ Because your spirit, your skill, and knowledge are going to contribute to the bottom line here for us all to be successful together.”

From inspiring young talent to providing career growth opportunities for more established UVM professionals, education is essential to the future of our industry. That fact isn’t lost on *Trees & Lines* hosts Dr. Phil Charlton (UVM veteran) and Tej Singh (Iapetus Infrastructure Services COO). It’s why in-depth conversations focused on education—like our chat with Rafferty about the California Community College Utility Line Clearance Arborist training program—are commonplace on the podcast. Larry Abernathy, who helped develop the curriculum for that program, also joined *Trees & Lines* to talk about the value of UVM education.

“The trainees coming out of this class will probably know more and have better skills than someone who’s been on the job six

months that started the old-fashioned way, the way that most of us start,” Abernathy explained.

Other educational programs we’ve explored on *Trees & Lines* include Dr. Robert Vanderhoof’s Tall Tree Learning, LLC, which helps UVM professionals earn ISA certifications, and University of Wisconsin–Stevens Point’s comprehensive UVM Certificate Program, which is 100% online and asynchronous.

“You’re learning from different perspectives, from people outside your own bubble who are dealing with the same challenges you’re dealing with and may have different perspectives or different ways to go about that,” UAA Executive Director Dennis Fallon said of the UWSP program.

As we continue the conversation around UVM education, we hope you’ll join us! Head on over to [treesandlines.com](http://treesandlines.com) to listen along. 🎧

**TREES &  
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# 2022 PinE Award Recipients

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## Cultivating the Future: How Education and Innovation are Transforming Utility Vegetation Management

By Robert Vanderhoof, PhD, Research and Consulting SME, Environmental Consultants, Inc.

**F**inding the labor force with the skills necessary to satisfy the rapidly rising demand for utility vegetation management services continues to be a serious challenge for most contractors. Currently, utilities spend more than 8 billion dollars annually on vegetation management, representing the largest line-item expenditure in their annual operating budgets. Moreover, market analysis suggests costs for UVM have been increasing at a rate of seven-percent a year since 2008 (Williams 2022). Achieving net-zero carbon emissions by 2050 will require companies to double their investment in transmission lines and other infrastructure by 2030 (Barth et al. 2024). Much of that investment will largely go to UVM providers to hire, plan, manage, and execute vegetation treatments for utilities.

Until recently, the specialized skills required for UVM work were primarily possessed by its practitioners. Unfortunately, a Department of Energy study shows that by the end of this year alone more than 25-percent of those practitioners will be retired. Where will necessary new skill sets come from? Fortunately, there is hope on the horizon.

Community colleges and universities in cooperation with industry organizations across the country are beginning to not only offer training but are also raising awareness that a career in UVM can be both exciting and rewarding. Opportunities to learn high-demand job skills in UVM are beginning to appear across the country. Community colleges, like Butte College in California, Mid-State Technical Institute in Wisconsin, and Alpena Community College in Michigan (to name a few), are all

providing essential training in entry-level utility arborist skills.

The University of Wisconsin–Stevens Point (UWSP), in cooperation with the Utility Vegetation Management Association (UVMA) and the Utility Arborists Association (UAA), has gone a step further with its UVM Certificate Program. This one-of-a-kind program provides comprehensive training beyond basic arboricultural skills, including foundational knowledge of the North American electrical grid and its operation. It extends from individual tree care to managing the utility forest as a system using integrated vegetation management.

The UVM Certificate Program covers UVM program and project management skills, such as time and material estimation, work scheduling, budget estimation, and procurement. It also goes beyond simple customer relations to include stakeholder management, effective communication, and compliance with federal, state, local, and NGO regulations.





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Supports original research that creates a safer work environment for people working in the tree care industry and the general public they serve.

**John Z. Duling Grant Program**

*up to \$25,000 (minimum \$10,000)*

Provides start up or seed funding to support innovative research and technology transfer projects.

**Hyland R. Johns Grant Program**

*up to \$25,000 (minimum \$10,000)*

Supports research that directly affects the work of industry professionals.

**Jack Kimmel International Grant Program**

*up to \$10,000 (minimum \$5,000)*

Provides funding for arboriculture research by applicants working primarily outside of the United States.

**Tree and Soil Research Fund Grant Program**

*up to \$10,000 (minimum \$5,000)*

Supports projects with research of interest to the landscape architecture community with special focus in the area of trees and soils that support them.

## ADDITIONAL TREE FUND GRANTS

- Utility Arborist Research Fund Grant Program
- Barborinas Family Fund Grant Program
- Ohio Chapter ISA Education Grant Program

If you are a company, chapter, or individual seeking to expand your research or educational mission through an endowed fund, please reach out to Paul Putman at [pputman@treefund.org](mailto:pputman@treefund.org)

Our next grant application cycle begins on January 15, 2025. See website for details.

Additionally, beyond safe work habits, it emphasizes developing a culture of safety within an organization. Above all it is designed to instill the leadership skills necessary to move beyond utility arboriculture toward a more holistic, integrated, system-based approach to the business and science of UVM.

Technological advances in UVM, however, are increasing at a rapid pace. Advances in field data collection and workflow management technology, LiDAR, high-altitude imagery, and artificial intelligence are all poised to fundamentally change our approach to UVM. A changing climate and current market forces are pointing toward higher demand for renewable low-carbon energy sources, sources often located far away from peak demand centers. The need for an expanded, more reliable, and safer electrical grid has forced a growing awareness among utilities that UVM is changing—an awareness that UVM contractors may have more to bring to the table than simply the lowest price.

In keeping pace with the rapidly expanding opportunities in UVM, UWSP is looking to expand its training opportunities even further. Discussions with the UAA are currently underway to grow the current program beyond a certificate into a college credit offering, streamlining the existing curricula and including additional skills in safety, fire science, and meteorology as well as the business of running a utility. College credit-bearing courses would open opportunities for veterans and nontraditional students in the UVM industry for tuition assistance and provide exposure to the UVM industry for students in forestry seeking traditional four-year degrees.

UWSP boasts the largest undergraduate program in natural resources in the country and graduates more forestry majors than just about any other four-year college. Exposing incoming freshman to the UVM Certificate Program as electives for college credit has the potential to expose future foresters from UWSP and other universities to the abundant career opportunities in UVM, attracting highly skilled and highly trained graduates into the UVM workforce of tomorrow. Graduates trained not only in forest management but in fire science, remote sensing technologies, data analytics, project management, effective communication, and the myriad of other skills outlined by the UVMA back in 2014, along with the new skill sets that will be needed in 2064.

The benefits of such a program are many. For utilities, vegetation management is their largest and fastest-growing annual maintenance expense, and it directly affects the safety and reliability of service to nearly every electric customer. With stakes that high, professionalism may once again be able to compete with price point. For those seeking careers in natural resource management, awareness of UVM as a career path opens new opportunities in an increasingly competitive field. For practitioners, no longer will those seeking a career in utility vegetation management be relegated to on-the-job training to acquire the skills necessary to run successful UVM programs. They will now have curricula available to them curated by a

generation of leaders and managers who have hundreds of years of collective experience in UVM. Contractors and utilities alike will no longer have to worry about having the in-house capacity to develop and deliver comprehensive and necessary UVM training.

What began in 2014 as the brainchild of Neil Thiessen and a few visionary UVMA industry leaders, armed with a 42-page wish list of essential knowledge for experienced UVM managers, has evolved into a comprehensive, industry-owned and industry-led training program for the next generation of UVM professionals. Developed in collaboration with professional educators, this program is designed by UVM professionals for UVM professionals. The future of utility vegetation management has never looked brighter.



Dr. Robert Vanderhoof

#### About the Author

**Robert Vanderhoof** earned his PhD from the College of Forest Resources at Mississippi State University in 1995. A veteran natural resource manager in wildlife and range management, Vanderhoof spent 15 years as a Utility Vegetation Supervisor for PacifiCorp. An ISA Board Certified Master Arborist and Certified Utility Specialist, he currently serves as Research and Consulting SME for ECI and also teaches urban and community forestry at University of

Wisconsin–Stevens Point. Vanderhoof also heads up Tall Tree Learning, LLC, which specializes in preparing students for ISA certification as arborists and utility specialists. Winner of the UAA Education Award in 2023, Vanderhoof currently sits on the UAA Board of Directors, has written several articles on natural resource management, and routinely speaks on UVM issues.

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## TREE Fund 2024 Scholarship Awardees

By Jonathan Cain, Communication and Engagement Manager, TREE Fund



**T**ree Research and Education Endowment Fund (TREE Fund) is proud to announce its 2024 scholarship program recipients.

Six scholarships have been awarded from TREE Fund's spring application cycle, which received 29 student applications. Each scholarship is worth \$5,000. Of the six scholarships given, two were for the Robert Felix Memorial Scholarship and one each for the Bonnie Appleton Memorial Scholarship, John Wright Memorial Scholarship, Will Nutter Memorial Scholarship, and Fran Ward Women in Arboriculture Scholarship.

The Robert Felix Memorial Scholarship, which supports college students studying arboriculture, urban forestry, or related fields with the intention of entering arboriculture, was awarded to two students, **Earielle London** of Southern University and A&M College and **Taylor Law** of Portland Community College.

The Bonnie Appleton Memorial Scholarship supports college students studying arboriculture, urban forestry, horticulture, nursery management, or a related field with the intention of becoming a professional in one of these fields, and was awarded to **Jakob Van Berkomp** of South Dakota State University.

The John Wright Memorial Scholarship supports high

school seniors and returning college students pursuing careers related to arboriculture, and was awarded to **Bailey Nez** of Dartmouth College.

The Will Nutter Memorial Scholarship, which supports the utility forestry and arboriculture industry by helping college students interested in those fields achieve high academic goals without accumulating burdensome debt, was awarded to **Gabriel Koelzer** of West Virginia University.

The Fran Ward Women in Arboriculture Scholarship, which supports female college students enrolled in programs related to the practice of arboriculture and urban forestry, was awarded to **Alexandra Cseri** of the University of Rhode Island.

TREE Fund is a nonprofit organization whose mission is to support scientific discovery and dissemination of new knowledge in the fields of arboriculture and urban forestry. TREE Fund promotes scientific inquiry designed to benefit commercial, residential, utility, and consulting arborists, urban foresters, and other professionals in related fields in their shared work to create, support, and sustain vibrant urban canopies. TREE Fund offers nine grants and six scholarships each year. More information can be found at [www.treefund.org](http://www.treefund.org). 🌳

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## SPOTLIGHT ON THE ENVIRONMENT



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## Environmental Law: Get Ready for a Wild Ride

By Lawrence J. Kahn, Director—Utility Vegetation Management Institute, Tulane University

**E**nvironmental law. We all think we know what it means, but even lawyers who specialize in it—and the Environmental Protection Agency (EPA) that regulates it—struggle to define it. Essentially, environmental law concerns the interactions between humans and the planet, including managing Earth's resources, both living and inanimate. There's a very real purpose to environmental law: We are trying to ensure that future generations of people—our own children, grandchildren, and great-grandchildren—will be able to have clean air and water, unpolluted land, wildlife diversity, and healthy food. We create environmental laws and regulations to fulfill these desires, and in part because our predecessors fell short and we want to do better.

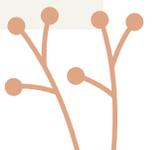
Utility vegetation management (UVM) is closely linked to environmental law, requiring UVM managers to navigate complex regulations while balancing operational needs with environmental protection. Staying informed about environmental regulatory interpretation and enforcement is crucial. UVM managers often consult legal experts, attend training, and monitor updates from agencies like the EPA. Regulatory changes have required UVM managers to adapt, ensuring their work doesn't harm protected species and complies with legal requirements, all while supporting conservation efforts. This evolving legal landscape has provided many opportunities for professional arborists, enriching the field's expertise and U.S. history itself.

When did environmental law in the U.S. begin? It's unclear. Native Americans practiced sustainable

agriculture, animal husbandry, and hunting and gathering for thousands of years and admirably developed a decision-making philosophy that provided a stewardship model that considered the needs of the next seven generations. The world's first national park, Yellowstone, was created in 1872 by President Ulysses S. Grant, and others like Sequoia and Yosemite followed in the 1890s and later. Arguably, the National Park System was developed for the "environmental purpose" of preserving nature, but the terms "environment" and "environmental" as they are known now hadn't been coined yet.

The care of our nation's natural resources actually traces back to the earliest days of our Republic. The U.S. General Lands Office was created as early as 1812 under President Madison to manage government-owned lands for the benefit of future generations. The Forest Reserve Act of 1891 under President Harrison began the process of creating and preserving national forests (largely for timber purposes), and The Rivers and Harbors Act of 1899 under President McKinley prohibited polluting rivers and harbors, and from damming or altering waterways. The Lacey Act of 1900 prohibited selling illegally hunted animals across state lines. President Teddy Roosevelt famously expanded many of these environmental laws and agencies, and created the U.S. Forest Service in 1905.

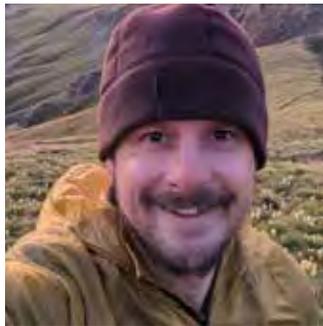
President Wilson (1913–1921) propelled the development of environmental law. The early twentieth century's fashion industry grossly affected bird populations, threatening and causing extinction to many. To save wild birds, the U.S. and Great Britain (on behalf



## Spotlight on Grow With Trees' Boardroom Branch

**G**row With Trees (GWT) launched its Boardroom Branch under the leadership of Program Manager John Steelman in August 2023. The Boardroom Branch works with companies to understand their natural capital, evaluate biodiversity-related risks and opportunities, and build long-term sustainable business operations through integrated vegetation management, holistic planning and reporting, and proactive stakeholder engagement.

**John Steelman** joined GWT as a Project Specialist in 2017 and has since developed an analytical focus concentrating on utility biodiversity exposure



John Steelman

evaluations, long-term strategic IVM planning, and sustainability reporting that links IVM and biodiversity as management and material topics. Steelman has a background in forest operations, serving for seven seasons as a forest mensuration specialist and

supervising sawyer with the U.S. Forest Service in the Rocky Mountains.

His forestry skills followed him to Ethiopia, where he served as an agricultural volunteer with the Peace Corps for two years in a small coffee-farming community nestled within a UNESCO Biosphere Forest Reserve. Bottom-up community development in rural Ethiopia taught Steelman the importance of relationship building, cultural exchange, and the snail's pace of behavioral change. Wanting to explore development aid from a different perspective, he extended his service for an additional year with Catholic Relief Services, then Ethiopia's largest nongovernmental food distributor. Based in the bustling capital city, Steelman explored the world of top-down development assistance through the lens of multimillion-dollar USAID project management, focusing on food development assistance and disaster risk reduction programming.

With a newfound passion for humanitarian aid, Steelman returned to the Rocky Mountains to study clean water systems with the goal of returning to the country that gave him so much. This is where his

Ethiopian family would smile and say, "If you want to hear God laugh, make plans." In Colorado, Steelman met his wife and reacclimated to Western life. He also found himself once again working in vegetation management. Seven years later, with no regrets, he is grateful to be living with the comforts of reliable electricity and clean water, and is passionate about his work enhancing IVM systems that affect hundreds of thousands of acres.

"Given the quickening pace of global biodiversity loss and humanity's dependence on natural systems for ecosystem services, it is increasingly important that companies and individuals manage their natural capital to provide benefits beyond compliance," said Steelman.

This year, the Boardroom Branch is expanding to meet the needs of GWT's clients. **Faith Brown** joined GWT in February 2024 as an IVM and ESG Specialist. She studied environmental science at the



Faith Brown

University of Delaware and received a graduate certificate in geographic information systems. She is using this expertise to perform environmental modeling, vegetation monitoring (with a focus on compatible species), and technical assistance to utilities participating in conservation programs, like the Monarch CCAA.

Brown currently lives in South Jersey, where she is an amateur birder in her free time and likes to walk with her dog, Corn Muffin. She is passionate about fostering native species in the "little spaces" in between, like backyards and ROWs. This is what attracted her to GWT and its mission to support utilities in enhancing biodiversity and providing positive change on the ground.

The GWT team is proud to partner with our utility clients, whose unwavering commitments to IVM and biodiversity conservation set them apart as leaders in the industry. We look forward to strengthening and adding to these relationships in order to deliver tailored strategies that help create environments where both humans and nature thrive.

Interested in chatting? Contact us at [support@growwithtrees.com](mailto:support@growwithtrees.com).

of Canada) agreed on the first international environmental treaty, the Migratory Bird Treaty Act (MBTA) of 1916, enacted into law in Canada in 1917 and the U.S. in 1918—making it illegal to pursue, hunt, take, capture, kill, or sell living or dead birds or their parts, including feathers, eggs, and nests. The hat industry challenged the MBTA before the Supreme Court in the 1920 case *Missouri v. Holland*, and the Supreme Court confirmed that Congress had the power to ratify treaties by enacting domestic legislation to implement international agreements. The MBTA was later expanded to include Mexico, Japan, and Russia (and Canada in its own right), and remains today. Ultimately, other animal protections including the Bald and Golden Eagle Act in 1940 under President Franklin Roosevelt, and the Endangered Species Act (under Presidents Johnson and Nixon) entered into U.S. law.

The MBTA introduced a new concept in environmental law: strict liability crimes. Ordinarily to be found guilty of a crime, it's necessary to have both *actus rea* (a “guilty act”) and *mens rea* (a “guilty mind”). Without both, there may be wrongdoing but no “crime.” But in the MBTA, any violation is automatically a crime—the prosecution need only prove the *actus rea* component. This is why, when performing tree work, it is so important to keep a lookout for birds and nests.

Numerous major events in the '50s, '60s, and early '70s led to sweeping change in environmental law to create the laws we know today. These included:

- **Keep America Beautiful** (1953)—Founded by corporations and civic leaders to fight littering, and successfully turned public consciousness with its 1971 “Crying Indian” ad campaign
- **Radioactivity Exposure** (1954)—the 23-man crew of the F/V Lucky Dragon 5 became exposed to radioactive fallout from a hydrogen bomb test at Bikini Atoll
- **Rachel Carson's book *Silent Spring*** (1962) discussed the effect of pesticides on birds and other wildlife
- **The 1965 lawsuit *Scenic Hudson Preservation Conference v. Federal Power Commission*** blocked the construction of a power plant on Storm King Mountain in New York
- **The Santa Barbara Oil Spill**—a catastrophic ocean pollution event in 1969 from an offshore well

These major events led to hundreds of environmental laws under both President Johnson (1963–1969) and Nixon (1969–1974), including the Clean Air Act of 1970; the National Environmental Policy Act of 1970; the Water Pollution Control Act of 1972; the Marine Protection, Research, and Sanctuaries Act of 1972; the Federal Insecticide, Fungicide, and Rodenticide Act of 1972; and the Endangered Species Act of 1973. Environmental legislation continued under President Ford with the Safe Drinking Water Act of 1974, the

Toxic Substances Control Act of 1976, and the Resource Conservation and Recovery Act of 1976. More major developments arrived under President Reagan with the Comprehensive Environmental Response, Compensation, and Liability Act (i.e., the Superfund Act) of 1980.

Throughout the late '80s and early '90s (under Reagan and Bush), nearly all major environmental developments were results of lawsuits filed and heard before the federal courts, especially the Supreme Court, and new federal acts were largely aimed at modifying existing laws. These lawsuits shaped the policies of the numerous federal agencies responsible for enforcing U.S. environmental laws, leading to regulations that in turn influenced state policies and laws, enforced by various state agencies.

Through this period, most environmental laws were viewed as nonpolitical and enjoyed bipartisan passage. In fact, the foundation of most current environmental legislation was passed during Republican-led administrations. An interesting change occurred in a 1984 case called *Chevron, USA, Inc. v. Natural Resources Defense Council*, in which an environmental group (NRDC) challenged an EPA interpretation of the Clean Air Act that benefited an oil major (Chevron). The Supreme Court's decision sided with the EPA and against the environmental group, saying that the EPA was entitled to deference in its interpretation of the law. This became known as the “Chevron Doctrine.”

This summer (2024), the U.S. Supreme Court, in a case called *Loper Bright Enterprises v. Raimondo*, overturned its decision in *Chevron*, leaving many wondering what the future of environmental regulation will be. The best way to anticipate what's next is to view these cases in the context of the federal system.

The U.S. Constitution established a system of checks and balances among three equal branches of government. Congress holds hearings then drafts and passes laws, the President enforces the laws through federal agencies, and the Supreme Court ensures the laws and regulations align with the Constitution. Congress rarely passes laws that require no interpretation by executive agencies. Recognizing this, Congress passed the Administrative Procedures Act (APA) to guide federal agencies in enacting and enforcing regulations, including holding public hearings and addressing citizen concerns.

In *Chevron*, the Supreme Court addressed whether an agency exceeded its authority due to a gap between Congress' intent and the agency's regulations. Experts for both sides testified and ultimately the Court decided that courts should defer to the federal agency's expertise in interpreting Congress' intent. While this benefited agencies with respect to challenges to their authority, it did not give them unchecked power. They still had to comply with the APA, act reasonably, and connect their actions to Congress' explicit will when such gaps appeared.

In *Loper*, the Supreme Court reversed its holding in

*Chevron*, determining that *Chevron* improperly gave agencies deference with regard to legal interpretations, a role the Constitution reserved for the judiciary. The Court confirmed agencies should still receive deference on factual determinations, but legal interpretations regarding Congress' will or the Constitution itself are for the Court to decide without favoring either litigant's point of view.

As a result, *Loper* potentially increases the ability of parties to successfully challenge agency regulations and rules. Under *Chevron*, courts rarely invalidated agency interpretations due to "Chevron deference." Now that there is no such deference, what will happen to environmental law and regulation? There is no clear answer, but it is known that many regulations face opposition from various interest groups, and now agencies will need to defend their policies as legitimate interpretations of congressional intent.

In truth, most regulations, even if unpopular, are usually fairly within agency authority and comply with the APA. Therefore, most challenges are likely to fail, and so most of these regulations will remain in place. If agencies exceeded their authority or took improper steps in creating regulations though, courts are now more likely to find a basis to overturn or limit these regulations. Courts are also now freer to more closely examine potential agency overreach or errors, and can determine that problematic regulations need to be negated or reformed.

Generally, when an agency regulation is challenged, courts try their best to preserve the existing situation (the *status quo*). If a challenge concerns a new agency regulations or rule, the court might issue an injunction preventing enforcement by the agency until a legal decision is made. For already existing agency regulations and rules, though, preserving the *status quo* might allow continued enforcement (based on the presumption that the regulation or rule was valid).

Federal agencies are represented in court by government lawyers, so the cost of legal action doesn't have a direct impact on the budgets of agencies, but it will take the time of agency officials away from their ordinary work in order to respond. This could potentially result in either decreased agency enforcement actions or, possibly, the need for agencies to hire more personnel (which would enlarge the budget) in order to accomplish their missions. Certainly, though, there'll be a need for more government lawyers representing agencies with regard to regulatory challenges, and this could potentially raise taxes.

While it is possible

some agencies have occasionally abused or mismanaged their authority, at present, there is insufficient neutral academic research to suggest that agencies were deliberately creating regulations and rules that exceeded their authority in reliance on *Chevron* deference to give them cover. Certainly if there were such cases, then the result in *Loper* may very well be the healthy cure that was needed, even if it comes at the high cost of testing and challenging valid efforts by regulatory authorities.

#### About the Author

**Lawrence J. Kahn** is a member of the bar of the state of New York and an adjunct professor at Tulane University Law School, where he also serves as the Director of the Utility Vegetation Management Institute, a division of the Center for Environmental Law. He is a member of the UAA, the ISA, and the Energy Bar Association, and is the facilitator of the Vegetation Management Working Group of the International Wildfire Risk Mitigation Consortium, among other professional affiliations.

This article represents Kahn's personal views and is not legal advice and should not be taken as legal advice, nor should it be interpreted as the official position of any organization associated with Mr. Kahn. ♪



**GROW WITH TREES**

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# Utility Arborist Research Fund: Recent Grants

By Paul Putman, PhD, President/CEO, and Dan Herms, PhD, Research and Education Chair, Tree Research and Education Endowment Fund

**T**ree Research and Education Endowment Fund (TREE Fund) and the Utility Arborist Association established the Utility Arborist Research Fund (UARF) in 2010 to finance work with real importance and benefit to utility tree care professionals. In 2017, the UARF endowment reached its one-million dollar activation goal, and the first grant under this program was awarded in 2018. TREE Fund manages the UARF endowment and administers all research grants awarded, while the UAA Research Committee advises TREE Fund with respect to research priorities. Grant applications are reviewed by an anonymous committee of researchers and utility arborists to ensure that funded projects are both academically rigorous *and* will be of use to utility arborists. We are pleased to share the results of research that was funded several years ago as well as research results being shared later this year and in the future.

## CHARACTERIZING THE RISK OF ELECTRICAL CONTACT TO ARBORISTS

### TREE Fund Grant: 21-UARF-01

In 2023, John Goodfellow (BioCompliance Consulting, Inc.) and John Ball, PhD (South Dakota State University), shared their findings from a review of the twenty-year history of electrical injuries and electrocutions of arborists engaged in arboricultural operations. Others contributing to this report included B. Don Russell, PhD (Texas A&M University); Mark W. Kroll, PhD, FACC, FHRS, FIEEE, FAIMBE (University of Minnesota and CAL POLY at San Luis Obispo); and John Skog, EE, PE (Maintenance Test and Engineering, Inc.). Surprisingly, prior to this study there had been little research on the root causes of electrical contact incidents resulting in injuries and electrocutions to arborists.

As summarized in their report, which is available on the TREE Fund website, the project focused on five basic questions:

1. What arboriculture activities create electrical exposure?
2. What is the relative frequency of arborists' electrical exposures?
3. What levels of exposure to voltage and currents are associated with arboricultural work?
4. What are the consequences of adverse electrical exposure to arborists?
5. How can the likelihood of adverse electrical exposure be mitigated?

Sixteen electrical contact incident case study scenarios were identified, and the frequency of occurrence of each was determined. The electrical fault pathway involved in each case study was defined and likely levels of exposure to electrical currents and voltages were evaluated. Risk abatement and mitigation practices were identified.

According to this research, "the most common electrical contact fatal incident among all arborists, regardless of occupation, was indirect contact through a branch (28.1%). The branch was either being cut or had already been detached but was still held by the worker when it contacted an energized conductor. The contact also occurred from a falling cut and detached branch that simultaneously contacted the worker and an energized electrical conductor" (p. 21).

The full webinar is available on the TREE Fund YouTube channel, and a link to the webinar as well as a PDF of the full report can be found at <https://treefund.org/webinar-archive>.

## TREE-CAUSED OUTAGES—WHAT WE KNOW AND WHAT WE HAVE LEARNED

### TREE Fund Grant: 20-UARF-01

Over the past several years, Dr. Greg Dahle, Associate Professor of Arboriculture at West Virginia University, and Cindy Musick, PhD Candidate at West Virginia University, have worked with data acquired in Virginia to learn more about the leading cause of power outages: trees. On Tuesday, November 5, 2024, 12:00 p.m. (CST), they will be presenting their findings and research. They will share what they have learned by investigating outages and how that information has led to data-based maintenance decisions. CEUs will be available for this free webinar.

More information on this and other TREE Fund webinars is available at <https://treefund.org/webinars>.



## A Career Rooted in Nature and Safety: Dawson Westurn

**D**awson Westurn's admiration for the outdoors originated long before he found himself at Texas Tech University working toward a degree in natural resource management with a concentration in conservation science. His appreciation for all things nature developed from a young age, as Westurn's childhood was centered around the Boy Scouts of America.



Dawson Westurn

Once he completed his degree, the Texas native headed to the West Coast after accepting a job with ACRT Pacific, where he has grown to appreciate the industry. As a vegetation management inspector, Westurn shared that his job often requires walking around to look at trees, typically alone—something he views as a perk.

"Being alone outdoors with your thoughts is such a benefit of this job," explained Westurn. "Your decisions are your own out there and you have to take care of yourself, but at the same time, you have the freedom to look at all this beautiful landscape and explore these different places in California. I've seen so many beautiful sites that I would have never gone to beforehand."

It didn't take long before Westurn immersed himself in the organization and its culture of safety. Early on in his career, Westurn served as an Area Safety Representative (ASR) and eventually transitioned to a role with the ACRT Pacific Safety Committee.

Westurn continues to build upon his career through the University of Wisconsin–Stevens Point Utility Vegetation Management program. He was also recently selected to participate in the ACRT Services Honors Program, a multiday leadership program dedicated to training up-and-coming employees throughout the organization.

Westurn's career and education reflect a strong commitment to natural resource management, UVM, and safety advocacy.

Learn more about our employee owners like Dawson at [pacificacrt.com](http://pacificacrt.com).

# and Findings

## RECENTLY FUNDED UARF GRANTS

Dr. Dahle continues to work on his research to determine failure characteristics from distribution outage reports and has received grants in 2022 and 2023 to support that research. The total project is scheduled to be completed in 2028.

In May 2024, a grant was awarded to Dr. Paul Kinder, Jr. (West Virginia University), for the project "Improving Future Utility Vegetation Management Options by Developing a Public Collection of Open-Source Annotated Machine Learning Data Archive."

According to Dr. Kinder's proposal, "this project will explore the use of sensor-equipped drones and machine learning to enhance efficiencies in utility vegetation management. Arborists are experimenting with the use of machine learning techniques (trained computer models that predict new information from previously analyzed images) to classify drone-based imagery and other data for the purposes of identifying tree species, diagnosing diseases and pests, predicting whole tree failures, and more. Training these machine learning models to be useful and accurate requires an enormous amount of input imagery and data. Publicly available imagery and data are often low in resolution, do not usually have standardized formats, and rarely capture the environments in which UVM work takes place."

This project is expected to be completed in 2026.

TREE Fund is proud of its partnership with the UAA on the UARF grant program. For more information on any of the grants described above, or to view our research archive, learn more about applying for a grant, register for a webinar, or subscribe to our newsletter, please visit [www.treefund.org](http://www.treefund.org) or email us at [treefund@treefund.org](mailto:treefund@treefund.org).

# A Promising Path from Military Service to

By Eric Scherer, Regional Vice President, Lewis Services



Eric Scherer

When Rich Evans graduated from Lakeland University in May 2001, he was excited to embark on his new career as a secondary English teacher. Looking back, Evans never could have predicted how short-lived that career would be. When the Twin Towers were hit on 9/11 and our country suffered its worst assault in American history, Evans' future as a high school teacher abruptly ended. Two days after the terrorist attacks, Evans joined the Army and began a different type of service—this time trading his classroom for barracks, and literary classics for field manuals.

Fifteen years and four tours later, Evans was nearing the end of his active military service and contemplating where the next chapter would lead when he was contacted by Alliance Careers—a well-respected recruitment company that assists junior military officers (JMOs) with career placement as they transition to the private sector. Founded by John Todd in 2003, Alliance partners with 300 top-performing JMO candidates each year to provide customized support in preparation for the transition.

For Evans, his partnership with Alliance led to a promising career in vegetation management with Lewis Services, where he now serves as a division manager in Florida. As a division manager, Evans oversees more than 250 employees and works with major utility companies and municipalities across the state. Reflecting on his time in the military, Evans draws distinct parallels between military service and utility vegetation management especially when it comes to creating adaptive learning environments in variable conditions. Evans also credits the military for helping him hone leadership skills that have been critical when leading a distributed workforce.

## Navigating the Post-Service Path

My personal path from military service into VM work took a slightly different route. After serving in the Navy for eight years, I attended the University of Southern Florida's Muma College of Business and earned a bachelor's degree in business/managerial economics while participating in the Reserve Officers Training Corp (ROTC), a program designed to train college students for future service as

officers in the military. Following graduation, I served in the Army for four years and finished my twelve years of combined military service as a combat veteran.

Similar to my fellow veteran and now colleague, Rich Evans, I was unsure about my next chapter as a civilian. Evans and I were not alone in this uncertainty. For many veterans who are finishing their active military service, the path can be challenging. In her article "Transition to Civilian Life Remains Difficult Years after Military Discharge," Mary Anne Dunkin writes that more than 200,000 service members leave the United States military each year (2022). She noted that, for many, this transition includes challenges related to physical and mental health, difficulty with interpersonal relationships, and an uncertain career path.

The statistics related to employment uncertainty following military service are concerning. In their article "The Transition to Post-Military Employment", the authors share eye-opening research indicating that only one in four veterans had a civilian job waiting after they left the military (Parker et al. 2019). About half (48%) said they didn't have a job lined up but looked for one right away; 21% looked for a job but didn't look right away; and 5% did not look for a job at all or retired from working.

## Partnership with Purpose

There are many paths that veterans may pursue following service. For some, that path leads to employment with the federal government. Recent data shows that nearly a third of federal employees are veterans (Windmueller 2021). Other common post-service careers include health care, technology, law enforcement, financial services, education, and manufacturing (Stilwell 2020).

As I was completing my military service, I also received a call from Alliance Careers—which quickly became a call that changed my life. Though there are many other job placement agencies that work with military members who are entering the private sector, Alliance has distinguished itself by establishing rigorous criteria, not only for their candidates but also for the companies that are seeking employees. Alliance's partnerships are not arbitrary; they are purposeful and powerful.

ALL PHOTOS COURTESY OF LEWIS.

# Vegetation Management

To enter the Alliance program, I had to submit my undergraduate transcripts and last three years of officer evaluations. My pathway with Alliance was accelerated and included business training, case studies, career assessments, and study sessions. This curriculum was critical in helping me identify positions I might want to pursue, as well as careers I wanted to avoid. Admittedly, without Alliance's mentoring and support, I probably would not have considered a career in vegetation management and would not be serving as a regional vice president at Lewis today.

## Standing the Test of Time

Alliance's placement service is unique in many ways, due in large part to founder John Todd's personal experience when he was completing his own military service. A West Point graduate with nearly eight years of active duty, Todd's transition to a post-military career took a negative turn when the company that hired him went bankrupt three months after he started working for them. That horrible experience prompted Todd to start Alliance Careers so that other service members would receive the training, treatment, and placement they deserved.

Two decades later, Alliance is still going strong. More than 4,000 candidates have participated in the program since its inception, and pictures of many candidates are proudly displayed on Alliance's walls. Todd attributes Alliance's positive record to the strict standards they've established for military candidates and participating companies. Candidates are selected from the top tier of JMOs and must be committed to the rigors of the program. Companies seeking to hire Alliance candidates must meet four requirements: (1) demonstrated financial health; (2) growth potential for the candidate; (3) alignment on mission, values, and culture; and (4) senior leadership buy-in. Because of

these stringent mandates, Alliance is very selective and only partners with 50 companies a year.

Todd believes Alliance's commitment to these strict standards is the key to the program's ongoing success for both candidates and companies. He explained, "Upon leaving military service, a veteran's long-term success in life can be determined in the first 3-5 years. That initial career experience can be life-altering—positively or negatively." Todd continued, "We want to position our candidates for the best success possible, as well as our business partners."

## Connecting the Dots between Military Service and UVM Leadership

Because they are so deeply committed to providing their candidates with exceptional opportunities, Alliance must become very knowledgeable about the companies they partner with—knowledgeable to the point of becoming unofficial spokespeople for those companies. Throughout the vetting process, Alliance gets to know each business and sector intimately, and often becomes de facto champions for their work.

Todd shared, "Over the years, we have developed a very special relationship with Lewis. We have learned a great deal about the important work that Lewis does in the sector, and we have become an advocate for not only Lewis but vegetation management in general."

Michael O'Connor, chief human resources officer at Lewis Services, is a staunch believer in Alliance's program and has witnessed its success firsthand. Lewis began its partnership with Alliance in 2013 and has hired more than twenty Alliance candidates during the past eleven years.

O'Connor appreciates Alliance's commitment to each candidate's preparation and long-term success. "Alliance invests a great deal of time in the process so that candidates fully



Eric Scherer



Then Captain Rich Evans (right), who retired as a Major, with Colonel Mirwaiz (left), Afghan Brigade Commander.



Division Manager Rich Evans with D15 and 16 team members at the VMA Conference.



Lewis Payroll Analyst Jason Ehmann—eight years in the U.S. Army (three years active, five years inactive)



Lewis Safety Supervisor Steven Chase—two years in the U.S. Army (active duty) and six years in the National Guard



DOT Compliance Manager David Darnell—eight years in the U.S. Marine Corps and the North Carolina National Guard

understand the scope of the company's work, and businesses understand their obligations."

Many of Lewis' Alliance hires have been immediately placed in leadership positions, such as division managers and supervisors. Though some may wonder how military tenure translates to leadership roles in VM, the experiences and skills are quite complementary and transferrable.

For example, Lewis and the military both rely on strong leadership to manage small teams in geographically dispersed areas. In the Army, a young lieutenant may be assigned to lead an already-established unit, just as a division manager may be supervising well-established crews. Both situations require keen observation, listening skills, a commitment to team building, and management acumen. From a process standpoint, both Lewis and the military use After Action Reviews to create positive learning environments that are productive, not punitive. And when former-military-turned-Lewis-leaders face adverse situations, potentially dangerous environments, and emergent risks, military crisis training kicks in and leaders instinctively react in a calm, focused manner.

### Tapping into Tomorrow

Because Lewis' need for division managers isn't as pressing right now, the company is currently hiring Alliance candidates for developmental roles. O'Connor sees great value in this path because it gives new hires a chance to experience Lewis' work in VM from the ground up. As the Alliance candidates are brought onboard, they are

paired with mentors who rotate them through various departments—such as Operations, Safety and Fleet—for comprehensive training and integration.

Looking ahead, I believe there is untapped potential for former military members to work in vegetation management. So how can we learn from companies like Alliance and build better systems that benefit more veterans? How can we promote VM as a viable, promising career to those transitioning out of military service—not just JMOs but also enlisted military personnel? How do we leverage the valuable skills and experiences our service members acquire while on duty and apply them in the VM industry?

To start, companies in UVM should be partnering with military bases to place non-commissioned officers (NCOs) and others leaving the military into training programs and positions. We need to create a fast-track that will attract transitioning service members to the industry and help them move upward through the ranks of leadership. We must support our champions and surrogates, like Alliance and Veterans in Energy, and expand partnerships to reach more military members. And we need to foster inclusive environments that attract candidates from all service branches, genders, races, and cultures.

For service members who are seeking their next chapter, the road to a career in vegetation management holds promise and potential. Together, we can forge a path that benefits all.

For more information on Alliance Careers, visit [www.alliance-careers.com](http://www.alliance-careers.com).

For more information on Veterans in Energy, visit [www.veteransinenergy.org](http://www.veteransinenergy.org).

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# Wildfire and the Expert Witness

By Michael Neal, President, Michael Neal Consulting, LLC

In today's environment, wildfires can happen anywhere. The ingredients needed are fuel, oxygen, and heat. By combining low humidity, dry conditions, low fuel moisture, and wind, a simple spark can turn catastrophic. Even if the wildfire risk is low, utility companies should have comprehensive wildfire mitigation plans, vegetation maintenance, and tree risk assessment programs.

Expert witnesses working for the plaintiffs or the defendants will be looking at the strengths and weaknesses of these programs. Other important factors that will be scrutinized are budgets, tree-related outages, backlog of VM work, on or off cycles, auditing, qualifications, and training of utility employees and its contract partners.

Historically, utility vegetation management programs are underfunded to maintain established cycles, even though each utility company has determined its cycle length. In some cases, the VM cycle is published internally and externally. This becomes problematic when a company starts a wildfire and is off cycle because senior management underfunded the VM department.

In addition, one element reviewed is whether the utility identified high-risk fire areas, such as the wildland interface areas, and developed strategies to minimize the risk of tree-caused wildfires. A study by Guggenmoos (2003) has demonstrated that most outages are caused from trees from outside the established ROW. These exceed 80-percent of all related VM outages. Therefore, the focus of pre-inspection, vegetation management, and post audits need to go beyond

the maintained ROW. If a utility doesn't have a separate tree risk assessment program, isn't funded to the proper level, or has a backlog of trees that haven't been mitigated, this can potentially provide the plaintiffs with information which puts the utility at additional risk.

Utility companies are bound by the standard of care to ensure all pre-inspection and VM work is done according to the scope of work. Lack of undocumented audits by the utility or third-party inspection companies where work was completed, or entire circuits (especially in high fire-risk areas), will be analyzed.

International Society of Arboriculture Certified Arborists have a responsibility to follow all American National Standard Institute (ANSI) A300 Standards and ISA companion Best Management Practices (BMP). The utility or contractors cannot pick and choose what parts to follow. The Utility Tree Risk Assessment BMP from John Goodfellow and the ISA Tree Risk Assessment Qualification are resources expert witnesses will use to ensure competency of utility employees and contractors. Therefore, documentation of education, training, and experience will be evaluated. If it isn't documented, it didn't happen.

As an expert witness, the hope is that this article gives the utility vegetation managers and contractors insight into the litigation process and the need for appropriate vegetation management funding.

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# Legal Considerations for Vegetation Management

By Michael Marefka, Restoration Ecologist and Vegetation Services Operations Manager, EnviroScience

**R**estorative vegetation management is an ecological restoration strategy intended to conserve, improve, and reintroduce habitat to natural systems impaired by human activity. Natural systems range in size and complexity, from small channelized urban streams to preserved glacial fens and bogs. Each system presents unique restoration challenges, whether due to terrain or the presence of rare and endangered species, which requires expert planning, execution, and monitoring. Furthermore, protected areas and wildlife habitats require a holistic understanding of existing site conditions and how those conditions influence system-level and species-level ecological function.



Michael Marefka

There is no one-size-fits-all approach to restorative VM, especially when dealing with semi-intact natural systems that require immediate restorative intervention while simultaneously providing critical habitat to native species, both endangered and non-endangered.

Here, “challenge” is an umbrella term for a constellation of problems facing stakeholders involved in the restorative process. Vegetation management stakeholders include but are not limited to regulatory agencies, land conservancies, governmental natural resource organizations, VM vendors, concerned neighbors, and wildlife. The ever-shifting landscape of challenges is a result of navigating the legal framework governing restorative VM activities; manufacturing stakeholder consensus; defining and achieving project objectives with budgetary restraints; and identifying, through expert analysis, the ecological complexities of impaired natural systems.

Restorative vegetation management is disruptive. The

success of mechanical, chemical, and biological methodologies of control is measured by the impact, removal, and permanent elimination of target species. A main challenge of managing target species near or within protected areas and wildlife habitats is preventing collateral damage. Non-target species, also known as desirable species, are often interspersed within an impaired natural system. The ratio of target to non-target interspersal is a major factor in the degree of challenge.

In the context of protected areas, wildlife habitats, and endangered species, restorative VM compliance can be understood as an adherence to the system of rules and regulations designed to protect natural resources from harm. Harm reduction needs to be implemented both for invasive vegetation control and native vegetation installation, the two essential phases of restorative VM.

For invasive VM, compliance depends on control methodology (i.e., mechanical, chemical, biological), existing natural resource removal (i.e., crop tree release), and site assessment (i.e., presence of endangered species).

State and federal laws govern chemical control application processes. Business licensing and individual commercial applicator certification requirements vary by state. In Ohio, for example, business licensing and applicator certification for herbicide use is regulated by the Ohio Department of Agriculture and required by all VM vendors. The application of herbicide for commercial purposes without the appropriate licensing and certifications is not in compliance with laws governing restorative vegetation management. Furthermore, specific categories of certification, such as Aquatic Pests and Forest Pests, need securing, particularly when working in protected areas and wildlife habitats. Certification in these categories by commercial applicators displays an understanding of native and invasive vegetation, the label requirements of herbicides such as those approved for aquatic environments, and the ability to mitigate harm to non-target species by

PHOTOS COURTESY OF MICHAEL MAREFKA



Phragmites treatment before



Phragmites treatment after

# near Protected Areas and Wildlife Habitats

tailoring herbicide applications to specific site conditions.

Herbicide compliance is by far one of the most pressing challenges in managing vegetation near protected areas and wildlife habitats. Herbicide itself is a product regulated by the National Environmental Policy Act, and only those evaluated and registered by the U.S. Environmental Protection Agency (EPA) can be utilized for restorative VM. Although navigating the labyrinth of state-specific herbicide rules and regulations is difficult in and of itself, the real challenge comes during the application process. Essential laws like the Migratory Bird Treaty Act, which prohibits the harming of all native birds, nests, and eggs, put the onus on herbicide applicators to protect natural resources while performing services. This is why site assessments by experienced restoration professionals are imperative.

Restoration professionals understand and diagnose the system-level and species-level ecological functions at work on a given site. For example, identifying the presence of engendered species while also identifying their existing habitats, such as particular species of trees, shrubs, grasses, or forbs. Furthermore, they can define treatment timelines in compliance with governing laws, such as those that define nesting periods for endangered and non-endangered bird and bat species.

Vegetation management in protected areas and wildlife habitats involves a combination of mechanical and chemical control. Mechanical control components are meant to remove existing vegetation from a site, such as non-desirable trees or shrubs. This can pose a challenge for remaining in compliance, given that even non-desirable vegetative species can provide temporary habitat to endangered and non-endangered bird and bat species.

Assessment of nest timelines is crucial for the timely and successful execution of VM services. Timelines for disturbance, set by the Division of Wildlife, often dictate budgetary and capacity restraints and require creative planning solutions to ensure project objectives are met while also protecting

vulnerable wildlife populations. Assessments inform restorative vegetation services, and in the context of compliance with governing laws, they ensure treatments mitigate risk.

The main challenges of managing vegetation near protected areas and wildlife habitats often come down to balancing project objectives, limitations, and the interests of existing natural resources on a given site. Governing laws, such as the National Environmental Policy Act and the Migratory Bird Treaty Act, provide the framework for protecting the latter. This framework should inform the project objectives and limitations and provide a realistic scope of work for all stakeholders involved in the restorative VM process.

Restorative vegetation management is crucial for utilities, which often operate in diverse ecological landscapes. For example, by establishing pollinator habitats and raptor nesting programs, utilities can enhance biodiversity and mitigate VM challenges. These initiatives support crucial species, naturally control pest populations, and demonstrate a commitment to environmental stewardship. This balance of operational needs with ecological preservation ensures compliance with regulations like the NEPA and the MBTA, contributing positively to both the environment and utility operations.

## About the Author

**Michael Marefka** is an Ohio Department of Agriculture Certified Commercial Applicator in the Categories of 3A-General Aquatic Pest Control, 4A-Forest Pest Control, 5-Industrial Vegetation Control, and Commercial CORE. He provides project management and technical expertise for the vegetation components of environmental restoration projects. The diverse nature of his work demands proficiency with issues related to the conservation of sensitive natural areas, ecosystem identification, herbicide application, and spatial analysis. Marefka holds an M.A. in environmental studies from Cleveland State University, and previously worked at the Cleveland Museum of Natural History, Natural Areas Division as a conservationist. 🌿



*Glossy buckthorn (Frangula alnus) treatment assessment*



*Garlic mustard (Alliaria petiolate) treatment*

## Utility Arboriculture and Technology Transform VM

By Randall Miller, Director of Research and Development, Eocene Environmental Group

**W**hen I started my utility arboriculture career in the early 1990s, many North American utilities had decentralized vegetation management programs run by operations managers, light-duty line workers, or others without arboricultural training. The predominant perception was that it wasn't "rocket science" and anybody could do it without training. In those early days, I was informed many times that money spent on foresters or arborists was better spent "trimming trees."

That perception was wrong then, and even more so now. Vegetation management is essential to utility operations. Failure in VM has been an existential threat to utilities. Conflicts between trees and powerlines have resulted in catastrophic fires, ruinous blackouts, public electric contacts, enforcement action from regulators, and tarnished corporate reputations. Utilities have fallen into bankruptcy and chief executives have lost their jobs as a result. Now, vegetation management is often the largest utility operations and maintenance budgetary line item, and the contribution provided by utility arborists is indispensable.

### Gaining Knowledge

The knowledge required for an effective VM program is formidable. In addition to demanding command of dynamic natural systems, this work requires an understanding of program management, budgeting—often for tens of millions or hundreds of millions of dollars—remote sensing, communication, safety, and the fundamentals of electrical systems, according to the *Utility Arboriculture: The Utility Specialist Certification Study*

*Guide* published by the International Society of Arboriculture.

### Investing in Technology

Technological developments are transforming VM. A premise of integrated vegetation management best practices is to base prescriptions on data, according to "Utilities & Vegetation Management in North America: Results from a 2019 Utility Forestry Census of Tree Activities & Operations," a 2021 University of Wisconsin–Stevens Point publication. Vegetation managers can apply this principle by taking information supplied through remote sensing to deploy resources to areas of greatest risk. Moreover, technology can help overcome the constraints imposed by insufficient human resource pressure. Technology drives efficiencies that can bridge the gap between need and resource limitations.

As essential as these technological advances are, they cannot replace competent field professionals. Practitioners on the ground are necessary to augment remote sensing, ensure quality control, and deliver optimal programs. For example, remote sensing is unable to determine tree flaws that can be identified through tree risk assessments.

Misuse of technology may drive VM programs into a detrimental hotspot paradigm. *T&D World* and the *Utility Arborist Newsline* continue to provide insight into the importance of developing diverse, compatible plant communities through IVM. The method is not only cost effective, but it also has an added benefit for creating early successional habitat that benefits pollinators, ground nesting birds, and other species for

which habitat has been dwindling in recent decades due to development, agriculture, and human preference for trees and forests. Technology by itself can't deliver that result.

### Focusing on Training

State-of-the-art IVM requires training. Credentials such as certification and tree risk assessment from the International Society of Arboriculture are crucial. University of Wisconsin–Stevens Point, the Utility Vegetation Management Association, and the Utility Arborist Association have collaborated on a two-year Utility Vegetation Management Program. This program should be promoted by progressive utilities and contractors for their employees wishing to advance their VM careers, according to Tomaszewski and Miller in the "2022 UVM Professional Development Program" article in the November/December 2022 issue of the *Utility Arborist Newsline*.

It's clear that money spent on arborists is not better spent "trimming trees." Professional vegetation management is central to enabling utilities to deliver safe, flawlessly reliable electricity while advancing environmental stewardship, all of which are core values of progressive utilities. *T&D World* and the *Utility Arborist Newsline* recognize the importance of VM and work to provide a wealth of topics that provide information on the skills necessary to transform utility arboriculture to the benefit of arborists, utilities, and the public.

This article was originally published in the *T&D World* Vegetation Management supplement, [www.tdworld.com](http://www.tdworld.com), and revised with permission for the *UAN*. 🌲



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OPINION EDITORIAL

# Knowledge Is Power: Leveraging Large Language Models to Microlearn

Phil Swart, Director of Business Development & Marketing, ClearWay Industries, LLC

In today's fast-paced world, continuous learning is essential for professional growth. Microlearning has emerged as an effective method to absorb information in small, manageable bites. This article explores how large language models (LLMs) like ChatGPT can enhance microlearning, making it easier for individuals to acquire new skills and knowledge. Read on to discover the benefits, challenges, and practical applications of integrating LLMs into your learning routine.

## Microlearning

Microlearning is a new approach to learning that delivers content in bite-sized, focused segments, which typically last 3–5 minutes. It's designed to combat the "forgetting curve," a concept based on Hermann Ebbinghaus' research, which shows that people tend to forget large amounts of information over time. Microlearning breaks down information into manageable segments, allowing learners to revisit and retain key points more effectively. The ability to revisit is crucial to successful learning.

Microlearning can take various forms:

- Flashcards
- Google searches
- Wikipedia
- LinkedIn Learning
- YouTube Shorts
- Duolingo
- TikTok

These examples illustrate just a few ways microlearning is integrated into our *daily lives*. Microlearning methods are quick to consume, easy to deliver, and well-suited to modern learners' habits and preferences. It boosts engagement, increases knowledge retention, and enables self-paced learning. The ability to customize microlearning to an individual's specific knowledge base and retention level gets even easier with the use of LLMs.

## Large Language Models

You've likely heard of ChatGPT, a large language model AI-powered chatbot. LLMs use artificial intelligence systems that utilize machine learning (ML) to understand and generate human-like text, providing assistance across a wide range of tasks by drawing on a vast amount of information it has been trained on. As you use an LLM, it learns more about you and can better personalize its responses to your prompts. LLMs are becoming more advanced, and new ones are becoming available at a fast rate.

The primary three LLM programs are:

1. Microsoft Copilot
2. Anthropic's Claude
3. OpenAI's ChatGPT (the gold standard of LLMs)

The major benefit of LLMs is that through analysis of a user's history and preferences, they can tailor microlearning by creating personalized learning paths that focus on areas needing improvement. They provide real-time feedback and predictive analysis, enabling learners to engage with new

topics and revisit previously learned material, which is essential to successful learning.

## Pros and Cons of LLMs for Microlearning

Using LLMs for microlearning offers significant benefits, including quick access to a vast amount of information, personalized learning experiences, and the ability to explain complex concepts in simple terms. They can cater to specific learning needs, providing tailored lessons on diverse topics and recommending additional resources for deeper understanding.

However, there are downsides as well. These models can sometimes overwhelm users with too much information, present inaccuracies, and lack the practical, hands-on experience crucial for mastering skills. Without expert verification, there's a risk of adopting incorrect practices, making it essential to use these tools as a supplement rather than a sole source of learning.

## Utility Arboriculture Microlearning Options

You may be surprised at how many options currently exist for microlearning in the field of arboriculture. The Utility Arborist Association website has a few:

- *Newsline* articles
- *Newsline* article quizzes
- Fact sheets
- UAA video library (English and Spanish)

Outside of the UAA, there are a few excellent arboriculture podcasts that benefit listeners via microlearning. For utility arboriculture, the *Trees & Lines* podcast and *The UVM Podcast* are fantastic choices. For microlearning general arboriculture, nothing tops Paul Johnson on the *Trees Are Key* podcast. All three podcasts offer bite-size, tangible learning environments for utility arborists.

## Get Started!

Want to begin your microlearning journey using LLMs? Simply copy and paste this prompt into ChatGPT, Copilot, or Claude:

I am a utility arborist looking to improve my knowledge and skills through microlearning. Can you provide a brief lesson on **[insert topic]**, including key concepts, best practices, and any important safety considerations? Additionally, recommend some resources for further learning.

Happy learning!

## About the Author

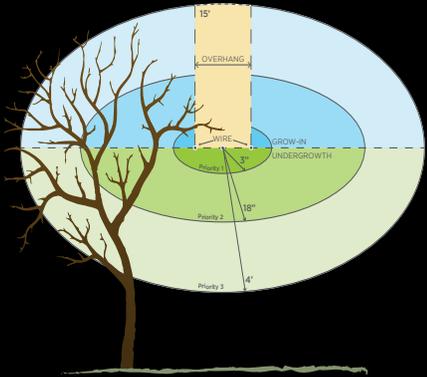
**Phil Swart** is the Director of Business Development and Marketing for ClearWay Industries, LLC, and the Chair of the UAA Professional Development Committee. He is an ISA Certified Arborist, Utility Specialist, and Texas Oak Wilt Qualified arborist. Deeply committed to education and ongoing improvement, Swart is passionate about advancing utility arboriculture and empowering others to grow both personally and professionally. 🌳



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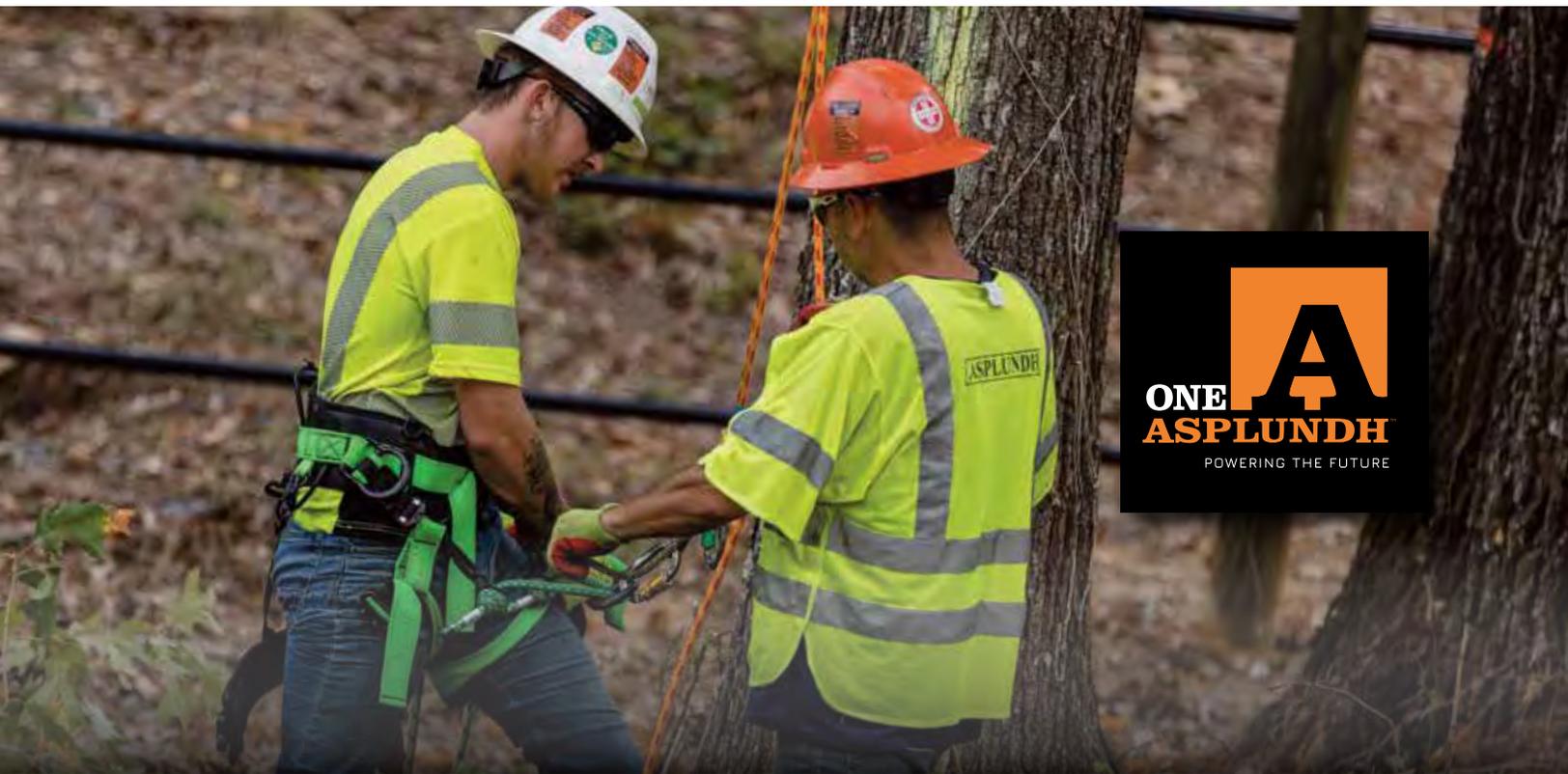
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