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Number 5

UTILITY ARBORIST NEWSLINE

FOCUS ON ENVIRONMENTAL STEWARDSHIP

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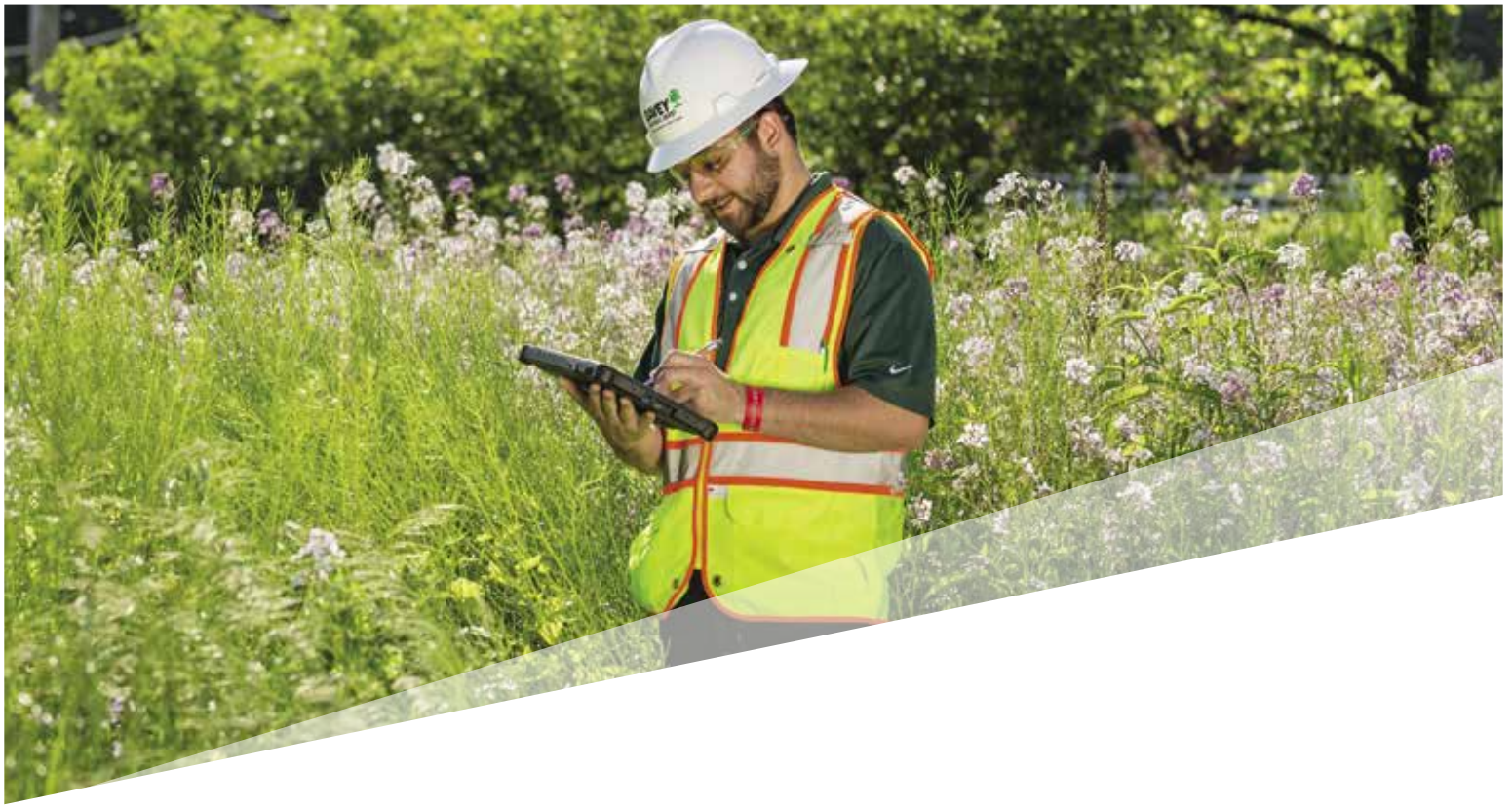

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Turn to **page 12** to learn about climate-resilient environmental stewardship.

There's a cause for pause! Learn about bats and vegetation management on **page 18**.

Turn to **page 40** to learn about the largest utility and generator of renewable energy in the U.S.

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

Best Management Practices (BMPs)
Corporate Social Responsibility (CSR)
Environmental, Social, and Governance (ESG)
General Foreperson (GF)
Geographic Information Systems (GIS)
Integrated Vegetation Management (IVM)
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President's Message

Geoff Kempter

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Have you noticed? We are facing major environmental challenges. Climate change, including warming temperatures, more severe storms, and changes in precipitation patterns have affected trees and wildlife. Invasive species have destroyed or weakened millions of trees. And, meeting the needs of 8 billion humans has greatly altered land-use patterns around the world and the natural systems upon which we all depend. This has reduced habitat for many species, many of which are threatened, endangered, or even extinct. Making our world sustainable requires all of us—including entire nations, organizations, corporations, and individuals—to significantly change our behavior.

The energy sector of our economy, including electric utility providers, is actively working to reduce environmental impacts by reducing and mitigating greenhouse gas (GHG) emissions and to improve its record in ESG. Pressure from investors and customers are driving these initiatives. Fundamental changes in how companies are run and how services are provided are underway.

UVM operations can be either an asset or a liability in these efforts. Our work sites are habitat for pollinators and other wildlife and can potentially provide additional benefits. This means that the choices we make in managing our ROWs are important from economic, social, and environmental perspectives. The good news is that there are available solutions that win on all of these fronts.

There are tens of millions of acres of utility, railroad, and highway ROW in North America that must be maintained for the safe operation of our transportation and energy needs. It is proven that IVM methods can be applied to develop vegetative cover that is compatible with management objectives, enhance wildlife habitat, and eliminate invasive or noxious weeds. All this can be done while reducing GHG emissions and at lower costs than traditional methods, such as mowing alone.

> **We are presented with an enormous opportunity to make a difference beyond the already important task of providing safe and reliable utility services.**

In urban areas, canopy trees capture and store carbon and provide cooling shade to mitigate urban heat islands and reduce peak electric demand. Urban forests are also habitat for birds and other animals and provide a range of additional benefits. Utilities can be strategic partners in sustainably managing these resources to maximize the environmental benefits, many of which accrue directly to utility interests, while also minimizing risks to surrounding infrastructures and utility facilities.

The increased interest in corporate ESG, including GHG reductions, raises the profile of utility vegetation managers and the UAA. We are presented with an enormous opportunity to make a difference beyond the already important task of providing safe and reliable utility services. Our members have the information and expertise necessary to assist in meeting corporate ESG goals and promoting environmental stewardship.

UAA Members should seize this opportunity to raise our profile and leverage our expertise in advancing the sustainability goals of our industry. This means reaching out to other stakeholders inside and outside of our companies. Corporate communicators, environmental teams, and executive management should understand the capabilities of our operations. Nonprofits, government agencies, and media outlets can be partners in implementing environmental initiatives in the field. Together, we can ensure that we are managing millions of acres in a sustainable way, and that we are doing our part to ensure a healthy planet for future generations.

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Executive Director Message

Dennis Fallon

This past summer, I was invited on a canoe trip by a longtime coworker I've known prior to working in UVM. We went to the Boundary Waters Canoe Area (BWCA) near Ely, Minnesota. When I received the invitation, I thought of reasons not to go—I was too busy and wouldn't know anyone there. Eventually, I realized I keep telling staff that recharging their batteries in their free time makes them more valuable at work, so I should probably heed my own advice and go on this canoe trip. After five days of sleeping on the ground and eating freshly caught fish each evening, my batteries were in fact recharged. I became more aware of the fact that I needed to hold myself accountable for things that I deem as important. No one else is going to hold me accountable for ensuring that I am living my values.

Since that canoe trip, I have had the opportunity to attend safety summits, regional meetings, and the ROW Sustainability Summit in Pennsylvania held at Penn State. The sustainability summit included a tour of the famous (to UVM folks) Game Lands 33 research site, along with educational breakout sessions in the field with researchers and successful UVM practitioners. Seeing the site firsthand—after discussing the research with landowners over the years—was more personally impactful than I imagined it would be. What struck me most was the biodiversity on the site.

> **Environmental stewardship is not a destination; it is a way of traveling through our environment.**

Sunset in the Boundary Waters Canoe Area (BWCA) near Ely, Minnesota.

This issue of the *Newsline* is dedicated to environmental stewardship, and as natural resource managers, environmental stewardship is often near to us. It isn't very often that you speak with a natural resource manager who tells you they don't have an appreciation for nature, wild spaces, or the dwelling animals. Most of us went into natural resources because we love being outside to absorb its natural wonders. We also want to help people understand that their perceived natural wonder may have other attributes that are incompatible with their site and its management needs.

So, what do canoeing in the wilderness, visiting herbicide research plots, and enjoying nature have in common? Accountability. To obtain sustainability through environmental stewardship, we must start holding ourselves accountable. This accountability does not mean sites are perfectly balanced and maintenance strategies are completely refined to the least possible external inputs in exchange for near-self-sustaining corridors. Environmental stewardship is not a destination; it is a way of traveling through our environment. It starts with the things we have immediate control over, like picking up trash, minimizing single-use products, or making lifestyle choices that reduce impacts on our environment. Then, we can begin to transition this philosophy to our work. For example, perhaps you are not able to create boarder-zones on 100% of your system. Ask yourself if there is a site where you can—start *somewhere*.

To know the real impacts of starting somewhere, you are going to have to create some measurements showing the progress. Measurements require goals and thought-out strategies. You need to know where you want to go and what you hope to accomplish before you can measure where you are on that journey. Start by setting personal goals associated with stewardship opportunities you are passionate about. Even in the face of limited budgets and tight workforces, there are decisions you can make that advance environmental stewardship in areas under your control. These decisions do not need to be grand; every little bit adds up. If you are already on the journey of environmental stewardship, ask yourself where and how you can add more value to it, then add more value.

The world we live in is not perfect, but it can be better. We all have the power to make better, more informed decisions. Do not let "the perfect" get in the way of "the good." Partake in your environmental journey with an attitude of continuous improvement. Start where you can and hold yourself accountable, because it's a necessity for holding others accountable.

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By Mark Shipp, Senior Executive Vice President, HUB International and Patrick Criscuola, Vice President, Program Brokerage Corporation

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We all have a preconceived notion of what constitutes pollution. Images of 55-gallon drums of *meth-ethyl* death, skull and crossbones placards, men in Tyvek suits, and burning rivers usually come to mind. These preconceived notions may be true to some extent, but it couldn't be further from the truth from an insurance standpoint. Since the 1980s, every General Liability (GL) policy includes a "total pollution exclusion," in some form. Among the standard exclusions in a GL policy, the total pollution exclusion is the lengthiest and most comprehensive, occupying well over a page of text in the policy form. "Pollutants," as defined in a GL policy, are any solid, liquid, gaseous, or thermal irritant or contaminant, including smoke, vapor, soot, fumes, acids, alkalis, chemicals, and waste. Waste includes materials to be recycled, reconditioned, or reclaimed. Unlike our presumptions, pollution defined in a GL policy could mean literally *anything*—especially anything that is not where it is supposed to be.

The business ramifications of this exclusion are significant for any company that decides not to purchase this essential coverage. Although pollution losses do not occur frequently, when they do occur, they are very severe. Given this fact about pollution claims, a GL carrier faced with a large loss from a contractor has a broad exclusion to work with to fully or partially deny coverage for the claim. Coverage disputes involving the total pollution exclusion in GL policies have been a significant area of litigation since the 1980s, when it was first added to the standard GL policy. Since its addition, GL carriers now have legal precedence when denying coverage utilizing this exclusion. A Contractor Pollution Liability (CPL) policy will provide your business the essential coverage for pollutants that you do not currently have.

Utility line clearance companies often work in public ROW on behalf of large utilities that are vulnerable to ongoing lawsuits. Given the high-profile nature of their primary customers, utility line clearance companies may be implicated in lawsuits regardless of their role in named damages. A CPL policy will ensure that there is a duty to defend against the suit from an insurance company, in the event it involves the alleged or actual release of pollutants. Utility line clearance companies may be exposed to claims related to smoke and soot from fires; spills of hazardous or nonhazardous oils contained in pole-mounted transformers; spills of hydraulic fluids and fuels from on-site equipment; damages from improperly applied herbicides and pesticides; and releases of silt, sediment, and dust from jobsites. Pollution losses could also result from first- or third-party transportation related to your scope of work.

Another unique coverage provided by the CPL policy is non-owned disposal site liability coverage, or presumed liability from the waste of your operations. Utility line clearance companies often sell the wood and vegetative debris generated from their operations to composting and mulching operations for beneficial reuse. As a good environmental steward, you are recycling waste from your operations and supplying a green product to control erosion and reduce the application of herbicides. What can be overlooked is that your waste to be recycled, reconditioned, or reclaimed is, by its very definition, a *pollution exposure*.

Pollution claims can and do arise from recycled waste and materials. For example, if the composting company you are using goes bankrupt, either from mismanagement or uncovered claims from mulch fires (because they did not purchase their own pollution policy), you are still liable for the waste you sold to them. When a recycling facility goes bankrupt, the state regulator of the USEPA seizes the property and performs a cleanup of the facility. Cleanups and remediation can be extremely costly. To pay for these, the regulating agency seeks recourse from the companies that disposed of their waste at the facility. Without a CPL policy, a utility line clearance company would be responsible for dealing with the state regulator and for any resulting liability payments. The cost of a competent environmental lawyer and consultant to defend you will far surpass the premiums associated with a CPL policy.

If a company neglects to purchase this essential coverage and their business fails from an uninsured pollution liability loss, the damages and resulting cleanup costs will ultimately be borne by the general public. CPL policies are unique among insurance policies because they directly pay for cleanup of the environment. A CPL policy signals to the marketplace that your company is serious about your environmental stewardship. By properly insuring all aspects of your operation, including the potential for pollution-related claims, you are taking a big step in ensuring your business continues to serve your community and protect the environment.

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Environmental Stewardship Committee Update

By Philip Chen, Environmental Stewardship Chair and Manager of R&D, CNUC

Our last update was nearly two years ago. In January 2021, our focus was moving environmental stewardship from the abstract to the concrete and working to support UAA Membership to fill knowledge gaps. Our committee has always charged toward big, audacious goals but recognized that, though dedicated, we are a small committee who have busy day jobs. To continue our committee's trend of making significant strides, but ensuring not to burn out the committee volunteers, we shifted to accomplishing our goals through committee task forces. To do this, we use our calls to connect task forces with the committee and UAA organizational-level initiatives. We brainstorm and develop high-level ideas we feel are attainable and ask one or more committee members to step up and take responsibility for that item. Finally, a group of committee members and other subject matter experts (SMEs), with interest in that item and bandwidth, form a task force to make progress on that item between meetings. This article summarizes the initiatives we have completed (or are actively working on) since our last update in 2021.

UAN SPOTLIGHT ON THE ENVIRONMENT

Our first major initiative is the "Spotlight on the Environment" section seen in each issue of the *Newsline*. This initiative started with our committee's inception and continues to be important to our group. Since our last update, we have provided nine articles to the "Spotlight on the Environment" section, authored by various SMEs across our industry:

- "Writing Prescriptions for Success: Contemplating the Surrounding Landscape" by Nikki Hill (March/April 2021)
- "How Do We Make Conservation the Standard? Look to Occupational Safety" by Sienna Malik (May/June 2021)
- "Adapting to a Changing Climate" by Leslie Brandt (July/August 2021)
- "Clearing the Way for the Environment" by John McPherson (September/October 2021)
- "Part 1: The History of ESG" by Stephen Hilbert (January/February 2022)
- "Part 2: The Components of ESG and Their Impact on the Utility Industry" by Stephen Hilbert (March/April 2022)
- "The Value of Environmental Moments" by Kimberly Laing (May/June 2022)
- "Effectively Communicate Value to Decision Makers Using Financial Metrics" by Amy Murray (July/August 2022)
- "New Tools are Available to Help Manage Biodiversity" by Dan Salas (September/October 2022)

Additionally, we have assisted in providing articles for the 2021 and 2022 fall issues, which focus on environmental stewardship. We hope you've had a chance to read these articles. If not, take some time to catch up, and keep an eye out for future issues of the *Newsline*.

TOOLKIT FOR MANAGING COMPATIBLE VEGETATION FOR TARGETING SPECIES AND BIODIVERSITY

We identified that many in the industry might need additional support materials to shift their VM to focus on ecosystem management, shifting focus from removing incompatible vegetation to promoting compatible vegetative communities. As a result, a 15-person task force, representative of multiple aspects of our industry, came together to develop these resources. Our deliverables included the following:

- "Managing Compatible Vegetation for Targeting Species and Biodiversity: A Companion to the Integrated Vegetation Management Best Management Practice, Third Edition" document
- "Scope of Work Guidance for Managing Compatible Vegetation for Target Species and Biodiversity" document
- A PowerPoint template for the Business Case for IVM
- An IVM Net Present Value Cost Calculator and associated user guide

Our task force has been trying to make the rounds at conferences and via webinars to build awareness of this tool kit. Additionally, each section (business case, scope of work document, and companion guide) is featured this year in a *Newsline* article (look for the scope of work article in the November/December issue). The entire tool kit can be found on the UAA website within the "Environmental Stewardship" tab.

PSA VIDEO ON BIOLOGICAL CONTROL

In a similar style to the Safety Committee's PSA videos, one of our task forces has worked to develop a brief animated video to ensure practitioners understand what biological controls are, how they can be established and maintained through IVM, and their benefits compared to other management approaches. This video was recently premiered and will be available on the UAA website, along with a discussion guide for use by UAA Members.

REGIONAL PLANT GUIDES

Our newest initiative involves developing regionally based guides for identifying key species. These guides aim to help UVM practitioners identify compatible plants that can be promoted and protected to provide habitat and biological controls on ROWs. Additionally, guides will include species that may be compatible with power transmission but are noxious or invasive and should be managed as a UVM program shifts from a compliance focus toward an intentional VM approach. These VM programs will enhance and restore compatible flora, manage for more biodiversity, and build more ecological integrity and climate resiliency into our land management activities. This, as our newest initiative, is still early in the process. If you'd like to participate in this task force, please email me at *pchen@cnutility.com*.

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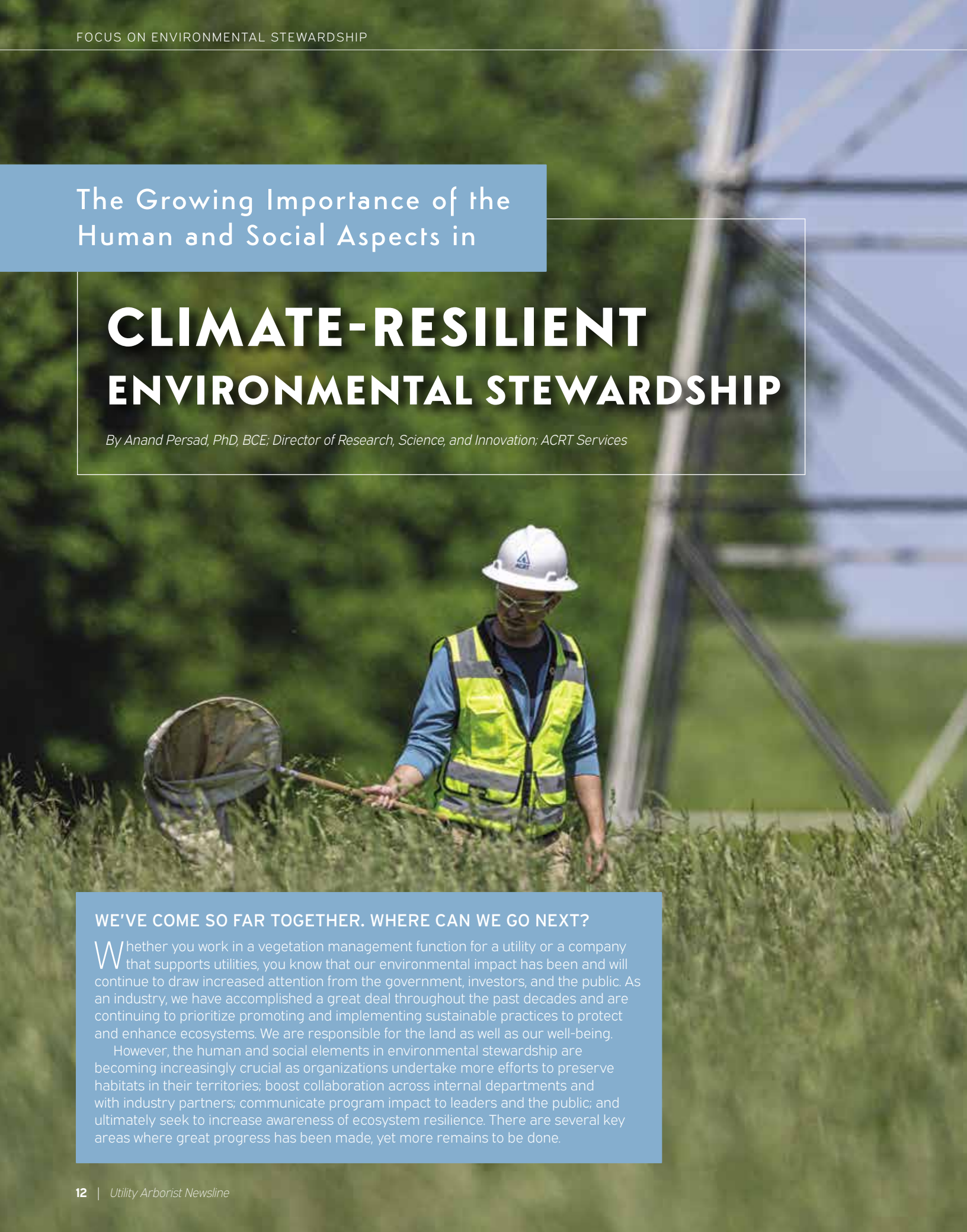


The Growing Importance of the Human and Social Aspects in

CLIMATE-RESILIENT ENVIRONMENTAL STEWARDSHIP

By Anand Persad, PhD, BCE; Director of Research, Science, and Innovation; ACRT Services

WE'VE COME SO FAR TOGETHER. WHERE CAN WE GO NEXT?

Whether you work in a vegetation management function for a utility or a company that supports utilities, you know that our environmental impact has been and will continue to draw increased attention from the government, investors, and the public. As an industry, we have accomplished a great deal throughout the past decades and are continuing to prioritize promoting and implementing sustainable practices to protect and enhance ecosystems. We are responsible for the land as well as our well-being.

However, the human and social elements in environmental stewardship are becoming increasingly crucial as organizations undertake more efforts to preserve habitats in their territories; boost collaboration across internal departments and with industry partners; communicate program impact to leaders and the public; and ultimately seek to increase awareness of ecosystem resilience. There are several key areas where great progress has been made, yet more remains to be done.

Photo courtesy of ACRT Services

IN OUR UNDERSTANDING OF IVM

While IVM has been an industry strategy for promoting thriving ROW habitats for years, utilities and related associations implement and manage ROW based on their regional needs, available partners and resources, and project timelines. The ability to reduce invasive species in a targeted way enables more native plant species to return to and grow within ROW and other green spaces, creating suitable environments for thriving pollinators and provide benefits to the larger environment, as well as animal and human populations.

However, ongoing education in IVM is critical to moving us forward as an industry. IVM control methods (biological, chemical, prescribed burning, and others) continue to evolve each year, meaning that consistent training is needed to ensure our and collaborating organizations are putting the latest knowledge to use to create more sustainable plant communities. The methods and application of IVM are just the beginning.

Safety is also a crucial focus for everyone working in IVM, particularly when it comes to the herbicides themselves. Managers and crews in the field must receive ongoing training to ensure they understand the registration, labeling, handling, and transportation of herbicides. In each of our organizations, leaders must ensure their teams understand IVM and related safety topics thoroughly to safeguard lasting success.

IN COMMUNICATING OUR IMPACT

Herbicides are and remain a useful tool in our arsenal. However, the human sentiments and community perception of its usage need to be engaged by a trained and informed workforce. Let's reset to the good that comes after an invasive plant is removed—this cannot be understated and should be the focus as we look beyond the application. Overall, education efforts must be consistent, not just for new entrants to the field but for everyone who uses IVM equipment or develops related plans. A deeply educated and engaged workforce yields far more advantageous (and safer) results.

As many VM leaders and communications teams know, communicating impact and benefits of IVM and other fieldwork can be challenging, and yet it's essential for demonstrating the value and importance of our work to stakeholders and the public. Often, initial impressions about herbicides can be negative communication barriers for teams to overcome to keep moving forward. This effort must also apply to our contractor relationships, as there can occasionally be a negative feeling associated with herbicide application among incoming trainees, some of whom may not have worked with products in the past.

Many organizations have already provided resources for the public and internal teams on what herbicides are, why they are being used, and what their ultimate value is. These efforts are a tremendous first step, and we must not stop sharing them whenever and wherever our IVM work takes us—and with everyone involved. Whenever possible, capture your success stories (and do so even before they become successes, because showcasing your effort is itself a success). After all, the result of IVM is a healthier, more resilient, and sustainable environment, and that's good news for everyone.

Organizations, like the UAA, ISA, Tree Fund, and TCIA, are putting solutions into action to promote healthier trees, more sustainable communities, and a green economy. Photo courtesy of ACRT Services.

IN MANAGING OUR FLEETS

Another field-level yet far-reaching effort (and again, communication focus) is our fleets. Emissions, fuel consumption, and the general impact of vehicles in the field have been a focus area for years, and organizations throughout the industry have made substantial progress toward adopting green fleets that reduce that impact, both environmentally and financially. Continued efforts here will yield equally substantial results, both for organizations looking to reduce their footprint on the environment and maximize the results of their VM programs.

Fleet managers, vegetation managers, and leaders responsible for sustainability and environmental impact must increase their collaboration to continue this movement toward greener fleets and other efforts that will reduce impact, improving public perception of our industry. This is particularly crucial today, with an increased focus on oil availability, fuel costs, and climate change.

IN DEVELOPING OUR POLICIES

Utilities and companies that provide services to them are increasingly spotlighted by their respective communities and stakeholders to be a voice and force for environmental and social good. Many organizations throughout our industry have developed and shared ESG reporting as well as CSR policies to meet that need and showcase their efforts. Everything mentioned thus far should be included in such reporting, but with the understanding that measuring progress has thus far been difficult.

Often, utilities are executing IVM programs and other efforts to preserve green spaces but lack either the resources or scientific capability to understand progress over time and address real-time metrics and ROI. Utility service providers have recognized this gap and are making solutions available, with one example being the BIOaudit™ assessment from ACRT Services. As industry leaders, we must leverage these solutions to understand the impact of IVM and other work on our ROW and related community green spaces, to help our stakeholders and customers see why we do what we do, and measure the ultimate difference it can make in their lives and for the environment overall.

IN THE INDUSTRY ASSOCIATIONS

Looking outside of our organizations, the associations and groups that bring all of us together are already hard at work, and have been for years, putting these solutions into action and developing more. Examples include the UAA Research Committee, whose work goes to support the organization's commitment to environmental stewardship. The spin-off Utility Arborist Research Fund (UARF) has funded several bodies of work ranging from IVM to reliability studies. The ISA and its research are also working tirelessly to conduct and disseminate research to the industry to promote healthier trees, more sustainable communities, and a green economy.

The Tree Research and Education Endowment (TREE) Fund provides research grants to support new knowledge in arboriculture and urban forestry across a variety of topics. The Tree Care Industry Association (TCIA) is also actively engaged in providing education and information resources for utilities, tree care professionals, and countless other organizations. As an industry, there are ample opportunities for us to continue growing our knowledge, educate future workers in our field, and communicate our impact to the wider public. If your organization is not already actively involved in one or more of these associations or groups, this is an ideal time to consider participating to make meaningful contributions that further the reach and impact of the industry, while realizing the growing needs of the human and social aspects of our work.

NOW IS THE TIME TO BREAK THE SILOS

Today more than ever, the world demands that we work together to make our environment and communities more resilient, more sustainable, and more beneficial. We cannot accomplish this working on our own. It starts at the organizational level. Making change on this level and in our communities cannot rest with VM and related departments alone. We must work across disciplines and skill sets, involving and gaining the insights of others to enact greater and more efficient change. From there, we must take our efforts and insights to the greater industry by increasing our collaboration with one another in industry associations and in the field.

These commitments stand to benefit not only the current workforce but also stand to help shape the future of those who will come after us. As stated earlier, we have already accomplished so much, and yet an equal and even potentially greater challenge lies ahead for the next generation of environmental stewards. The more we work together now, the clearer and more successful their path will be.

ACRT Services invites our industry partners to start conversations on this topic and to share ideas. If you have any insights or questions, we would enjoy hearing from you. Reach out to our RSI team at *email@acrt.com*.

2022 Nelsen Money Scholarship Recipients

By Renée Phillips, Member Services Manager, UAA

Last summer, the UAA announced its first ever Nelsen Money Scholarship award winner. This year, we are happy to announce *two* winners!

Congratulations to Elinor Niemi from University of Wisconsin–Stevens Point, our 2022 recipient of the Utility Arborist Nelsen Money Scholarship! Niemi's passion for forestry and interest in the industry was clear in her application and supporting essay she submitted. She is interested in commercial logging—a system she finds fascinating—as well as another side of forestry that is near to her heart. She lives just outside Milwaukee and went to school in the city for most of her formative years, sparking her interest in urban forestry and its varying aspects. "I saw the trees in the city and how they needed a better care system in parts of the city, while other areas had incredible care," she commented. Niemi is a very active member of her university's student chapter of the Society of American Foresters, as well as an activities coordinator for the chapter.

Elinor Niemi

Connor Neeser was our 2021 recipient and he put his scholarship funds to use at Central Lakes College, located in Brainerd, Minnesota, where he is studying environmental engineering and natural resources. This year, the scholarship committee is pleased to offer Neeser a second financial award.

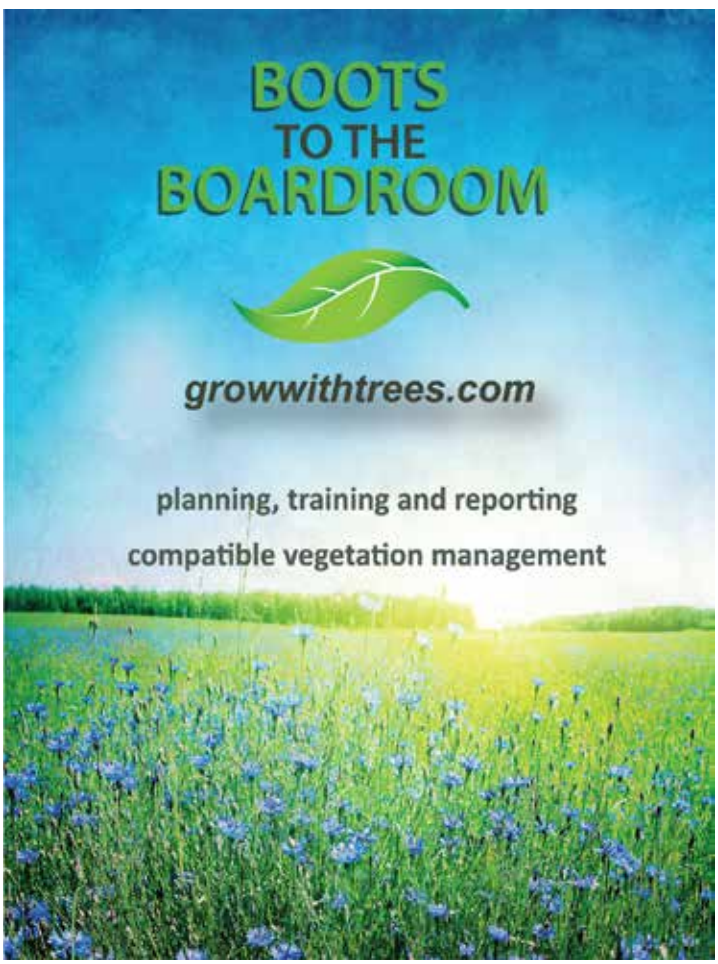
Connor Neeser

The Nelsen Money scholarship was established in 2020, after Money passed away. He was the UAA President nearly a decade ago and was the driving force behind the UAA Editorial Committee, truly shaping the UAA *Newsline* as it is today. When Nelsen oversaw the publication, previously named the *UAA Quarterly*, it was a challenge to provide diverse content representing our whole industry. The *UAA Quarterly* began in 1992 and much of the content was written by staff, with a lot of arm twisting according to then Executive Director Derek Vannice. That year, when Nelsen led the UAA, the publication got a makeover and produced six issues per year.

In addition to updating the *Utility Arborist Newsline*, Nelsen established the partnership the UAA currently has with T&D World, producing an annual VM supplement which expanded our reach to the industry. He also contributed to the ROW Stewardship accreditation and was a strong supporter of the program. Nelsen Money was tireless in his promotion of the UAA and IVM; there were few corners of this industry he didn't touch. His legacy is profound. "My husband, Nelsen Richie Money, was many things to many people. But at his core, he was a mentor," said his wife, Pam Money. "He made a difference in many lives and touched so many people. He was a leader in UVM and was deeply involved in the UAA."

The Nelsen Money Scholarship Program offered by the UAA has two scholarship options. One is geared toward college undergrads looking to pursue a degree that leads to arboriculture and VM fields, but there is a second option that most people overlook. A $1,200 award is intended for a graduate, within the last four years, who has not previously attended the Trees & Utilities Conference. Attendance at this event provides an opportunity to interact with leaders of the industry and make industry connections. Applicants are required to have their undergrad degree in a related subject and have career goals in the arboriculture or VM field. This year, the conference will be held September 20–22 in Milwaukee, Wisconsin. Please watch next February for your opportunity to apply for this wonderful opportunity.

For more information about how to apply for the Nelsen Money Scholarship Program or to donate to this scholarship fund, please visit *gotouaa.org/project/scholarship-program.*



New Tools Available to Help Manage BIODIVERSITY

By Dan Salas, Senor Ecologist (CSE), Stantec

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Biodiversity is no longer a concern just for biologists. Investors and companies are acknowledging the role of biodiversity as good business. Utilities rely on healthy ecosystems to reduce pests and fire risks; treat and dissipate pollutants; and maintain soil and water quality. In light of this, companies increasingly need to demonstrate their impact and enhancements to biodiversity in sustainability reporting for ESG-minded investors.

For the first time, vegetation is viewed as an asset, not a liability. The timing could not be better for all of us. According to the United Nations Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES), biodiversity is declining at an unprecedented rate in human history. Biodiversity loss poses real business risks like added regulations resulting from species listings, reduced resilience to pests, and increased fire hazards.

IVM has proven itself a cost-effective way to manage vegetation for safety and reliability. Addressing biodiversity now poses a new suite of management objectives. Fortunately, a new series of tools published by the UAA can help planners and managers.

The “Managing Compatible Vegetation for Targeted Species and Biodiversity” report is a companion guide to the recently revised third edition to the IVM BMP Manual. This guide is joined by three other related resources available on the UAA website: a template slide deck, a cost-benefit tool, and a scope-of-work planning document. Together, these resources give vegetation managers the information needed to start considering biodiversity on their ROW. With these tools, utilities can manage vegetation like life depends on it—and indeed it does.

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BATS

Regulatory Shifts Are Cause for Pause

By Jessica Miller, Midwest Operations Manager and Jeff Brown, Senior Biologist, ECT, Inc.

Bats are often an afterthought in the world of utility vegetation management. In many ways, this is because the removal of trees is part of an acceptable and exempt safety program within approved industry guidelines. This article outlines the historical and current regulatory landscape for bat species within the utility industry and some recommended actions to take while we wait on the anticipated regulatory changes expected before the year's end.

BAT BACKGROUND: Four Sensitive Species Driving the Bus across the U.S.

The following is a brief regulatory timeline of the four bat species that are most significantly impacting current and future regulatory requirements.

Indiana Bat *(Myotis sodalis)*

The Indiana bat was the first federally listed bat species. Originally listed as a species in danger of extinction in 1966, it is currently listed under the Endangered Species Preservation Act (ESA) of 1973. Summer clearing of potential roosting habitat has restrictions in many states, generally April 1 through October 1 (but dates may vary depending on how close clearing is to winter hibernacula). Summer clearing may result in the need to obtain surveys for these bats, mist net, or use acoustics to determine their presence. Except for safety concerns, which include management of trees encroaching on ROW, most other tree clearing is subject to clearing restrictions as regulated under the Endangered Species Act. This species is mainly located in the Northeast, Midwest, and South Central States.

Northern Long-Eared Bat *(Myotis septertrionalis)*

In 2015, the northern long-eared bat was classified as federally threatened with a 4(d) rule and was afforded protection under the ESA. In March 2022, the United States Fish and Wildlife Service (USFWS) proposed reclassifying the northern long-eared bat from federally threatened with a 4(d) rule to endangered. The 4(d) rule was established to avoid tree clearing during June and July (when young are birthed) and near known hibernacula and summer roost trees, but allowed tree clearing outside of that window. By changing the status to endangered, this action would result in removing the 4(d) rule and is likely to have the same restrictive tree clearing window as the Indiana bat. The northern long-eared bat has a much more extensive range across the U.S., especially into the Southeast and west into the Great Plains.

Photo courtesy of ETC, Inc.

Little Brown Bat *(Myotis lucifugus)* and Tricolored Bat *(Perimyotis subflavus)*

To further complicate matters, there is also a decision from the USFWS expected this fall to add the little brown bat and tricolored bat to the list of federally protected bats. The range of the little brown bat includes almost the entirety of the U.S., with exceptions in the lower Plains states, while the tricolored bat is found primarily east of the Plains states. These two bats also use trees of various sizes for roosts, as well as limited use of human structures. If these two bat species are federally protected, it is likely to change how bat habitat is reviewed when a federal nexus is present and when and how trees can be cleared for many industries.

BEST PRACTICES: Conventional Considerations for Bat and Vegetation Management

Habitats

Summer foraging and roosting habitat for these bats vary but generally include a mosaic of forested habitats interspersed with non-forested features, such as wetlands, edges of agricultural fields, fallow fields, pastures, and woodlots. Roost trees may include live and standing dead trees greater than three inches in diameter at breast height with features such as exfoliating bark, cracks, crevices, hollows, and/or cavities. Roost trees may be found in forested patches as well as linear features such as fencerows, riparian corridors, and other wooded corridors. Linear features are important travel routes for bat movement between foraging and roosting areas. It is worth noting that roost trees for many of the native bats are somewhat ephemeral in that they are often found in varying degrees of decline and may naturally fall during any season, presenting a safety concern for utility lines.

Regulatory Agreements or Memorandums of Understanding (MOU)

Utility operations may have agreements with federal and state wildlife resource agencies regarding VM, specifically tree removal. There are tiered agreements in place that are based on acreage to be removed, suitability of habitat for roosting, time of year to remove, and voluntary contribution to conservation programs for bats that can be utilized for tree clearing along existing ROW. Those ROW located in more sensitive areas, either because of known summer or winter roosting, may have more restrictive requirements that result from consultation with the USFWS. However, in the absence of the above-mentioned agreements, certain tree-clearing activities might be subject to federal and state regulations, especially if a federal nexus (e.g., an action authorized, funded, or carried out by a federal agency) is triggered. Also, with each addition of new species to the federal list, these agreements may be subject to reinitiating consultation with the federal and state agencies.

Tree Removal Practices

At times, surveying the areas that require tree clearing may help determine the presence or probable absence of a federally listed species. The USFWS has been publishing and updating their range-wide Indiana bat and northern long-eared bat survey guidelines annually since 2015. This guidance provides protocols for assessing habitat and surveying summer presence/absence via mist net or acoustic survey, hibernacula surveys, and emergence surveys.

When removing trees, whether for a new ROW, expansion of an existing one, or general vegetative maintenance, understanding how noise, dust, light, and general activity associated with those actions affect bats should be considered. When it is not possible to manage vegetation—primarily trees—during the winter season (generally October 1 to March 31), limiting these impacts near potential bat habitats during June and July when bats are birthing their young helps mitigate disturbance and potential negative effects.

Water Source Impacts

Another aspect not often thought of regarding bats and VM is the impact on water sources. Impacts to Waters of the United States or waters of a state are likely to require Clean Water Act permits (i.e., section 404, 401). Actions to minimize impacts on water resources can also benefit bats. The quality of the aquatic resources can affect the insect populations and diversity that can influence foraging bats. Minimizing chemical applications for VM near water resources can play an important role

Potential bat summer roosts can be as small as 3 inches diameter at breast height and can be alive, dying, or dead.

Courtesy of the United States Fish and Wildlife Service.

Ranges of the Indiana bat (purple) and northern long-eared bat (green) in the United States.

Courtesy of the United States Fish and Wildlife Service.

The little brown bat is found in most of the U.S., with exceptions in the lower Plains states, while the tricolored bat is found primarily east of the Plains states.

in bat conservation. Similarly, overmanagement of vegetation that leads to erosional features can also negatively affect the quality of aquatic environments as foraging areas and drinking resources.

Invasive Species Management

Control of invasive species is perhaps as important to a utility operator as well as native wildlife, including bats. Invasive vegetation grows incredibly fast and can overtake native vegetation by outcompeting for light and soil resources. Kudzu *(Pueraria montana)*, English ivy *(Hedera helix)*, *Wisteria*, and poison ivy *(Toxicodendron radicans)* vines can overtake trees and cut off the crevices, cracks, and the ability to use the tree for roosting. This disruption of native vegetation assemblages may impact bats' food sources, roosting, and foraging habitat. Mechanical treatments are less impactful than chemical treatments; however, there are times when chemical treatments are more reliable.

The growing potential to add additional bat species to the federal list of endangered and threatened species may disrupt standard VM within the range of these bats. The challenge is knowing beforehand what management restrictions may be proposed before the listing to prepare schedules, budgets, and possible consultations. Therefore, we encourage subscribing to the Federal Register and the USFWS in particular, so that you receive all notices of actions being considered, proposed, and put in place.

THE NEW NORMAL: Rethink Your Bat Strategy Now for Success in 2023

- **New geographies will be in play.** If your operating footprint has had areas of bat concern and regulation, or maybe none at all, do not assume this will be the case in 2023. Arm yourself with the knowledge to understand the topic and the terrain most critical to your O&M schedules and budgets.
- **Rethinking your traditional approach.** Even small, proactive steps in your overall VM can net large time and dollar savings when you consider the regulatory fines, delays, and negative brand impact that such event can cause.
- **If you are not operating with relevant regulatory agencies under an executed agreement, seriously consider it.** It takes the potentially vague nature of this topic out of the mix and can be the basis for future agreements as regulation shifts.
- **The COVID-19 effect.** Labor shortages combined with continual project demand have left bat consultants and technicians completely booked for mist netting and critical activities before the brief season even starts. The cost of reactive site labor when an issue is identified is astronomical, when labor can actually be found.

JESSICA MILLER is the Midwest Operations Director for Environmental Consulting & Technology, Inc. (ECT) and a federally permitted seasoned bat and vegetation consultant who advises on how bats can impact project development in multiple industries.

JEFF BROWN is a federally permitted senior bat biologist working on bat habitat assessments, surveys, permitting, research, and other related studies. He is an active member of the Midwest and Ohio Bat Working Groups.

Leading the Way for Future Environmental Stewards:

RICH HENDLER

ACRT

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With decades of experience, ACRT Services Integrated Vegetation Management Specialist Rich Hendler has seen the evolution of our industry firsthand. Vegetation management in ROWs has been a necessity since our world became dependent on power. The early days of Hendler's career were spent researching, developing, and launching selective herbicides, while training applicators.

Reflecting on his career, Hendler shared, "One of my key hard idealisms is we did a great job in the '80s and '90s. We've evolved to better, more cost-effective tools. Now, we're moving towards treating and managing ROWs as ecosystems instead of linear corridors that distribute power. In that evolution, we need to lay claim to the good we've done in the past with taking care of the undesirables while keeping the lights on and creating biodiversity in the corridors through forests."

These days, Hendler focuses his efforts on land management and environmental stewardship. He likes to joke old dogs can learn new tricks, too. As an IVM specialist, he holds a seat with visibility to the industry where he can see the changes being made and appreciate how far our best practices have come.

"We need to stop, hit the pause button, and rejoice in the good we've done. And in that same moment, commit to a higher level in the future. It will take knowledge, commitment, training, and it will cost more," explained Hendler.

When he looks into his crystal ball, Hendler sees a bright future for our industry filled with teamwork, continued hard work, and more selective applications to better the environment.

"We all need to become greener in our daily lives," said Hendler. "It takes a team. Change is slow but understanding why it has been slow will help us pick up the pace and do better in delivering it. You can't switch on a greener world, but you can switch on your commitment to be a little greener in your organizations, meetings, moments, and personal lives."

Learn more about Rich Hendler and ACRT's environmental stewardship initiatives at *acrt.com*.

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Environmental, Health, and Safety Stewardship for

HAZARDOUS MATERIALS IN ARBORICULTURE

Storage, Use, Handling, and Waste Management

By James Beery, CSP, CTSP, CHMM, CHCM, CHST; Authorized OSHA Outreach Instructor Safety Supervisor; Wright Tree Service

Arborists, tree care workers, and utility line clearance arborists are all uniquely focused on safety. For this line of work, our minds tend to think about things like slips, trips, and falls; securing the drop zone; and wearing the proper PPE. One aspect of safety that we have the propensity to overlook is environmental, health, and safety risks posed by hazardous materials.

Protection of the environment can be negatively affected by our daily actions, like tossing a container into the dumpster without rinsing it. Imagine a landfill with leaking containers. What is the water table level? What is near the landfill? Where does the contaminant migrate to when it gets into the soil and water tables? It is better to avoid all of that. Like most everything regarding safety, the Environmental, Health, and Safety (EHS) stewardship of chemicals, fuels, and lubricants is a process. This article describes the process and legal requirements, standards, and practices that drive EHS.

The first step is to identify the standards. There are many standards involved, with some coming from the main governmental agencies, local authorities, and other nongovernmental organizations. You can find a basic list of those who have a stake in our EHS stewardship in **Figure 1.**

FIGURE 1. EHS STEWARDSHIP STANDARDS

- Federal and state Occupational Safety and Health Administration (OSHA): health and safety issues
- Federal and state Environmental Protection Agency (EPA): environmental protection including air, water, soil, and waste management
- Federal and state Department of Transportation (DOT), which includes the Federal Motor Carrier Safety Administration (FMCSA): transportation of new materials and hazardous waste
- National Fire Protection Association (NFPA) and international/local fire codes: storage, segregation, fire and explosion prevention, and emergencies
- National Institute of Occupation Safety and Health (NIOSH), which is the scientific arm of OSHA, essentially: health issues, illnesses, and respirator standards
- American National Standards Institute (ANSI): standards for PPE, Z133-2017
- Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), an agency inside the EPA
- American Conference of Governmental Industrial Hygienists (ACGIH): establishes scientific studies of occupational exposure limits for chemical and biological substances
- Local agencies involved, such as the Combined Uniform Public Agency (CUPA): county-level agency which regulates hazardous materials and waste permits/inspections, and levies fines on behalf of the state EPA agency. (In California, known as the Department of Toxic Substances Control [DTSC]). Also, for hazardous materials and wastes, local fire departments get involved for fire prevention and hazardous materials inspections. For herbicides and pesticides, state agencies control certifications and permits
- Licensed disposal companies—among others—for example, are required to haul away our regulated wastes

"IF A HANDLER DROPS A CLOSED CONTAINER AND IT BREAKS OPEN, IT IS AN UNANTICIPATED ACUTE EXPOSURE."

REVIEWING MATERIALS

To discuss this process, let's look at the review and purchase stage. Typically, people acquiring the material purchase what is the least expensive and most easily obtained or most commonly used. Often that means they are not knowledgeable in EHS standards. It is vital to include EHS professionals early on and ask for a second professional review of the material being purchased. EHS professionals will look at the Safety Data Sheet (SDS), as well as a few other important resources.

What needs to be reviewed lies in the storage, use, handling, and waste management. Each of these categories has a set of legal requirements and BMPs associated with them, because at each of those stages, there are standards and best practices involved—not all obvious.

This infamous process is meant to ensure that the materials chosen meet the production needs but also have a minimal negative impact associated with other costs, as well as increased risk to workers and the environment.

PURCHASING, TRANSPORT, AND RECEPTION

We want to ensure that materials are shipped in accordance with our final needs and meet legal transportation standards:

- Transporters must be DOT compliant for hazardous materials (Hazmat) with licensed Hazmat drivers.
- Trucks and trailers must be placarded (Class 1 to 9) according to 49 CFR Parts 100–185.
- Drivers/operators must follow approved routes and some that avoid environmentally sensitive areas. Drivers must be prepared for spills en route.

PACKAGING AND CONTAINERS

We want to ensure containers and labels are proper and meet OSHA standards. Cost savings are good; sometimes, we save money when buying larger containers, but then we are forced to pour to smaller containers, exposing us to spills and environmental damage. Container materials are important. For example, pesticides require polyurethane containers. Fuels require polyurethane containers if less than 55 gallons. At 55 gallons or more, containers must be metal due to bonding and grounding requirements for fire prevention and to avoid static electricity as an ignition source.

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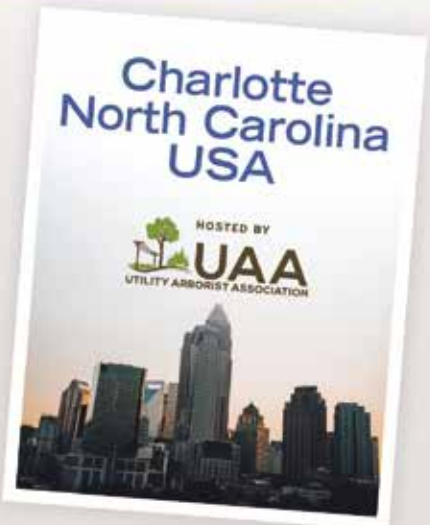

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- The Catawba Nation Tribal Friendship Dance
- Keynote speaker, Harry Sideris and much more!

RECEPTION AND HANDLING OF MATERIALS

When the material is delivered, make sure that the package and containers inside are not damaged. Make sure there is a copy of the SDS. And get into the habit of putting materials in their proper location as soon as possible.

Materials handling is done by forklift, cart, by hand, and the occasional crane lift. Be sure to balance the load. While still in the package, the risk of spill is minimal but could occur. Be sure to consider the weight of the containers; the NIOSH and OSHA lifting limit is 50 pounds.

The SDS, which is divided into physical hazards and health hazards, should have been reviewed prior to purchase. If not, complete a review of it once received.

STORAGE

Materials must be stored according to segregation of incompatible materials by class or family. This prevents an unwanted reaction and thus mitigates both fires and creating vapors that can be inhaled. Often, we rely on the Four Families of Compatibility, which are the most reactive and least desirable to react when in close proximity: (1) flammables, (2) all oxidizers, (3) all acidic corrosives, and (4) all alkalines. Try to avoid storing materials next to the property lines where outside influences may damage or involve the material in adjacent fires or hazards. Never store materials near exits or under stairways. Keep materials in clean, dry spaces and away from direct sun. Direct sunlight increases internal vapor pressure and can be released or the container may fail and burst.

Atmospheric condition is important as well as explosive range. Atmospheric condition describes where the material is most likely to accumulate. Explosive range is a description of the oxygen and fuel mixture percentages, minus the ignition source or heat. Proper on-site storage infrastructure (such as flammable cabinets, secondary containment pads, or basins) is aimed at keeping the material close to the source of the spill and to protect the environment.

Try to avoid storing materials next to the property lines where outside influences may damage or involve the material in adjacent fires or hazards.

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TRAINING OF HANDLERS

Once the SDS is reviewed and the material is received, handlers must be trained on the new hazards and any change in procedures (if any). New employees who are potentially exposed to said materials must receive the initial Hazard Communication Standard (HAZCOM) 29 CFR 1910.1200 training. For those designated as first responders, possible further training according to the Hazardous Waste Operations and Emergency Response (HAZWOPER) Standard 29CFR 1910.120 may be required. Additionally, waste handlers would need specific waste management training related to labeling, manifests, regulated record keeping, and more.

EXPOSURE RISK

Exposure to materials comes in various levels. If a handler drops a closed container and it breaks open, it is an unanticipated acute exposure. The opening/pouring of materials have the potential for not only acute exposure but chronic exposure over time, as well. In the case of herbicides, the exposure is magnified due to active spraying of larger amounts. PPE selection is based on an analysis of the risk/hazard. Since PPE is selected according to the specific risk or hazard, it is important to discuss the Routes of Exposure. NIOSH describes five Routes of Exposure. Aside from noise (which we will leave out), the remaining four routes directly related to hazardous materials are: (1) skin and eye contact, (2) ingestion, (3) injection, and (4) inhalation.

PERMISSIBLE EXPOSURE LIMITS

Permissible Exposure Limits (PEL) are legal limits set by OSHA. These are based on an 8-hour shift with a determined known concentration. We face two problems with full compliance.

The first problem is the SDS provided (by the provider) may or may not be specific about PPE. To select the proper respiratory protection, we must determine if the reduction concentration (RC) is compliant, by reducing the inhaled concentration that is inside the body. The RC is determined by a mathematical formula. The constant in the formula is the Assigned Protection Factor (APF) which comes from NIOSH. The variable in the formula is the known concentration (KC) of vapors/mists/gases in the breathing zone of the handler or applicator. The only true way to determine the KC is by using a certified/rated detector that is designed and calibrated for that material.

Another problem is selecting gloves and suits. To do so, the tables given by the manufacturer to ensure that the gloves' or the suits' materials can resist against degradation or permeation must be reviewed.

The various types of occupational exposure limits that exist in addition to the PEL are:

- Recommended Exposure Level (REL) for work shifts of 10 hours
- Short Term Exposure Limits (STEL) which are exposures of 15 minutes or less at higher concentrations, with breaks between exposures that do not exceed 4 consecutive exposure events
- IDLH which is a one-time exposure of 30 minutes without benefit of respiratory protection; it's usually used in emergency planning
- Ceiling Limit which are materials that are considered more hazardous and therefore cannot be exceeded at any time

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FIGURE 2. EPA HAZARDOUS WASTE / RCRA

What is an EPA ID number and how do I get one?

A hazardous waste EPA ID number is issued by either the U.S. Environmental Protection Agency (federal EPA ID numbers) or by State EPAs. The EPA ID number identifies each handler of hazardous waste on hazardous waste manifests and other paperwork. In addition, the EPA ID number enables regulators to track the waste from its origin to final disposal, a process also referred to as "cradle to grave." With a few exceptions, most hazardous waste generators must have an EPA ID number before a registered hazardous waste transporter will accept their waste for shipment. All hazardous waste transporters and permitted treatment, storage and disposal facilities (TSDFs) must have EPA ID numbers.

A label must include the following:

- Company name and address
- EPA ID number
- Accumulation start date
- Manifest tracking number
- DOT chemical name and United Nations ID number

CONTROL MEASURES: PPE

RESPIRATORS

As important to respiratory protection as is the formula RC = KC / APF, is the selection of the proper filtering cartridge. It is also important to remember that OSHA requires fit testing and a medical questionnaire (SOURCE: 29 CFR 1910.134).

SKIN AND EYE CONTACT

There are four types of PPE that protect your skin and eyes:

1. Gloves, inner and outer (incorporated and non-incorporated)
2. Suits, aprons, and arm guards
3. Eye protection (goggles and face shield)
4. Full-face respirators with incorporated face piece

Suits and gloves come with selection guides from the manufacturer that conforms to ANSI and the American Standards of Testing Materials (ASTM) that dictate material types used in gloves. Glove charts are needed to select the proper glove based on the hazardous material listed. For eye protection, OSHA and ANSI Z87 set out requirements for eyewear, which include splash protection. And for protective clothing, suits come with selection guides as well. A thorough review of the SDS and the selection guides are required.

EMERGENCIES

The three main elements of emergency response are: (1) spill control and countermeasures, (2) medical emergencies due to exposures, and (3) fire response.

1. Spill control and countermeasures: There should be secondary containment for prevention purposes and a spill kit with absorbent materials and PPE available for spills. A means of collecting the contaminated material is also required.
2. Medical emergencies due to exposures: Emergency shower and eyewash requirements.
3. Fire response: Different chemicals require specific extinguishing media, listed in the SDS.

WASTE MANAGEMENT

When it comes to waste management, the "reduce, reuse, recycle" method first comes to mind. This is not always directly obtainable with herbicides, fuels, and lubricants in the typical yard. But we can minimize the amount of materials on-site, for example.

Waste must be stored with the same deference for hazards as hazardous materials that are newly used. Keep in mind that new hazardous materials may not be stored with hazardous wastes, to avoid possible doubling of the storage requirements.

We need to respect the rules for disposing waste according to their respective waste streams. Waste should not be disposed of in the regular trash unless it is allowable. That usually means giving containers a thorough triple rinsing. But then you are stuck with the contaminated liquid that cannot be poured down the drain or onto the ground. Fortunately, herbicides can be put back into the useful product cycle. However, none of this is easy or cheap.

Waste disposal often requires that a company obtain an EPA ID number if they have those regulated materials and substances. Fuels do not get disposed of unless they go bad. Fuel disposal has options for recycling or may be sold for fuel mixing. Lubricants would normally be recycled or sold.

Herbicides are regulated by the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) (an agency inside the EPA) and would require an EPA number and compliance with the Resource Conservation and Recovery Act (RCRA) rules to manage them (**Figure 2**). Remember that no containers should go into the regular trash without treatment. Be sure to have a contract with licensed disposal provider for final disposition.

CONCLUSION

Arborists, tree care workers, and especially utility line clearance arborists are uniquely focused on safety. On one hand, we applaud that. It is, after all, a unique and dangerous line of work. And we don't hear much about chemical spills or secondary containment problems on those weekly utility safety calls. We do have the propensity to overlook the big picture because of it. That includes health risks from hazardous materials that require a deeper dive into the OSHA, NIOSH, and EPA weeds.

Protection of the environment can be negatively affected by our daily actions, like tossing a container into the dumpster without rinsing it. Imagine a landfill with leaking containers. Our line of work requires safety in many facets. EHS stewardship of chemicals, fuels, and lubricants—the storage, use, handling, and waste management—should not be overlooked, for our own health and the environment.

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The Utility Arborist Association is the leading North American organization for the enhancement of quality utility arboriculture and right-of-way (ROW) management. Our success relies on the support we receive from all of our members, sponsors, and volunteers.

Companies that go above and beyond to support our mission will be recognized annually through our Partners in Excellence (PinE) Program.

Membership, sponsorship, advertising, active committee volunteerism, and many other means have been quantified and assigned a value, all adding up to equal a PinE Score.

All applications and supporting material of qualifying companies are reviewed and selected by the PinE Committee.

We want to take this time to congratulate and thank our 2021 PinE Award Recipients.

Your continued support of the Utility Arborist Association is greatly appreciated on many levels.

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CONTROLLING THE SPREAD OF INVASIVE SPECIES

By Erika Biemann, Senior Environmental Project Manager and Katie Rasmussen, Environmental Project Manager, American Transmission Co.

Purple loosestrife, kudzu, buckthorn (*Lythrum salicaria*, *Pueraria montana*, *and Rhamnus*, respectively). We know you've encountered at least one, or many more, of these invasive plants in your work, yards, and outdoor activities.

When non-native plants are introduced—usually thanks to humans—they can quickly take over a large area, causing harm to native ecosystems and humans. In fact, invasive species (aquatic, terrestrial, and wetland) have contributed to the decline of 42% of the U.S. endangered and threaten species, and for 18% of those, invasive species are the main cause of their decline.

Cut-leaved teasel growing within an ATC right-of-way. Each plant can produce as many as 2,000 seeds that remain viable in the soil for at least two years. Photo courtesy of American Transmission Co.

At American Transmission Co. (ATC), we take seriously our efforts to control the spread of invasive species in and around our electric grid facilities and in our transmission line ROW. Because of the nature of our business, we are primarily focused on avoiding and preventing the spread of terrestrial-plant invasive species.

We comply with all state and federal regulations around the management of invasive species during construction, maintenance, and VM. In Wisconsin and Michigan, where we have most of our operations, a permit is required to transport, transfer, introduce, or possess invasive species.

CLEAR EXPECTATIONS SAVE TIME AND ADD PREDICTABILITY WHEN WORKING ON FEDERAL LANDS

ATC transmission lines cross many diverse landscapes, including sensitive state and federal lands. Three national forests are located within ATC's footprint: the 1.5 million-acre Chequamegon–Nicolet National Forest in Northern Wisconsin, the 895,000-acre Hiawatha, and the 990,000-acre Ottawa National Forests in Michigan's Upper Peninsula. Following non-native invasive species protocols is an essential part of ATC's ability to operate in each of the forests because they are a key component of U.S. Fish and Wildlife Service approvals. Each national forest within the ATC footprint regards invasive species as a high-priority issue, and we cannot conduct work without documenting how we will protect against the spread.

In 2021, the Hiawatha National Forest and ATC developed a first-of-its-kind operating plan between a utility and national forest since the U.S. Department of Agriculture Forest Service adopted a new rule to prevent power lines from sparking wildfires on public land. The plan protects public lands and improves the safety and reliability of the transmission system while also providing significant long-term cost savings for the public, the company, and the agency.

The new operating plan establishes clear expectations and coordination procedures through 2051, defining the construction, maintenance and, VM activities ATC may perform, providing guidance and clarity for activities performed in sensitive areas and establishing a new communication framework between ATC and the Hiawatha.

Updating the existing operating plan required an environmental assessment as a part of the National Environmental Policy Act (NEPA). The assessment was reviewed by several interagency partners, including the U.S. Environmental Protection Agency, the U.S. Fish and Wildlife Service, and others.

SYSTEMS AND TOOLS TO REDUCE SPREAD

ATC uses a number of tools and resources to help our employees and contractors reduce the spread of invasive species, including BMPs, maintenance and construction specifications, interactive GIS maps, PDF maps, annual training, and project-specific training.

Employees and contractors who work within our business footprint are required to complete general environmental training and are responsible for adhering to our environmental commitment. ATC also conducts specific training for VM crews about the importance of identifying and managing invasive species in areas that require vegetation clearing and mowing to prevent trees and vegetation from threatening the reliability of the electric transmission system.

Project-specific environmental training is provided for all crews working on construction projects. Our BMPs follow various measures to prevent and control invasive species. First, the work site must be inspected to identify invasive species. An Environmental Access Plan (EAP) is available for all our ROW and known invasive species are mapped on EAPs. If ATC employees or contractors identify additional invasive species, they report it to ATC's environmental department so it can be included on the EAP for future work.

High-quality wetland and upland pollinator seed mixes were used to restore the nearly two-acre site. Courtesy of Stantec.

If invasive species are identified in the work area, the best way to prevent spread is by avoiding the areas where they are present. We use roads and approved areas without the invasive species to access the work area or schedule work during times of year when invasive species are unlikely to spread. In other areas that are in pristine condition, we and our contractors only bring clean equipment to the sites. If it is not possible to avoid invasive species, we clean all equipment, clothing, footwear, and timber matting before leaving an infested area. Similarly, cut vegetation material remains on-site whenever possible. If invasive material must be hauled out, we take steps to ensure debris is not released during transport and is disposed of at an approved facility.

REDUCING SPREAD DURING CONSTRUCTION

Construction projects to either replace existing or install new transmission facilities can result in significant ground disturbance. Our contractors use tracked equipment and/or timber matting along the ROW or in material laydown yards to reduce soil disturbance.

Disturbed soil that is not properly revegetated is vulnerable to the establishment of invasive species. After the project work is completed, the bare ground is revegetated using new seed mixes and straw matting that is free of invasive species. When federal, state, or local permits are required, they are often granted on the condition of implementation, monitoring, and documentation of invasive species BMPs to ensure growth of a native plants in a ratio similar to or better than the preexisting site conditions.

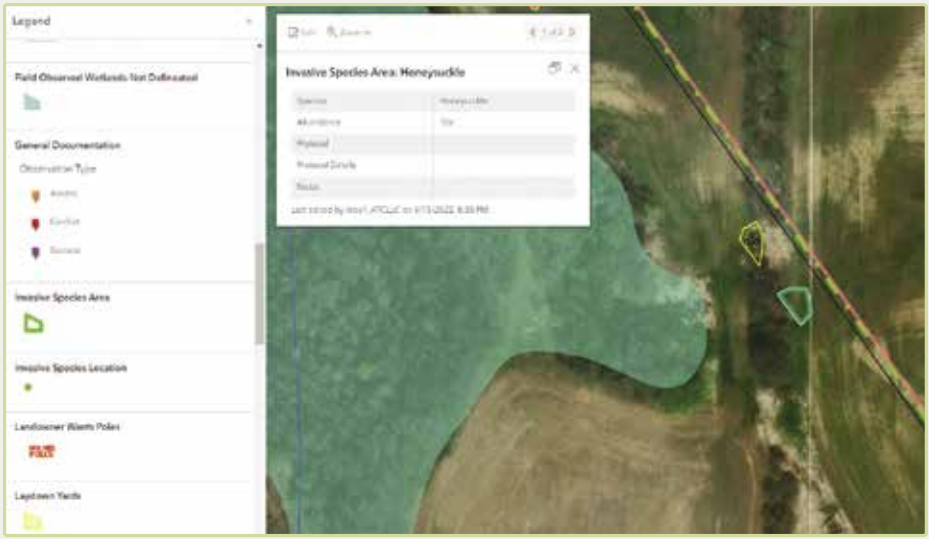
Common reed grass (*Phragmites australis*) is an invasive plant we encounter frequently during construction. Roughly 80% of the plant is made up of dense roots and rhizomes that can damage our transmission facilities and impact our access to our substations. We also face this troublesome plant during transmission line construction. ATC recently rebuilt 3.5 miles of a 69,000-volt transmission line that runs through the sensitive and well-used Baird Creek Parkway in the city of Green Bay. Baird Creek is wide and winds through the city's property, making access challenging. Areas adjacent to the parkland along ATC's ROW have patches of *Phragmites* and the city has taken effective measures to control it within the parkway. To support those efforts and control the spread within the construction area, ATC installed geotextile fabric beneath the timber mats, practiced avoidance, and kept equipment and mats clean. High-quality wetland and upland pollinator seed mixes were used to restore the nearly two-acre site.

DISTURBED SOIL THAT IS NOT PROPERLY REVEGETATED IS VULNERABLE TO THE ESTABLISHMENT OF INVASIVE SPECIES.

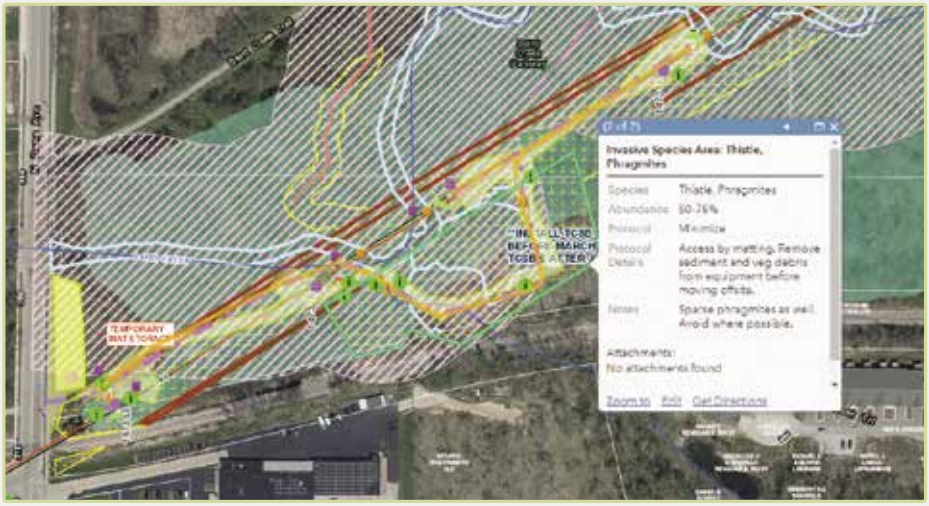
USING HERBICIDES TO CONTROL INVASIVE SPECIES

Occasionally we need to control an isolated invasive species population. In these cases, the species can be fully eradicated or treated with an herbicide application that targets woody invasive species (such as Eurasian bush honeysuckles [*Lonicera spp.*] and common and glossy buckthorn [*Rhamnus frangula L.*]) that often flourish in the ROW. Our contractors are licensed experts in herbicide applications who also use herbicides to control small populations of invasive species at substations, especially those where we are working to establish native, pollinator-friendly habitat.

The city of Stevens Point received two grants from ATC's Pollinator Habitat Program to create a native prairie habitat. City workers and volunteers spread pollinator seed mix to the ROW after removing invasive species. Photo courtesy of American Transmission Co.



ATC uses interactive GIS maps to help employees and contractors easily identify areas where invasive species are located.



ATC's interactive GIS map showed the location and protocols to follow in the Baird Creek waterway to control the spread of Phragmites.

INVASIVE SPECIES ARE HARMFUL TO THE ENVIRONMENT, BUT WITH PROPER AWARENESS, TRAINING, TOOLS, AND MANAGEMENT PRACTICES IN PLACE, THEY CAN BE MANAGED TO CONTROL AND PREVENT THEIR SPREAD.

BUILDING PARTNERSHIPS

Kozcizkowski Park in Stevens Point, Wisconsin, is adjacent to a 5.5-acre nature area, managed by the Aldo Leopold Audubon Society, that is an important rest area for many migratory birds, like the scarlet tanager (*Piranga olivacea*) and Baltimore oriole (*Icterus galbula*). In 2019, ATC cleared the ROW running through the park of incompatible brush and invasive species like buckthorn. When the city decided to create a native prairie in the ROW, they applied for and received two consecutive grants from ATC's Pollinator Habitat Program. Between 2020 and 2021, the city and its partners prepared the area, including removing invasive garlic mustard plants, and seeded the prairie to create a habitat for bees, butterflies, and other pollinators—and out complete invasive species.

Invasive species are harmful to the environment, but with proper awareness, training, tools, and management practices in place, they can be managed to control and prevent their spread.

Formed in 2001 as the nation's first multistate, transmission-only utility, American Transmission Co. (ATC) is a Wisconsin-based company that owns and operates more than 10,000 miles of electric transmission lines and 582 substations in portions of Wisconsin, Michigan, Minnesota, and Illinois. Our transmission network enables the movement of electricity produced from all forms of generation resources to areas where it is needed.

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Use GSI Forester
to Enhance Your ESG Score

An ESG score is a measure of an organization's long-term environmental, social, and governance risks. These risks include worker safety and energy efficiency, both of which carry their own financial weight in terms of sustainability. GeoSpatial Innovations, Inc.'s (GSI) Forester software is able to streamline workflow processes while simultaneously raising an organization's ESG score through reduced costs and real-time data capturing and integration into current databases.

How does GSI Forester support that improvement? With GSI's Forester, users are able to capture data and have that information converted into actionable work assignable to individuals throughout an organization. By using the Forester software, users can experience efficiencies via automating utility workflows, improving the quality of the data collected, time and cost savings, and streamlining communication processes. Improved communication within an organization and with contractors in the field can reduce time and equipment waste, ultimately resulting in workflow efficiencies and an improvement in a utility's ESG score.

Deficient UVM practices directly impact surrounding land by creating conditions favorable for wildfire ignition, fragmenting wildlife habitats, and introducing invasive and exotic species. By utilizing GSI's Forester, utility companies can modernize their current VM process, which can raise their ESG score and improve their environmental stewardship. The Forester software is capable of combating these environmental challenges by assisting utilities to incorporate IVM techniques and view their program as an asset of the utility, rather than a drawback.

GSI is a private, woman-owned company providing software and services to electric and natural gas companies across North America and Australia. The GSI Forester team has developed this software solution to modernize UVM processes, aimed toward a positive impact on the ESG score for utility companies.

Support The Science That Supports You

The TREE Fund supports the scientific exploration of urban and community forests and how they contribute to our lives, our communities, our economy, and our planet.

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LEAVING THE GOLDEN STATE BETTER THAN HE FOUND IT:

Dr. Anand Persad

As Director of ACRT Services' Research, Science, and Innovation (RSI) department, Anand Persad, Ph.D., is working to better tree systems, community-level interaction, and educate grade-school level students throughout the State of California.

Dr. Persad explained, "The thing about California is there's a huge number of phenomena—droughts, fires, and more—in proximity to huge trees and communities with lots of green spaces. That's a recipe for things to go wrong if trees begin to become structurally compromised."

Persad and his team are developing programs to better the annexation of trees and humans for future forest initiatives, using technology to guide communities dealing with the evolving climate and impact it has on tree and human populations.

He's also working to use technology to boost community-level interaction throughout the state so its residents can better understand tree planting and more.

"Technology can be as simple as having a proper tree planting map that's based on tree biomechanics and AI-based processes, coupled with properties inherent in tree species and less personal preference or what's widely available," noted Persad.

Having a tree structural- and climate-informed planting strategy will help design a better climate-resilient tree canopy for future generations.

Implementing plans that use tree structure and potential impact forces—both non-living (e.g., drought, winds, and fire) and living (e.g., insects and diseases)—and planting the right species properly and further apart, communities can begin to make the impact of fires more manageable.

Persad is the recipient of the 2021 ISA L.C. Chadwick Award for Arboricultural Research and the Award of Achievement by the Ohio Chapter of the ISA. He is using his extensive background in arboriculture, tree biomechanics, and more to make a lasting impact on California's terrain.

"Our goal is to implement these early warning systems and better programs for the future in California," said Persad. "We want to have a program where vegetation is managed and there is defensible space around infrastructure that's maintained."

Learn more about Dr. Persad and our various RSI initiatives in California at *pacific.acrt.com*.

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HOW TREE CANOPY

COVERAGE CAN BRING COMFORT TO NEIGHBORHOODS ACROSS AMERICA

By Kevin Gamble, Marketing and Communications Manager, ACRT Services

As temperatures get hotter and hotter throughout the country, it's hard to imagine a world without trees. A 2021 Landscape Business article authored by ACRT Services Business Development Manager Maegan Mullinax discussed how trees improve our lives (Mullinax 2021). Mullinax wrote, trees:

1. Help clean our air
2. Contribute to our health
3. Provide us with oxygen
4. Help clean our drinking water
5. Provide much-needed cooling
6. Help reduce the effects of climate change
7. Help us save energy
8. Benefit wildlife
9. Help reduce crime
10. Are a good investment of our public dollars
11. Increase our property values

Let's focus on number five, **trees provide much-needed cooling**. The Arbor Day Foundation noted "Trees play a critical role in creating healthier, safer, and more connected communities. They clean our air, filter our water, and even slow storm surge and flooding in our cities. Trees also provide shade and cool our cities by up to 10 degrees, which can help prevent heat-related deaths in urban areas."

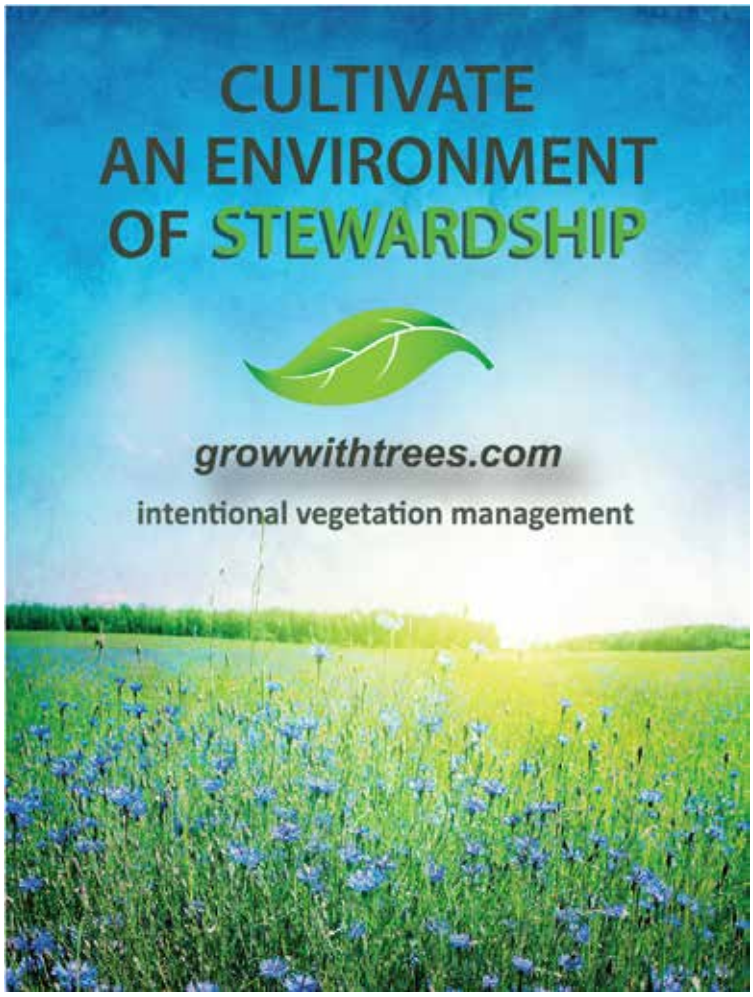
When I stumbled upon Joss Fong's short documentary "How America's hottest city is trying to cool down," which showcases how the city of Phoenix uses trees to mitigate its frequent heat waves, I was intrigued.

The City of Phoenix has pledged to reach "tree equity" by 2030 through creating an urban forest to achieve an average 25% shade canopy coverage for the entire city. Phoenix averages 92 days of temperatures over 100 degrees annually (City of Phoenix 2022).

The low-income-area aspect of the documentary revealed fascinating data, showing how one neighborhood is 105 degrees, while another neighborhood miles up the road is in the mid-90s because it's a more affluent area with more canopy coverage.

This reminded me of the shady tree canopy coverage in my Midwest neighborhood, which allows more enjoyable time spent outdoors during the summer months. But, if you travel a few miles down the road to the more urban area of Akron, Ohio, it's not always so comfortable.

The combination of watching this documentary and experiencing this phenomenon myself led me to reach out to Lori Jones, maintenance services manager at Salt River Project (SRP), to get a better understanding of Phoenix's tree initiative.



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The Future Is COMPATIBLE

Join us in celebrating **five years** of promoting biodiversity and compatible VM in the utility industry! We'd like to thank all of our partners, including the UAA, for helping us reach this milestone. Let's look back at some of the highlights of what we have created together.

Grow With Trees is proud to have been an active participant in the UAA Environmental Stewardship Committee, which launched with the creation of the short films "The Stewards" and "Lifelines," available on the UAA YouTube Channel. We also worked closely with task force and committee members to develop the:

- Vegetation Management Maturity Model to quickly assess the maturity level of your VM department
- Compatible Companion Guide to the IVM BMP third edition to proactively manage for targeted species and biodiversity on your system
- Scope of Work Guidance to provide a template for scopes of work related to managing compatible vegetation

All of these are available for free download from the UAA website (*gotouaa.org*).

We'd also like to give a shout-out to some of our team's favorite projects over the years:

- Supporting Columbia Gas in building a strong pollinator program centered around habitat restoration on their pipelines and strategic partnerships in their communities
- Assisting FirstEnergy with their successful Right-of-Way Stewardship Council Accreditation
- Launching a popular compatible-species field training and career advancement program for field crews at Liberty Utilities Central
- Working with NiSource to reimagine their company-wide biodiversity commitment
- Building a custom IVM training video series for the Electric Power Research Institute
- Conducting the first biodiversity exposure assessments for all of Algonquin Power and Utilities Corporation's North American electric subsidiaries
- Designing holistic grazing opportunities Down Under for Powerlink

Thanks again to all of our partners. We look forward to a future of continued sustainable growth!

Want to learn more about how Grow With Trees can help you create biodiverse ROWs? Visit *growwithtrees.com*.

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"The urban heat island effect is real. The jungles of asphalt and concrete do nothing to help low-income areas," said Jones.

She shared how SRP used the Right Tree Right Place (RTRP) program to increase the overall canopy coverage throughout the Greater Phoenix area, while serving as advocates and educators. Through their partnership, SRP and the city of Phoenix removed more than 300 trees encroaching on power lines and planted more than 1,200 utility-line-friendly trees to increase their urban canopy. They also partnered with the Arbor Day Foundation to quantify the environmental benefits of the plantings through ADF's Energy-Saving Trees program.

The RTRP program has a handful of guidelines that must be followed, taking into consideration height; canopy spread; whether the tree is deciduous or evergreen; form and shape; growth rate; soil, sun, and moisture; and hardiness zone.

They also have a shade tree program where SRP gives two free trees away to any energy-consuming, bill-paying customer who attends an educational workshop to learn about the trees and low-water use. The trees they provide customers are often desert-adapted, desirable, native species, such as mesquite (*Prosopis*) and palo verde (*Parkinsonia*) trees.

"These are wonderful for the desert, but horrible species under power lines. As part of the educational process, we indicate that the planting location is critical to the trees' success—near or under power lines is not the right place for those species," shared Jones.

The combination of providing appropriate trees with education from the Right Tree Right Place initiative has been a key contributor to Phoenix increasing its canopy coverage. It's important for residents to understand the importance of planting trees so that overhead line encroachment is not an issue.

This isn't a problem exclusive to Phoenix. Other cities across the U.S., including Los Angeles and San Diego, are working to reduce extreme heat, too.

In 2019, the mayor of Los Angeles announced that 90,000 trees would be planted throughout the city by 2021 as part of L.A.'s Green New Deal. *The Los Angeles Times* recently reported that as of June 2022, 65,000 trees have been planted (Ding 2022).

To help meet the goals of San Diego's Climate Action Plan, the city teamed up with San Diego Gas & Electric (SDG&E) to plant more than 2,500 trees in various communities over ten years. "These trees provide long-term environmental benefits to help capture carbon, energy savings due to shade, stormwater runoff reduction, and cleaner air," shared San Diego Council Member Raul Campillo (San Diego Gas & Electric 2022).

As cities continue to work towards greater canopy coverage, perhaps we'll see a decrease in temperatures, an influx of different species, and a more enjoyable environment for both humans and animals.

TREE Fund remembers ACRT Services founder, Dick Abbott, with a tree planting ceremony.

AUTHOR BIO

Kevin Gamble serves as the marketing and communications manager at ACRT Services and has been with the organization since 2015. He was named a 2017 Goodwill Employee of Distinction Award honoree, a program that allows businesses to showcase their top-notch employees who have made a significant difference. Gamble is a member of the UAA and serves on the UAA Partners in Excellence Committee. He holds a Bachelor of Science in communication studies from Western Oregon University and a Master of Arts in communication from the University of Akron.

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NEXTERA ENERGY'S LESSONS ON CULTURE, DISRUPTION, AND RENEWABLE ENERGY

The Largest Utility and Largest Generator of Renewable Energy in the U.S.

By Tej Singh, Chief Operating Officer; Dr. Phil Charlton, Principal Advisor; and Sally Lechin, Director of Marketing and Communications, Iapetus Infrastructure Services

FPL's commitment to cleaner energy began more than two decades ago with the conversion of multiple older, oil-burning power plants to modern energy centers fueled by cleaner, more efficient natural gas, like the FPL Port Everglades Clean Energy Center, pictured here.

Since 2001, FPL has saved customers more than $12.4 billion in fossil fuel costs while avoiding more than 183 million tons of carbon dioxide emissions through its power generation modernization.

Pam Rauch, Vice President of External Affairs and Economic Development, Florida Power & Light Company—a subsidiary of NextEra Energy—discussed the following topics in the *Trees & Lines* podcast, summarized in this article.

PAM RAUCH AND FPL

I started doing work for Florida Power & Light Company (FPL) here in Florida, the regulated entity, as we were undergoing a growth phase of generation and modernizing our plants as well as developing wind and solar farms all over the country through our unregulated business, NextEra Energy Resources.

CULTURE AND DISRUPTION

Back in the '80s, FPL was the first company in the country to win the Deming Award, a Japanese award for quality improvement. It totally changed the processes of how we did business. That has been part of our DNA for a very long time. We were part of the first rocket that went to space in the '60s. We powered that! So, there was innovation happening at our company for a very long time. That said, I do think we have exponentially evolved over the last 20 years. The culture here is very different from other "traditional" utilities because of the way our culture is...we are looking to disrupt ourselves.

BECOMING THE MOST RELIABLE UTILITY IN THE COUNTRY

FPL is the most reliable utility in the country and has been for the last five years because of a lot of investments we made, that other utilities didn't make, in smart technology and hardening and so many other things. But, you know, we don't have to do that. We're regulated. All we have to do is match our revenue requirements and we're good.

But that is not the culture of our company. Our culture is "If we're recognized as number one in the industry, now we have to beat ourselves." And so, we're not happy. For example, back in 2000, regulators didn't tell us to do this, but we made a decision to wean off oil.

HOW NEXTERA ENERGY BECAME A LEADER IN RENEWABLE ENERGY

We were the largest user of oil in America. We were using more than 40 million barrels a year, and all of it was coming from overseas. We made the decision to use new technology for our power plants and converted to natural gas. We were even sued about it from different groups who said, "You don't have to. Don't spend the money now."

But we knew we could operate those plants more efficiently. We didn't have a crystal ball, but we knew that natural gas was definitely going have more of a future than oil. And, in the process, we saved our customers $11 billion beyond the cost of the plants, and we operate those plants much more efficiently. We created a huge tax base in every community where we did

Trees and vegetation—including palm fronds—are one of the leading causes of power outages. FPL proactively trims and maintains trees and other vegetation along more than 26,000 miles of power lines each year to help reduce the frequency of these outages.

The company's strategy to maintain power lines free of tree growth is based on a consistent, planned trimming cycle.

FPL has 50 solar energy centers throughout Florida, comprised of nearly 15 million solar panels. In total, these sites generate enough energy to power nearly 750,000 homes. FPL is on track to install more than 30 million solar panels across the state by 2025.

it, and we reduced emissions by 50%. Those are the "win-win-wins." We now use 150,000 gallons [of oil] a year. We're down to nothing, and we do that because we have to and are required by law.

WEANING OFF OIL

That was huge! It was more than a 99% reduction of foreign oil use. We could have stopped there and said "Hey, we're good. We're at the top of our industry." But we also were a big believer that reducing carbon emissions was a priority long before the discussion that's going on now.

So, we made an investment in solar back in 2009. We got special legislation to allow us to build three plants that were not cost-effective, but we needed to build those first plants to learn how to make them so. I was leading the development team at the time in 2015, where we actually built the first three cost-effective solar plants, utilizing the best technology or the cheapest power to give our customers.

And we could've stepped back and said it's too expensive, but we drove the cost down. We found land that we already owned, located next to transmission. All of that greatly reduced the cost in the projects. That helped pave the way for the largest solar growth in the country, with what we call our "30-by-30 plan"—30 million solar panels by 2030.

We've been working on our 30-by-30 plan now for about ten years; we're not going to stop there. We've been leading the way on green hydrogen technology and are about to start a pilot at our Okeechobee plant, where we also have a solar energy center. It will generate the power to perform the electrolysis process, which divides the hydrogen from the oxygen. Then, that hydrogen will be fed into our natural gas plant that will help it run completely free of emissions. Our CEO really believes that green hydrogen is the key to unlocking 100% carbon-free power in this country. We want to lead the way.

▲ *FPL recently introduced a robotic trimmer to assist in tree trimming and vegetation management activities.*

And the only way you do that is if you disrupt yourself—because no one's making us do it—and we truly believe you have to find ways to make it economic. And that's why we've been able to deliver power that is consistently well below the national average in terms of cost, making smart, disciplined, long-term investments, which is what we've done with our grid as well.

STRENGTHENING THE GRID AND CLIMATE CHANGE

Back in '04 or '05, it was the first time we got slammed in Florida with so many hurricanes. I've been a Floridian since I was four, and it was the first time we'd ever seen something like that! But we realized that with temperature and climate change, the intensity of these storms was changing, and our grid needed to be strengthened. We made investments in hardening the grid. We've made great improvements with replacing old wood poles with concrete poles, which is impactful when it comes to a hurricane, or even just bad weather days.

◀ *Trees and vegetation are one of the leading causes of power outages—especially following severe weather.*

FPL invests billions of dollars every year to protect the grid against extreme weather and improve day-to-day reliability. This includes replacing wooden transmission structures with new ones made of steel or concrete; hardening main power lines that serve critical community facilities and services; and inspecting power poles and replacing those that no longer meet FPL's industry-leading standards for strength.

VEGETATION MANAGEMENT

We've invested in being aggressive in VM, more so than a lot of our sister companies in terms of inspecting poles and vegetation. That has helped our reliability...and investing in smart technology. We have almost 200,000 smart devices on our grid throughout Florida. That has changed the way we do business.

LEVERAGING TECHNOLOGY AND PREVENTING OUTAGES

It has given us so much data that the knowledge we have ahead of time helps us significantly prevent outages before they even happen. When outages do happen, we have immediate information. We used to have to wait to get a phone call to know if something was out. And now, we know. Not only do we know about it, but we know how we're going to fix it. We know what we need to do. All that reduces costs for our customers. Furthermore, we even use drones and robots. So, after a hurricane, we utilize our drone teams now instead of driving trucks that can't get to the backyards, which through quick flights, we have information on how we're going to restore power. Again, great strides in efficiency, cost, and ability to serve our customers better.

And I think we're kind of leading the way in using that technology. And we continue to look for new ways. Our culture here is how to be innovative.

For the full interview, listen to the Trees & Lines podcast available on YouTube, Spotify, BuzzSprout, Google, and Apple podcasts.

The Industry Unites at 2022 ROW Sustainability Summit

By Travis Rogers, Market Development Specialist, Corteva Agriscience

A field tour of State Game Lands 33 allowed 2022 Right-of-Way Sustainability Summit attendees to see and learn about the benefits that different vegetation control strategies can provide. Photo courtesy of Ben Borden.

The United States contains approximately 9 million acres of utility ROW and nearly 3 million miles of natural gas and liquid petroleum pipelines. This expansive infrastructure delivers energy resources to communities, homes, and businesses across the country. For energy companies and their industry partners to ensure the safe and reliable delivery of these resources, it is imperative they properly service and maintain not only infrastructure but also the land and ecosystems surrounding it.

These responsibilities make VM an essential practice for energy companies. However, decades of environmental research and field results have shown that the effects of different vegetation control strategies can vary from one site to the next. That's why the UAA, Corteva Agriscience, FirstEnergy, Pennsylvania State University, Rights-of-Way as Habitat Working Group (ROWHWG), and the University of Illinois–Chicago worked together to present the 2022 Right-of-Way Sustainability Summit from June 28–30 in State College, Pennsylvania.

The summit was structured to keep electric and pipeline operators, vegetation managers, vendors, and members of nongovernmental organizations up-to-date on the latest trends impacting the energy sector. Throughout the three days, the event facilitated conversations and learning opportunities to help nearly 60 industry leaders identify the impact programmatic decisions can have on environmental sustainability and cost efficiency, as well as internal and external communications.

IMPROVING SAFETY AND GRID RELIABILITY

As the longest continuous study of VM practices and their environmental impact throughout utility ROW, the State Game Lands 33 (SGL 33) research project in Central Pennsylvania has provided nearly 70 years of environmental insights to the utility industry. A field tour of SGL 33 gave summit attendees a firsthand look at different VM strategy results that can improve sustainability and reliability for both electric utility and pipeline managers. Topics discussed on the field tour included:

- The impact of vegetation control strategies on various wildlife species, including ground beetles, pollinators, and breeding birds
- Benefits of maintaining a wire-zone/border-zone approach to VM
- Improving stem density management with basal low-volume herbicide applications
- What energy companies and their contract partners can do to prepare for programmatic success in the near and distant future

Presentations from industry professionals also provided valuable insights regarding technological advancements and resources that can help energy companies enhance change management, meet state or federal regulations, improve site accessibility, and monitor wildlife throughout ROW corridors. Together, these discussions identified IVM programs as the ideal approach to ensuring the safe and reliable delivery of energy resources while enhancing biodiversity.

DETAILING THE MULTIFACETED VALUE OF ENVIRONMENTAL SUSTAINABILITY

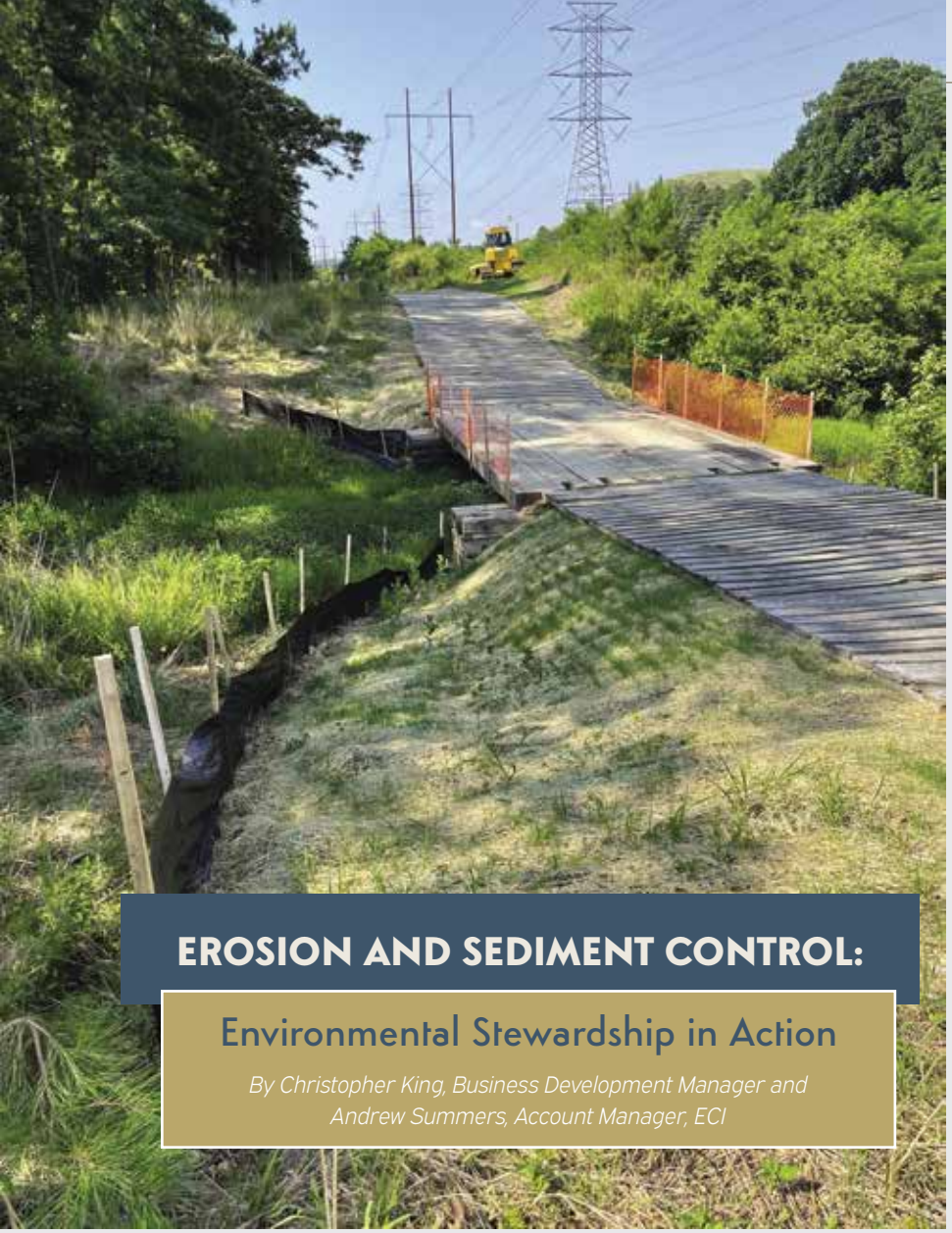
Numerous presentations at the 2022 ROW Sustainability Summit featured researchers, working group members, and VM specialists detailing the ways in which energy companies can reduce their environmental footprint to enhance public perception and resource management. Presentations explored industry resources, assessment practices, and treatment strategies that can help organizations document their environmental impact, such as:

- Classifying landscapes to identify habitat compatibility
- Using habitat scorecards and benefits provided by each
- Applying herbicides that can help reduce mowing practices and carbon emissions
- Utilizing quantitative and qualitative assessment tools that support ESG reporting

While mechanized mowing is a popular vegetation control strategy for professionals working to maintain incompatible vegetation throughout ROW corridors, several speakers acknowledged that mowing exclusively can leave room for cost efficiency and biodiversity enhancements. Industry experts referenced various herbicide applications as complementary practices that can enhance the adaptation of an IVM-based approach, effectively minimize mowing practices, circumvent a cyclical reclamation model, and reduce long-term maintenance costs.

KICK-STARTING THE CONSERVATION CONVERSATION

In addition to the environmental and economic incentives detailed at the event, the 2022 ROW Sustainability Summit unearthed an overarching theme: the need for industry-wide communication and collaboration. As summit partners prepare for future iterations of this forward-thinking event, energy companies and their VM counterparts have access to more impactful tools, resources, and strategies than ever before. For the time being, professionals and organizations throughout the energy sector are encouraged to engage landowners and establish partnerships with like-minded entities to adapt BMPs, enhance results, minimize scrutiny, and lead the industry into a new era of stewardship and sustainability.



EROSION AND SEDIMENT CONTROL:

Environmental Stewardship in Action

By Christopher King, Business Development Manager and Andrew Summers, Account Manager, ECI

Stream crossing and silt fence installed for construction access. Photo courtesy of ECI.

Environmental stewardship is pivotal in a utility's environmental, social, and governance strategy. It is a risk not to consider the environmental implications of construction, maintenance, and day-to-day operations. Utilities must consider the environmental impacts of access and construction to prevent an environmental event and comply with local, state, and federal regulations. Today, most states have explicit standards for land disturbance and guidelines for mitigation. These plans are in place to prevent water pollution, which can have devastating impacts on streams and vital water sources. Fortunately, proven strategies have been implemented that mitigate the risks associated with land disturbance. Environmental Consultants (ECI) and our utility partners have a course of action to properly plan, execute, and rehabilitate sites that require land disturbance. Each one of these stages is interdependent and is integral to the success of environmental stewardship.

STAGE 1: PLAN

Mitigation and control efforts begin in the planning stages. Site surveys and assessments by trained professionals reveal the environmental conditions. Features such as slopes, wetlands, endangered species, and streams determine the course of action. Tools such as topography maps, wetland delineation, and regulations determine the requirements for the site. The construction scope of work is also considered. When determining areas of impact, the asset which needs to be accessed, its access points, and easement factors are also considered.

Since every construction site is unique, a plan tailored to the site-specific requirements is necessary. The course-of-action plan outlines the erosion and sediment controls needed to mitigate sediment relocation. Some standard controls are silt sock, silt fence, and berms. These measures are incorporated into the plan and are installed before construction. Other needs may include mats and bridges to eliminate degradation when crossing streams and entering wetlands. In addition to the site assessment, all permits must be obtained from local, state, and federal regulatory agencies. The course-of-action plan, inspection logs, and permits are all included in a Storm Water Pollution Prevention Plan (SWPPP). This book is a live repository maintained throughout the project's life.

STAGE 2: EXECUTE

By this point in the process, an oversight representative is assigned to ensure the proper installation of controls to the guidelines outlined in the SWPPP. This representative oversees the site from control installation to rehabilitation. An installation company installs all necessary environmental controls per the site plan. The oversight

Fully rehabilitated construction site. Photo courtesy of ECI.

Work pad stabilized with seed and straw after construction was completed. Photo courtesy of ECI.

representative monitors progress and inspects the site once the installation is complete. Once the site aligns with the site plan, construction can begin. The oversight representative will periodically inspect the site to ensure the controls are in working order during construction. These inspections are logged in the SWPPP and updates are made as required. If repairs or changes need to be made, the representative will take action to ensure compliance. During this time, the site may be inspected by internal or external parties. These inspections are to ensure that the site meets the requirements dictated by the permit and regulatory bodies. The consequences of a failed inspection can mean the revocation of a permit and/or fines. This can completely stop the project and lead to costly remediation. Maintaining compliance is vital, and having an oversight representative keeps the project on track.

STAGE 3: REHABILITATE

Environmental stewardship doesn't stop once the construction is complete. Site rehabilitation ensures that the site is left in a state that is comparable, if not improved. Temporary bridges and mats are removed from the site. The oversight representative oversees the rehabilitation stage, ensuring the site is restored to its natural state by implementing the appropriate tools. Depending on the site, the restoration could include laying sod, hydroseeding, spreading special wetlands seeds, and planting trees. The oversight representative will continue to monitor the site after planting—the site is not entirely rehabilitated until it returns to its original state.

CONCLUSION

A responsible approach to land disturbance affirms a utility's commitment to environmental stewardship. As a component of ESG, having environmentally conscious methods to manage construction projects is necessary to reduce impacts on stakeholders. Planning, executing, and rehabilitating are stages that fulfill construction needs while minimizing environmental impacts. ECI is proud to support our utility partners in these efforts and looks forward to continued progress in environmental stewardship.

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—Lewis close call

When reviewing notes from the past few months of our weekly close-call meetings, an interesting trend emerged. We captured more than 130 instances of the phrase "thank you."

You are taking ownership beyond your sphere of influence. **Thank you.**

We love that you are looking at innovative ways to be safer. **Thank you.**

What a great example of work that went well. **Thank you.**

"People don't care how much you know until they know how much you care."
—John Maxwell

This is exactly how we want Lewis leaders to perform. You had a concern that you elevated. **Thank you.**

In our high-risk industry, something incredible happens when we (a) collectively engage in praising the messenger and (b) treat vulnerability as a strength—we create an environment of trust. In return, more stories emerge from which we can learn and get better. And save lives.

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One of our guiding beliefs is that organizations, like Lewis, are a collection of relationships. As leaders, we must positively influence the spirit of our team members to ignite their performance. Beyond physical safety, we are actively creating psychological safety through our culture of praise.

As a company, we are intentionally building belonging not only by establishing high standards but, more importantly, making connections among a highly distributed workforce and solving difficult challenges together. It all comes down to trust.

Thank you.

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Join Us in Celebrating International Day of the World’s Indigenous People

International Day of the World’s Indigenous People raises voices for the rights of the indigenous communities. The history of the Sac and Fox tribe of North America, who were dislocated from their indigenous lands through a series of armed conflicts and treaties, is certainly no exception. Today, this community celebrates its famed leader Black Hawk and esteemed Olympian Jim Thorpe. At Lewis, we celebrate Hector who is a proud, tribal member of the Sac and Fox Nation and Crew Leader at Lewis.

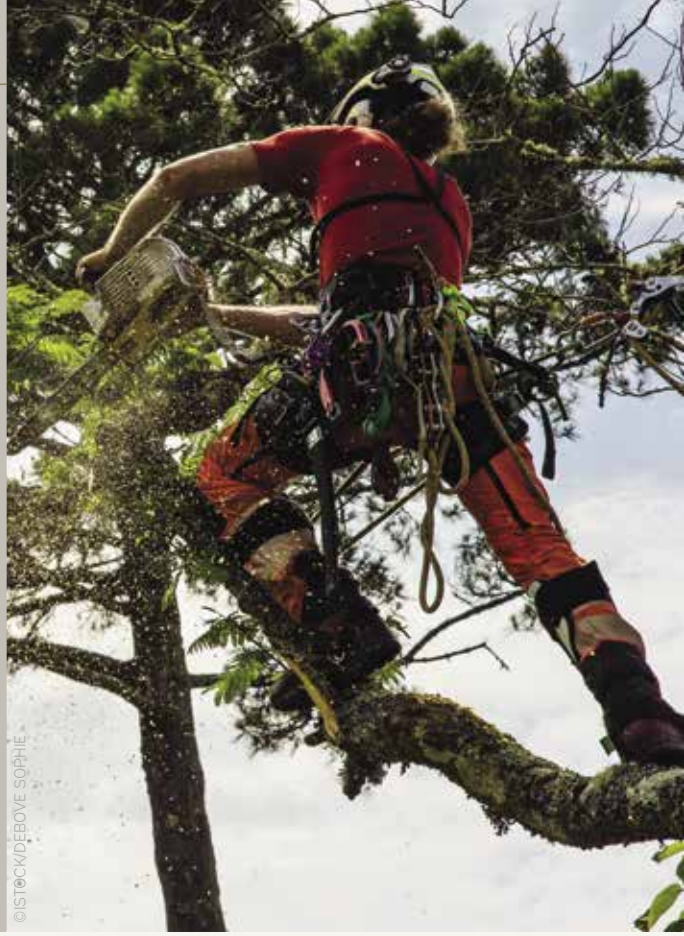
Learn more about Hector’s views on DEI at Lewis and Day of the World’s Indigenous People by scanning the QR Code or visting https://qr.page/g/1mvKFjnNYKY

At Lewis, our commitment to Diversity, Equity, and Inclusion (DEI) is key to the success of our business.

UVM IS TOO IMPORTANT TO BE LEFT TO "TREE TRIMMERS"

By Randall H. Miller, Director of Research and Development, CNUC

Utility vegetation management is too important to be left to "tree trimmers." Failure in VM can be an existential threat to utilities. It has resulted in catastrophic fires, ruinous blackouts, loss of life, severe injury, property damage, and tarnished corporate reputations. CEOs have lost their jobs due to failures in VM. Our profession has a profound responsibility to mitigate safety and reliability risks potentially caused by conflicts between vegetation and utility infrastructure, and to do so in an environmentally sensitive manner.



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Satisfying that responsibility is beyond the capability of "tree trimmers." Consider the topics you read in every issue of the *UAA Quarterly*. Reflect on the depth of information Geoff Kempter and I covered in the utility arboriculture book (Miller and Kempter 2018): safety, program management, pruning, IVM, electrical systems, communications, and storm response. Consider the Utility Professional Development Program, which is a partnership among the UAA, Utility Vegetation Management Association of Canada, and the University of Wisconsin–Stevens Point. It is a rigorous, two-year course that emphasizes business management principles and IVM. Tree trimming doesn't begin to describe what's involved.

Yet, we continue to discredit ourselves by referring to our organizations as "tree trimming" contractors and departments, to what we do as "trimming," to those who perform the work as "trimmers" and we count our production in "trims." It's jargon that insults the level of expertise utility arboriculture demands. I observed years ago that trimming is used as a synonym for pruning. It also has dozens of definitions, generically describing various activities people perform on turkeys, Christmas trees, fingernails, hair, lawns, budgets, and many other things besides pruning. Associating pruning with all these behaviors suggests trimming trees doesn't take any more skill than any of those other activities, like trimming fingernails (Miller 2009).

The work required by our tradespeople is also too technical to be left to tree trimmers. It demands all the skills required for commercial and municipal arborists: command of tree biology, a skilled hand for pruning, safe climbing techniques, tree and plant identification, roping and rigging, and knowledge of tree risk assessment, among many other skills. What's more, field responsibilities require knowledge of IVM, herbicide application, tree growth regulators, heavy equipment operation, botany and ecology, cover type conversion, and many other competences—all that, in addition to knowledge of electrical systems and how to safely navigate the considerable safety risks attendant to line clearance work. These responsibilities are far more demanding than any we can describe as tree trimming.

Yet, "trim" and "trimming" are used at the highest levels of our profession. The International Brotherhood of Electrical Workers (IBEW) has a Nation Wide Line Clearance Tree Trimming Coordinating Council. Many professional utility vegetation managers justify the terminology because it is used by Occupational Safety and Health Administration (OSHA), as if we should submit to the judgement of bureaucrats who confuse arboriculture with landscaping. Although, to be fair to them, how else should they classify tree trimming? It doesn't stop there. I hear contractors and unions classify our tradespeople as "Trimmer 1, Trimmer 2, Trimmer 3" or similar references. Other professionals refer to trimming transmission lines, even though they are applying IVM best management practices, which requires a level of skill and knowledge that should be disgraced by such terminology. It goes on and on, but I hope you get my point—it's degrading language that damages our profession.

There are consequences for selling ourselves short. Vegetation management is as demanding as any other utility department. The average utilty that responded to a University of Wisconsin–Stevens Point/CNUC UVM survey spent over $30 million a year on VM in 2018 (Hauer and Miller 2021). For many utilities, VM is the single-largest operations and maintenance expenditure. Still, tree trimming is often a second-class operation. Those assigned to run VM departments often have far more responsibility than any manager, but they are classified and paid as supervisors. Others with more challenging assignments than directors are managers. The few who are directors

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Since 1972 ECI has helped hundreds of clients in North America realize dramatic improvements in public & employee safety, service reliability, cost savings, risk, regulatory compliance, and overall operational effectiveness while improving the public's perception of utility vegetation management.

are often engineers or project managers, not tree trimmers. I have never even heard of a vice president of VM at a utility. My point is that most utilities don't think tree trimming requires the same level of skill as other responsibilities, and "tree trimmers" lack the competency required for positions of responsibility. We are partly responsible for contributing to that disrespect by referring to ourselves as tree trimmers.

Apart from devaluing those who run VM programs, many utility procurement departments administer a drive to the bottom. They ignore competency and tender contracts to the lowest bidder. Since they do not believe any skill is required for tree trimming, their only consideration is cost. Margins for VM contractors are low. In turn, wages for VM tradespeople are often suppressed. Both realities hurt the industry because they constrain our ability to attract and retain the best and brightest. Further, software companies are now selling remote sensing tools that they say will enable managers to dispatch tree trimmers from their office. They don't recognize the need for the skilled, professional arborists. I understand that remote sensing is a valuable tool and there are synergies in partnering with remote sensing software developers (Miller 2020). However, many software technicians lack an appreciation for the expertise VM requires. I think we contribute to that misunderstanding when we refer to our work as merely "tree trimming."

> "WE CAN'T EXPECT TO COMMAND THE RESPECT OF OTHERS UNLESS WE RESPECT OURSELVES."

There is beginning to be improvement. In the Western United States, where climate change has brought risks associated with tree and power line conflicts to unprecedented levels, utilities are beginning to recognize the need for professional VM. In California, wages for utilty arborists have been raised to the level of journeymen linemen. Training at community colleges in the state is underway to prepare a generation of skilled utility arborists that are needed to satisfy the pressing demands confronting California utilities. They are leading the way, and plans are in progress to apply that model throughout the U.S.

Our professional organizations recognize the importance of proper language. The ISA is not the "International Tree Trimmer's Association." ISA credentials are not "Certified Tree Trimmers" or "Certified Tree Trimmers Utility Specialists." Rather, they are Certified Arborists, Certified Arborist Utilities Specialists, and so forth. The UAA is not the "The Utility Tree Trimmers Association." We, as UAA Members, have an obligation to drive professionalism. Remember, the UAA mission is to "...drive excellence, innovation, and improvement in utility vegetation management through professional development, outreach, research, and the use of best practices." As UAA Members, we betray our mission by referring to ourselves as "tree trimmers." ANSI A300 standards apply to utilities, arborists, and VM contractors. These standards never use "tree trimming." ANSI A300 Part 7 clearly states a vegetation manager is an individual engaged in the profession of VM who, through appropriate experience, education, and related training, possesses the competence to provide for or supervise an IVM program. Our terminology should be consistent with A300's lead.

Further, the IBEW is discrediting its VM membership by referring to them as tree trimmers. That preeminent labor union should follow the lead of professional arboricultural organizations and describe their tradespeople as "Journey-Level Utility Arborists," or something along those lines. Our contractors should also have more appropriate job titles and use terminology like utility arborist and utility arborist trainee that command respect for the knowledge and technical skill the profession demands.

It's been more than 80 years since G.D. Blair complained in his pioneering utility forestry book (Blair 1940) that tree trimming was a "misnomer, because line clearance involves much more than 'trimming' trees." If it was true then, it is even more so now. As Geoff Kempter wrote in the *Introduction to Utility Arboriculture: The Utilty Specialist Certification Study Guide* (Miller and Kempter 2018), "It should be clear that the terms 'trim' and 'trimmer' inadequately describe the skills required of utility arborists... 'Tree trimmers' are 'utility arborists' and 'tree trimming' is 'utilty arboriculture.' Trees are not trimmed, they are pruned; there is no such thing as a 'tree trimming program,' it is a 'vegetation management program.' These more accurate terms promote utilty arboriculture as a profession and will generate greater respect from the public and our industry peers.'"

We can't expect to command the respect of others unless we respect ourselves. We need to use language that reflects the level of expertise required to fulfill our responsibility to mitigate safety and reliability risks potentially caused by conflicts between vegetation and utility infrastructure—and to do so in an environmentally sensitive manner. That work is too important to be left to "tree trimmers."

AUTHOR BIO

Randall Miller has been chair of the TREE Fund Board of Trustees, president of the Utility Arborist Association, and twice Chair of the Edison Electric Institute Vegetation Management Task Force. He has also served on the ISA Certification Test Committee and many other industry committees. Randall is the author of the *ISA Integrated Vegetation Management Best Management Practices* and co-author of the *Utility Specialist Study Guide*. He speaks widely on arboricultural topics and performs formal UVM surveys of North American utilities.

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