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Number 5

UTILITY ARBORIST NEWSLINE

FOCUS ON SUSTAINABILITY AND ENVIRONMENTAL CONSERVATION

SUSTAINABLE UTILITY CORRIDOR TRANSFORMATION

THE MEADOWAY PROJECT IS
MAKING A DIFFERENCE

UTILITY ARBORISTS PLAY A VITAL ROLE IN ORPHAN WELL DETECTION

JOINING THE FIGHT AGAINST
METHANE EMISSIONS

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Turn to **page 16** to read about the fight against methane emissions from orphan wells.

Learn about data-driven, modern solutions for risk-based VM vs. inefficient traditional practices on **page 26**.



Read about the complicated management of the invasive, non-native European Starling on **page 36**.



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

Artificial Intelligence (AI)
Best Management Practices (BMPs)
Beyond Visual Line of Sight (BVLOS)
Environmental, Social, and Governance (ESG)
Integrated Vegetation Management (IVM)
Geographic Information System (GIS)
Light Detection and Ranging (LiDAR)

Machine Learning (ML)
National Safety Council (NSC)
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Visual Line of Sight (VLOS)
Virtual Reality (VR)

PRESIDENT'S MESSAGE



Matt Goff

As this is my final President's Message, I'm excited to share highlights from a key strategic planning session held after the UAA Vegetation Managers Summit in May. The Board and staff established a bold new goal: for the UAA to become the Voice of the UVM Industry—our guiding North Star moving forward to amplify our impact.

To bring this vision to life, we've identified key strategic objectives:

- **Educate Stakeholders and Influence Policy:** We want to be the go-to resource, ensuring decisions are well informed and support vital utility operations and our planet.
- **Establish Standards of Excellence:** We're building a tree outage investigation form with minimum standards. By championing the highest standards, we elevate the industry and position UAA members as leaders in safe, efficient, and sustainable VM.
- **Strengthen Financial Foundations:** Like strong tree roots, sound finances support growth. We'll invest in resources, research, and outreach to support our ambitious plans—including hiring a finance-focused staff member in 2026.
- **Deepen Partnerships:** Collaborating with organizations like the ISA, Arbor Day Foundation, TCIA, plus key players in the rail and pipeline sectors (like API) will supercharge our voice and extend our reach.

These strategic objectives directly support our commitment

to sustainability and environmental conservation. They're not just tasks; they define how we operate.

This thematic goal isn't just a fancy phrase; it's a rallying cry! To be the authoritative voice in UVM, we *must* fully embrace sustainable practices and conservation. These objectives aren't green window dressing. They're essential to remain relevant.

By weaving these principles into all we do, we boost operational and cost efficiency, enhance public perception, foster regulatory stability, and secure our industry's long-term, indispensable value to society. It's about being smart, responsible, and respected.

Sustainability means delivering predictable, accurate, and beneficial results over time and building a lasting, positive legacy. *Conservation* focuses on precise strategies that manage target vegetation while protecting, and even benefiting, the surrounding ecosystem—surgical precision with ecological care. This stewardship leads to fewer outages, lower costs, better public image, and stronger regulatory stability. These aren't "perks"—they're vital for long-term success and our ability to advocate for our members and the public we proudly serve.

Sustainability and conservation aren't abstract. They're perfectly captured through integrated vegetation management—a comprehensive, data-driven process that champions environmental conservation while delivering reliable power. It's how we ensure effective results with a responsible footprint. And the best part: We'll continually monitor, learn, and adapt to exceed expectations.

Get Involved: Be the Voice, Make a Difference!

I'm blown away by the passion of UAA peers who volunteer their time and talents to help advance our goals through a growing list of regional and national events. This is how our collective voice is built—through the dedication of amazing individuals like you.

Think about the bright talent joining

our workforce. New generations are drawn to industries that visibly commit to sustainability and social responsibility. To attract and keep the sharpest, most dedicated minds, the ROW industry must showcase its environmental leadership and forward-thinking approach. A strong, clear voice highlighting this commitment not only boosts appeal but ensures a vibrant, skilled workforce for years to come.

Let's be honest, UVM doesn't happen in a bubble. Our work intertwines with complex ecosystems, diverse communities, and other vital infrastructure industries. A *relevant* voice understands and articulates these intricate connections, showing how thoughtful VM contributes to broader environmental health, biodiversity, and community well-being—far beyond just keeping the lights on.

Here's an exciting thought: Sustainability often fuels real innovation! Emerging technologies for precision monitoring, advanced data analysis, and targeted treatment application are pushing us towards more sustainable and efficient practices. Being a relevant voice means actively embracing, promoting, and even pioneering these advancements to ensure our industry remains at the forefront of environmental stewardship and operational excellence.

As I transition from this leadership role, here's my straightforward, heartfelt challenge: **Help build our voice.** Engage with the Board and fellow members. Whether you agree, disagree, or are somewhere in between, your input is vital! Join your elected representatives to become the definitive voice of our industry. Individually, we hold opinions. But collectively, united in purpose and passion, we have the power to shape a stronger future for our industry, bringing unparalleled benefit to workers, managers, companies, society, and the environment alike. 🌱

Matt Goff

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kids do
dangerous
things
carefully"

- Jordan Peterson

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EXECUTIVE DIRECTOR MESSAGE



Dennis Fallon

Support the UAA's mission to empower the utility arborist community! Whether you want to make a donation, volunteer for a committee, apply for scholarships, participate in our events, or explore our IVM resources, there are many ways to get involved and make an impact. Get started here: www.gotouaa.org/support-uaa.

This edition of the UAN is themed to sustainability and environmental conservation. The easy play for this article would be to talk about the great work the UAA Environmental Stewardship Committee is undertaking. Or to highlight the efforts of the committees working to bring the 14th Environmental Concerns in Rights-of-Way Management International Symposium to life in Vancouver, British Columbia, May 11-14, 2026. ROW14 marks fifty years since the first symposium was held at Mississippi State University in 1976. You can learn more and register at www.rights-of-way.org.

In true utility arborist form, I'm not going to make the easy play here—I'd rather spend time talking about the sustainability and relevance of the UAA. Organizational sustainability is intertwined with relevance. An organization must remain relevant to remain sustainable. Sustainability, in any context, boils down to the ability to meet the needs of the present without compromising the

ability of future generations to meet theirs.

This past May, to achieve sustainability and relevance over the next decade, the Board of Directors identified a bold thematic goal for the UAA to be recognized within and beyond our current audiences as the **Voice of the Utility Vegetation Management Industry**. The thematic goal will be used as a guide to provide direction for us as we carry out the mission of the UAA: *Drive excellence, innovation, and improvement in utility vegetation management through professional development, outreach, research, and the use of best practices*. While our mission is clear, it's intentionally open to interpretation, allowing space for new ideas and the agility needed to reach our goals.

As we map our path forward, we recognize that sustainability, both environmentally and organizationally, requires active participation. It is more than setting a bold declaration; it is about creating the momentum and a community to reach it. The UAA's strength lies in its members and their diverse experiences, voices, and ideas. We need your insights to shape our outreach, your creativity to innovate our practices, and your passion to steward this profession into the future.

Volunteer. Speak up. Join a committee. Reach out with an idea. Together, we can build a more resilient, forward-thinking, and impactful UAA that embraces change and leads the way forward. 🌱

Dennis Fallon



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ENVIRONMENTAL STEWARDSHIP COMMITTEE UPDATE

For a Greener Tomorrow: The ESC's Year in Print

By Caitlin Morrison, PHI Account Manager, Davey Resource Group

The Environmental Stewardship Committee (ESC) had a dynamic and thoughtful year, contributing several articles to the *Newsline's* "Spotlight on the Environment" column. These pieces reflected our industry's growing commitment to sustainability, biodiversity, and community engagement.

- Our call to action is inspired by wanting a better life for future generations.

As we reflect on 2025, there is one major theme echoed by every author: the respect for the land and nature through mindful stewardship. Here are some key highlights and quotes from the ESC's articles that reflect this sentiment, based on my interpretation:

- **The growing dependence on technology has become a distraction from our connections with nature. And more than ever, we should seek time in nature for inspiration and inner growth.** Meccage wrote, "Reconnecting with nature doesn't mean disappearing into the wild for days. Sometimes it means walking a ROW, being present, and noticing what's already there."
- **Community collaboration can help mindful restoration of urban canopies.** As Bouton wrote, "Responsible environmental stewardship requires acknowledging past harm and honoring the true value of land to occupants. Climate change mitigation efforts at large will not be successful without meaningful engagement of diverse stakeholders and an intersectional lens."
- **Environmental-focused practices can affect wildlife populations and even contribute to population growth among threatened and endangered species.** I concluded, "Extensive research shows that implementing IVM principles and practices can positively affect the ecology of the ROW and the surrounding area, whether it's a new construction project or an ongoing maintenance program."
- **Knowing the potential negative impacts of improper herbicide applications and selections can guide the applicator toward best practices.** Musgrove cautioned, "Some impact a set of specific species and nothing else while others kill plants indiscriminately. Some herbicides can even be toxic to non-plant organisms, like wildlife and even humans. Given their wide range of uses and their impacts, it is important to be sure that when herbicides are called for, the right kinds are chosen and applied using best practices."

As environmental stewards, we are protectors of the natural environment. It is through forms of activism and sustainable practices that we echo the importance of preserving and protecting this earth. It is needed more than ever to find it within your communities and stakeholders to collaborate on projects that contribute to environmental stewardship. We often hear the phrase, "Act locally, think globally." The work featured in "Spotlight on the Environment" reminds us how powerful small, thoughtful actions can be—and encourages all of us to lead with care and purpose. 🌱

- 
- **JAN/FEB:** "Neighbors and Nature: Building Community Through Equitable Green Infrastructure" by Whit Bouton
 - **MAR/APR:** "Protecting and Conserving Bird Populations Affected by Utility Infrastructure" by Caitlin Morrison
 - **MAY/JUN:** "Herbicide Safety: The Importance of the Right Herbicide in the Right Place and Time" by Joshua Musgrove
 - **JUL/AUG:** "The Electric Butterfly: Reconnecting with Nature on the Edges" by Ryan Meccage

If you haven't had a chance to read these articles yet, I encourage readers to download previous issues of the *Newsline* and give them a ponder—you won't be disappointed!

While all these articles varied in topics, there were major themes and ideas shared throughout them all. These themes are indicative of the major topics discussed during ESC meetings as well as the general sentiment of our industry. These key themes are:

- Environmental stewardship is an increasingly important and conscious choice that requires deliberate actions.
- Staying informed about environmental regulatory interpretation and enforcement is crucial.
- Celebrate the wins for native species to highlight the progress we have made.
- Understand the root causes and the reasonings behind our actions to preserve our natural resources.
- Connect to local communities to strengthen the relationships with the utility companies with their clients.
- Companies are continuing the strive for positive impacts on ESG performance.
- Safety and environmental stewardship are complementary.



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SAFETY TOOLS

Organizational Resilience

By Paul Hurysz, Manager–UVM Safety Consulting, Davey Resource Group

In today's rapidly evolving utility industry landscape, utility vegetation management organizations face significant management of change challenges, from economic fluctuations and technological advances to natural disasters and the strong desire to build capacity to improve safety outcomes. The ability to not only withstand these shocks but also adapt, recover, and even thrive in their aftermath is known as *organizational resilience*. It's more than just a buzz phrase discussed in C-suites; it's an objective for most organizations to obtain sustained success over time.

WHAT IS ORGANIZATIONAL RESILIENCE?

Organizational resilience refers to a system's capacity to operate consistently despite changes or disturbances, whether anticipated or not (Hollnagel 2004). To fully grasp this comprehensive definition from a leadership standpoint, let's dissect it.

What constitutes a "system"? Organizations are composed of numerous systems, such as safety, financial, and operational systems. Given this article's focus, we'll narrow our scope of discovery to Safety Management Systems (SMSs). Every organization, whether they are aware of it or not, utilizes an SMS to structure its safety management. As Paoletta (2021) notes, "As long as your organization has people working on its behalf, or who may be affected by its activities, then using a systematic approach to managing health and safety will bring benefits to it." While SMS structures vary by organization, they typically contain several core components, as illustrated in Figure 1.

Organizational resilience hinges on a system's ability to adapt its operations before, during, and after various events—be they changes, disturbances, or even opportunities. This adaptability ensures sustained functionality under expected and even unexpected conditions (Hollnagel 2016). This principle applies to every system element, emphasizing the dynamic, rather than linear, nature of



Figure 1. Adapted from the ASSP GM-Z10.100-2019 Guidance and Implementation Manual for ANSI/ASSP Z100-2019 Occupational Health and Safety Management Systems.

resilient systems.

In linear systems, where leaders often prioritize individual element performance, silos can form and hinder collaboration, cooperation, and communications that resilient and effective organizations need in order to succeed. For instance, in a linear system, trainers might focus solely on their preferred training content, neglecting employee needs or organizational leadership's future vision. Conversely, in a dynamic system, trainers and educators align closely with the goals and needs of all the elements of the system, benefiting the system as a whole. Ultimately, a system's success is linked to its resilience, which is fundamentally rooted in the interdependence of its elements working together for collective achievement.

ACHIEVING ORGANIZATIONAL RESILIENCE: BENEFITS AND STRATEGIES

Investing in SMSs that pave the way for organizational resilience offers a multitude of benefits that coincide with system thinking.

Enhanced Stability and Continuity

By mitigating the likelihood and impact of disruptions, SMSs ensure business continuity, enabling organizations to withstand economic downturns and external crises. This can be achieved through strategic capital investments in

technological infrastructure that support employee engagement and retention (e.g., lone worker tracking applications, reliable data collection tools, and analytics for prioritizing needs).

Increased Competitiveness

Organizations that effectively navigate crises gain a competitive advantage by fostering financial resilience and organizational readiness. Given that no organization possesses unlimited resources, system thinking and management can identify where the highest return on investment is by system element, thereby boosting organizational competitiveness and mitigating waste.

Improved Reputation and Trust

Demonstrating resilience cultivates trust among clients, customers, and employees. For instance, building trust can involve creating and delivering sustainable solutions that surpass client and employee expectations. Whereas silos hinder system effectiveness, fostering trust cultivates the development of confidence in a learning culture where resilience signifies more than just recovery. A good example of this might be fostering an observation program that welcomes feedback with open arms.

Greater Innovation and Growth

The capacity to adapt fosters a culture of innovation and uncovers new opportunities, extending beyond technological advancements. This can be accomplished when an organization recognizes its strengths and weaknesses by leveraging its system to maximize performance to utilize internal/external assets to address aging infrastructure. It may also involve engaging subject matter experts outside of the organization's core competencies to tackle more complex and increasing demands, including environmental and regulatory pressures.

Stronger Employee Morale

Employees experience greater security and support within a resilient organization due to the free flow of information—top-down, bottom-up, and horizontally. While no organization is perfect, teams committed to continuous improvement are fundamentally strong in growth and developmental opportunities, making them difficult to leave.

CONCLUSION: WHY IS RESILIENCE IMPORTANT?

Safety, an inherently relative value, is a dynamic and evolving pursuit. SMSs are not perfect—nothing ever is. However, they demand continuous refinement to achieve true resilience. Ultimately, safety is embodied in the individuals who play an elemental role in every SMS—those actively engaging with and navigating the complexities of the world. We are all integral components within a fluid and constantly shifting system, which necessitates continuous improvement for survival and successful outcomes.

In today's increasingly unpredictable work landscape, organizational resilience transcends mere recovery from events; it is an imperative. Through proactive risk management, cultivation of inclusive leadership, development of adaptable and transformative operations, promotion of a resilient culture, commitment to financial prudence, and active stakeholder engagement, organizations can not only withstand adversity but also emerge more robust and adept at confronting future challenges. Resilient, safety-focused organizations are perpetually engaged in a journey of continuous improvement, thereby ensuring their preparedness for whatever the future may hold.

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OUTREACH COMMITTEE UPDATE



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A Conversation on Corridor Transformation: The Meadoway's Vision for Sustainable Utility Corridors

By the UAA Outreach Committee

In this issue, we highlight The Meadoway, an ambitious project led by Toronto and Region Conservation Authority (TRCA) that is reimagining what utility corridors can be. Stretching across 16 kilometers (10 miles) of high-voltage transmission corridor, The Meadoway is transforming the linear swath of land into a connected network of native meadows, multiuse trails, and thriving habitat for pollinators and wildlife. More than a restoration effort, it's an excellent example of how utility corridors can support reliable utility operations while advancing ecological health, sustainable land management, and public engagement. In the following interview, TRCA Project Manager Lorraine Chadwick shares insights into the project's development, the role of community and education, and opportunities for collaboration with the Utility Arborist Association.

What is an example of a way you've seen The Meadoway project make a difference?

The Meadoway is making a meaningful difference by redefining what an infrastructure corridor can be—transforming a landscape of grass monoculture into a thriving multifunctional and naturalized greenway that supports urban ecological health and community connectivity.

Beyond restoring native meadows and enhancing pollinator habitat, the project's trail infrastructure plays a vital role in linking neighborhoods and community destinations across

the region. Once complete, The Meadoway will connect seven river systems, 15 parks, 16 kilometers of trails, 13 neighborhoods, 100 hectares of meadow, and over 1,000 species of flora and fauna, and provide a critical connection between downtown Toronto and Rouge National Urban Park. The trail network not only provides safer, naturalized options for pedestrians and cyclists but also ensures access to the corridor for public engagement and stewardship. The integration of recreational and green infrastructure within a utility space is unique, and The Meadoway serves as a model for integrated utility corridor stewardship.

The Meadoway demonstrates that utility corridors can be managed not just for safety and reliability but as vibrant ecological and social corridors—setting a new standard for utility revitalization.

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

If you're looking to learn more about TRCA or The Meadoway project, there are several great ways to dive in—whether you're an industry professional, researcher, or simply curious about how utility corridors can be reimagined.

Start by visiting trca.ca and themeadoway.ca, which offer detailed information on the organization and project's vision, outreach efforts, restoration goals, and ecological impact. The project website includes a wide range of project content, including videos, maps, background

reports, native species lists, volunteer opportunities, project updates, and other educational materials.

For a more immersive experience, I highly recommend visiting The Meadoway in person. Spanning over 16 kilometers of connected hydro corridor, walking or cycling the trail gives a firsthand look at how utility spaces can be transformed into biodiverse meadow habitat.

Additionally, attending one of our community events or guided walks is a great way to learn from project team members and volunteers who are actively involved in the work. These sessions often include behind-the-scenes insight into how infrastructure and habitat restoration intersect. Information about upcoming opportunities can be found at themeadoway.ca/community-outreach.

Finally, connecting with us on social media or subscribing to our newsletter ensures you stay updated on seasonal progress, research findings, and partnership opportunities.

What efforts are made to educate the public on sustainable practices?

Public education is a cornerstone of The Meadoway, and we've made a concerted effort to turn this transformed utility corridor into a living laboratory for research and a classroom for sustainability. We run guided walks, workshops, and community events which give people hands-on opportunities to learn about sustainable land management. These events are led by subject matter experts who share knowledge on topics like

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OUTREACH COMMITTEE UPDATE

pollinator health, meadow restoration, invasive species management, and low-impact maintenance techniques. In schools and community centers, we offer curriculum-linked educational programs that highlight how infrastructure, ecology, and sustainability intersect. This helps cultivate early awareness and appreciation for land stewardship.

Digital engagement plays a key role as well. Through our website, social media, and seasonal newsletters, we regularly share restoration progress, ecological tips, and volunteer opportunities—ensuring that sustainable practices are not just modeled but multiplied through public participation.

Were there any challenges in the design phase of the project? How did you overcome those challenges?

The design of The Meadoway has presented several challenges in balancing the needs of ecological restoration, trail infrastructure, and utility corridor functionality. Integrating these elements into a cohesive and sustainable vision requires extensive coordination and innovation.

One early challenge was ensuring that the meadow and trail infrastructure—spanning a 16-kilometer multiuse length—could be safely incorporated into the active hydro corridor. This meant addressing issues like clearance zones, access for utility crews, and public safety in proximity to high-voltage transmission infrastructure. We overcame this by working closely with utility partners and engineers to determine appropriate setbacks and design trail alignments that allowed for both safe public access and unimpeded operational access.

Do you have a strategic plan? What key things are you trying to accomplish in that plan?

The Meadoway is guided by an implementation plan that focuses on transforming a 16-kilometer utility corridor into a vibrant, connected naturalized greenway—balancing

the needs of utility infrastructure with ambitious goals for ecological restoration, sustainable land management, and public access. At the heart of the plan are three key objectives:

- **Ecological Restoration**—Converting mown grass and invasive plants into thriving native meadows that support pollinators, birds, and other wildlife while maintaining utility safety and access standards.
- **Trail Infrastructure Development**—Building a continuous multiuse trail system that connects parks, schools, and neighborhoods, encouraging low-carbon, active transportation and deeper community engagement with the corridor.
- **Public Education and Stewardship**—Empowering communities to understand and participate in ecological practices through signage, outreach programs, volunteer opportunities, and curriculum-aligned education.

How do you measure success when it comes to conservation and sustainability?

We measure success in conservation and sustainability through both ecological and operational metrics. These include:

- **Biodiversity Monitoring**—Tracking increases in native plant coverage, pollinator species, and bird populations
 - **Invasive Plant Reduction**—Measuring the decline of targeted non-native plants over time
 - **Soil Health and Vegetation Establishment**—Assessing improvements in soil quality and the successful establishment of native seed mixes
 - **Maintenance Efficiency**—Monitoring how restoration impacts utility access and long-term vegetation management needs, striving for a landscape that's both ecologically rich and cost-effective to maintain
- Implementation of The Meadoway

is adaptive by design, allowing for continual learning, innovation, and refinement.

Through The Meadoway project, we've worked to shift perceptions by highlighting how these corridors can support ecological restoration and public access simultaneously. In Scarborough, The Meadoway is no longer seen as a just utility right-of-way but as a thriving green space, a biodiversity corridor, and a safe and active transportation route—all coexisting with critical energy infrastructure.

Do you have ideas on ways that the UAA could benefit your organization, or about opportunities for collaboration?

There's potential for collaboration between the Utility Arborist Association and The Meadoway project—particularly where utility vegetation management and ecological restoration intersect.

One promising opportunity lies in knowledge exchange. The Meadoway is essentially a living lab for integrated corridor management, and the UAA's network of professionals brings a wealth of experience in safety standards, line-clearance practices, and innovation in vegetation control. Hosting joint field days, webinars, or technical workshops could foster mutual learning around native plant compatibility, adaptive maintenance schedules, and risk mitigation in biodiverse settings.

Another area is developing best practices that demonstrate how ecological goals can coexist with utility safety and access needs. The UAA's involvement in shaping or reviewing these frameworks would be invaluable in making them scalable and applicable to other urban corridors across North America.

There's also room to collaborate on research and data collection, from monitoring vegetation performance under wires to evaluating how restoration affects inspection and maintenance cycles. This kind of applied research benefits both utility operators and environmental planners. 🌱

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The Wells Beneath the Work

Utility Arborists as Frontline Stewards in the Fight Against Methane Emissions

By Curtis Shuck, Founder and Chairman, Well Done Foundation

As utility arborists, your daily work keeps our communities safe and powered. You navigate diverse landscapes, from urban greenways to remote rights-of-way, ensuring that vegetation doesn't interfere with critical infrastructure. While your primary focus is on managing trees and plants, your unique vantage point offers a powerful opportunity to become frontline stewards in a critical environmental battle: the fight against methane emissions from orphaned oil and gas wells.

Many of these "orphan wells" are silent, unseen polluters, leaking methane directly into our atmosphere. Methane is an incredibly potent greenhouse gas, with a warming potential over 84 times that of carbon dioxide over a 20-year period. While CO₂ often dominates climate discussions, methane's short-term warming power makes its reduction an urgent priority for mitigating climate change. The U.S. Environmental Protection Agency (EPA) highlights methane as the second-most abundant greenhouse gas from human activities, underscoring the severity of these emissions.

There are hundreds of thousands of documented orphaned oil and gas wells across the United States, and potentially millions more undocumented ones. Each of these wells, even seemingly dormant ones, can be a continuous source of these powerful emissions.

PHOTO COURTESY OF CURTIS SHUCK



The Arborist's Unique Advantage

This is where your role as utility arborists becomes incredibly powerful. Your work takes you into remote, often undisturbed areas where these legacy wells might hide. With your trained eye for detail and awareness of changes in the landscape, you're already well equipped to notice the signs. By remaining alert to a few key indicators, you can help identify these hidden methane leaks and turn them into environmental wins.

What should you look for?

- **Visual Cues:** Keep an eye out for old, degraded infrastructure. This could include rusted pipes sticking out of the ground, old concrete pads, remnants of wellheads, or abandoned pump jacks. Sometimes, the only visible sign might be a disturbed patch of ground or an unusual clearing.
- **Vegetation Anomalies:** Methane can poison the soil, causing localized patches of dead, stunted, or unusually discolored vegetation even in otherwise healthy areas.
- **Sensory Indicators:** While always prioritizing safety and maintaining distance, you might detect faint smells or sounds. A "rotten egg" smell could indicate hydrogen sulfide, which is often associated with natural gas leaks. A subtle hissing sound, especially near old piping, could also signal a leak. You might even see bubbling in nearby puddles, streams, or standing water.

Joining Forces for a Healthier Planet

At the Well Done Foundation, our mission is dedicated to permanently plugging these orphaned wells, transforming environmental liabilities into environmental assets. When we successfully plug a single orphan well, we frequently prevent



PHOTO COURTESY OF CURTIS SHUC

the release of up to 4,000 tons of CO₂ equivalent per year, sometimes more. This climate impact is significant, making it comparable to planting 400,000 trees and caring for them for two decades.

We believe that utility arborists are uniquely positioned to become vital partners in this critical work. You are on the ground, literally, where these problems exist. Your observations can be the first step in identifying a leaking well that could otherwise continue to pollute our air, soil, and water for decades.

A Call to Action for Utility Arborists

If you encounter what you suspect might be an orphaned or leaking well during your work, please:

1. **Prioritize Safety.** Do NOT approach or disturb the well. Methane can be explosive, and other hazards might be present.
2. **Document.** Take photos or videos from a safe distance. Note the exact location (GPS coordinates if possible, or clear landmarks).
3. **Report.** Share your findings with the Well Done Foundation. You can find more information and a way to report potential orphan wells directly on our website at welldonefoundation.org.

Your expertise in managing our natural environments, coupled with a keen eye for these hidden threats, makes you indispensable partners in our collective effort to reduce methane emissions. Beyond ensuring safe powerlines and healthy trees, you have the opportunity to serve as crucial frontline stewards in protecting our planet. By working together, we can plug these silent polluters and leave a healthier legacy for generations to come. 🌱



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WOMEN IN VM



Amanda Sexton

Amanda Sexton

The Sketchy Flight that Changed My Life

By Amanda Sexton-Madrid, Northern Region Manager, Chemical Weed Control, Inc.

My introduction to the vegetation management industry was a bit unorthodox. After graduation from Texas A&M University, I struggled getting interviews in my field of study, Wildlife and Fisheries Sciences, and instead was recruited from my college hotel job to a position as a traveling apartment manager.

One morning, a friendly gentleman, who I learned was Morgan Pippen, sat next to me on the plane to Sacramento. He talked the *entire* flight, bless his heart. He asked me about my career and college education, and said that the company he worked for would be a better fit for me than apartment management—and he could get me a job. I was intrigued . . . but also a little concerned. I was a young woman, traveling alone, and I hadn't checked a bag. I was unarmed, and for all I knew, this man could be a serial killer. Then, Morgan said his boss was picking him up from the airport and he could introduce me. That's when I decided he was *definitely* a serial killer, and his "boss" was his partner in crime—they were going to kidnap me from the airport, and I'd never be seen again. I had to lose him.

We landed and I skedaddled away from Morgan, but he caught me at the top of the escalator. I thought, "Well, this is it—play nice and get away. And if that doesn't work, make a scene." I shook the hand of the man at the bottom of the escalator, Bob Urban,

and visited for a few minutes. He provided me with an email address to send my info to, and I escaped to the rental car area (murder avoided).

I checked out the company ACRT and learned it was legitimate, so I sent my resume in. And coincidentally, I was being sent to Tulsa that week. I called Bob, interviewed with him, discussed that I wanted a position in Texas rather than California, and flew to Tulsa. As the good Lord would have it, I had a voicemail when I got off the plane that ACRT was interviewing for a position in Texas, and the manager was in Tulsa that day. Troy Ross asked me to meet him at a hotel for an interview, and I thought, "That other guy didn't kill me, so a job interview at a hotel is completely reasonable." I was offered a position with ACRT working on the Oncor project, and spent the next several years on various assignments, ending up in Transmission Vegetation Management.

Over those years, I had great mentors and built relationships through ACRT, Oncor, and the Texas Vegetation Management Association, where I served on the Board and as President from 2017–2018. Bill Martin, Bruce Moore, Brad Mayfield, Kenny Murphy, and several others that I'll feel badly for not listing by name, taught me valuable lessons, such as "during a storm, eat all you can every time you can" and "never walk when you can drive." Seriously, I gained a wealth of knowledge, much of which I use on a

regular basis.

In 2014, time for a change, I was invited to join the team at Chemical Weed Control by Layne Fields and Donnie Wilson, a family-owned business that truly cares about their employees and customers. A few years later, I was approached by a long-time mentor, Howard Pierson, who asked me to consider training with him at Alligare to take over his position upon his retirement. I have never been more flattered. It was a difficult decision, but I took the position and spent two years traveling with and learning from Howard. However, when Alligare made business changes that weren't a good fit, I returned to Chemical Weed Control in January of 2020, and currently help the Northern Region.

I've never considered my gender to be an important factor in my career. Of course, it has arisen at several times in both positive and negative ways, but I am proud of the roles I have worked in and appreciate everyone who has impacted my career. My suggestion to anyone looking for career options is to consider the overall culture of the workplace as a high priority. It makes an exceptional difference in your happiness when you work with a group who respects and is respected by you. There will always be hard days and situations you wish were different, but when you work with a group who genuinely cares about each other, those situations are manageable. 🌱





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BUSTING THE MYTHS



Lorelei Phillips



From Helicopters to Homeowners: Inside the Life of a Vegetation Manager

By Lorelei Phillips, Vegetation Manager, Pacific Power

It is the week before a heat wave and temperatures are expected to skyrocket, with potential heavy winds in Southern Oregon and Northern California. At 7:00 a.m., a call comes in from a line patrolman. He is requesting me to join him on a helicopter patrol the following morning to identify any vegetation conditions to prepare for the incoming heat.

The next morning, my alarm buzzes at 4:30 a.m. to ensure we make the 6:00 a.m. departure from the helicopter hangar in Ashland, Oregon. The pilot, line patrolman, and I jump in and fly south over the Siskiyou Mountains. I am prepared for a long day in the air, with my tablet, binoculars, water, and snacks. The day is spent weaving in and out over many high-voltage lines that are rural and hard to access on a ground patrol. We fly up and down, hover, spin around, and glide over powerlines that run through acres of forest, rivers, lakes, and mountains where the lines feed many homes.

I am extremely focused as I peer out of the helicopter window, looking at thousands of trees to identify any type of tree condition that could affect the powerlines. There is constant chatter between the three of us to communicate and ensure we avoid obstacles in the air. After dropping down to fuel, I squeeze in part of a conference call and communicate to ground inspectors on any imminent conditions. After eight hours, we descend and end the day with high fives on our teamwork in the sky.

The following morning, I engage in many conference calls, including contractor schedule attainment, tree growth regulator projects, and finalizing a national forest maintenance plan. I review transmission projects, budget allocations, and contractor progress goals. I make appointments to meet with customers that have concerns about vegetation management work on their property. I open work orders for contractors initiating VM work on circuits and transmission lines. Tree vouchers are also sent to a landowner so they can replant trees where incompatible trees were removed under powerlines. I prepare for an incoming new contractor and ensure we have approvals from the forest service to start the work. I start a PowerPoint presentation that I will be presenting to county officials to educate the representatives on the VM work we are conducting for wildfire prevention. The day flies by, and I stop to take the time to review the next day's schedule.

The following morning, I have a meeting with a landowner who is concerned about pruning that must take place on their tree to gain clearance from the powerlines. The family dog comes running from the backyard to greet me. I express to the owner how much I love dogs, and we begin our connection. At first, the landowner completely refuses to have any pruning completed on the tree. But I know it's time to listen, understand their concerns, and educate the

person on why utilities perform the work—I speak about safety, power reliability, and wildfire prevention. I review regulations and clearance requirements. We walk around the tree, and I begin explaining the tree's growth rate, the current clearance, the limbs that need to be pruned, and how the tree crew can gain the necessary clearance by utilizing ISA-approved pruning techniques. The landowner begins to soften and understand. We shake hands and make plans to schedule the work. As I return to my truck, an incoming call comes in from the director who states we have a data request from a utility commission and the deadline is two days.

The day after, crunching data to provide to the public utility commission, I grab my lunch and hit the ground hiking powerlines to perform random audits on completed VM work. I move through neighborhoods, backyards, and streets to evaluate the trees, clearances, and data entry. I follow the map on my tablet and see the powerline ventures into the woods for several spans.

As I step into the forest, the sound of the wind swaying through the trees, the crunching of the fresh fallen leaves, and the sounds of the birds aloft remind me of why I still enjoy my job in utility vegetation management. We are educators, arborists, coaches, and stewards of the environment, working on the front line of wildfire prevention and continuing to promote safe and reliable electric service. 🌲

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Reducing Wildfire Risk with IVM

With fire incidents on the rise, vegetation managers in fire-prone regions should look to IVM techniques as a component of risk mitigation.

The increasing number, severity, and duration of wildfires in recent years has revealed a fundamental truth: there are no quick solutions to the problem. There are effective ways to reduce the risk of fire, and once implemented they can start to work relatively quickly, but mitigating the risk of fire is a long-term commitment, often requiring a fundamental shift in thinking among utility vegetation managers (UVMs) and the utilities and citizens they serve. Part of that shift may involve adopting integrated vegetation management (IVM), or IVM, techniques.

IVM: Not Just Herbicides

It's critical to understand that IVM doesn't just mean replacing mowing with herbicide applications. It simply means that in practice, any and every available method of vegetation control is on the table – hand cutting, mowing,

and herbicide use, along with the biological control achieved when low-growing native forbs and grasses effectively “crowd out” undesirable brush and other vegetation.

Most often, we

see IVM promoted as a means to economic, environmental, and operational stewardship, and for good reasons. The average per-acre cost to apply herbicides is significantly lower than the cost to mow that same acre. In addition, herbicide applications emit far less greenhouse gas than mowing, and require fewer crew members and fewer hours. But for utility vegetation managers (UVMs) in fire-prone areas...which is rapidly expanding to include parts of the Eastern and much of the Central and Western United States¹...IVM offers real advantages in fire risk mitigation.

IVM and Fire Risk Mitigation: How It Works

A mowing-only program can actually contribute to fire risk, or to an increase the severity, duration and spread of a fire once it's started. How? First, mowers can spread the seeds of undesirable brush species, resulting in higher stem counts across a wider area. Second, mowing leaves brush and plant debris behind to dry out – and become the perfect ladder fuel. Finally, mowing increases the chances of ignition due to sparks or contact with hot equipment.

But IVM program incorporating selective herbicides and selective application methods can not only return the environmental, budgetary and operational benefits we hear so much about. It can help reduce the risk of fire, and help limit the spread of fires that do start.

Here's how:

1. A well-executed IVM strategy allows native grasses and forbs to flourish. This not only helps prevent the growth of undesirable vegetation, it allows UVMs to establish fuel breaks throughout rights of way. In turn, these fuel breaks provide landscapes from which firefighters can more effectively work to prevent the spread of fires.
2. An IVM program can reduce the amount of mowing required. Less mowing means fewer undesirable seeds are spread, a fewer chances for ignition due to sparks from mechanical equipment.
3. An IVM program helps reduce the amount of available fuel. As undesirable vegetation dries, it becomes more vulnerable to spark or flame. An IVM strategy helps prevent the growth of trees and brush, reducing the amount of fuel available and reducing the chances of interaction between lines and vegetation.

As the threat of wildfire expands to include areas once considered lower-risk, and as the severity of wildfires continues to increase, a solid IVM program can serve as a foundational component of a fire risk mitigation program, and can provide a variety of additional environmental and economic benefits.

If you'd like to learn more about the benefits of IVM and selective herbicide use, visit Corteva.us/UAA, or reach out to your Corteva vegetation management specialist.



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¹*Increasing Large Wildfire in the Eastern United States: Donovan, Crandall, Fill, Wonkka, Geophysical Research Letters, 18 December 2023*

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Successful Communication in Vegetation Management

The Heartbeat Roles of Consultants and Researchers



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By Dr. Anand Persad, Founder and Director of Research, Tetra Energy Sciences, and Diona Neeser, Marketing and Client Relationship Manager, EDM International

Effective communication across all aspects of our rights-of-way is integral to a thriving vegetation management program. As we aim to uphold reliability, ensure safety, and support sustainability, we face increasing complexity each year. Addressing the living systems surrounding our hard infrastructure calls for nuanced understanding—and above all, collaboration.

In this article, we explore the essential roles that consultants and researchers play in improving communication and coordination across the VM ecosystem. At the heart of these efforts lies sound economic judgment and thoughtful stewardship that both rely on clear, timely, and strategic dialogue. We have tapped into and captured the perspectives of a consultant and utility in sharing and developing seven key areas of communication in VM. Drawing on years of experience and insights from veteran leaders, we offer an overview of where communication can be improved—and where it is already evolving in meaningful ways.

1. Research in the Industry: Partnership-Driven Progress

Research tools allow for innovation, which continually affords us the ability to grow and meet new goals and deliverables. The rapid pace of today's VM work makes intentional partnerships more essential than ever. As consultants, contractors, utilities, and vendors align on shared goals, effective communication becomes the glue that binds collective success and optimum resource and budgetary allocation.

2. Resource Identification and Dashboard Initiatives

Improved internal and cross-industry communication can begin with better tools. Dashboard platforms can spotlight emerging topics, including the

rising participation of women in VM; development and implementation of wildfire mitigation tools; and layered communication across organizational levels.

3. Consultants and Researchers in Decision-Making

Consultants are pivotal in helping organizations balance reliability, sustainability, and ecosystem health. Amanda Opp of Flathead Electric Cooperative Inc. shared, "Consultants provide solutions and insights—especially when facing seemingly unsolvable problems, such as wildfire mitigation planning and trend analysis."

4. Data Analysis and AI Tools

The integration of AI and data modeling is reshaping storm response strategies, regulatory compliance, and trend prediction. Ryan Brockbank of EDM International noted the critical need for "real-time results to better inform decisions and drive timely responses."

5. Human-Centered AI

Opp and Brockbank emphasized the growing intersection of AI tools with human judgment. For example, Opp used ChatGPT to translate Spanish job briefings, improving inclusivity and clarity. She observed, "The only limitations to the use of technology in communication are the boundaries of our own imagination."

6. Industry-Wide Investment Community Partnerships and Public Engagement

Brockbank and Opp both stressed that industry collaboration is critical. Shared investments in technology and communication networks help cooperatives afford innovation and adapt to environmental challenges. Opp advocates for creating frameworks for shared technologies; leveraging real-time data to allocate resources; and developing standardized industry nomenclature to reduce misinterpretation.

Opp highlighted how public communication is fundamental in programs like hazard tree removal and fuel reduction. With an increasingly engaged public, utilities must embrace tools that foster **transparency, timely responses, and trust-building**.

Examples include:

- **Grant Partnerships:** Public utility collaborations, such as the Community Wildfire Defense Grant, to offer symbiotic opportunities.
- **Homeowner Education:** Educating property owners about overhead hazards and fuel reduction.
- **Drone Footage:** Visual storytelling enhances public understanding and buy-in.
- **Mass Communication Tools:** QR codes and mailings inform the public, and crew feedback loops improve planning.

7. Networking, AI, and Future Growth

The future of VM lies at the intersection of technology, communication, and shared commitment. Opp and Brockbank agreed that AI and networking platforms will be critical in streamlining stakeholder collaboration; driving innovation; and supporting industry-wide cohesion.

As consultants and researchers continue to shape and document this work, it is ultimately the entire industry—and the public—that stands to benefit.

"We need each other," Brockbank concluded—a simple truth with lasting relevance. This article is one in a series we, the UAA Research Committee, are planning that will help us dovetail clearer communication needs and roles within our VM space.

ACKNOWLEDGMENTS

We thank Amanda Opp, Integrated Services Manager, Flathead Electric Cooperative Inc. and Ryan Brockbank, Principal, EDM International Inc. for their valuable contributions to this article. 🙏

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Utilities Must Transition to Data-Driven, Risk-Based Vegetation Management Practices

By Robert Warwick, J.D. BCMA TX-4379BU, Pacific Gas and Electric Company

For years, utility companies have relied on outdated and inefficient methods to manage vegetation near electrical infrastructure, including paper maps and helicopter flyovers. These traditional approaches are labor-intensive, environmentally costly, and insufficient to address modern challenges like climate change and wildfire risk. While some utilities have begun experimenting with advanced tools like mobile tablets, LiDAR imagery, satellite imagery, and AI-based predictive models, widespread adoption has lagged.

The urgency of mitigating climate change presents utilities with a pivotal opportunity to modernize their practices. A shift toward risk-based, technology-driven vegetation management could significantly reduce wildfire risk, lower greenhouse gas emissions, and improve operational efficiency. Integrating drones, LiDAR and satellite imagery, and predictive analytics into routine operations can reduce emissions from vehicles and helicopters while also enhancing the accuracy and effectiveness of vegetation risk assessments.

However, without regulatory intervention, these changes may remain inconsistent. For instance, the California Public Utilities Commission (CPUC) should mandate annual visual inspections of all vegetation capable of encroaching on high-voltage lines, ensuring uniform adoption of advanced technologies statewide. This regulatory requirement would help utilities align with California's climate goals while improving public safety.

The Environmental Costs of Inefficiency

Current vegetation management practices are not only outdated but also environmentally damaging. Utility inspections often require employees and contractors to make repeated site visits, collectively driving millions of miles annually. This reliance on physical inspections adds significantly to utility companies' carbon footprints.

As a former utility pre-inspector, I personally logged over 50,000 miles annually conducting inspections. Multiply that by an entire workforce and the environmental toll becomes staggering. These inefficiencies are amplified by reliance on helicopter flyovers, which emit large amounts of carbon dioxide, to identify potentially hazardous trees. After flyovers, additional ground inspections are often necessary, further compounding costs and emissions.

Modern technology offers a solution. Drones and satellite imagery can drastically reduce the need for vehicle-based inspections. These tools enable utilities to remotely monitor vegetation health and proximity to electrical infrastructure with greater accuracy and frequency. Predictive AI enhances this process by identifying high-risk areas in advance, allowing utilities to focus their resources where they are most needed. Adopting these innovations could significantly lower emissions while improving the overall efficiency of VM programs.



Post-fire regrowth

The Inefficiency of Traditional Practices vs. Modern Solutions

Helicopter flyovers are emblematic of the inefficiencies that plague traditional vegetation management. These visual assessments are inherently limited by human error and only provide a snapshot of conditions at a single moment in time. Once potentially hazardous trees are identified, utilities often conduct additional on-the-ground inspections to confirm risks, adding both costs and delays.

By contrast, drones and satellite technology provide continuous, real-time monitoring capabilities. These tools offer a more comprehensive understanding of vegetation risks, reducing reliance on costly and environmentally damaging practices like helicopter flyovers. When combined with AI-driven predictive models, utilities can identify hazardous conditions before they escalate into emergencies, allowing for proactive mitigation.

This shift toward technology-driven solutions not only enhances safety and reliability but also represents a more sustainable approach to utility operations. Implementing these tools can help utilities better protect their infrastructure while aligning with California's broader climate and environmental goals.

Overcoming Barriers to Modernization

Transitioning to advanced VM systems requires significant upfront investment in technology and training. However, the long-term benefits, including reduced wildfire risks, lower emissions, and improved operational efficiency, far outweigh these initial costs. To facilitate this transition, the CPUC should allow utilities to recover modernization costs through rate adjustments. Although this might result in modest increases



to customer bills, the societal benefits of fewer wildfires and reduced carbon emissions justify the expense.

The cost of inaction is far greater. The annual expenses of the PG&E vegetation management program have grown to \$2 billion USD each year to temporarily reduce risk until the vegetation grows back. Catastrophic wildfires destroy homes, lives, and ecosystems, leaving communities grappling with long-term economic and emotional recovery. The financial and environmental consequences of these disasters dwarf the costs of adopting modern VM practices. Regulatory mandates are essential to overcoming resistance to change and ensuring that all utilities adopt best practices.

A Call to Action

California's wildfire crisis demands bold and immediate action. The CPUC must mandate annual inspections of all vegetation capable of growing into or falling onto high-voltage electrical infrastructure. Such regulations would ensure consistent risk management

practices across utilities and drive the adoption of advanced technologies, including drones, satellite imagery, and predictive analytics.

Residents can also play a vital role by holding utilities accountable. Contacting representatives and the CPUC to advocate for technology-driven solutions can help prioritize these necessary changes. By embracing innovation in VM, utilities can reduce wildfire risks, protect communities, and contribute to California's climate resilience goals.

Ultimately, modernizing vegetation management is no longer optional, it is an essential step toward mitigating wildfire risks and addressing the broader challenges of climate change. With regulatory support and public pressure, California's utilities can lead the way in adopting sustainable, data-driven solutions that safeguard the environment and enhance public safety.

ABOUT THE AUTHOR

Robert Warwick is

a California-based attorney with a unique blend of legal expertise and extensive experience in utility regulatory law



and vegetation management. Prior to earning his law license, he served as a Senior Vegetation Program Manager at PG&E, where he specialized in utility risk mitigation, wildfire risk management, and environmental stewardship. As an ISA Board Certified Master Arborist, Warwick possesses a diverse background that brings a multifaceted perspective to his work, combining legal acumen with practical field experience. 🌱



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How a Utility Corridor Became an Unlikely Refuge for an Endangered Species

By Wesley Graham, Transmission Field Biologist, Cooperative Energy

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AN UNLIKELY REFUGE

In the southeastern United States, the gopher tortoise (*Gopherus polyphemus*) has long been a symbol of vanishing biodiversity. Listed as a threatened species in Mississippi since 1987, the gopher tortoise has seen its numbers decline due to habitat loss, fragmentation, and the gradual disappearance of longleaf pine ecosystems that once dominated the region.

But in an unexpected corner of Mississippi—along 1,900 miles of utility rights-of-way managed by Cooperative Energy—the gopher tortoise is making a comeback.

Thanks to a long-term integrated vegetation management program utilizing products and advice from experts at Envu, what were once dense, overgrown corridors have been transformed into thriving herbaceous ecosystems.

OVERGROWN AND INVASIVE

Cooperative Energy began this journey nearly twenty years ago when I joined the generation and transmission cooperative in 2006. Vegetation management was minimal and outdated. Transmission line ROWs were overgrown and difficult to navigate. The lack of proactive management posed serious challenges for line crews and created zero benefit for native ecosystems, which were being overrun by woody invasive species.

HEALTHY HABITAT

Two years later, we initiated the utility's first herbicide applications, followed by a methodical, data-driven effort to restore operational efficiency and ecological function across the nearly 30,000 acres of ROW.

The primary goal was to rid the 100-foot swath of undesirable vegetation, then transform it into a more grassy, herbaceous ecosystem. As an agronomist, I knew the soil was just waiting to burst forth with native grasses and low-growing forbs. We simply had to create the right habitat for that to occur, and herbicides were the only way to do it.

My team and I called upon numerous resources, including Envu, to tailor a program to go beyond traditional product use to build a solution that could succeed across Mississippi's diverse terrain.

Envu IVM Area Sales Manager Gueth Braddock worked alongside us to establish the program. Together, we:

- Adjusted tank mixes based on regional vegetation differences
- Tested and trialed Envu products to fine-tune application rates
- Elected a precision-based, low-volume application, eventually reducing use to only two to three gallons per acre

The Envu team also provided field training, applicator guides, and responsive support to help us build

a flexible and resilient vegetation management system.

UNEXPECTED BENEFIT

In those early years, we stumbled upon information that would ultimately lead to the discovery of an unexpected benefit of our new IVM program. Routine maintenance in 2008 uncovered rapidly decaying power poles along a transmission line in the extreme eastern part of Cooperative Energy's system that crossed U.S. Forest Service-controlled land. Once the decision was made to replace the poles, I called the Forest Service for permission to work on Forest Service land. The work required a special use permit and an endangered species survey.

Armed with my old Garmin GPS, I searched for gopher tortoises and other endangered species and logged data across the area. Using the data collected, I created and submitted waypoints to the Forest Service's special use permit coordinator. Once we received approval, we proceeded with the work.

Later that same year, we applied our herbicide regimen in the area for the first time. Two years after the initial survey, we repeated the survey process to prepare for replacing additional transmission line structures. As new survey data was uploaded, a pattern began to emerge. Gopher tortoises, which generally avoid areas with dense, woody vegetation that hinders their movement, were digging

burrows along the paths our crews had cleared between structures.

This created a challenge, as an endangered species was now concentrated in our work zones while crews were still forced to navigate thick vegetation in other areas. A continued focus on spraying for vegetation management has decreased vegetation density, though, causing the tortoises to shift their burrows from the centerline of the ROW to the edges. This shift reduces potential conflicts and disruption to the tortoises and their homes.

Since we began vegetation management through spraying, the vegetation density has decreased across our entire system. Once the brush cleared and sunlight returned to the ground layer, the tortoises found the open, sandy terrain they needed to thrive. As a result, the tortoises have started shifting their burrows from the centerline of the ROW toward the edges, helping reduce potential conflicts

INTERCONNECTING POWER AND BIODIVERSITY

More than twelve years of data show a 36% increase in tortoise presence and

a 75% decrease in burrowing along the centerline, both strong signs that the species now has more space and safer areas to disperse.

It is like Kevin Costner's famed movie, *Field of Dreams*—If you build it, they will come. We built it, and the tortoises came. As we worked toward a goal of responsible vegetation management on our ROW, we inadvertently created habitat in which the gopher tortoise thrives.

Today, we use an app we created with our geographic information systems team to capture waypoints and map every active burrow along our system for their protection and our knowledge.

The gopher tortoise is a testament to how herbicide application can create a thriving habitat for an endangered species—even when we do not expect it. Additionally, ROW landowners love the IVM program because we have transformed their land back into a usable form, whether it is for grazing cattle or hunting. Even some landowners who initially opposed herbicide use have embraced the program. And, after seeing the transformation firsthand,

one landowner even moved his fence to incorporate the restored corridor into his pasture.

While the biodiversity benefits are compelling, Cooperative Energy's IVM program, built with support from teams like Envu, has also delivered broad operational advantages:

- Fewer outages caused by vegetation interference
- Faster restoration times
- Improved crew safety with better visibility and access
- Nearly 30,000 acres of newly viable pollinator habitat
- Multiple state and national awards for innovation in vegetation management

Today, Cooperative Energy's ROW serves a dual purpose: to keep power flowing and biodiversity growing. With help from Envu, we have shown what is possible when operations and ecosystems are treated as interconnected—not conflicting—priorities. We were not doing anything special, just our job. But we believed in it. And it worked. 🌱



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UVM AND THE LAW

Suing for Shade: Can Utilities and Arborists Be Held Liable for Tree Removal?

By Alex Keiser, Assistant County Attorney, Harris County (Texas) Environmental Division

In utility vegetation management, the concept of “sustainability” typically centers on the need to preserve trees, in part because it is understood that trees provide enormous benefits. Trees enhance the value of property, provide shade that break up “heat islands,” and promote human health and prosperity. For these reasons and many others, property owners love having trees. But incompatible trees present a danger to arborists, line workers, and the public at large, and are a significant factor in causing outages and wildfires. Some incompatible trees are within the utility easement or ROW, while others are outside of it. Historically, the need for UVM to provide safe and reliable energy has been recognized and protected, but that authority has limits, and property owners’ rights with respect to their trees are growing.

In *St. Lucie County v. Florida Power & Light*, the utility cleared vegetation beyond the easement boundaries because of concerns regarding service reliability, removing numerous trees and shrubs that the plaintiffs had planted. The court held that unauthorized clearing of vegetation outside of the easement amounted to unlawful trespass, and the court of appeals upheld a jury verdict that awarded compensatory damages for both the tree losses and restoration costs.

Likewise, in *King v. Duke Energy Progress*, the utility trimmed and removed ornamental trees and shrubs outside the recorded easement boundaries. The court held that the utility’s actions constituted trespass because the removed trees were ornamental and were not interfering with utility operations. The aesthetic loss was compensable beyond mere market value—the plaintiffs were entitled to “damages reflecting the ornamental value of the trees.”

Similarly, in *Cottrell v. American Electric Power Co.*, the utility was sued because the property owners had evidence that the utility’s contractor had exceeded the scope of its easement to perform UVM, damaged a paved sidewalk, and removed ornamental trees. The court sided with the plaintiffs’ negligence claim and held that pruning beyond the easement without adequate reason constituted a valid cause of action and that damage to the sidewalk and the loss of the ornamental value of the trees were both compensable.

A developing legal argument is that tree removals constitute a regulatory taking. In *Boensch v. California Department of Transportation*, for example, the court recognized that “trees may have quantifiable economic and social value” (there, the takings claim ultimately failed for procedural reasons).

This is not to say that utilities and arborists can never perform work outside of the easement, though. In many jurisdictions, utilities have police power authority to act in the name of public safety. But increasingly, courts are scrutinizing whether removals are proportional, justified, and communicated properly.

On transmission ROWs, several utilities have easements that specifically allow them to perform UVM on “danger trees” outside of the ROW. Other utilities have no such language. Which is better? It’s hard to say. Having the right to do the work without seeking special permission certainly has advantages, but if these rights exist and a tree from outside the ROW strikes a transmission line causing an outage or wildfire, the utility’s position will be far less sympathetic, since it had the right to address the problem and failed to do so. Conversely, a utility without such rights still has the responsibility to protect against outages and wildfires, but it cannot trespass either—so arguably, a property owner who refused to allow a dangerous tree to be pruned or removed would be the liable party.

To protect themselves and the utilities they work for, arborists should know the governing regulations and standards:

- **ANSI A300** provides the best guide for UVM pruning and removal



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UVM AND THE LAW



- **FERC/NERC FAC-003** requires documented vegetation clearances for transmission lines
- **State utility codes** (such as California's GO 95/Rule 35) and **NESC 218** establish clearance minimums on distribution lines

Utilities and arborists must tread carefully, ensuring safety as the top priority but without overstepping legal rights or alienating landowners. Arborists are on the front line in addressing public perceptions of sustainability through "tree justice" and efforts to push back against UVM. Some key takeaways:

- **Document everything.** Many legal disputes hinge on lack of notice or inadequate documentation. Photo logs and inspection records help defend appropriate removals.
- **Know your easement.** If your utility operates under a general franchise and not a recorded easement, your scope of authority might be narrower than you might otherwise assume.
- **Communicate early and clearly.** Property owners are more likely to accept removals when alternatives (if any) are explained.
- **Consider replanting as mitigation.** Some jurisdictions now encourage or require tree-for-tree replacement programs, particularly in urban areas.
- Tree appraisals based on Council of Tree and Landscape Appraisers (CTLA) methods are increasingly introduced in lawsuits, especially when the trees are mature or native. Arborists should be prepared to **explain the rationale for removal** relative to the tree's structural risk and proximity.



While utilities retain broad rights to clear vegetation in the name of public safety, they are not immune from legal challenge. As public sentiment grows in favor of sustainability, shade, and carbon sequestration, arborists must balance safety with careful, lawful, and communicative tree management. The next time you mark a tree for removal, ask: *Is it truly necessary? Do we have legal authority? And are we doing this in a way the public can understand and accept?*

ABOUT THE AUTHOR

Alex Keiser is an Assistant County Attorney for the Harris County (Texas) Environmental Division. She earned her Bachelor of Arts and Juris Doctorate from Tulane University, was a senior managing editor of the *Tulane Environmental Law Journal*, a student attorney with the Environmental Law Clinic, and a board member of the Environmental Law and Policy Summit. A 2022 UVMi Scholar, Keiser won a scholarship to present her independent research paper on how UVM can be used to help cooperatives resolve legacy pollution challenges at Trees & Utilities in Milwaukee in 2022. The opinions presented in this article are her own and do not necessarily reflect the position of either Harris County or Texas. 🌱



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The European Starling: An invasive, Non-Native Species for Which Management Is Complicated

By Gary Balcerak, Landscape Architect, Consulting Arborist, and Tree Care for Birds Committee of WCISA Member; and Gillian Martin, Director of Cavity Conservation Initiative, and Tree Care for Birds Committee of WCISA Member

Though you may not be able to identify the non-native European starling (*Sturnus vulgaris*) at close range, you may have seen thousands of starlings performing spectacular aerial maneuvers. These are commonly referred to as a *murmuration*. Like a single organism, the flock swoops, twists, expands and contracts, changes direction, or temporarily subdivides. For many, this is an experience of awe and wonder.

In stark contrast to the pleasure these displays bring, the World Conservation Union lists this species as one of the three worst invasive birds. Conservative loss figures are that starlings cause hundreds of millions of dollars of crop damage per year. The starling is expected to continue being a formidable pest, because thus far, management efforts have been effective only in the short term, even after heavy mortality (Cabe 2020).

Arborists should be prepared to find people polarized about starlings. It is beneficial to learn about their biology, relevant laws, and important considerations before taking actions.

The Starlings' Introduction and Distribution

The starling's native breeding range extends from Europe to Asia, with a wintering range in North Africa. It was introduced in the mid-nineteenth century by the Acclimatization Society which originated in France and spread worldwide. The group was interested in how the species of one area might adapt to a different region. By the end of the eighteenth century, the unintended consequences of these introductions had become so clear that it was outlawed (Fugate et al. 2021). The starling now ranges from Alaska to Mexico, with population estimates ranging from 45–250 million.

In the West, starling distribution is patchy due to its avoidance of mountainous and closed forested areas as well as open deserts and unbroken chaparral, when these are far from human habitation.

Populations are most abundant around urban and suburban areas. However, substantial numbers also occur around agriculture, in valleys, foothills, and close to riparian areas.

Distinguishing a Starling from Other Similar-Looking Native Birds

Starlings are similar in size and color to many native medium-sized, blackish birds with which they can be confused, especially when foraging and roosting



A great diversity of invertebrates make up a starling's diet, especially in spring and summer.

together. Overall, starlings are stockier and have a shorter tail by comparison. Their bills are straight and thinner, and their legs are pinkish.

The sounds that starlings make may help in identification. Their vocalizations include rattles, whirrs, and whistles.

However, they can imitate many birds.

Reasons for the starling's success:

- The species consumes invertebrates all year, but fruit, seeds, livestock, and pet food are also consumed. Landfills and backyard bird feeders are also foraged.
- Human development supports their preference for foraging in open, short grassy landscapes.
- They are secondary cavity nesters and use woodpecker-excavated cavities in trees and saguaro. They may occasionally nest without a cavity in dense trees and untrimmed palms, as well as in human infrastructure, burrows in the ground, or cliffs. Nest boxes are also usurped if entrance

holes are one-and-a-half inches or larger.

- They can produce two broods of four or five young between March–July. Some individuals select and defend cavities as early as February, giving them an advantage over native cavity nesters.
- Starlings are strong flyers and may travel up to fifty miles between their night roosts and feeding sites (Feare 1984) or migrate great distances when conditions impact food availability.
- They gather in large mixed flocks (with their look-alikes) to forage and roost.
- They are highly intelligent with good problem-solving skills (Audet et al. 2023).

Known Impacts

Starling impacts are most severe in agriculture. The birds eat and are associated with the spread of disease via their droppings (Cabe 2021). Severe damage to some fruit crops also occurs. When large numbers of starlings repeatedly roost in the same location,

they can become pests because of the noise and mess they create. There is concern that starlings outcompete some native cavity-nesting species or cause a delay in breeding, reducing nesting success.

Laws Relevant to Management of Starlings

Starlings and other non-native birds are not protected by the Migratory Bird Treaty Act. State law is variable about protection of non-native birds. Due to the complexities, it is best to consult your state animal welfare agency, state department of fish and wildlife, or a qualified wildlife biologist prior to implementing any management plan.

Additional Factors That Make It Unwise to Remove a Starling's Nest

Starling nests and eggs can easily be confused with other species. Their eggs may be blue, greenish blue, pure white, or even spotted brown. To confirm the identity, a good-quality photo of a parent entering or leaving the nest is necessary. When in doubt, the advice of a competent professional should be sought.

A flock of starlings in an aerial defensive formation, called a murmuration.

A starling is not easily deterred from its nest. Elements that influence if starlings will return to a nest include the temperament of the birds and the stage of development of the offspring. Removing eggs may not be enough to deter them. If removed early in the nesting cycle, more eggs may be laid. However repeated disturbance, especially by suddenly frightening the birds near the nest, will cause desertion (Kessel 1957).

Once starlings have laid eggs, their competition for other cavities ceases. They are even tolerant of native cavity nesting birds nesting in the same tree (Kessel 1957). Feeding areas are not defended at all.

There is debate about intentionally destroying a starling's nest. It may lead to usurping the cavities already occupied by native birds. Also, proactively sealing cavities not only deprives native cavity-nesting birds in the area from using them but may unintentionally seal off the eggs or birds of nocturnal species, or harm bats and others who are not readily seen. For these reasons, Tree Care for Birds recommends that arborists avoid removing the active nests of any bird in any phase of development.

Deterring Birds from Urban Roosts

There are no laws that prohibit the deterrence or exclusion of starlings from a roost tree where they are a nuisance. Visual and noise-scaring devices are often suggested. When multiple types are used together and frequently relocated, they are found to be most effective. And when recorded distress calls are incorporated, they are even more successful.

The resources listed below are particularly appropriate for homeowners who want to discourage starlings:

- The Washington Department of Fish and Wildlife's publication, *Living with Wildlife –Starlings*.
- Cornell Lab of Ornithology NestWatch Program's *Managing House Sparrows and European Starlings*.
- Cornell Lab of Ornithology All About Birds' *Feeders Overrun by Starlings and Blackbirds. What Can I Do?*

Revelations about Their Murmurations

Starlings continue to be studied. Findings about their murmurations have posed multiple explanations and potential applications. The results from one study (Storms et al. 2019) are summarized here.

Murmurations are highly variable in their size, density, speed, formations, and closeness to the ground. Many scientists agree that murmurations are primarily a defense against raptors, which are attracted to winter flocks. Their erratic nature is thought to surprise and confuse the predator. Another explanation is that the murmuration itself may be a way of monitoring a predator's approach rather than responding to it.

When a raptor approaches a flock, starlings on the perimeter influence the direction and motion of the flock. By keeping a constant eye on the speed and location of a predator in relation to the flock, the "perimeter birds" change their direction, position, or speed, thereby creating a form of information transfer. Interestingly, this transfer seems to be limited to the six or seven birds closest to it. Those handful of neighbors mimic the change which, in turn, spreads through the group, six or seven birds at a time. Within tight formations, the birds maintain a distance from one another approximately equal to their wingspan.

Researchers postulate that by initiating a change in motion, the birds (which are initially on the perimeter) not only reduce predation risk to members of the flock but simultaneously seek a safer place for themselves within the flock's interior.

To date, there are several potential applications of these findings. One such application is the design of robots which can be deployed in groups for use undersea, on land, or in the air for monitoring dangerous environments or working together in rescue operations.

Closing Thoughts

While reflecting on the diverse topics covered in this article, equally diverse thoughts have surfaced. The story of the starling is a reminder that history is littered with the unintended consequences of misguided intentions. However, the resulting outcomes have yielded benefits. They point us to places where our knowledge and capabilities are limited, prodding us to be cautious and aware of our biases. The pressures involved in decision-making remind us of the benefits of seeking consultation and basing decisions on the most reliable data.

Although starlings are problematic, they are also the product of millions of years of evolution in which external forces and genetics have contributed to their success. A difficult decision is usually easier to live with and respected



The species is a secondary cavity nester which often uses natural tree cavities or those excavated by woodpeckers in tree trunks, broken limbs, and saguaro.

when its significance has been weighed.

We have every reason to hope that through ongoing research, the starling will reveal more secrets that may be beneficial to humans and the planet. We can continue to appreciate starlings for their mesmerizing murmurations in which they transform stress and self-defense into inexplicable beauty.

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Torrie Brandon

Not the Plan, But the Right Path: Discovering a Career in Utility Vegetation Management

By Torrie Brandon, Senior Specialist in Vegetation Management and Forestry, Southern California Edison

Growing up in the small town of Yucaipa, California, I always loved being outdoors. My favorite memories are the ones spent outside with family and friends, watching sunsets or sitting around a campfire. I have always been a bit adventurous. Winters were for riding dirt bikes and snow skiing. Summers meant water skiing, hiking, camping, or fishing.

In 2016, I graduated from the University of Redlands with a bachelor's degree in Environmental Science and Business, with a minor in public policy. I didn't originally know that this was what I wanted to study and dedicate my professional life to, but after taking an introductory Environmental Studies course, I was quickly hooked!

After graduating, I struggled to break into the environmental field, so I instead took a job in insurance to pay the bills. While I appreciated the real-world experience I obtained in this position, after three years, I felt somewhat desperate to find something more fulfilling. What I found was utility vegetation management—and it turned out to be one of the best decisions I've ever made!

In 2019, I proudly told my family I had quit my stable insurance job and accepted a contract position as a consulting utility forester, even though it came with a six-dollar-per-hour pay cut. My practical father was a bit horrified, but I could not believe someone would pay me to hike outdoors and inspect trees every day!

I started with ArborMetrics Solutions, LLC as a contractor for Southern California Edison; first as a consulting utility forester and later as an inspector for the Bark Beetle removal program. I also briefly worked with Pacific Gas and Electric Company on their Enhanced Vegetation Management program. Later, I accepted another contract position with Environmental Consultants (ECI), working as a lead for the Hazard Tree program. Of the various projects I have worked on, this was absolutely my favorite, as I found the diagnosing and assessment of trees to be fascinating.

During this time, I felt it was important to expand my professional

knowledge, so I obtained my Certified Arborist and Utility Specialist certifications, as well as my Tree Risk Assessment Qualification through the International Society of Arboriculture. For anyone considering this field, my best advice is to earn relevant certifications and qualifications, because it truly opened many doors for me in my career.

At the end of 2022, I accepted my current position as a senior specialist in Vegetation Management and Forestry with Southern California Edison. I couldn't be happier working for a great company doing work that truly feels meaningful to me. Every day I take part in promoting safety, ensuring service reliability, and supporting strong UVM practices.

I am most grateful for the many wonderful people I've had the pleasure of working with and learning from in this industry. Surely we can all agree that most people who love the outdoors and want to keep their communities safe are *good* people. Part of what makes this community special is the variety of backgrounds and experiences we bring to the table.

Unfortunately, there are still not many women in this field—and I would love to see that change! Utility vegetation management is an ever-changing field as we work to adapt to an ever-changing environment. My own unique perspective helps me to collaborate with my team to come up with solutions. Diversity also brings relatability to the communities we serve and the future colleagues we hope to inspire. I've had many women tell me how exciting it is to see a woman rocking a hard hat and safety vest! However, I would be lying if I said I had never experienced someone doubting my skills or faced assumptions based on my age or gender. I'm glad to say those moments have been few and far between, and I'm proud to disprove those beliefs and encourage other adventurous, nature-loving women to find their own amazing careers. I hope more women will put on that hard hat and vest and discover the joy of utility vegetation management! 🌲



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SPOTLIGHT ON THE ENVIRONMENT

100 Years Later

Rethinking Utility Operations with Stewardship at the Center

By Whitman Bouton, Utility Urban and Community Forestry Lead, Seattle City Light

Over the last two centuries, societal and technological advancements across the globe have resulted in improved outcomes for human life at large. However, this period of rapid growth has brought significant consequences, including climate change, resource depletion, and ecological degradation. Today, land managers are responsible for centering sustainability and stewardship in their plans and processes.

Throughout this period in North America, ecosystems that have sustained indigenous communities since time immemorial have undergone violent disturbances that have transformed land and waters in the name of progress. In order to meet industrial needs and establish urbanization, landscape alterations—such as large-scale regrading projects and the rechanneling or elimination of river systems—have resulted in irrevocable loss.

As our communities contend with competing desires for modern convenience, environmental conservation, and community connection, it is essential that our field acknowledges past harm and incorporates restorative justice principles in our work going forward.

In 1889, electricity began to flow in the Pacific Northwest (PNW) through the first long-distance transmission lines carrying hydroelectric power 14 miles from Willamette Falls to Portland, Oregon.² The same year in downtown Seattle, a fire started in a cabinet shop that quickly spread, destroying much of the central business district and waterfront in a matter of hours. Privately owned water mains failed during the firefighting efforts and compounded growing concerns with monopolistic utility and transportation services. The reform movement and lobbying efforts that followed resulted in the creation of the publicly owned essential service infrastructure that we know today.¹

Ten years later, in 1899, hydroelectric power ran through transmission lines that bisected Tribal homelands, from Snoqualmie Falls to Issaquah and into Renton, where it was diverted north and south to deliver electricity to Seattle and Tacoma.⁷

In 1901, Seattle residents approved the construction of a municipal system, piping water all the way from the Cedar River (35 miles away), which had continuously supported Coast Salish people for at least 7,000 years, into a reservoir located atop Volunteer Park.⁶ A year later, the creation of a hydroelectric plant at Cedar Falls was in motion, and by January of 1905, the power generated at the facility brought light to Seattle streets and expanded again 10 months later to provide residential service.¹² Having previously operated under the water services, Seattle City Light (SCL) was separated into its own distinct department in 1910.¹² Throughout the last 115 years of operation, SCL has grown into one of the nation's largest publicly owned utilities in terms of the number of customers served.⁹

Many of these early hydroelectric infrastructure projects remain in operation over a century after their initial conception and construction. Today, 88% of the electricity delivered by SCL comes from renewable hydropower generated across seven owner-operated facilities.⁹

Research from the Pacific Northwest National Laboratory estimates that changes in weather and waterways are likely to significantly increase hydropower generation in earlier months while decreasing rates throughout spring and summer.¹¹ The anticipated shifts in timing and volume of water availability are of particular concern, as the nationwide forecast for electricity demand surges with an estimated growth rate of nearly 16% over next five years.¹³

Climate conditions are altering historic precipitation patterns, instigating premature snowmelt, and driving more extreme weather events such as flooding, prolonged periods of elevated temperatures, exacerbated drought conditions, as well as increases in both the frequency and intensity of wildfires. These shifts will drastically alter our water cycles, creating concern for land managers that oversee multipurpose operation sites used in the creation of hydropower and supply of clean drinking water.¹⁰

Utility sustainability is at the core of emerging efforts by essential service providers, like SCL, that seek to manage resources and operate in ways that ensure long-term environmental, economic, social, and cultural viability. In the Pacific Northwest, where we are highly dependent on hydroelectric power, the well-being of our population is deeply intertwined with the health and continued resilience of our mountains, forests, rivers, and oceans. Public utilities like Seattle City Light are responsible for offsetting some of the initial environmental cost that was required to develop their infrastructure.

Throughout the PNW, utilities have a long history of innovation and early adoption of sustainability and conservation efforts that are pioneering practices and shaping the future of the industry. Below are a few of Seattle City Lights' efforts:

- In 2005, SCL became the first large utility to achieve 100% carbon neutrality.³
- Established in 1977, SCL now has the longest-running energy conservation program in the U.S.
- SCL's strict environmental policy emphasizes proactivity, compliance, resource conservation, protection and mitigation, process improvement, collaboration, and leadership. On average, SCL annually acquires 188 acres of land for the purpose of fish and wildlife habitat conservation.⁸
- SCL's Vegetation Management team centers community and stewardship in their work through the creation of pollinator habitats in their landscapes, IVM best practices,

a conservation mowing program aimed at supporting migratory birds along the Chief Sealth Trail, community-led restoration sites along the green line, and race and social justice initiative-focused tree-planting investments.⁵

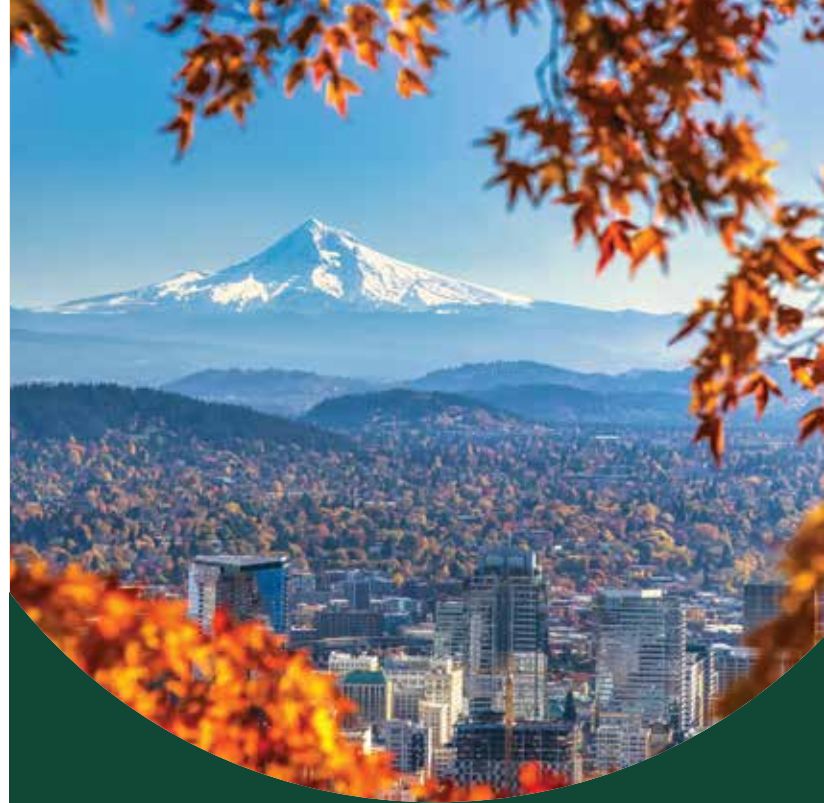
- Historic FERC relicensing of the Skagit River Project involves robust collaboration across seven years of in-depth engagement with 38 partners. These partners include Native American Tribes and Canadian First Nations, nonprofit organizations, and state, federal, and local agencies. The resulting agreement includes a settlement of more than \$4 billion designated for efforts like fish protection and passage, recreational improvements, infrastructure upgrades, and estuary restoration.⁴
- Designing and implementing both a Climate Change Response Plan and Wildfire Risk Reduction Strategy.
- Spearheading an initiative for electrification of the utility's fleet and building, and participating in freight and ferry electrification projects by supporting these infrastructure upgrades.

As large-scale landowners and managers, utility companies' role in environmental conservation has the ability to greatly mitigate climate impacts and create increasingly significant progress towards restoration. Together, we can ensure we deliver not only safe and reliable power to our customers but an environmentally sound and sustainable future.

To learn more about Seattle City Light, visit www.seattle.gov/city-light.

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Talking Through Aerial Rescue

By Kevin Myers, Training Supervisor, ACRT Arborist Training

In the arboricultural industry, safety is paramount, particularly when it comes to aerial rescues. This crucial operation can mean the difference between life and death, emphasizing the importance of preparedness, proper training, and adherence to industry standards.

Understanding the Importance of Preparation

Preparation is the cornerstone of any successful aerial rescue. The ANSI Z133 and Occupational Safety and Health Administration (OSHA) mandate annual practice of aerial rescue procedures, yet industry experts recommend more frequent drills—ideally on a quarterly or monthly basis—to ensure proficiency and confidence. Much like a quarterback who practices daily to perform effectively during a game, arborists must hone their rescue skills regularly. Waiting until an emergency occurs is too late to begin training.

Job briefing forms are another vital aspect of preparation. These forms outline hazards, energy source controls, necessary PPE, and work procedures. Including an Emergency Response Protocol (ERP) in the briefing is highly recommended. An ERP should specify:

- Who will perform CPR
- Who will execute a climbing or bucket rescue
- Who will contact emergency services and provide the exact location

Ensuring everyone is aware of their roles before work begins fosters a well-coordinated response during emergencies.

Preparation also includes having the right equipment readily available. A properly stocked first aid kit, including items like coagulating powder and tourniquets, should match the size of the crew. Furthermore, identifying nearby locations with automated external defibrillators (AEDs)—such as schools, medical facilities, or retirement communities—can save crucial time during cardiac emergencies.

Recognizing and Combating Complacency

Complacency poses a significant risk in arboriculture. Unlike blatant disregard for safety rules, complacency develops subtly over time as workers become overly comfortable with their surroundings. Regular reminders of potential hazards and ongoing safety training are essential to combat this

dangerous mindset.

Creating a culture of vigilance can prevent accidents. For instance, laminating and displaying aerial rescue flowcharts in common areas—even unconventional spaces like the back of restroom stall doors—can subconsciously encourage workers to familiarize themselves with rescue procedures.

Simplifying Aerial Rescue: Four Key Steps

Aerial rescues can be complex, but breaking the process into four steps simplifies the operation:

1. **Delegate Help:** Assign specific tasks, such as calling 911, retrieving the first aid kit, and locating an AED. Ensure instructions are repeated back for clarity.



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2. Inspect for Hazards: Reassess the jobsite for new or overlooked hazards, such as compromised ropes or unstable tree branches. Always prioritize the safety of the rescuer to avoid becoming a second victim.

3. Check for Breathing: Determine if the victim is breathing and conscious. This assessment guides the next steps—administering first aid in place or performing CPR if necessary.

4. Administer First Aid or CPR: If the victim is breathing, provide first aid while stabilizing them in the tree. If not, perform CPR immediately after lowering them to the ground.

These steps not only ensure a systematic approach but also prioritize the safety of all involved.

Addressing Equipment and Scenario Challenges

Arborists often face unique challenges during rescues, including compromised equipment and victims stuck in precarious positions. Key considerations include:

- **Rope and Harness Integrity:** Regularly inspect victims' ropes and tie-in points. If the victim's equipment is damaged, use alternatives such as nylon loop runners to reinforce the harness or create a makeshift system.
- **Mechanical Advantage Systems:** Devices like hitch climber pulleys and rope grabs can provide the necessary leverage to lift victims out of tight spots.
- **Backup and Redundancy:** Maintain multiple secure points during the rescue to mitigate risks.

Additionally, understanding potential medical issues such as suspension trauma is crucial. Suspension trauma occurs when a victim hangs immobile for an extended period, leading to blood clots that can cause severe complications. Proper use of trauma straps can help alleviate this risk.

Special Situations: Working Alone and Large Crews

While working solo is strongly discouraged, ensure you have a phone accessible at all times, preferably attached to your harness. Knowing your exact location and communicating it clearly to emergency services is critical.

For large crews, extra personnel can assist by barricading the area to keep bystanders safe, opening gates for emergency vehicles, or preparing stretchers for transport. Preventing social media disclosures ensures victims' families receive news directly rather than through online platforms.

Electrical and Bucket Truck Rescues

During electrical incidents, if a tree or bucket truck contacts powerlines, prioritize de-energizing the lines before attempting a rescue. Never approach an energized vehicle or tree without proper clearance from utility companies. As demonstrated in alarming case studies, rushing to assist can result in additional casualties.

In the event of a bucket truck emergency, wearing a properly fitted five-point harness with an energy-absorbing lanyard is nonnegotiable. Proper fit and adjustment are crucial to preventing ejection during equipment malfunction or rapid movements. Bucket bailout kits equipped with friction devices and descent systems offer an additional safety layer for escaping malfunctioning or energized buckets.

Building Confidence Through Training

Repetitive practice builds muscle memory, enabling arborists to perform rescues with confidence during high-pressure situations. Training should include realistic scenarios, such as handling unconscious victims or simulating compromised equipment. Incorporating advanced techniques, such as counterbalance pick-offs or

mechanical advantage systems, can further enhance preparedness.

Moreover, understanding and mitigating risks associated with spinal injuries is essential. For example, rescuers must stabilize victims suspected of head or back trauma to prevent further harm during the descent.

A focus on teamwork during training can also prepare workers for situations involving multiple victims or large-scale rescues. Ensuring that all crew members are familiar with their roles in such scenarios increases efficiency and reduces response times.

Bringing Everyone Home Safely

Aerial rescue is an indispensable skill in arboriculture, requiring preparation, vigilance, and regular practice. By adhering to industry standards, fostering a culture of safety, and mastering essential techniques, arborists can respond effectively to emergencies, minimizing risks and saving lives. Remember, the ultimate goal is not just to perform a rescue but to ensure that everyone—workers and victims alike—returns home safely.

About the Author

With over a decade in the tree care industry, **Kevin Myers** is dedicated to safety and education as an arborist training instructor for ACRT Arborist Training. A CTSP and ISA Certified Utility Specialist, he has experience in consulting forestry, line clearance, and arboricultural operations. Recognized with the UAA Silver Shield Award, Myers is committed to industry advancement, contributes to ANSI Z133 safety updates and serves on the UAA Events Committee. 🌳



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Boosting Environmental Stewardship Initiatives with Technologically Advanced UVM Programs

Utility vegetation management programs have increasingly adopted sustainable practices, enhancing reliable energy systems by incorporating the needs of surrounding wildlife into right-of-way management practices. Integrated vegetation management has long been considered the most effective approach to incorporating these sustainable practices systematically. The use of new and emerging technologies enables energy companies to more effectively and efficiently plan, implement, and maintain environmental stewardship practices on their ROWs.

Proving Sustainability Can Be Cost-Effective

While UVM program managers recognize the sustainable benefits of IVM, it's challenging to justify the additional cost required to transition to large-scale IVM, and then demonstrate its benefits. Science-based research plots and pilot projects offer insight into the specific plant communities and ecological needs at the local level, demonstrating tangible, verifiable benefits.

With foresight and planning, work management software systems can be configured to establish baseline information related to workloads and budgets to track improvements over time. Remote sensing data, whether satellite imagery or LiDAR-based, can be configured and integrated into work management systems to provide datasets that provide documentation, trend analysis, and ultimately prove the value of implementing IVM.

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Circular Economy in Vegetation Management: Turning Waste Into Opportunity

By Aana Agrawal, Sustainability and Resilience Manager, EnviroScience

The utility vegetation management sector plays a crucial role in ensuring the smooth transmission of power across regions and cities by keeping plant growth under control within the vicinity of transmission and distribution lines. However, unrefined vegetation maintenance practices often focus on trimming, cleaning, and disposal processes that generate an unnecessary amount of organic waste, aid in releasing greenhouse gases, and fail to maximize community and ecological value. With sustainability being a focus for utility companies, vegetation waste is now viewed as more than just a byproduct of discarding—but more as a valuable resource.

UNDERSTANDING THE CIRCULAR ECONOMY

Circular economy is a systems-based approach that focuses on reducing waste, improving resource efficiency, and making more sustainable alternatives to the dominant linear model of “take, make, dispose.” In reference to vegetation management, one would ask: How can tree trimmings, brush, and biomass be given a new life or be transformed into inputs for new value streams rather than being sent to landfills or left to decay? To understand this better, let’s first understand the different types of vegetation waste in UVM:

- Tree branches and limbs from pruning
- Whole trees uprooted for hazard mitigation
- Vines and undergrowth roots cleared from rights-of-way
- Leaves and other organic debris

This biomass, often viewed as waste and a byproduct of necessary operations,

has immense potential when processed and redirected appropriately.

PATH TO CIRCULARITY: WASTE TO VALUE

Mulching and Composting

One of the simplest and most valuable uses for tree residue is to convert it into mulch or compost. Wood chips can be repurposed in community gardens, public parks, and landscape designs, aiding soil enrichment and weed suppression. Composting organic residue not only conserves methane emissions that would be produced if discarded in landfills but also returns nutrients to the ground.

One of the largest power and gas distributors in the United States has a long history of vegetation management, where they repurpose wood waste as mulch. In collaboration with local communities, the California utility delivers wood chips from trimmings directly to residents, farmers, and city landscaping at no cost. For instance, in Sonoma County, wood chips have been distributed to vineyards across the state for erosion control and soil enhancement. The initiative has diverted thousands of tons of organic material from landfills annually, supporting both environmental and community resilience goals.

Biochar Production

Biochar is a form of charcoal produced by pyrolyzing biomass in the absence of oxygen. When used in soil, biochar enhances soil fertility, sequesters carbon, and improves water retention. Utility companies can collaborate with biochar producers to divert biomass for this purpose. For instance, in Northern California, the same utility also partnered with Sonoma Biochar Initiative and

local agencies to convert hazardous vegetation from utility line clearings into biochar. This effort aims to reduce wildfire risks by responsibly removing excess biomass while producing biochar for use on local vineyards, farms, and rangelands.

Biomass Energy Generation

Vegetation waste can also be used as a feedstock for biomass power plants, producing renewable energy from what would otherwise be discarded. This is particularly valuable in rural or forested regions where vegetation waste is abundant, and grid infrastructure may benefit from decentralized power generation.

Habitat Creation and Erosion Control

Logs, brush, and wood debris can be used to create wildlife habitats, restore wetlands, and reduce erosion on slopes and near waterways. This not only diverts material from waste streams and landfills but also supports local biodiversity. For instance, in the Pacific Northwest, utility ROWs are being managed to support pollinator habitats by reintroducing native shrubs, plants, trees, and using cleared wood to form brush poles for small mammals and birds.

Artisanal and Community Use

Community organizations and local artisans collect wood from utility tree removals to make furniture, sculptures, or building materials. This adds cultural and economic value to otherwise discarded resources. Utility companies can maintain a record or build a database of available materials and connect with local communities and organizations to get involved with reuse programs.

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IMPLEMENTING CIRCULAR STRATEGIES: KEY CONSIDERATIONS

- **Partnerships and Stakeholder Engagement:** Establishing circular pathways requires collaboration with local governments, nonprofits, recyclers, and entrepreneurs. Stakeholder mapping and partnership frameworks are essential to create mutually beneficial value chains.
- **Logistics and Infrastructure:** Collection, processing, and distribution systems must be in place to transport vegetation waste to its next use. This may include mobile chippers, local drop-off sites, or contracts with third-party processors.
- **Policy and Incentives:** Regulatory support and incentives can encourage utilities to divert vegetation waste from landfills. Green procurement policies and carbon credit programs can also make circular practices financially viable.
- **Training and Awareness:** Field crews and vegetation planners need to understand the goals and practices of circular UVM. Training modules, tool kits, and incentives can support behavior change at the ground level.
- **Tracking and Reporting:** Quantifying diverted biomass, carbon saved, and community benefit is vital for accountability and continuous improvement. Digital tools and GIS mapping can help track waste flows and identify optimization opportunities.

BENEFITS OF CIRCULAR VEGETATION MANAGEMENT

- **Environmental:** Diverts and reduces waste going to the landfills, reduces greenhouse gas emissions, enhances biodiversity, and promotes soil health
- **Social:** Supports community gardening, brings awareness, and enhances education and engagement
- **Economic:** Lowers disposal costs, opens revenue streams, and enhances brand value through sustainable leadership

LOOKING AHEAD

With the advent of climate change and the increasing rise of sustainability expectations from all industries, utility companies and arborist teams must embrace creativity and innovation. Circular economy-focused strategies in vegetation management offer a way to balance operational efficiency with environmental stewardship. From electric saws to biomass mapping to community codesign, there are necessary tools, frameworks, and standards available for organizations to use. It is now up to organizations to frame vision and goals, develop leadership, and commit to seeing vegetation waste not as an endpoint but as the beginning of something creative and valuable.

Looking ahead, let us not waste the waste—instead, let's chip away at old habits and build a greener future, one brand at a time.

ABOUT THE AUTHOR

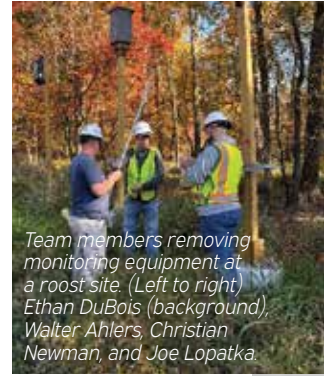
Sustainability and Resilience Manager **Aana Agrawal** joined EnviroScience in March 2024, bringing extensive expertise in sustainability, climate change, and ESG. She leads strategic efforts to embed best sustainability practices internally and for clients, offering guidance on net-zero carbon strategies, GHG accounting, risk management, and strategic planning. Agrawal's global career spans Singapore, India, China, the UK, the UAE, and the United States, giving her a nuanced understanding of diverse cultural and regional sustainability challenges. She holds a bachelor's degree in planning from CEPT University, dual master's degrees in sustainable development from Singapore and China, and is pursuing a master's in business analytics with a focus on sustainable supply chains. 🌱

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Artificial Bat Roost Structure Research Project on FirstEnergy ROWs in New Jersey

FirstEnergy, with the Electric Power Research Institute (EPRI) Program 195 and DuBois Environmental, is evaluating whether artificial roost structures on electric rights-of-way can offset the loss of maternity roosts for endangered and at-risk bats. This study assesses conditions and methods of attraction for bat detection and occupation of artificial roost structures along ROWs.



Team members removing monitoring equipment at a roost site. (Left to right) Ethan DuBois (background), Walter Ahlers, Christian Newman, and Joe Lopatka.

Artificial bat roosts offer new hope for protecting endangered species such as the Indiana (*Myotis sodalis*) and Northern Long-eared (*Myotis septentrionalis*) bats, experiencing significant population declines largely due to White-nose syndrome.^{1,2} In New Jersey, this has led to stringent regulations on how utilities manage trees along ROWs that bats rely on for shelter.³ If bats utilize artificial roosts, utilities could use this mitigation tactic to conserve bats and ease the impact of necessary maintenance work—a win for both wildlife and line clearance requirements.

EPRI and the FirstEnergy project team, comprised of employees from Vegetation Management, Environmental, and New Jersey operations, are pioneering a free-standing roost concept that will negate the need for extensive permitting requirements, avoid unnecessary ground disturbance, and allow roosts to be moved and repaired over time. This approach will make artificial roosts more attainable for utilities hindered by permitting issues on their ROWs. Artificial roost clusters are comprised of four different box structures placed in a “Goldilocks” method to test whether certain bats show a preference for a specific roost. Each of the two study sites include thirty-two roosts in sets of four and incorporate guano traps, temperature sensors, acoustic monitors, and hobo loggers.

In their second year of monitoring, FirstEnergy has plans to continue for three or four more years, if funding allows. Long-term monitoring will enable FirstEnergy to more accurately determine the most effective methods and locations for utilizing artificial bat roosts as potential regulatory mitigation tools.

For inquiries, contact Michele Dellinger (mdellinger@firstenergycorp.com).

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OPINION EDITORIAL

Succession, Strategy, and Stewardship Beyond the Edge

By Seth Blair, Research and Development Manager, Eocene Environmental Group

In utility vegetation management, program components are commonly placed in operationally logical boxes.

When we consider the succession of plant communities, it is about the management of compatible and incompatible brush *within* the right-of-way. When we speak of tree failure risk, it is about identifying and removing high- and extreme-risk trees *outside* of the ROW.

Often, off-ROW trees that were unlikely removal targets account for the largest slice of the vegetation-caused outage pie charts. For that reason, it is becoming increasingly apparent that solely assessing individual conditions of concerns in trees is inadequate. Remote sensing technologies will play an important role in this effort. Experts are researching soil and wind impacts on tree failure. What else is left to consider? Succession of plant communities *off* the ROW.

Forest Stand Development

When left uninterrupted, early successional plant communities develop into forests. The transition begins with stand initiation, which is routinely suppressed within the ROW. In early stages, young trees grow rapidly and vertically, competing for light in dense stands. Eventually, some trees assume dominance, causing decline and mortality of suppressed trees. This stem exclusion stage poses a clear line risk.

Mortality is not the only condition of concern at this stage. Energy directed toward rapid growth comes at the expense of the taper development required to withstand the forces of wind and other load stressors. Low live crown ratios are also common (Goodfellow 2020). Consequently, pole-sized trees may fail and contact electrical facilities (Figure 1). Recognizing developmental patterns is key for putting proactive management strategies into action.

Forest Stand Characteristics Are Site Characteristics

Assessments of site characteristics precede and help to guide decision-making, made clear by industry best management practices (Goodfellow 2020; Miller 2021). Assessments of stand dynamics are uncommonly considered as a site characteristic, yet discussions of tree density predate the light bulb. Including an estimate of stand density in outage investigations may help develop a more informed, sustainable work planning process. This may include trees per acre, basal area, or something less granular and more ocular, such as low, medium, or high density. Further inferences can be made from existing outage data using total height and diameter as a proxy for slender, pole-sized trees in earlier stages of development.

I'm not suggesting using basal area factor prisms for tree density assessments but instead to examine sites like a silviculturist. Cooperation with conservation agencies may better equip UVM personnel with tools to confidently identify forest types, estimate appropriate stocking levels, and anticipate development over time.

ROW Widening Can Be Sustainable Practice

Frameworks exist for evaluating the effectiveness of ROW widening with respect to forest stand metrics (Guggenmoos 2003). The basis that risk is reduced when fewer trees are within striking distance is logical, but is widening justifiably sustainable? When applied thoughtfully, yes. Conversely, the consequences of tree-caused outages are not sustainable—nor are reactionary directives that follow a major event.

A sustainable approach to widening may be to start early. Forests in stand initiation or stem exclusion stage are comprised of smaller diameter stems than that of a mature forest. Removal of smaller trees is not only more economical but more environmentally and socially acceptable. It is critical to recognize operational constraints, such as easement limitations. Acceptable residual risk should be defined. Further, large investments require longitudinal data to evaluate results and inform program adaptations.

Forest Thinning Adjacent to the ROW

Stands are sometimes thinned to encourage desirable development in residual trees, lessening the risk of fire and pests. A 20-year UC Berkeley study found that thinning does not reduce surface fuels initially unless residuals are managed (Stephens 2022). Over six years, surface fuels decomposed, reducing wildfire risk. By year 14, regeneration required additional thinning and mastication. Cyclical management sounds familiar, right?

Along the ROW, thinning can create a strategic buffer, aligning forest health with reliability goals. Factors to consider include age structure, density, crown classification, species, shade tolerance, vigor, and live crown ratio (Hicks 1998). In UVM, we may also favor species with a lower risk profile and fall bias away from facilities. The potential for short-term windthrow exists, as newly exposed trees may not be wind-adapted.

Cooperation Is Required

Working outside of the ROW is a challenge, legally and in public perception. Removing trees yet to reach a high- or extreme-risk rating may intensify those challenges. None of the strategies discussed above can be accomplished by UVM managers alone—collaboration is essential.



Figure 1. Pole-sized tree actively failing from beyond the ROW, attributable to poor taper and a low live crown ratio.



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OPINION EDITORIAL

Fortunately, a model for such partnership already exists: the U.S. Forest Service, NV Energy, and Liberty Utilities have successfully implemented more intensive forest management practices adjacent to ROWs in the Tahoe Basin, demonstrating that with the right partnerships, it can be done.

Conclusion

UVM is an interdisciplinary field. Applying principles from various fields to meet needs and management objectives is no strange thing. We are already rooted in forest ecology and traditional forest management, making it a natural place to partner, borrow research, and bring concepts into practice. Regardless of the objective, working *with* the environment in its various stages represents the conservation-based approach required of dynamic, natural ROW environments.

About the Author

Seth Blair is Eocene's Research and Development Manager. He brings diverse experience from across the UVM industry, having held roles as a utility forester and consulting utility forester.

He currently serves as the co-chair of the Utility Arborist

Association Research Committee and is a published author of peer-reviewed urban forestry research. Blair has also presented to both professional and public audiences on topics such as tree risk assessment, integrated vegetation management, and urban tree growth and longevity. He received his bachelor's degree in forestry from West Virginia University and a master's degree in environmental horticulture from the University of Florida.

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Over the last 12 years, we have been producing and utilizing Filtrex® SiltSoxx™ to meet the erosion and sediment control needs of ourselves and our customers. SiltSoxx are a three-dimensional device designed to filter runoff. This style of barrier can be used

on hard surfaces, making it a versatile option. The mesh is photodegradable and lasts up to five years. To work effectively, the porous mesh outer layer needs to be filled with a filter media. Our daily vegetation management operations yield pound after pound of an ideal filter media: wood chips.

Field crews ensure our chippers produce quality chips that enable proper flow rate inside the finished sock. SiltSoxx manufacturing does not require any further preparation or extra steps. Our dedicated SiltSoxx group operates two manufacturing sites. In an average year, we produce 300,000 feet of filled SiltSoxx.

SiltSoxx production expands our service offering and enhances the

impact we can have on jobsites. For example, our crews and equipment will clear the vegetation from the right-of-way for new line construction, as we have done for decades. After the line crews build the lines, we can return to the site and complete additional work to reestablish vegetation. This may include manufacturing and installing SiltSoxx, as well as seeding, matting, turf reinforcement mats, and fertilizers.

While the premise itself is simple, giving a second purpose to these wood chips is a uniquely satisfying endeavor. As we look toward the future, we are energized by the idea that our environmental impact will be enhanced by new practices and new opportunities. 🌱



We cannot do what we do without our sponsors. UAA sponsorship provides industry connections, hospitality, affinity, member access, data, and helps to shape our members' perception in a way that is difficult to achieve on our own. The UAA empowers a network of thousands of UVM professionals and the public, by offering an interactive, comprehensive website and member platform that is the primary resource for all aspects of utility arboriculture and right-of-way vegetation management.

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UTILITY ARBORIST NEWSLINE

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Our commitment to sustainability is rooted in every solution we deliver. From environmentally responsible line clearance and tree planting to chip drop programs and investing in workforce development, we integrate strategies to ensure safe and efficient operations while helping communities thrive. One call connects you to Asplundh's full range of utility vegetation, infrastructure, digital innovation and engineering services. Our teams are dedicated to helping you achieve your goals with long-term, sustainable results.

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