

Utility Arborist Newsline

NOV/DEC 2018

VOLUME 9

NUMBER 6

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ComEd Stewardship

By Sara Race, Environmental Services Department, Commonwealth Edison

Commonwealth Edison (ComEd), a subsidiary of Exelon Corporation, serves almost four million customers and operates more than 5,300 miles of overhead transmission lines in northern Illinois. Environmental compliance is a core pillar of ComEd's operations as the company continually strives to reduce its negative impacts on wildlife and enhance natural habitats. A biodiversity and habitat policy formalizes ComEd's ongoing commitment to promote and enhance biodiversity through protection and conservation of species and habitats, while maintaining safe, efficient, and effective operations. This policy is applied to operations at all levels, from siting new infrastructure, to day-to-day systems maintenance, to vegetation and rights-of-way (ROW) management. As an electric utility, and one of the largest landowners in Illinois, ComEd is committed to advancing biodiversity and habitat initiatives at a regional scale. In the face of urban sprawl and increased demand for land, ComEd's ROW remain a constant on the northern Illinois landscape. The biodiversity and habitats on the ComEd system are assets to local communities, the company, and to shareholders. Wildlife habitat enhancements on its ROW and other properties are, therefore, highly encouraged by the company.

One way that ComEd is helping enhance regional biodiversity is through its Prairie Program. This environmental stewardship

FOCUS ON ENVIRONMENTAL STEWARDSHIP

program was initiated in 1994 by the Environmental Services Department (ESD) to preserve prairies, a type of grassland native to Illinois, that were discovered on its ROW more than 25 years ago. The long-standing protection and stewardship of Buffalo Grove Prairie, a high-quality prairie in the northwestern suburbs of Chicago, stands as a testament to the positive impact of this program. All that remains of this once larger prairie is located on ComEd's ROW, where the land was spared from industrial and residential development decades ago. The natural fires that maintained the prairie for thousands of years were stopped when the



Wentworth Prairie



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first settlers arrived—without frequent fires prairies quickly succumb to dense growth of trees and shrubs. Only maintenance of the ROW throughout many years, and removal of incompatible trees and shrubs, allowed the prairie to persist. In the late 1980’s, ComEd and the Buffalo Grove Prairie Guardians (BGGP), a group of local community volunteers, began a partnership to preserve the prairie—this partnership remains active today.

ComEd now uses prescribed fire to assist with ecological management of Buffalo Grove Prairie and other Prairie Program sites. Fire is a highly beneficial tool for managing prairies and other grassland landscapes—fire reduces growth of trees and shrubs, helps with management of invasive plants, and assists with nutrient cycling. Burning under transmission lines presents unique challenges—these challenges often vary from site to site based on conditions and surrounding landscapes. Smoke management is a universal challenge for ComEd. Burns must be conducted in a manner that minimizes smoke impacts on population centers, roadways, and highly smoke-sensitive areas, such as schools and hospitals. Flames must also be safely contained with designated burn units to minimize impacts on utility and nearby infrastructure. The level of planning to safely conduct a burn is extensive—ComEd’s ESD manages an internal burn-approval process for the planning, execution, and assessment of all burns. The process requires the ESD to coordinate extensively with other ComEd business units, external stakeholders, regulators, and other utilities sharing the ROW. To guide this process at each site, burn plans are developed to specify burn objectives and the prescription parameters under which a burn will be safely conducted. Burns are only ignited when the site and weather conditions are favorable to meet the burn objectives and compliance with prescription parameters. ComEd typically burns in the early spring (March) and late fall (November)



Buffalo Grove Prairie after regrowth of native plants (above).

Prescribed fire assists in ecological management of the same area (below).



when vegetation is dormant, air temperatures are 7-18°C, relative humidity is 40 to 50 percent, and winds are blowing away from utility infrastructure and nearby population centers. It is sometimes necessary to wait for several burn seasons to safely conduct a burn due to the highly constrained nature of many ROWs, but the ecological benefits of burning are worth the wait.

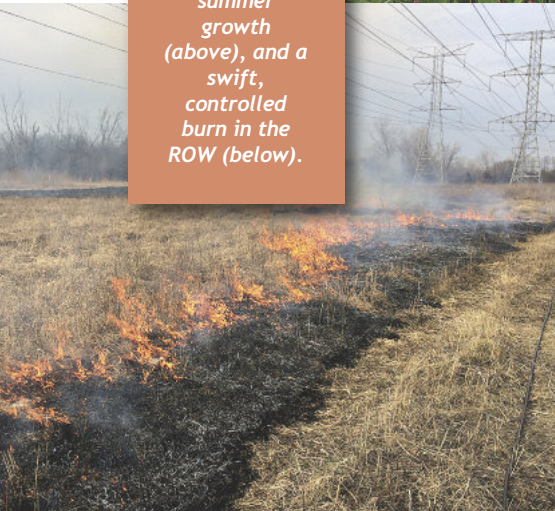
With procedures in place for site management, the Prairie Program has expanded from just a few sites at the program’s inception, to more than 35 sites today, and has resulted in the preservation and restoration of more than 300 acres of prairie. The program contains a full range of the prairies naturally found in northern Illinois, from sand prairies on the ancient Lake Michigan lakebed just south of Chicago, to the globally rare dolomite prairie along ancient glacial meltwater streams, to wet prairies of low-lying landscapes. This variety of habitats contributes to high biodiversity and provides many benefits to nature and communities—food and shelter for declining populations of the Monarch butterfly, storm water retention, and improved aesthetics, to name a few. ComEd is actively

expanding the program by adding new sites annually and the lessons learned from the past 25 years are consistently applied to new projects. Experience has shown that projects with partnerships provide high value to ComEd through sharing of resources and expertise, community engagement opportunities, and relationship-building. In addition, projects conducted on ROW bordering existing natural areas, such as parks and preserves, typically result in greater conservation gains in a shorter period relative to projects in heavily developed areas. As such, ComEd is actively partnering with non-profit conservation organizations like the Conservation Foundation to help children learn about prairies and pollinators. A partnership with the Forest Preserve District of Will County will soon result in an increased stewardship of high-quality prairies on and adjacent to ComEd’s ROWs. These and other stewardship efforts are boosting ComEd’s reputation in the conservation industry—14 of the Prairie Program sites are now certified through the Wildlife Habitat Council’s Conservation Certification program.

ComEd’s prairies provide food, shelter, and breeding habitat for



Kloempken Prairie in summer growth (above), and a swift, controlled burn in the ROW (below).



pollinators such as bumble bees, honey bees, and butterflies. As many types of pollinators continue to experience a rapid population decline, ComEd is acting to respond to the growing crisis. Naturally, the many lessons-learned and expertise gained from implementation of the Prairie Program provide a frame-

work for expansion of the company's pollinator conservation initiatives. ComEd's vegetation management (VM) department continues to expand integrated vegetation management (IVM) activities for ROW maintenance—this practice benefits plants and wildlife, such as many pollinators, that require open, low-growing habitats. Working in partnership with ESD, vegetation managers at ComEd are collecting data on ROW land uses to develop plans to enhance habitat for pollinators and other wildlife. An internal partnership between ESD and ComEd's Vegetation Management Department spurred innovation and development of a Geographic Information System (GIS) model to identify and prioritize future pollinator habitat projects throughout its service territory. Best management practices are being finalized to minimize potential impacts of routine VM and use of herbicides on pollinators. ComEd is also actively engaged with other industries to lead pollinator recovery efforts, highlighted by its involvement with the ROWs as Habitat Working Group and the Electric Power Research Institute's Power-in-Pollinators program. Working in partnership with Openlands, a Chicago-based non-profit conservation organization, ComEd initiated the Green Region program to award grants to public agencies supporting their efforts to enhance open space throughout northern Illinois.

Moving forward, ComEd will seek to grow and expand its stewardship footprint. A five-year stewardship plan is currently in development to focus these efforts and galvanize support throughout all levels of the company. One core focus area includes expansion of existing stewardship programs through development of tools to fill existing conservation gaps, to identify new conservation opportunities, and to prioritize future planning efforts. ComEd will strive to leverage its stewardship programs into the community and throughout the company through outreach and volunteerism. Ongoing education and training of employees will enhance environmental awareness, communication, and accountability to go beyond compliance during all aspects of operations. These initiatives will allow ComEd to lead the path to a greener and more sustainable future by addressing the environmental challenges that impact the company and its stakeholders in northern Illinois and beyond.



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A culture of safety, environmental sustainability, and operational excellence are the foundation on which our vision and mission are built.”

—UAA Core Values



Executive Director Comments

By Phil Charlton

I want to thank the UAA editorial committee for dedicating this edition to the topic of environmental stewardship and to those that contributed. It is a great sign of positive change in our industry as more and more become aware of the opportunity and need, while maintaining the vegetation growing near pipelines and powerlines. Here are some of the signs of progress that has been made in recent years:

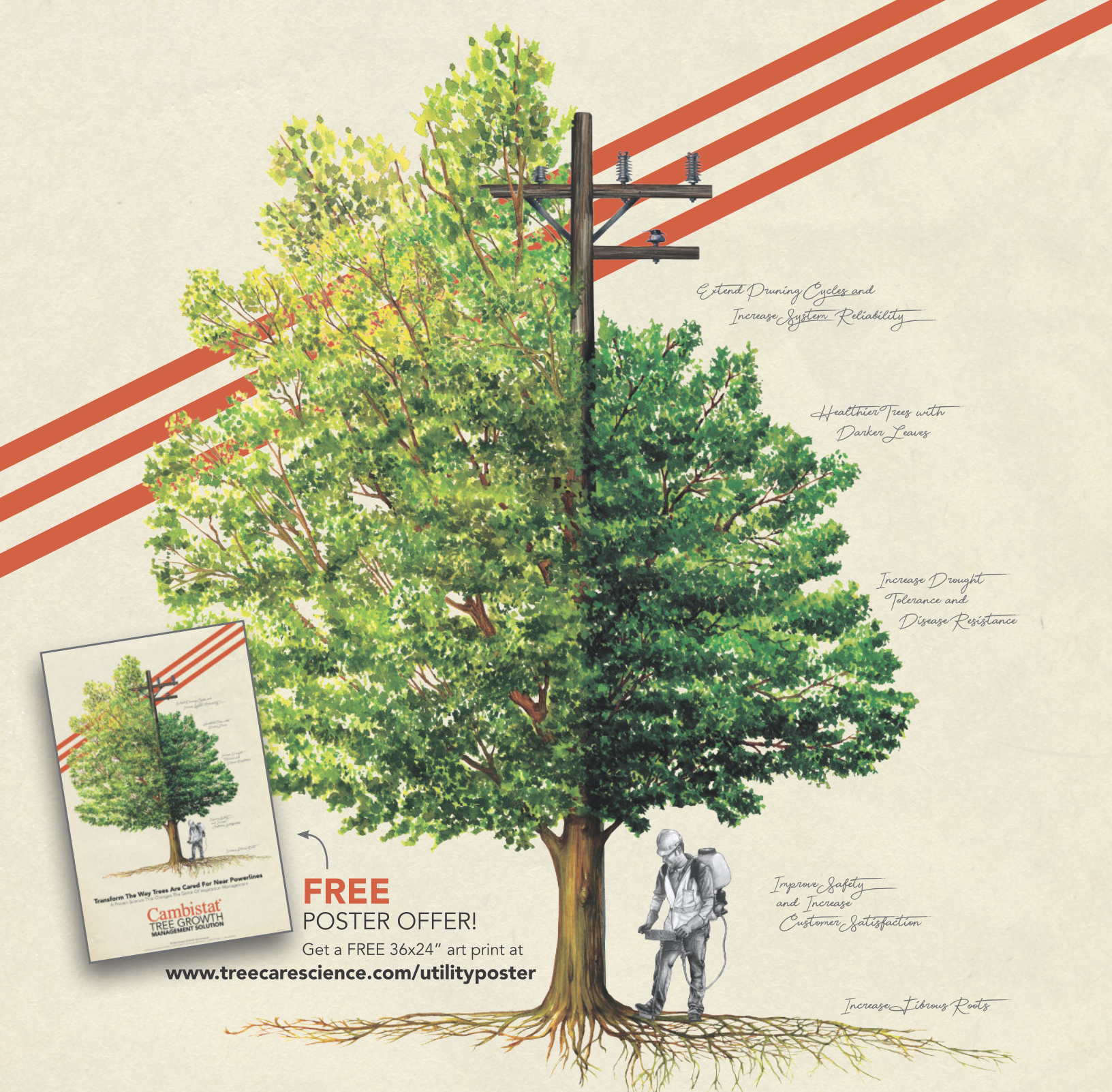
- In 2012, UAA members said that the most critical thing UAA could do was to develop and initiate the Right-of-Way Stewardship Accreditation Program. The change was brought about by the growing concern regarding the unanticipated results of FAC-003, namely the unnecessary destruction of wildlife habitat. It was happening in too many places where it simply was not needed for reliability or safety. Today, eight electric and pipeline companies have been recognized for the excellence of their integrated vegetation management (IVM) programs and many more are working to improve their IVM programs.
- A few years ago, the UAA’s leadership decided that a set of core values—environmental stewardship, safety, and excellence—should be articulated to give a foundation to the mission. Significant progress was made regarding safety, but increasing demand for more action to raise the banner of environmental stewardship challenged us. With great leadership from UAA past president Sara Sankowich, the UAA initiated the *Managing for Thriving Ecosystems* task force to help inculcate environmental stewardship in everything we do. They produced the first in a series of educational videos promoting concepts of sustainability in rights-of-way

(ROW) management. Be sure to view the video, which can be found on our website, and note the pride in those who were interviewed and who manage thriving ecosystems rather than mowing them down. Are you proud of what is being done on the ROWs in which you work?

- In September, the UAA hosted the 12th symposium on Environmental Concerns in ROW Management (ROW12). This year, the focus was on ROW management in the face of the changing climate and more than 90 presenters and 400 attendees discussed a wide range of issues, including environmental protection, restoration, regulation, and more. It was the best summit yet.
- Finally, we end the year with this edition of the *Newsline*. It is just one more piece of evidence that there is momentum among the membership, a growing awareness of the need and opportunities for achieving safety and reliability goals, while also creating a better future for the next generation.

What can we expect in 2019? First, you will see the revised ANSI A300 Part 7 (IVM) published. Revisions have been accepted and should be in place in the first quarter. It now closely aligns with the Right-of-Way Stewardship Council’s standards of excellence and will raise the bar for everyone who practices IVM. Work on a new Best Management Practice to accompany the standard will need to begin soon. By the end of the first quarter, you should also see the proceedings for ROW12 published and work will already have begun on ROW13. This will be sponsored by Duke Energy and held in Charlotte, North Carolina in 2021. Finally, the Managing Thriving Ecosystems task force should be completing its second educational video, which will focus on the opportunities ROW managers have to influence pollinators.

It is an impressive list, especially considering volunteers will lead and implement most of it. Please consider your involvement as UAA makes environmental stewardship not just a priority, but a core value.



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President's Message

By Bob Richens

Greetings everyone!

When you receive this edition of the UAA *Newline*, our industry will have made it through not only one of the worst wildfire seasons on record, but a catastrophic hurricane season as well. The world's weather climate continues to change; the challenges that will impact our companies and the ecosystems we live and work in continue to evolve and increase. There is a positive force that can help us confront and manage these issues: the UAA.

As I share this list of conferences, regional meetings, and associations hosted by the UAA in 2019, I'm sure you'll agree—it is impressive. The information presented at these UAA meetings will help you and the companies you work for meet their goals and fulfill their missions. I encourage you to get involved and participate in these events.

Safety Summits:

- New England
- Oklahoma
- Wisconsin

Regional Meetings:

- Michigan
- New York
- Ohio
- Western

National Meetings:

- Trees & Utilities Conference (Cincinnati, Ohio)
- ISA Annual Conference and Trade Show (Knoxville, Tennessee)

- Arbor Day Foundation's Partners in Community Forestry Annual Conference
- Society of Municipal Arborists (SMA) International Forestry Conference and Trade Show

UPDATED STRATEGIC PLAN

The UAA Board of Directors, under the leadership of Craig Kelly, has updated our strategic plan, goals, mission, and core values and added a core value. Here is the updated UAA Strategic Plan:

MISSION STATEMENT

The UAA's mission is to drive excellence, innovation, and change through professional development, outreach, research, and the promotion of best practices.

VISION STATEMENT

Our vision is to be the leading organization for the enhancement of the utility vegetation management (UVM) industry.

CORE VALUE

A culture of safety, environmental sustainability, and operational excellence are the foundation on which our vision and mission are built.

UAA's STRATEGIC GOALS

UAA will achieve its mission, consistent with its core values, if it strives for the following goals:

- Create a culture of safety within the UAA, throughout the Utility Vegetation Management (UVM) profession
- Create a culture of environmental sustainability within the UAA and throughout the UVM profession
- Ensure UAA operational excellence

- Enhance the quality of UVM through guiding principles
- Enhance and support continuing educational needs for UAA members
- Drive innovation and change through scientific research
- Promote the UAA and UVM Best Practices through active engagement and education of peer groups within the broader UVM industry, the public, environmental non governmental organizations (NGOs), regulators, and other stakeholders

The new core value of environmental stewardship is one you will hear and see more of in 2019. This issue of the *Newline* is dedicated to environmental stewardship. If you have not already seen the new video, *ROW Environmental Stewardship*, I encourage you to view it on YouTube. The video was developed by the UAA Managing for Thriving Ecosystems Task Force led by Stan Vera-Art.

In closing, I want to thank Sara Sankowich for her leadership of the UAA this past year as president and as the champion of the task force that enables us to recognize that managing rights-of-way (ROW) for thriving ecosystems is a core value of the UAA and its members. Sara's energy, leadership skills, and passion for this organization are amazing. Thank you, Sara!

Happy Holidays,
Bob Richens

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Industry News

In Memoriam: Retired Executive Howard Bowles Climbed the Davey Ladder



Howard Bowles

By Matt Fredmonsky

Employees and retirees of the Davey Tree Surgery Company are mourning the loss of long-time Davey executive Howard Bowles, who passed away on September 12, 2018 at the age of 75.

Bowles retired from Davey in 2012 as senior vice president and general manager of the Davey Tree Surgery Company after a nearly 46-year career,

which focused primarily on western utility operations. He started with Davey in 1966 as a climber on the San Diego Gas & Electric (SDG&E) account. A native of Oklahoma, Bowles got the job in California thanks to a family member who worked at Davey as a foreman and hired him at the age of 23.

In 1973, Bowles graduated from the Davey Institute of Tree Sciences and was subsequently promoted to general foreman on the PG&E Coast Division account. A year later, he was promoted to supervisor.

In 1981, Bowles was promoted to utility operations manager, and in 1984 he was promoted to vice president of utility services. Bowles became an ISA Certified Arborist in 1988.

Bowles was elected to the board of directors of the Davey Surgery company in 1989, and later that year he was promoted to vice president and general manager. In 2000, he was promoted to senior vice president and general manager, and that same year he received Davey's most prestigious honor, the John Davey Award of Excellence.

In 2009, Bowles received the UAA Lifetime Achievement Award. The award recognizes a utility arborist that has achieved impressive milestones throughout his or her career.

"Howard was truly one of a kind," said Davey President and CEO Pat Covey. "We will remember him not only as a great leader within the Davey Company, but as a man dedicated to his family, faith, and community. Howard gave generously to so many causes and people. He was a big guy, with a big personality, and an even bigger heart, and he will be greatly missed."

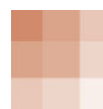
When asked during a 2017 interview about a proud moment in his career, Bowles pointed to the many times he helped utility clients overcome a challenge set forth through a government regulation or mandate.

"Our job was to analyze the project, understand it, and then help our utility client be successful," Bowles said. "And when those would come to pass, that would feel real good for us. So, we were proud of those moments."

Bowles also reflected on changes he witnessed in the utility line clearance industry during his nearly five-decade career. Among them, he pointed to increased budgets for utility vegetation management (UVM), a rise in use of tree growth regulators, and more strict government regulation of the industry.

Bowles was one of the original 114 employee owners of Davey Tree when employees purchased the company from the descendants of John Davey in 1979.

Aside from his work at Davey, Bowles served on several boards of non-profit organizations. He was a member of Celebration Christian Center in Livermore, California, where he served on the elder board for more than 30 years. He also served on the Board of Shepherd's Gate for 20 years, where he worked to help women and children escape cycles of addiction, homelessness, and abuse. Bowles also served on the Board of Assist International for 10 years, where he worked with orphans and vulnerable people, volunteering on overseas trips where his generosity built many projects for orphaned children. And he served the local communities of Livermore and Brentwood, California, as a Rotarian for several decades.



Davey Tree Establishes Educational Endowment for TREE Fund

The Davey Tree Expert Company has pledged a \$250,000 educational endowment fund through TREE Fund. The Davey Fund supports community-based arboricultural education in the U.S. and has a history of supporting TREE Fund's dedication to furthering scientific discovery and research by giving more than \$500,000 in donations and in-kind gifts in the last 15 years.

TREE Fund is a 501(c)3 nonprofit dedicated to supporting scientific discovery and dissemination of new knowledge in the fields of arboriculture and urban forestry. Its primary public outreach and fundraising



CEO of Davey Tree. “With the establishment of the Davey Fund, we strengthen our long-time commitment to TREE Fund and its mission to support arboricultural research. This endowment fund is a reflection of our employee-owners’ dedication to continued education and the advancement of arboriculture throughout our industry.”

Davey’s pledge of \$250,000 spread throughout five years will be allocated directly to the funding of scientific research on urban tree care issues and community-based education.

“All of us at TREE Fund are honored that Davey has chosen to have us serve as stewards and administrators for their new educational endowment fund,” said J. Eric Smith, president and CEO of TREE Fund. “Davey has been incredibly influential in the evolution of the modern scientific tree care industry, while also demonstrating the myriad ways that a visionary company can create social and economic good for all the communities they touch with their work. This new long-term commitment to empowering arboriculture education is yet another profound example of Davey’s century-long commitment to making a difference in the world.”

event is the green industry renowned Tour des Trees, an annual week-long, 500+ mile cycling adventure. Since 1992, tour riders have cycled through communities in the U.S., Canada, and the U.K., planting trees, educating children, and shining a light on the work done by arboriculture professionals and the importance of science-based tree care.

“As the Davey Company continues to evolve and grow, it’s increasingly important that we invest in research that will advance not only our company, but the industry that we are so proud to be part of,” said Pat Covey, president and

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Finance Committee Update

It is the responsibility of the Finance Committee to ensure that the UAA remains in good financial standing in accordance with accepted accounting practices. In addition to being monitored by the Finance Committee, the UAA financial statements must also undergo an annual external audit. The latest audit results confirmed that the UAA continues to be on sound financial footing.

The UAA is the leading organization promoting quality utility arboricultural practices and vegetation management (VM). The UAA sponsors research, continuing education, various publications, and regional and national conferences—which requires money. Funding for these important events comes from membership dues, publication sales, and any excess receipts remaining after sponsoring events, such as safety summits or national and regional meetings. It is the Finance Committee’s

responsibility to ensure that the necessary funding is available and that it is used in a fiscally responsible way to maintain the solvency of the UAA.

Each year, the Executive Committee, Finance Committee, and UAA staff develops a detailed budget of anticipated income and expenses. A reserve is held to manage any unanticipated emergencies. In addition, special funding for projects, such as the Trees & Utilities Conference and the ROW Symposium is held in designated accounts. The committee meets monthly to review the finances of the organization and offers any necessary advice and recommendations to the Executive Board.

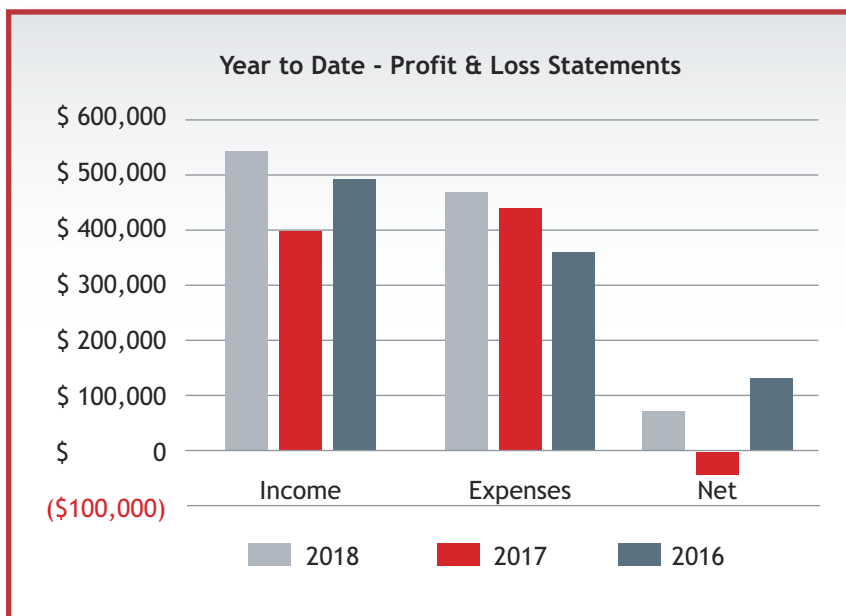
Another responsibility of the committee is to establish and maintain Board policies. UAA policies are reviewed on an annual basis to maintain relevancy and

currency with the overall goals of the organization. At the time of this writing, the following policies have been reviewed: conflict of interest, financial procedures, lobbying activities, and record retention.

Very few changes have been required to the current policies.

The UAA staff has been able to focus on managing payrolls, adjusting cash reserves, and overseeing the budgets for national and regional meetings. The re-birth of the Trees & Utilities Conference has provided the UAA with the potential to realize additional revenue that can be used for future research, training, and education. In addition, the ROW Symposium, which is held every three years, offers the same opportunities. This increased revenue has allowed the UAA to provide additional materials, such as the safety video which was released at the 2017 Trees & Utilities Conference and the environmental stewardship video that was released this year at Trees & Utilities. However, adding additional resources and activities requires manpower. The Finance Committee is currently considering the addition of full-time staff to manage the increasing workload.

The Finance Committee will continue efforts to ensure that the UAA is managed with excellence so that our organization will remain at the top in promoting quality VM practices through research, education, and training.



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Connect and Collaborate: Partnership with FirstEnergy Corp. and Ohio State University

By Gabriel Karns, Visiting Assistant Professor for the School of Environment and Natural Resources, Ohio State University

A rural regional campus of the Ohio State University (OSU) is a hub for an exciting new initiative aimed at bridging the gap between environmental sustainability, social justice, and workforce diversity. FirstEnergy Corp. and OSU at Mansfield partnered to tackle these pressing issues in mid-2018 under the framework of a Connect and Collaborate grant. The funding mechanism, an internal grant offered through the university, seeks to connect the university with external private and/or public partners in strategic multi-pronged initiatives. Having a sequence of smaller collaborations as a foundation in the past, a team assembled across FirstEnergy Corporation, Ohio State Mansfield, and the School of Environment and Natural Resources (College of Food, Agriculture, and Environmental Sciences at OSU) were awarded a Connect and Collaborate Grant. The project is developing a holistic approach by which non-traditional environment and natural resources students are provided practical, personal, and professional support to succeed academically, and ultimately, as high-achieving professionals.

FirstEnergy Corp. lists community involvement as one of their top priorities beyond providing safe and secure energy, and the company has a history of successful initiative led primarily, but not exclusively, through their FirstEnergy Foundation. FirstEnergy's commitment to environmental sustainability also sets them apart as a frontrunner amongst



COLLEGE CORNER



the Midwest and Mid-Atlantic region's energy sector. Where those two aspects intersect—a commitment to people and a commitment to the environment—is where the Connect and Collaborate initiative leverages the concept of “social-ecological justice.” Entitled, “Producing Qualified and Diverse Natural Resource Professionals through Advanced Partnerships and Experiential Learning Communities,” the initiative between FirstEnergy Corp. and OSU aims to address several fundamental social and societal issues by combining personalized student support (i.e., enhanced learning communities, mentoring) with on-campus engagement (i.e., experiential, field-based internships) atop a bedrock of environmental initiatives related to vegetation management (VM) and stewardship of natural resources.

A 2015 pollinator planting under FirstEnergy's 69-kV overhead utility transmission corridor (hereafter ROW) was one of the initial successes from which today's Connect

and Collaborate initiative has emerged. In a truly collaborative effort, FirstEnergy and Ohio State Mansfield's ROW committees worked alongside Ohio State Extension, the Pollinator Partnership, Ohio Prairie Nursery, Arnold's Landscaping, Davey Tree, and the UAA to create a multi-plot pollinator garden directly in the ROW wire zone and central to campus traffic and activity. Plots feature diverse native seed mixes to provide different resources for pollinators throughout the growing season, and the plots have been host to numerous outreach and extension events for both students and public alike. Just a year later, researchers from the Terrestrial Wildlife Ecology Laboratory (School of Environment and Natural Resources) launched a project in eastern Ohio examining the role of pipeline ROW VM on wildlife habitat and populations within the Marcellus/Utica shale play. More generally, the research lab began exploring utility ROWs' conservation potential from an integrated vegetation management (IVM) viewpoint. ▶



FirstEnergy's on-campus Mansfield ROW and the corridors branching into the surrounding landscape were an excellent and obvious fit for collaboration and to advance the lab's research.

Beyond the on-site FirstEnergy ROW, another ingredient that stitched the partnership together was that of an undergraduate capstone course for college seniors majoring in Forestry, Fisheries, and Wildlife Sciences (FFW) from the School of Environment and Natural Resources. With a diverse portfolio of environmental and natural resource assets distributed throughout the 640-acre Ohio State Mansfield campus, the property became a perfect platform for FFW students to conduct their senior capstone projects. From an online article highlighting the 2016 course iteration, one of the instructors said, "It's hard to quantify just how vital the capstone course is to our students. For a student to see how all the moving parts of their academic career coalesce within this single immersive experience, it's often that aha moment that propels them into their future—very much a passing from student to young professional sort of moment. That capstone course takes place in such a diverse property as the Mansfield campus, that's just the icing on the cake. With vernal pools, plantation woodlands, forb-rich ROWs, 150-year-old forests, and more, the outdoor classroom is literally 10 steps away from the chalkboard. For student and instructors alike, it's a learning and teaching environment that is tough to top."

The centerpiece of this collaboration was the creation of a campus-wide Natural Resource Management Plan and subsequent formation of the Social Justice and Ecology initiative, which is the formal outreach, education, and research program of the OSU Mansfield's 640-acre natural landscape. The goal of Ecolab is to foster socially relevant and ecologically sound solutions to today's environmental challenges in natural resource management, food and agriculture, and education. Ecolab capitalizes on the fact that the Ohio State Mansfield student body is uniquely urban (northeastern Ohio's urban metropolises of Cleveland, Akron, Canton, and Youngstown), diverse, and comprised of many first-generation college students. A predominantly rural setting, Ohio State Mansfield is a perfect stage to pay particularly special attention to incoming first-year students by creating a smaller, more intimate learning community that combines practical and personal first-year support with exploration and exposure to social justice and ecological issues. Through the Ecolab

learning community's dual focus on social and ecological issues and collaboration with faculty-led, on-campus projects focused on environment and natural resources, we anticipate a subset of these students remaining committed to or perhaps even transferring to majors thematically aligned with and addressing environmental sustainability—future young professionals that companies like FirstEnergy, Corp. would be eager to hire!

The Connect and Collaborate initiative provides the capacity to enhance educational outcomes for students and attract a wider diversity of future professionals to environmental and natural resource opportunities (i.e., research, internships, careers). Enrollment in the first year Ecolab learning community (inaugurated August 2018) met and exceeded capacity and is an exciting indicator that the initiative is meeting a real and important need for eligible students. FirstEnergy acknowledges workforce gaps in diversity and has committed to engaging under-represented students as pre-professionals through creative and forward-thinking mechanisms by partnering with the School of Environment and Natural Resources and Ohio State Mansfield. Professional-to-student mentoring is a component of FirstEnergy's commitment, and eligible students may apply for a fellowship that couples a stipend with living arrangements for on-site summer internships focused on topics, such as ROW vegetation and pollinator monitoring, forest stand inventory and management, and sustainable urban agriculture. Inasmuch that professional- and faculty-led internships provide guidance for management decision making and creation of best management practice (BMP) demonstration areas across the Mansfield property, student interns will gain relevant career experience, provide opportunities to help the general public see how FirstEnergy, Corp. makes environmental sustainability a priority, and collect data that illustrate the benefits of BMPs to conservation and more informed decision making by Ohio State Mansfield leadership. Additionally, participation in the Ecolab learning community and internship program at Ohio State Mansfield links eventual campus change students to School of Environment and Natural Resources faculty and staff in Columbus who are involved with a university-internal Diversity, Inclusion, Justice, and Equity Task Force. This explicit linkage will support any campus change students in transition throughout the remainder of their undergraduate curriculum, ultimately graduating a more diverse student body, which can feed back into environmental and natural resources career fields to reinforce positive gains on socioecological issues.

This initiative is one that I hope, speaking for both FirstEnergy, Corp. and OSU, becomes a template for how the corporate sector and academic institutions unite to more effectively engage local and regional communities in a more holistic manner in order to achieve a host of multi-pronged objectives pertaining to healthy communities, a healthy environment, and a complete education that makes the world a better place to call home.



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2018 UAA Award Recipients

By Craig Kelly, UAA Past President 2017

Since the mid 1990s, the UAA has been recognizing utility arboriculture practitioners who have made outstanding contributions to both the UAA and utility vegetation management (UVM) industry. These awards have been given to both pioneers in the industry, as well as long-standing stalwarts who have given selflessly to promote the UAA. These awards are a just a small token of recognition so deserved by these individuals.

UAA 2018 Lifetime Achievement Award

The Lifetime Achievement Award is the highest honor the UAA can bestow upon an individual, recognizing a track record of excellence and leadership for someone who has performed an outstanding service and accomplishment in UVM.

Lynn Grayson was hired into American Electric Power's Appalachian Power Company on March 23, 1981 and retired—to the day—31 years later in 2012. Starting as a utility forester, Grayson moved into the position of guiding the VM programs for Appalachian Power's transmission and distribution system and spent his last seven years developing and managing the Transmission Forestry program for the AEP system.

Grayson's vast knowledge of VM processes, leadership abilities, tactfulness, sincerity, and clear communication skills helped AEP's programs ride through the storms experienced at a large, investor-owned utility. Throughout many years, Grayson has trained many utility foresters, some contractors, and many engineers in the art and science of UVM; experienced the annual budget roller coaster; navigated through the table-banging demands of managers and vice presidents; testified to state regulatory commissions on UVM practices and procedures; and tirelessly worked to bridge the gap in understanding that most laypeople have about the UVM field.

Grayson is the consummate professional and mentored his utility foresters not only in the methods of managing a successful VM program, but also in the importance of building strong relationships. Grayson not only participated in many industry organizations, he pressed



Lynn Grayson (left), recipient of the UAA 2018 Lifetime Achievement Award with wife, Robin Grayson.

his staff and coworkers to become Certified Arborists and to take active roles in those industry organizations, with several rising to leadership positions within regional chapters and associations. Grayson has served on or led numerous committees, worked on many projects, and even lobbied Congress to try to bring some common sense to VM practices on the nation's transmission system. In the "old days," Grayson helped develop and pioneer many VM tools and practices that are commonplace in the industry today.

Often, when it seemed like everyone from the CEO to the newly hired line mechanic wanted to tell him how to better manage the program, Grayson was the voice of reason, the teacher, the mentor, and in the words of one of his supervisors, "the sensei," bringing the conversation back to reality. Grayson has taught many that VM is much more than a bunch of "yahoos" running around with chainsaws and spraying "agent orange." He has taught them that it's a complex process, and demonstrated through his actions and activities that those who plan and execute the work are knowledgeable professionals.

UAA 2018 Utility Arborist Award

The Utility Arborist Award recognizes an individual who is engaged in UVM and has demonstrated exceptional industry leadership.

Paul Hurysz, currently the Manager of Transmission Contract Resources at Duke Energy, has been a leader in the UVM Industry for more than 30 years, and has held numerous positions in the industry. Throughout his professional career, he has demonstrated strong leadership, training, human performance, project management, as well as analytic and operational skills.

Hurysz holds a Bachelor of Science degree in Forestry and Wildlife from Louisiana Tech University and a

Master of Business Administration (MBA) from the University of Houston-Clear Lake. He is an International Society of Arboriculture (ISA) Certified Arborist® and ISA Certified Arborist Utility Specialist.™

Hurysz has been actively engaged with activities and committees at two industry organizations, the ISA and UAA. During his current role as co-chair of the UAA Safety Committee, his role as the Vice President of the UAA, and his past term as UAA Executive Board member, he has demonstrated a commitment to, and passion for, improving industry safety performance by focusing on enhancing safety culture and awareness within the industry. Hurysz also finds the time to volunteer with scouting and other community organizations.

UAA 2018 Education Award

The UAA Education Award is given to individuals recognized for the contribution to the education and training of UVM professionals.

This year's award recipient is Geoff Kempster. Kempster is a prolific author and has provided continuing education opportunities through a tremendous number of presentations. There is, however, a common theme that runs through the many contributions Kempster has made to our profession, and that is a passion for conveying knowledge to practicing arborists across the many disciplines within arboriculture. Kempster creates touch points with arborists—through speaking, writing, developing references, and standards, or through direct education. His end game has always been about finding common ground, and conveying knowledge that has made us better, more competent arborists. Kempster has a history of sharing his passion for the profession of arboriculture throughout his career. His influence extends beyond the utility industry to all practicing arborists. He is a frequent speaker at professional meetings including the ISA international conference and many ISA chapter meetings, as well as trade association conferences. His speaking engagements number in the hundreds and include presentations at major international and national conferences, regional and state meetings, and local sessions with small groups of practitioners. These include:

- The ISA Annual Conference
- Tree Care Industry Association “Expo”
- International Symposium on Environmental Concerns in Rights-of-Way Management
- National Arbor Day Foundation “Trees & Utilities” Conference
- National Arbor Day Foundation “Partners in Urban Forestry” Conference

Phil Charlton,
UAA Executive
Director (left),
congratulates
Geoff Kempster,
recipient of the
UAA 2018
Education
Award



- National Rural Electric Cooperatives “Tech Advantage” Conference
- Edison Electric Institute (EEI)
- Individual ISA Chapters
- State and Regional VM Conferences
- State and Regional Urban and Community Forestry Conferences

Kempster is also an author of the ISA Best Management Practices; Utility Pruning of Trees; a co-author of the new Utility Arborist Specialist Study Guide (with Randy Miller); and has published more than 50 articles in trade publications, including *Arborist News*, *Arbor Age*, *Electrical World*, *T&D World*, *TCIA Magazine*, and the *UAA Newslines*.

Kempster has had a long history of commitment to our profession and has served in a leadership capacity on several groups focused on supporting professional growth and the competency of arborists. He chaired the ISA Certification Board, and has served on both the ISA Educational Goods and Services Committee, and the ISA Board of Directors. Kempster also demonstrated his enthusiasm for research, education, and new ideas, through many years of active involvement with the TREE Fund, and previously the ISA Research Trust.

He has been involved with the development of ANSI A300 Tree Care Standards and best practices, and his involvement in the development of industry standards and practices is evident in his contribution towards the A300 Tree Care Standards Committee (ANSI accredited). Kempster has also served as Chair of the ANSI Part 1 Pruning Subgroup and has also been an active member of the Right-of-Way Stewardship Council's Technical Advisory Committee, helping develop accreditation requirements for integrated VM on utility ROW. Kempster is also an ISA TRAQ Instructor.

UAA 2018 Rising Star Award

The Rising Star Award is given to individuals who are relatively early in their career, yet have already shown leadership of the organization and the industry, and this year's recipient is Josh Beaver of CN Utility Consulting.

Josh holds a Bachelor's degree in Environmental Science from the University of Tennessee at Chattanooga and is an ISA Certified Arborist® and ISA-Certified Arborist Utility Specialist.™ He started his career working as a biological technician and was responsible for developing wildlife habitat on public and private land. He soon became interested in UVM.

Josh began his UVM career like many of us—working as a consulting utility forester (CUF). He began his career with CNUC in 2010 as a CUF and has quickly worked his way up to the position of Vice President. He has become very active in the UAA and serves on both the Professional Development Committee and Events Committee. He has also been published in the UAA *Newsline*, and has presented at several industry conferences throughout the U.S.

Phil Charlton (left), and Josh Beaver, recipient of the UAA 2018 Rising Star Award



He has been a tireless advocate for training and professional development through UAA. He is always looking at how our industry is changing and works at finding training that is outside the box, but necessary. He is willing to volunteer to do whatever it takes to help move our industry forward and believes that industry involvement is a key to professional development. All his direct reports serve on UAA Committees.

His willingness to get involved, think outside the box, and not accept the status quo will benefit the UAA and our industry for years to come.

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Thank you for joining us in Omaha, Nebraska!

Highlights from the 2018 Trees & Utilities Conference



By Amy Fischbach, EUO Contributing Editor, T&D World

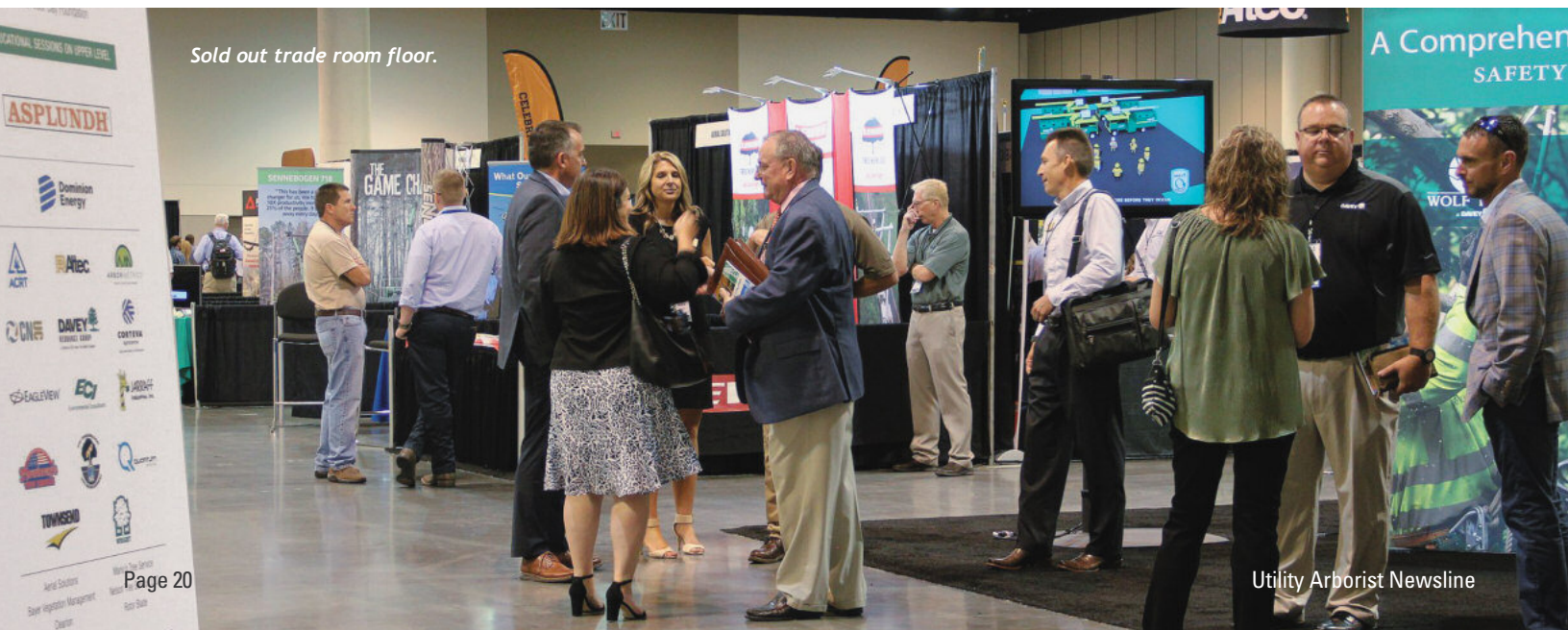
Vegetation management (VM) professionals learned about best practices and new technology at a three-day event organized by the UAA and the Arbor Day Foundation and sponsored by several companies.

More than 550 VM professionals convened in Omaha, Nebraska, to share best practices, discover new technology, and celebrate their love for

the industry. The event, which was a partnership of the UAA and the Arbor Day Foundation, featured a multi-track conference, networking reception, trade show, and awards luncheon.

Through slide presentations, panel discussions, and videos, the speakers addressed challenges and opportunities in the VM industry. For example, they covered topics such as safety, wildfire prevention, environmental stewardship, and emerging technologies.

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In addition, the attendees were able to meet with 64 exhibitors, which showcased new products, technologies, and services for the VM industry. Here are some snapshots from the show floor as well as the conference.

SAVE THE DATE!

The 2019 conference will be September 10-12 at the Duke Energy Convention Center in Cincinnati, Ohio.



The conference had amazing sponsor support with great ideas to put into practice next year.



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We want to take this time to congratulate and thank our 2018 PinE Award Recipients.

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Asplundh's 90th Anniversary Celebration Comes to a Close

Asplundh Tree Expert, LLC—the international vegetation management, utility infrastructure, and commercial landscaping contractor based in Willow Grove, Pennsylvania—celebrated its 90th year in business throughout 2018. The theme of its communications, as well as company events, is focused on honoring the past and embracing the future.

“As a third generation family executive, I look back to the founders and second generation family executives during our 90th anniversary, and I think it is clear that their philosophy of ‘The Better Way’ is still a strong and guiding force of the company,”

said Chairman of the Board and CEO Scott Asplundh during the annual headquarters picnic in late September. “I extend my thanks to all of our employees and customers who have been a part of our successful 90 years!”

The company’s top-level executives were joined by PPL Electric Utilities President Gregory Dudkin to plant a swamp white oak as a living reminder of the company’s 90th anniversary celebration. During the picnic’s meal, Dudkin reminded the 350+ headquarters employees that PPL was one of the company’s first customers and that Asplundh crews

A freshly planted swamp white oak tree received several shovels full of soil from (L to R) Chairman of the Board and CEO Scott Asplundh, PPL Electric Utilities President Gregory Dudkin, Executive Vice Presidents Gregg Asplundh, Chris Asplundh, Jr. and David Fleischner, UtiliCon Solutions COO Steven Asplundh, UtiliCon President Brent Asplundh, and Asplundh Tree Expert President George Graham.

have worked on the system continuously since 1928. Today, in addition to vegetation management, several Asplundh subsidiary companies also perform line construction, street light conversions, electrical testing, and advanced metering deployments.

In closing, Dudkin said, “We are thankful that Asplundh has always been there with additional crews whenever PPL requested assistance in restoring power.”

If you’ve ever wondered about the family and company name, it means ‘grove of aspen trees’ in Swedish and couldn’t have been more appropriate for the tree service business founded by three Asplundh brothers on August 28, 1928 in Glenside, Pennsylvania. Known for its distinctive fleet of orange trucks, Asplundh focused on providing tree pruning and removal services to electric and telephone utilities.

The family-owned company, now managed by its third generation, used its ‘Better Way’ philosophy to develop the first commercial brush chippers in 1949 and in 1958—the first fully-insulated aerial lifts to get workers into the trees more efficiently and safely. Asplundh also initiated a joint research project to scientifically demonstrate the safe use of herbicides for vegetation control on rights-of-way (ROWs). This project, initiated in 1953, remains active and continues to validate the proper use of herbicides as part of an IVM program.

An ‘orange army’ of 300+ headquarters employees formed up on the front lawn of Asplundh’s Willow Grove, PA office for a commemorative 90th anniversary photo.



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2018 UAA Vegetation Managers Summit Reliability Based Vegetation Management

By Erin Creekmur, Arizona Public Service

A new approach was taken this June at the UAA Vegetation Managers Summit in Denver, Colorado. The purpose for the change was to better align with the summit’s mission of being an effective mechanism for bringing experienced utility vegetation management (UVM) professionals together to thoroughly address current industry challenges and identify solutions. The committee focused on one primary agenda topic. Deep exploration into one subject allowed participants to uncover multiple facets of a topic, and provided a comprehensive understanding that would empower them to take meaningful action upon their return. With almost 1,000 years of utility experience represented at this year’s summit, you can be assured the discussion was thorough.

The topic chosen for this year’s summit was Reliability-Based Vegetation Management (RVBM). Last year, during the 2017 Trees & Utilities Conference in Kansas City, a workshop was held to review findings from the 2017 UAA Benchmark Survey. Attendees realized very quickly that depending on your level of experience and exposure within the industry, reliability can be interpreted in a variety of ways. In order to establish a

baseline of understanding, the committee created a comprehensive pre-summit survey specific to reliability in which more than 30 utilities participated.

The theme of RVBM offered three primary objectives:

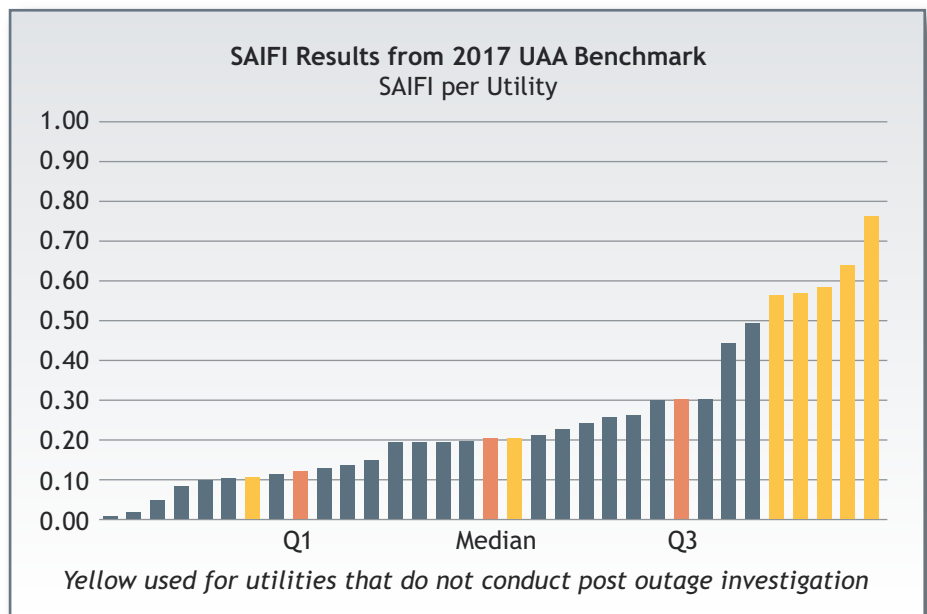
1. Define reliability-based VM
2. Explore strategies for capturing viable reliability statistics
3. Build effective management strategies to address and monitor reliability performance

After much dialogue and debate during the first day of the summit,

participants ultimately agreed that: *RBVM utilizes comprehensive outage and tree failure data to determine where and how actions can be taken to improve reliability performance, independent of growth related maintenance cycles.*

Using data analytics from the pre-summit survey results, participants explored the variety of ways their peers were or were not collecting and categorizing outage data. One of the most interesting findings was how vegetation-related outage cause codes were being categorized. One third of the participating utilities used only two cause codes, and they were primarily centered on whether program goals were being met or not. Examples include in-or-out of rights of way (ROW), in- or outside program, and storm or non-storm. Of these utilities, half did not have a formal outage investigation process integrated into their programs and they consequently reported some of the worst SAIFI metrics during the 2017 UAA Benchmark.

The majority of utilities instead focused on modes of failure and had between three and seven vegetation-related outage cause codes which distinguished how the vegetation caused the failure. Examples of





mode of failure cause codes included grow-into, trunk failure, limb drop, or uproot. As utilities expanded the variety of cause codes, they would pinpoint specific types of failures local to their region, such as interference with vines, palm fronds, and decline due to emerald ash borer (*Agrilus planipennis*).

Ultimately, attendees determined that to even start considering strategies for RBVM, it is essential for their utility to have a clear understanding of the underlying causes by performing post-outage investigations and creating a database of findings to evaluate trends. Trends identified through post-outage investigation could be used to identify the most effective strategies for improvement and ultimately support a strong business case internally for the program. Understanding that a successful RBVM program would only be as good as the quality of data obtained, participants shared key strategies for ensuring they had the most accurate data possible:

- Limit the initial pick list for outage cause codes to three to six selections
- Perform post-outage investigations by qualified VM staff
- Create a standardized form to collect consistent outage investigation data
- Create a feedback loop for data correction

Creating a feedback loop for data correction is an important strategy for all utilities to consider. One utility shared that after performing post-outage investigations, they were able to identify a 21 percent error rate in the cause codes selection made by the first responder. Of those, 41 percent were changed from vegetation-caused to non-vegetation related. Just the simple action of conducting a post-outage investigation and providing feedback improved their vegetation reliability metrics by almost 10 percent.

Once utilities have developed a historical backlog of data, they can begin to create a targeted, data-driven reliability

program. Presenting managers demonstrated how they were able to determine criteria for work prioritization based on numbers of sustained vegetation outages, customer minutes, and total outage duration. Using data gathered from post-outage investigations, they were able to analyze trends in the tree failure data allowing them to prioritize projects and craft species-specific prescriptions based on their findings. One utility was able to narrow down its efforts by recognizing that just half of their events accounted for more than 80 percent of their customer interruption. Another utility was able to narrow its scope of work by determining that individual species larger than a certain size class posed the greatest reliability impact, thus limiting the scale of work that would be required in order to realize improvements to performance.

By setting challenging, yet achievable performance targets around SAIDI, SAIFI, CAIDI, and outage frequency, utilities were able to demonstrate a positive shift in performance, ultimately justifying the benefits of their program within the company. One of the presenting utilities was able to demonstrate a 50 percent reduction in their average vegetation failure rate after the completion of a targeted reliability project. Managers stressed the importance of remaining flexible and realizing as time went on the program and the criteria that drives it can and should change as programs and environments change. They also emphasized the importance of partnering with other departments within your organization such as system health, who can help prioritize and set appropriate targets, as well as customer outreach, who can help develop and deliver challenging messages with a change in work scope.

As a presenter and a participant in this year's summit, I was able to walk away with a greater appreciation of the diversity within our industry. Even those individuals who seem to have it figured out are still continuing to learn, and others are just beginning to take a leap in a new direction.

Interwoven throughout the summit, discussions revealed that there is much more to reliability than metrics, and that the decisions we make have direct impact on safety. Poor reliability performance resulting in wire-down outages pose a significant risk to our customers and communities we serve, and to our line clearance crews who are responsible for pruning trees in close proximity to the lines and restoring power during adverse conditions.

We cannot allow ourselves as managers to only see figures, but rather recognize why a reliable system is important to the wellbeing of those around us and acknowledge the good that happens every day in the decisions we make. As leaders in the industry, it is important that we personally internalize our commitment to safety and reliability rather than simply focusing on achieving the numbers. Attending the summit was another step forward in a positive direction.

Standards and BMPs Explained

By Rocky Palmer, Risk Manager, WSC; Derek Vannice, President and COO, CNUC; and Randall H. Miller, Director of Research and Development, CNUC

The American National Standards Institute (ANSI) A300 Standard for Tree, Shrub, and other Woody Plant Management Standard Practices, and the ANSI Z133 Safety Standard for the Tree Care Industry are some of the most important documents used by utility vegetation managers. These publications, along with the ISA Best Management Practices (BMP) for utility pruning, integrated vegetation management (IVM), and the UAA Closed Chain of Custody, go a long way in providing the necessary information to safely manage vegetation on utility rights-of-way (ROWs).

Surprisingly, these publications are relatively new compared to how long we have been managing vegetation. The first ANSI standards were not developed until the late '80s and '90s and the first BMPs were not published until the mid '90s. Since their development, utilities have written their use into contract language as well as customer information material. Unfortunately, even with the best intentions, some common misconceptions have developed.

It is important to understand how the standards and BMPs are related and how they are developed. To put it simply, the standards are the “what” and they can be used to help draft contract language. The BMPs are the “how to” and can be used to provide training on the best way to do the work in conjunction with the standard.

One of the most common misconceptions comes from utilities trying to explain the work to the tree owner.



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Rocky Palmer



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Derek Vannice



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Randall H. Miller

Many utilities say they do work according to ANSI standards or they may even say ISA standards. However, what they really mean is that they utilize the ANSI standards to develop their specifications and their contractors use the ISA BMPs.

This article explains how each should be used, who develops the standards and BMPs, and how they are updated.

ANSI standards are intended to aid in establishing written specifications, best practices, regulations, and other performance measures. The ISA develops BMPs to interpret the standards and advance practical guidelines for arborists and other stakeholders. An effective way to distinguish between standards and BMPs is that ANSI standards offer guidance on what to do, while the BMPs advise professionals on how to do it. There are currently 15 ANSI A300 standards. Each A300 standard has a companion BMP. The most pertinent standards for UVM are Part 1: Pruning, Part 7: IVM, and Part 9: Tree Risk Assessment. The UAA's Closed Chain of Custody BMP has no corresponding ANSI standard.

The ISA BMP development starts after an ANSI standard is finalized, either in development or revision. ANSI standards are generally revised every five years, so each standard's companion BMP would follow suit. The ISA initiates the process by inviting an authority or two to write the document and lead the project. They

organize a review committee comprised of subject matter experts. Most BMPs have between 10-and 15-member review committees.

The review committee interprets the tree care standard and provides practitioners with what they (the committee members) consider to be the most appropriate practices. The project team makes a concerted effort to progress systematically through the ANSI standard, elaborate on each section, and reach a consensus on the final procedures. They intend for their recommendations to be used by professionals with appropriate experience and knowledge, so BMPs are not designed to substitute for a competent manager.

Once complete, the BMP manuscript is submitted to ISA and the author(s) work with a copy editor and illustrator to see the project through to publication. The entire process can take a year or more to finalize.

As stated previously, the foundation for the BMPs are the ANSI standards. It is important to understand how this process works and what ANSI is. What does ANSI do and how are we in the line clearance industry associated with it? ANSI identifies itself as a program that empowers its members and constituents to strengthen the U.S. marketplace position in the global economy while helping to ensure the safety and health of consumers and the protection of the environment. The Institute oversees

the creation, promulgation, and use of thousands of norms and guidelines that directly impact businesses in nearly every sector. ANSI is also actively engaged in accreditation—assessing the competence of organizations determining conformance to standards. ANSI is the official U.S. representative to the International Organization for Standardization (ISO).

The Z133 Safety Requirements for Arboricultural Operations was created to allow our industry to promote the safe work practices of arborists. A variety of professionals from the arboricultural industry, government, equipment manufacturers, and other interested parties contribute to this guide. It is a voluntary consensus standard that was created to establish conformity that safeguards all persons in the arboriculture industry. ANSI ensures the requirements for

due process, consensus, and other considerations have been met before the submitted recommendations for change are accepted.

Consensus in this instance is not a simple majority, nor does it have to be unanimous. This process includes a public release of the proposed draft. The public are encouraged to identify items of concern which are submitted for review to the appropriate subcommittees. The comment submitted will be reviewed to determine if it has merit for change in the standard. The part of the standard addressing the submission may be re-written with the commenters viewpoint addressed, or it may be rejected with an explanation of why it was rejected. The revised draft is then published again for review and, if no further comments are made to the final revision, it is then sent to ANSI for review and approval.

If OSHA does not have a specific standard for an incident that has occurred, they can use this standard to hold the employer accountable. However, OSHA does not have to use all or part of this standard. They can cite an employer in regard to this standard for failing to properly provide a safe working environment for their employees using these processes as a guide to what is expected in the industry.

Understanding how the standards and BMPs are developed and used is essential in our communication with the public, landowners, regulators, and the courts. Misrepresentation can have serious consequences from a public relation, regulatory, legal, and financial perspective. Providing a brief training on the differences and uses of these documents to employees will lead to substantial benefits at a low cost.

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Pollinators' Health and ROW VM: Value of Planting Management and IVM to Pollinators

By Anand B. Persad, PhD, BCE;
Entomologist, Manager in Arboriculture
and Plant Sciences, The Davey Institute

Photographs by Kodi Riedel, MPH, The
Davey Institute

Vegetation management (VM) in utility corridors and rights-of-way (ROWs) often employ strategies which focus on the primary goals of safety, reliability, access, and safe sight distances. While well developed, these mainstream strategies often encounter challenges relevant to safety, cost, regulatory, and personnel issues, as well as bridging community relations and meeting the goals of judicious environmental stewardship. As we advance ROW VM, what were once secondary objectives such as benefits of trees, biodiversity, aesthetics, wildlife refuge, and habitat value, now feature as integral targets and are a growing area of responsibility, especially in urban and peri-urban systems.

To further enhance our VM strategies, the increasing concern for pollinator welfare in communities nationwide offers us the opportunity to factor pollinator health in our utility corridors and ROW programs. While the value to pollinators of utilizing IVM and proper restoration techniques is difficult to quantify, we can, in and around our ROWs, attempt to promote sound environmental practices and gauge pollinator dynamics. One step towards a better understanding of pollinator health may be to evaluate and compare sites under varying management scenarios and gather baseline information on vegetation and pollinators. Types and combinations of strategies used, products, timing of product application, and planting materials may generally drive vegetation succession or shifts. A better understanding of the relationship of the plants and resulting

pollinator dynamics will, in turn, determine the suitability of that ROW as a viable pollinator habitat. One aspect of vegetation change that we can manage, for example, occurs during tree planting in ROW restoration efforts; especially in cases of loss of large tree biomass after storms or in the aftermath of invasive species such as the emerald ash borer (*Agilus planipennis*) and Asian long-horned beetle (*Anoplophora glabripennis*). Effective planting management hinges on the installation of utility-friendly or compatible trees that are often recommended and are perhaps the most effective way to reach a sustainable ROW-tree canopy. The reality of “right trees under wire,” however, may wane somewhat as our community partners (private owners) may sometimes shirk the responsibility of planting a desirable tree in preference for a species that is more easily available, cheaper to acquire, or one that is “deemed” to have better color and shape characteristics. One way to re-address the utilization of recommended planting material appropriate for the ROW setting could be to embrace the pollinator plight issue in our planting policies as wider community acceptance may now be found.

What is Pollinator Health?

Pollinator health should not be confused with more blooms necessarily. Nectar sources and pollen, to be of value to pollinators, should be available when needed. The presence of adequate overwintering sites along with early-season food sources are also important components needed to support viable pollinator populations. ROW habitats may consist of snags and fallen logs, which provide ideal homes for overwintering bees and other pollinators. These, combined with trees and other planting material that bloom early and provide early-



Crabapple (*Malus* spp.)



Redbud (*Cercis canadensis*)



Serviceberry (*Amelanchier* spp.)



Star magnolia (*Magnolia stellata*)



White fringe tree (*Chionanthus virginicus*)



Witch hazel (*Hamamelis* spp.)

Relative Bloom Availability for Early Pollinators (Ranking 1-5) 5=100%

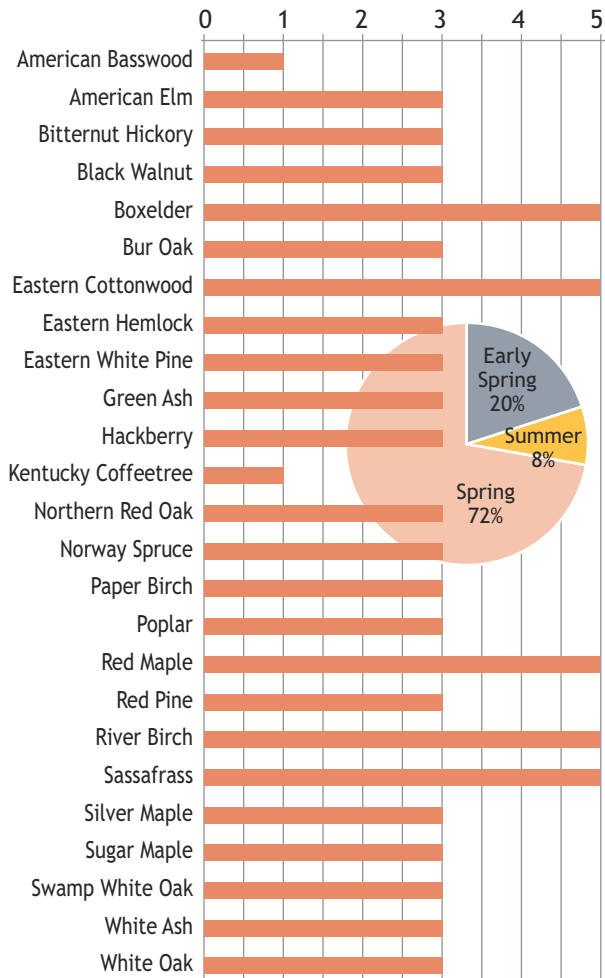


Figure 1A: Relative bloom availability for early emerging pollinators of 25 species of trees that currently exist in ROW in the Northeast, East, Mid-Atlantic, and Midwestern U.S.

Relative Bloom Availability for Early Pollinators (Ranking 1-5) 5=100%

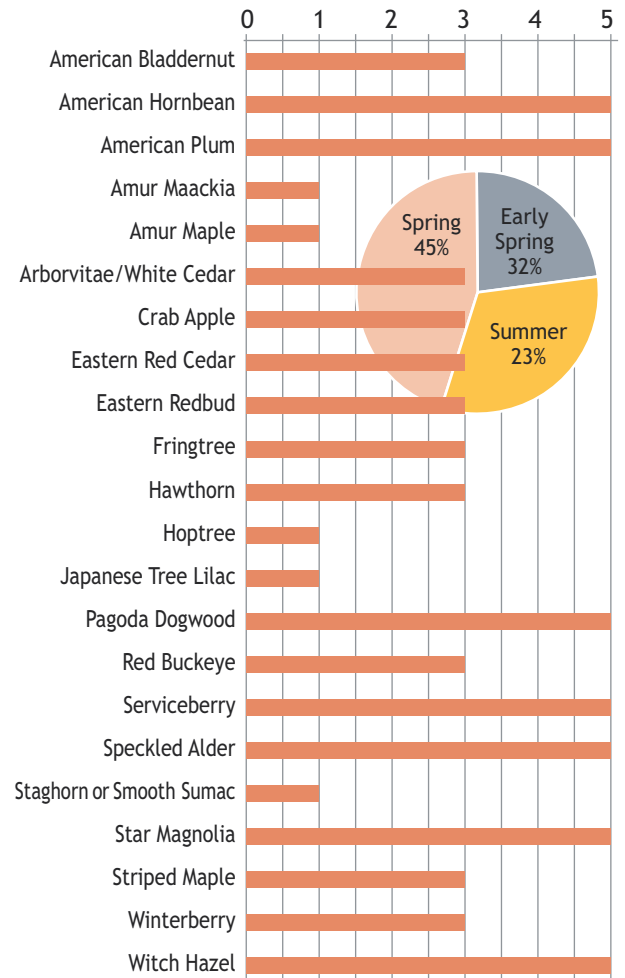


Figure 1B: Relative bloom availability for early emerging pollinators of 22 species of trees that are recommended for ROW in the Northeast, East, Mid-Atlantic, and Midwestern U.S.

emerging species with sustenance, need also to be a part of this landscape. Early season bloom trees such as boxelder maple (*Acer negundo*), maples (*Acer*), birch (*Betula*), etc. all may provide nectar and pollen to “early emergers” until the understory wildflowers begin to bloom. Several bumblebee species, including the rusty patched bumblebee (*Bombus affinis*) and the yellow-banded bumble bee (*Bombus terricola*) for example, emerge in early spring and will utilize these early food sources; some researchers attribute the imperiled status of these two species as being due to lack of sufficient diversity and quantity in early season fodder.

Compatible ROW Trees: Relevancy to the Pollinator Plight?

In a ROW tree suitability study, floral bloom times and bloom windows of 25 species of trees present in existing ROW service corridors in the Northeast, East, Mid-Atlantic, and Midwestern U.S. were examined in 2015 and 2016. These snapshot bloom times and bloom windows are estimated using GDD-based software, Nature-Clock™ technology (NC patent pending, Davey Tree Experts). This data demonstrates that floral (insect pollinated) and by extension, pollen (and nectar) sources from existing ROW trees do provide a seasonal

source of nectar and pollen that aligns with the life cycles of several pollinator species. The key, however, is the element of biodiversity which helps provide for a larger variety of pollinators and may better align with their overwintering and reproductive strategies. Some wind-pollinated trees, although devoid of nectaries, may still attract some insects that may benefit from the pollen contained in their flowers, which may be reduced and not very colorful. The bloom windows of trees in the generalized utility ROW (that currently exist) were compared to that of a recommended planting list of species suitable for the ROW environment.

**Percent Relative Bloom Availability
Across Pollinator Life Cycles**

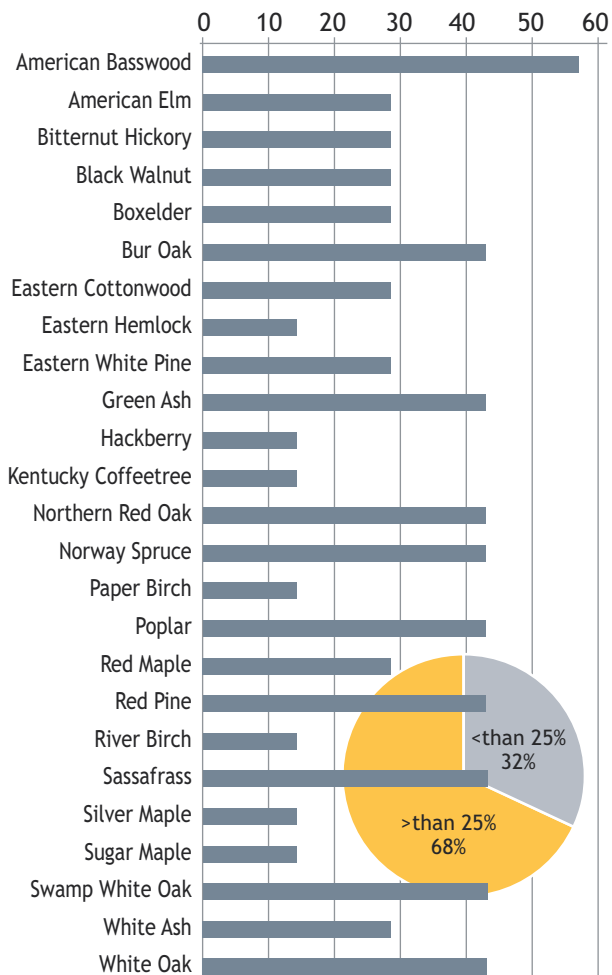


Figure 2A: Relative bloom windows of 25 species of trees that currently exist in ROW in the Northeast, East, Mid-Atlantic, and Midwestern U.S. 68% of the tree species bloom when needed for life cycles of native pollinators.

**Percent Relative Bloom Availability
Across Pollinator Life Cycles**

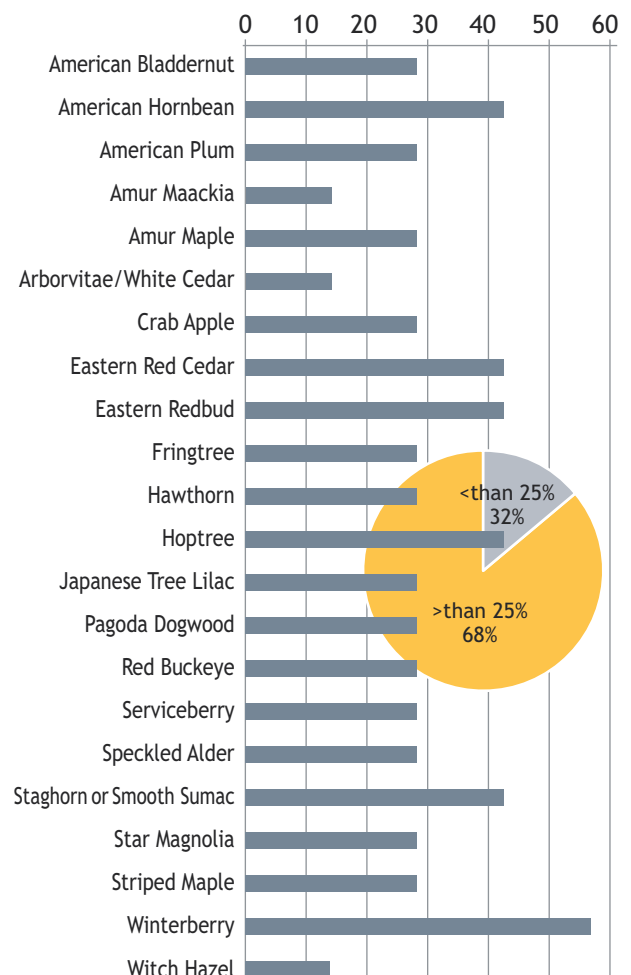


Figure 2B. Relative bloom windows of 22 species of trees that are recommended in ROW in the Northeast, East, Mid-Atlantic, and Midwestern U.S. 86% of the tree species bloom when needed for life cycles of native pollinators.

Results

The data (Figures 1A-B) indicate that recommended trees in restoration of underwire areas or compatible in ROW corridors also increase early season nectar sources from 20 percent to 32 percent when compared to traditional or existing trees, with a better distribution of blooms in each season. Recommended trees, while appropriate for the ROW wire zone areas, may also enhance pollen and nectar sources available for pollinators, especially if biodiversity of plantings in restoration activities are managed effectively.

When bloom availability alignment with most native pollinator bees were examined (using 25 percent as minimum margin for bloom alignment), bloom availability from 32 percent of traditional or currently existing ROW trees did not align with native pollinator life cycles or when they will be most required for pollinator health. ROW-compatible trees, however, provided blooms that were 86 percent of the time in alignment compared to existing ROW trees (Figures 2A-B). The opportunity here is to utilize trees that are not only ROW compatible for meeting our enhanced-stewardship goals, but to also provide increased pollinator value.

Evaluation of Pollinator Health and IVM Strategies

IVM strategies are often drivers for creating biodiversity as undesirable vegetation is constantly removed and more compatible vegetation either encouraged or in some cases installed. The value of IVM to plant biodiversity and ultimately pollinator health was examined in several ROWs in the eastern U.S. ROW's implementing mechanical methods were also examined along with ROWs that had been converted in the recent past three years from VM to IVM.

(Continued ►)

Results

Plant diversity (number of species/unit area) was higher in recently converted ROWs compared to ROWs that were maintained by VM and IVM. The higher species diversity in recently converted areas can be described as several opportunistic, invasive, and/or transition species such as weeds and clover, which may have capitalized on the open ground that is created after recent herbicide application. The number of plant species is reduced significantly in ROWs maintained by IVM in established areas (but still more diverse compared to VM alone) as equilibrium may be achieved by some species eventually out competing the transition species through natural succession (Figure 3).

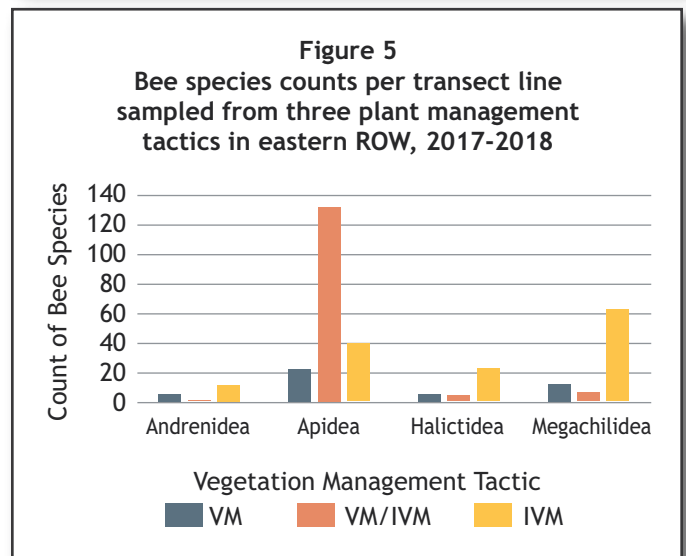
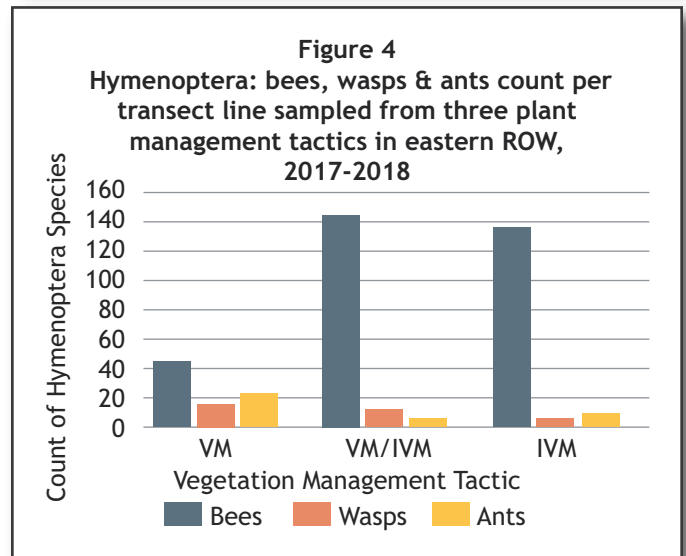
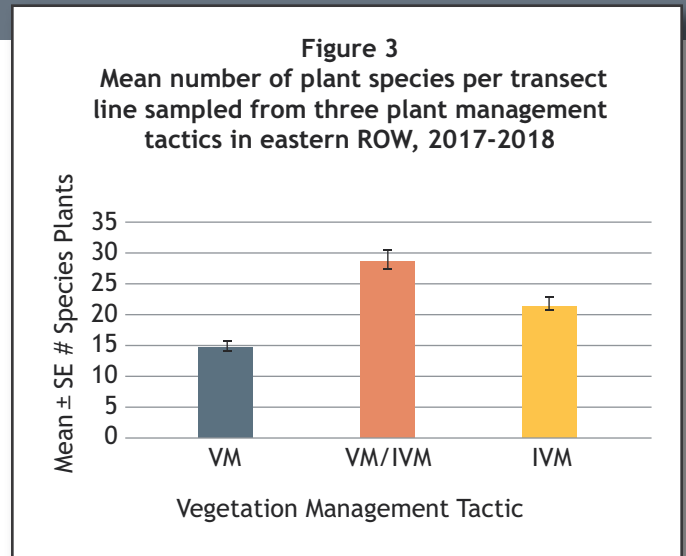
Hymenopteran-specific surveys revealed that VM-managed areas had the highest ant populations, which may have occurred as several grassy areas had open spaces that allowed for ant mounds to be readily built. Ant tracks or pathways were more noticeable in VM-managed areas. Bee populations were higher in recently converted ROWs compared to VM-managed ROWs and those managed by IVM (Figure 4). Higher bee populations likely occurred in the VM/IVM ROWs as transition plants, including weeds and clover, were in high abundance and probably attracted larger numbers of bees. Bee species composition was, however, skewed between sites with VM sites having the lowest populations of the main bee groups collected, including mining bees (*Adrenidae*), honey bees (*Apidae*) and sweat bees (*Halictidae*); VM/IVM sites had highest honey bees (*Apidae*) while IVM sites had the highest bumble bees (*Megachilidae*).

Overall Bee Analysis

Native bees were collected in higher numbers in sites managed by IVM or that were converted to IVM. Sites that provide overwintering habitat and early foraging for bumble bees and other native bees act as a natural resource and more stable environment. The presence of bumble bees in significantly higher population at IVM sites may help validate the tactics associated with IVM in ROW (Figure 5).

Conclusion: “What Are We Leaving Behind?”

As we advance ROW VM and environmental stewardship in utility corridors, we are obligated to our safety, regulatory compliance, budgetary allocation, personnel development, and other goals that subscribe to our enhanced reliability. However, with the growing increase in community and public and private partnerships, we are increasingly being guided by environmental health-based focal areas and the question “what are we leaving behind?” is a question that will continue to resonate in our industry for some time to come. As ROW and utility corridor vegetation managers, we must aspire toward an answer that is rooted in environmental and ecosystem health. Benefits from planting ROW-compatible trees in restoration efforts



as well as advancing our IVM strategies will be steps in this direction as we enhance wildlife and habitat value both for pollinator health and work towards greater environmental sustainability in ROW in the future.

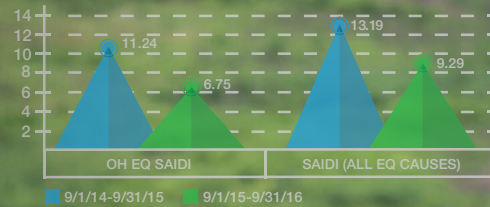
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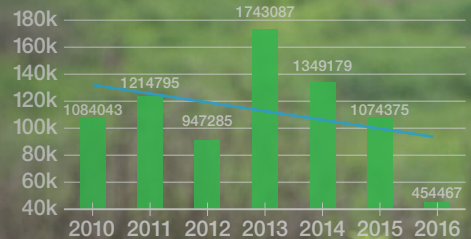


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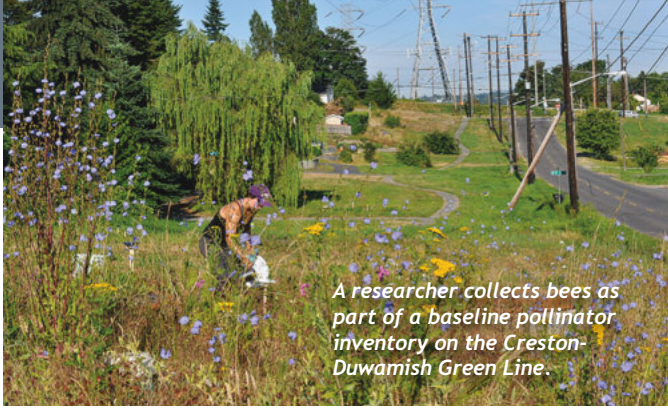


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RYAN	3063	929	99.89%
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A researcher collects bees as part of a baseline pollinator inventory on the Creston-Duwamish Green Line.

Seattle City Light's Green Line

By David Bayard, Powerline Clearance and Landscapes Manager; and Rory Denovan, Plant Ecologist, Seattle City Light

Seattle City Light (SCL) is one of the largest publicly owned utilities in the U.S. with a little less than 450,000 metered users.

As a power generator, transmitter, and distributor, SCL operates six hydro-electric generation dams, 1,700 circuit miles of transmission, and roughly 2,300 circuit miles of distribution lines serving the metro-Seattle region.

Seattle City Light has always had a strong environmental focus. From its humble beginnings in 1905 powering Seattle's streetlights with clean hydroelectric power, to supporting the longest continually running energy conservation program in the U.S. (alive and kicking since 1977!) Seattle City Light has always worn its green credentials proudly. Seattle City Light was the first greenhouse-gas neutral utility in the country in 2005 and has remained so ever since. Maybe it's due to being in the "Emerald City" (named for the trees, not the Wizard), but whatever it is, environmental stewardship is literally a part of our mission, vision, and value statements and an intrinsic part of our operating culture.

The Green Line—Objectives, Location, and Project Description

Continuing in that tradition, in 2012, SCL initiated its *Stewardship Strategy for the Creston-Duwamish "Green Line"* to explore more holistic approaches to vegetation management (VM) along select portions of its transmission right-of-ways (ROW). The strategy defines a "holistic" approach as one that seeks to:

- Maintain operational reliability and compliance
- Improve equity and environmental impacts (i.e., health impacts to residents from pollution and lack of ecosystem services)
- Create solutions with the flexibility to address multiple ecosystem and community-service needs based on community feedback

The ROW's total managed area is approximately 60 acres, but with most of it zoned for manufacturing/heavy-industrial use, almost half of the ROW consists of buildings, roads, and other infrastructure. The remaining acreage offers significant potential for habitat improvement as the

ROW is heavily dominated by invasive, non-native species, including reed canary grass (*Phalaris arundinacea*), Bohemian knotweed (*Fallopia × bohemica*), and Himalayan blackberry (*Rubus armeniacus*). Seven project-sites along the Creston-Duwamish (CR-DU) 230kV Transmission ROW were identified, totaling 32.5 acres, predominantly in the City of Tukwila (Seattle's southern neighbor).

The Duwamish Valley (home to the CR-DU ROW) is "a community with disproportionately high environmental health burdens and risks and fewer positive environmental benefits" than the rest of the area (Gould 2013). It sees higher rates of childhood asthma hospitalization compared to more affluent Seattle neighborhoods and tree-canopy coverage hovers around six to seven percent versus a Seattle-wide 28 percent. The racial demographic around the ROW is roughly 70 percent people of color (non-white) compared to the overall population of Tukwila and Seattle, which are roughly 61 percent and 33 percent people-of-color, respectively. This correlation between the high percentage of residents-of-color and the degraded state of the local environment mirrors trends are seen throughout the metro Seattle area; They echo of historically racist zoning, land use, and residential policies. A holistic approach to managing the ROW would necessarily have to engage this reality.

Project Description

To achieve the vision of a holistically maintained ROW, the *Green Line* strategy established a three-year project plan with the following objectives:

- Engage external and internal stakeholders
- Develop a strategy to promote community-based habitat stewardship
- Collaborate and coordinate with other efforts to improve habitat
- Keep track of inventory of the *Green Line's* habitat or plant communities
- Conduct a habitat pilot study to establish low-growing, diverse, native plant communities on a transmission line ROW
- Establish a baseline pollinator inventory

Local community-based organizations such as The Common Acre, EarthCorps, and Alley-Cat Acres were already established and working in the area. SCL sought to capitalize on the work of these organizations which had the proven capacity and legal status as non-profits to partner with them, and utilize their expertise, committed workforce, and local focus. SCL facilitated stewardship permits on the *Green Line* to normalize the relationship between the utility and its partners and allow for long-term planning.

Biodiversity as a Tool

City-mandated pesticide reduction policies limit SCL's ability to heavily utilize chemical control methods—policies which are appreciated by many of the Seattle-area's

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abundant progressive-minded population. Mechanical methods—mowing and mechanized cutting—are used where possible because they help reduce labor and do not have the toxicity concerns associated with herbicides. However, mowing also results in compacted and disturbed soils and higher light penetration at the soil surface—conditions that favor pioneer plant species establishment.

Pioneer species that come in after mowing are often non-native and invasive plants (i.e., weeds), or native and incompatible tree species. While the invasive species are often low growing, their relative dominance makes it difficult for compatible native plant communities to ever reestablish (Parker 1999). ROWs dominated by non-native species generally provide poor-quality wildlife habitat (McNeely 2001) and may be more prone to fire (Brooks 2004) and/or erosion that can threaten transmission infrastructure. Of the native pioneer species that come in after a disturbance, several incompatible tree species including black cottonwood (*Populus trichocarpa*), big leaf maple (*Acer macrophyllum*), red alder (*Alnus rubra*), black locust (*Robinia pseudoacacia*), and silver poplar (*Populus alba*) are reliably successful. SCL had to find a way to promote diverse, compatible plant communities while suppressing non-desirable monocultures.

Habitat Pilot Study

The purpose of the pilot study was to evaluate a mixed-prairie shrub pollinator habitat to suppress tree and invasive plant regeneration. SCL designed its study with input from both internal and external stakeholders, the latter of which requested that opportunities for community stewardship be considered, as the ROW offers important geographic connections between other habitat fragments.

The study was set up as five blocks of one 10m x 10m plot for each of five regimens:

1. No maintenance
2. Existing maintenance
3. Weed and tree control only
4. Weed/tree control plus native herbaceous species (seeding and plants)
5. Weed/tree control plus herbaceous and shrubs (seeding and plants)

The plots were monitored for regeneration of fast-growing tree and invasive weed species. With two years of data collection after treatments, initial results indicate that the test plots show more native cover and species (less invasive plant cover), and that plant-based controls are functioning as well as mowing to reduce tree seedlings. One more year of monitoring is planned, and a final report will likely be issued after data has been analyzed.

Baseline Pollinator Inventory

One opportunity that came from conversations with stakeholders was the ability to alter the ROW to better promote



pollinator habitat—a popular topic in utility ROW circles. As the first step in a before-after-control-impact study, SCL partnered with The Common Acre and the Department of Entomology at the University of Washington to inventory the diversity of bees at targeted restoration areas.

This inventory resulted in the capture of 74 recognizable species representing all five families of bees in our area. This helped SCL better understand how important urban transmission ROWs can be in providing important resources for bees, which in turn provide important resources and services for humans through edible plant pollination. Ideally, one to three more years of post-restoration inventory work will complete the picture and help SCL understand the impacts of habitat stewardship efforts on pollinators.

Conclusion

With the *Green Line* project still underway and data still being collected, it's not clear what the long-term implications of the project may be. However, we can already look back at the process and the initial years of efforts and draw some inspiring conclusions.

We now know what the plant communities on the *Green Line* look like, how those communities function from an ecological, social, and utility perspective, and have insights on how to better enhance those functions through intentional manipulation of the plant communities. This insight has the potential to change the way we, as utility vegetation managers, look at the ROWs, catching a glimpse of what others see when they look at them, and exploring the synergies which could lead to mutual benefits. Just as augmented reality glasses and LiDAR technology have allowed practitioners to literally see aspects of the ROW that were once invisible, so too can the insights and perspectives of our partners.

We also have a much better understanding of the communities that live, work, and play near our ROWs. As we develop partnerships and connections with these communities, we can alter our maintenance models to achieve our operational objectives while drawing more attention, ownership, and a sense of responsibility to the ROW. Social science (and common sense) have shown again and again that people take care of what they value. If we can successfully integrate the *Green Line* into a community's shared values, then what further opportunities and synergies might arise? What would a community-maintained ROW look like, and how might that free-up the budget for other utility/community priorities?

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Is Sustainable IVM Our Best Kept Secret?

*Opinion Editorial by Rebecca Spach,
Director of VM, FirstEnergy Corp.*

At a recent FirstEnergy Corp. staff meeting, a key topic of discussion was a review of our company mission—being a forward-thinking electric utility powered by a diverse team of employees committed to making customers' lives brighter, the environment better, and our communities stronger. Like other peer utilities, FirstEnergy Corp. has enhanced the environment by using LEED-certified designs for several recent corporate buildings, partnered with the Electric Power Research Institute (EPRI) on developing the next generation of electric vehicles, provided energy-efficient programs for our customers, and deployed employee waste-reduction programs throughout the company.

While these are valuable environmental initiatives, I began to reflect on the opportunity I have as a vegetation manager and a steward of the land controlled by FirstEnergy Corp. and its 10 utilities to do even more. With the responsibility for directing the VM across 24,000 miles of transmission corridors containing an estimated 150,000 manageable acres, I pondered what else my team could do to better the environment. Overall, our objective is to establish a compatible, biodiverse, plant community that provides a thriving habitat for insect pollinators, birds, and an array of wildlife. This is accomplished by deploying a team of professional vegetation managers and contractors in the field daily, completing critical work to provide energy safely, reliably, and compliantly in a cost-effective manner for our customers.

Taking this reflection a step further, I have been serving on a FirstEnergy Corp. committee tasked with enhancing the Environmental, Social, and Governance/Sustainability (ESG) strategies and initiatives for the benefit of our customers, employees, investors, and other key stakeholders. Our ESG strategy reflects a strong focus on building a better future for our customers, company, and communities as we make the transition to a cleaner, smarter, and more sustainable future. As part of this process, I reviewed other utility company sustainability reports and ran a targeted search to determine if other companies were quantifying and including the value of IVM programs. To my surprise, many were not.

A Missed Opportunity?

As a regulated electric utility company, our customers, stakeholders, and investors are essential to our existence. Their needs and interests must be considered as we strategize, engage, and implement integrated vegetation management (IVM) practices, policies, and programs that impact society and the environment. The regulatory process is also a part of this equation. The federal regulations demanding stringent requirements for vegetation

clearances for high-voltage powerlines has led to improved transmission reliability (with strict penalties for noncompliance) and with it more aggressive VM practices. As utilities have moved through reclamation to maintenance, great opportunities present themselves to refine our industry's approach to IVM to include ecologically oriented best management practices (BMPs). Our focus has been to remove incompatible vegetation, and the methods to achieve that objective may have been indiscriminate. The refinement in our approach should be to apply selective management practices that promote compatible, biodiverse, and thriving plant communities in corridors for long-term vegetation maintenance.

The opportunity for utility vegetation managers to make a positive impact on the environment to the benefit of society, while also enhancing corporate citizenship, is already occurring. Great effort to improve and expand the areas of VM education, research, pollinator partnerships, wildlife initiatives, and professional collaboration is widespread across the industry. The challenge is—how effectively are we sharing the benefits of our work with all invested stakeholders? Are we the best kept secret? Do your sustainability reports and ESG strategies include IVM program benefits and initiatives and quantify the value you are providing for the environment, customers, stakeholders, and investors?

Why Is This Important Beyond Core Objectives of Safety and Reliability?

While Investors have always paid close attention to the financial performance of an organization, there is current evidence of a growing interest in sustainable investing. Sustainable investments are a discipline that considers environmental, social, and corporate governance criteria as factors to generate long-term, competitive-financial returns and positive-societal impact.

According to the Forum for Sustainable and Responsible Investment (US SIF), the demand for sustainable and impact investing is growing—investors now consider ESG factors across \$8.72 trillion of professionally managed assets, a 33 percent increase since 2014.

Why is this important? As investors continue to evaluate how our companies influence ongoing and emerging environmental challenges and initiatives, I believe that a stewardship approach through sustainable IVM programs provides great value to our organizations, customers, stakeholders, and investors. The ability that ecological-oriented IVM programs have to enhance the diversity of the entire ecosystem will make a tremendous impact to the environment. In my view, the best strategy is to share our IVM programs and initiatives and continue to work together and collaborate on how to quantify this work and include them in our sustainability reports and ESG strategies. Going forward, it's an opportunity we as an industry should not miss.

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SURVEY QUESTIONS

1. Does your right-of-way (ROW) integrated vegetation management (IVM) program include surveys from rare and endangered species?
2. Does your ROW program communicate the environmental benefits of proposed IVM work to property owners?
3. Is there a cooperative working relationship between your environmental service department and your ROW managers?

Northwest Region

By James McKendry, Response also by James McKendry, BC Hyrdro

1. Healthy and diverse wildlife populations provide significant social, environmental, and economic benefits to the people of British Columbia (BC). Wildlife is also of special importance to indigenous communities as a source of food and for cultural purposes. With more than 18,000 kilometers of transmission line and 48,000 kilometers of distribution line, BC Hydro infrastructure transects many habitats that are important to the survival of rare and endangered species. To ensure the health and diversity of our wildlife populations, effective protection of the habitat that those species depend on is necessary. To help BC Hydro make responsible stewardship decisions, we have extensive biophysical inventory information collected along our powerline corridors. This includes spatial information from the BC Conservation Data Centre (CDC) on locations of rare and endangered species. This data is used when considering action thresholds and control methods for vegetation in and adjacent to utility corridors. In BC, species identified by the CDC as being “at risk” are not protected unless they are also identified by the Federal Species at Risk Act (SARA) and/or the Provincial Wildlife Act. However, having the

spatial data from the CDC allows our vegetation managers the ability to prescribe responsible treatments where our corridors intersect with at-risk and protected habitats. Areas of known critical wildlife habitat are also identified within the BC Hydro Geographic Information System (GIS). Where critical habitat has been mapped and a recovery plan is in place for an endangered species, there is communication with the related wildlife recovery team to ensure VM decisions meet the strategy requirements.

2. Our vegetation managers make every effort to prescribe the most effective, safe, economical, and environmentally sound procedure(s) for maintaining electric utility ROWs. We communicate with landowners where we are planning to do IVM work in order to outline the specific activities that will take place on their land. In the case of herbicide treatments, under provincial legislation, we are required to obtain specific consent from a landowner before applying herbicide, so this involves a detailed outline of the risks and benefits of work specific to their situation. BC Hydro prepares detailed IVM Plans that are submitted to our provincial Environment

Ministry outlining the need for vegetation control to ensure the safe and reliable operation of the power system. These plans and an outline of our vegetation program objectives are publically available on our website. This outlines within the IVM framework the variety of physical, cultural, biological, and chemical-control methods we use to manage vegetation on our powerline corridors and in our facilities. It explains the benefits and drawbacks to each method and how vegetation control is tied to site-specific conditions. We provide guidelines on planting appropriate vegetation in proximity to the powerlines, and we work with local governments on green initiatives in relationship to boulevard trees. Areas used to collect food and medicinal plants are mapped and BC Hydro is notified of their ongoing use. These interests are considered when planning VM work.

3. The evolving federal and provincial environmental legislative and procedural landscape that surrounds UVM in BC requires vegetation managers to work closely with our environmental subject matter experts to ensure regulatory compliance to achieve program success.

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