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# Pollinators and Rights-of-Way

**By Ward Peterson, Richard Johnstone, Denise Ellsworth, and Michele Colopy**

Arborists are responsible for nurturing trees and for caring for the pollinators that make trees possible. The previous issue of *Arborist News* included an article that identified ways to help pollinators and discerned how to approach using insecticides with as little impact on pollinators as possible. Pollinators, of course, are defined here as insects, including honey bees, as well as birds and some mammals, that transfer pollen from one flower to another.

Pollinators are considered ecological keystones. A major threat to pollinators is the loss of habitat and forage. The very properties and landscapes we work in daily are where pollinators make their homes. Workplace decisions concerning plant selection, plant removal, and Plant Health Care (particularly pesticides) can make the difference between a healthy, effective pollinator population and one in decline.

Arboriculture is a broad canvas on which to paint pollinator-friendly landscapes for bees, bats, birds, butterflies, and more. But perhaps no canvas is larger or more readily available than utility rights-of-way (ROWs). North American electric and natural gas utility ROW corridors occupy 12 million acres (4.8 million hectares) of land. They crisscross all ecosystem types and agricultural lands, are ideally situated to provide forage and habitat for pollinators, and are crucial for migratory pollinators.

Utility vegetation managers want their land to be productive. They want to be good land and environmental stewards—not unlike most homeowners—and aim to preserve natural areas and wildlife for future generations. Approximately 75 percent of all plants depend on animal pollinators to move pollen from plant to plant. Without the work of pollinators, many native plants couldn't produce seeds to ensure the plant's next generation. These plants' seeds and the fruit they bear are important food sources for approximately 25 percent of birds and many mammal species, including humans. Proper ROW management in support of pollinators has important effects in both natural and agricultural settings.

## IVM and Healthy Pollinators

Can utility ROW and Integrated Vegetation Management (IVM) techniques really expand pollinator habitat? U.S. President Barack Obama signed a Federal Strategy on Pollinators proclamation on June 20, 2014. This proclamation directed federal land management agencies to evaluate permits and practices on utility ROWs and make any necessary changes to enhance pollinator habitat through the use of IVM practices. Utilities have the opportunity to be major solution providers by working to develop and maintain pollinator environments on our ROW.

Members of the Utility Arborist Association recently spent the day exploring the connection between pollinators and ROW, using IVM, at the Pollinators and ROW Summit, hosted at the Ohio State University Agricultural Research and Development Center in Wooster, Ohio, U.S. Attendees included The Davey Tree Expert Company, FirstEnergy, AEP, NiSource, Bowling Green Utilities, other utilities, the Ohio Department of Transportation, IVM Partners, the Pollinator Stewardship Council, and biologists from The Ohio State University School of Natural Resources and Department of Entomology.

Participants identified research and communications that may be necessary to improve conditions for pollinators. Summit findings included: the need for a central repository for pollinator research for utilities to access, identification of appropriate plants (as different types of plants and native plants vary across regions), more collaboration with groups outside the industry, and the need for a cost analysis of implementation and identification of potential outside funding sources. Agreed upon impediments included: the hurdle of overcoming the conventional thinking of "This is how we've always done it", better educating all employees about pollinators and their habitat, and developing a supply chain for shared resources and technical advice (e.g., recipe books for vegetation treatment best practices).

Establishing pollinator-friendly habitats in ROW across the U.S. will require research, education, and strong, long-lasting industry partnerships. With this in mind, the Utility Arborist Association research committee is working with The Ohio State University to further pollinator research on its campus in Mansfield, Ohio.

Small changes can make a big impact. IVM Partners, a non-profit corporation that researches IVM practices and develops partnerships between industry and public agencies, reviewed a partnership study conducted with U.S. Fish & Wildlife Service, U.S. Geological Survey, NJ Institute of Technology, and Rutgers University on a one-mile (1.6 km) stretch of Baltimore Gas & Electric transmission ROW near the Chesapeake Bay in Maryland, U.S. IVM techniques included low volume, selective herbicide treatments to remove trees and invasive plants. The treatments allowed researchers to document, within that mile, more than 40 species of butterflies and 120 species of birds (some of which are rare), and 8,986 native bees comprising 145 different species, including 10 new county records, one new state record, and a species that has yet to be described in the literature. The ROW is managed as "old field" prairie in the center of the corridor (the wire zone) and as shrub-scrub habitat in ravines and along the forest edge (the border zone). This combination of habitats provides optimum food and nesting areas for native bees, butterflies, and birds.

The wire zone, the section of utility transmission right-of-way directly under the wires and extending to a utility specified distance on each side, is typically managed to sustain a low-growing forb, grass, herb, and shrub plant community.

Herbicide-treated trees provide cavity nesting sites, while bare soil between clumps of warm-season grasses are home to ground nesters. Flowering shrubs and wildflowers provide seasonal nectar, and the most important plant to the monarch butterfly, the milkweed, naturally germinates in the meadow areas when the trees and invasive plants are controlled.

This is only one example, but converting millions of ROW acres into prime habitat is certainly doable. IVM uses a combination of methods applied at the most appropriate times, removing problem plants and encouraging more desirable, low-growing plants. Methods may include manual or mechanical cutting, but selective herbicide treatments are also necessary to control root systems of weeds allowing the desirable low growing plants a chance to germinate. Once desirable plants are established, the cost of vegetation management declines rapidly. Study after study has confirmed the positive results of judicious herbicide applications used in an integrated approach.

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IVM Partners is seeking partners to work with the U.S. Fish & Wildlife Service, U.S. Environmental Protection Agency, and other federal agencies, conservationists, and universities to establish photo and botanical case studies on their electric and gas ROW across the country, corresponding to the migratory paths of birds and monarch butterflies. The documentation will demonstrate that IVM can help realize the goals of the Federal Strategy on Pollinators while host utilities and UAA Regional Conferences can use the case study sites for educating agencies and the public on ROW corridor benefits for pollinators.

Pollinators include insects and honey bees, as well as birds and some mammals, that transfer pollen from one flower to another. Pictured here: American goldfinch (*Spinus tristis*).

## The Value of Pollinator Stewardship

Many pollinators are in trouble. Migrating monarch butterflies struggle as their habitat is developed or limited by modern agricultural practices. Monarch populations are so low that the Fish & Wildlife Service is considering listing them as a threatened and endangered species. Honey bees must contend with multiple factors, such as Varroa mites, viruses, trucking from place to place to follow blooming crops, improper use of insecticides, and less forage. The health of North America's 4,000 species of native bees is negatively impacted by loss of habitat and forage.

Twelve million acres of utility ROWs present an opportunity to help pollinators. Utility land managers need to collaborate with local beekeepers, residents, and government land managers. Not all areas along ROW will be perfect, and there are options for managing land to suit other wildlife, but right now our nation faces a decline in pollinator forage. There is not enough natural forage or habitat to sustain healthy populations. And it's a bit of a paradox. We need more pollinators to pollinate

### How to Build a Pollinator Ecosystem

- It is not difficult or expensive to build a pollinator-beneficial ecosystem. In a short time, managing for pollinators should be less expensive (a three-year selective backpack treatment cycle is about one-third less costly than a three-year mowing cycle). This takes more thinking and knowledge than it does equipment or crew hours. Assistance is available from a number of helpful and committed organizations (e.g., IVM Partners, Pollinator Partnership, and your state's cooperative extension system).
- Decide what plant types meet the management objectives for a given ecosystem. The best plants can be defined in general terms, such as wire zone or border zone. Or they can even be defined as what plants are not desired, such as tall or invasive.
- Design an approach that will create an ecosystem that meets primary management objectives and promotes secondary objectives, such as pollinator health. This may be a broad treatment, such as mowing if brush is overgrown, or broadcasting herbicides if the density of problem plants is high [Note: Herbicides that affect all broadleaf plants (forbs) should not be broadcast]. Then follow after the next growing season with spot treatment of selective herbicides to control remnant undesirable plants and their root systems. Over time (three to four years) the area may need to be re-treated. The number of plants needing treatment will continually be reduced by competition and biological controls provided by a stronger ecosystem of desirable plants.
- Plan the work to be done in detail, taking advantage of GIS mapping technology. Soil, topography, moisture, land use, and vegetation cover type change rapidly and frequently across the land. Adjust the approach as needed for the best results.
- The people who are caring for and maintaining the land need to be technically proficient. This may involve more training for applicators and operators. The better they are at their work, the less time and material it will take to develop the ecosystem: labor is more costly than herbicides.
- Review the treatment effects and results to ensure the treatment was completed correctly and that it was the correct treatment design. Adjust subsequent treatments and herbicides to meet the evolving ecosystem challenges.

natural and agricultural plants, yet we don't have enough plants to feed and house those pollinators.

Pollination sustains nearly all plant life and provides food for many living creatures. All of us can support a healthy, diverse ecosystem for our communities and the environment. Utility rights-of-way are the logical place to make a real difference for pollinators.

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*All photos courtesy of the authors.*

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