

Utilities Take Action on Habitat Restoration

By **NEIL PALMER**

Electricity is the driving force of our modern world. It powers commerce and industry, enables critical advances in science and health care, and contributes to the comfort and convenience of everyday living. Today, however, one of the fundamental building blocks of life—plant pollination—is in jeopardy, and the utility industry is uniquely qualified to do something about this important issue.

Seventy percent of native vegetation and 30 percent of our food crops depend on insect pollinators for reproduction, but insect pollinators are struggling. In fact, beekeepers reported losing about 40 percent of honeybee colonies in 2014, threatening the viability of their livelihoods and the essential pollination services their bees provide to agriculture.

While honeybees and wild bees are the high-profile workhorses of plant pollination, the public is equally concerned about another pollinator—the iconic monarch butterfly. In particular, the eastern North American monarch population has declined dramatically—more than 90 percent since the 1980s—primarily because of loss of habitat for breeding, migrating, and overwintering. (See the sidebar, “Monarch Migration.”) Milkweed plays an essential role as the exclusive egg-laying site for adult butterflies and food source

for monarch caterpillars. But modern agricultural practices have all but eliminated milkweed from farms and pastures. In addition, an estimated 29.5 million acres of grasslands in the Midwest have been converted to crops since 1996. Herbicide application, roadside mowing, and urban development have further reduced the presence of milkweed.

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Private and Public Partnerships

The White House Pollinator Health Task Force issued an action plan in May 2015 calling for private and public partnerships to increase and improve pollinator habitat. Federal agencies also are required to consider pollinator habitats when conducting their regulatory responsibilities.

The decline of the butterfly has been so precipitous that groups have petitioned the U.S. Fish & Wildlife Service (USFWS) for protection of the monarch butterfly under the Endangered Species Act (ESA). The possibility of an ESA listing, which could have significant impacts on vegetation management and agricultural practices, adds urgency to the push for private conservation efforts.

With review of the petition underway, USFWS recently funded on-the-ground conservation projects to restore monarch habitat. In September, the National Fish and Wildlife Foundation made the first round of grants totaling \$3.3 million from its Monarch Butterfly Conservation Fund, which USFWS seeded with \$1.2 million. The 22 grants, which will

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be matched by more than \$6.7 million in grantee contributions, will support the restoration of up to 33,000 acres of habitat in areas identified by experts as key to monarch recovery. The agency also has pledged more than \$20 million in monarch conservation projects over the next five years.

“The fate of the monarch butterfly hangs in the balance, and its future is dependent on all of us. We can either choose to let its decline continue, or we can decide to do something about it,” said USFWS Director Dan Ashe. “To tip the scales back in favor of this magnificent creature’s survival, we need everyone—governments, NGOs, large landowners, homeowners, and industry—to get involved. By building local, national, and international partnerships and taking positive action, we can ensure the monarch continues to be a familiar sight across the American landscape.”

Biologists agree that the monarch doesn’t need vast fields of milkweed for its survival. Dr. Chip Taylor, insect ecologist at the University of Kansas, founded Monarch Watch to expand monarch habitat throughout the United States and eastern Canada. More than 7,700 small milkweed oases, or way stations, have been created through the program.

“We don’t need millions of acres of land for pollinator habitat,” said Taylor. “What we need are millions of small patches of habitat along the thousands of miles of flyways.”

According to Monarch Watch, 90 percent of all milkweed/monarch habitat occurs within the agricultural landscape. More than 25,000 square miles of electric utility rights-of-way exist just in the core monarch reproduction area.

By partnering with agriculture stakeholders, utility companies are making a significant contribution to monarch recovery by managing and enhancing habitat for pollinators. Such contributions not only benefit agricultural operations, but also impact utility siting efforts and vegetation management practices on existing rights-of-way. The majority of utility rights-of-way are owned by farmers, making farmers a critical utility stakeholder.

Utility Leadership on Habitat Restoration

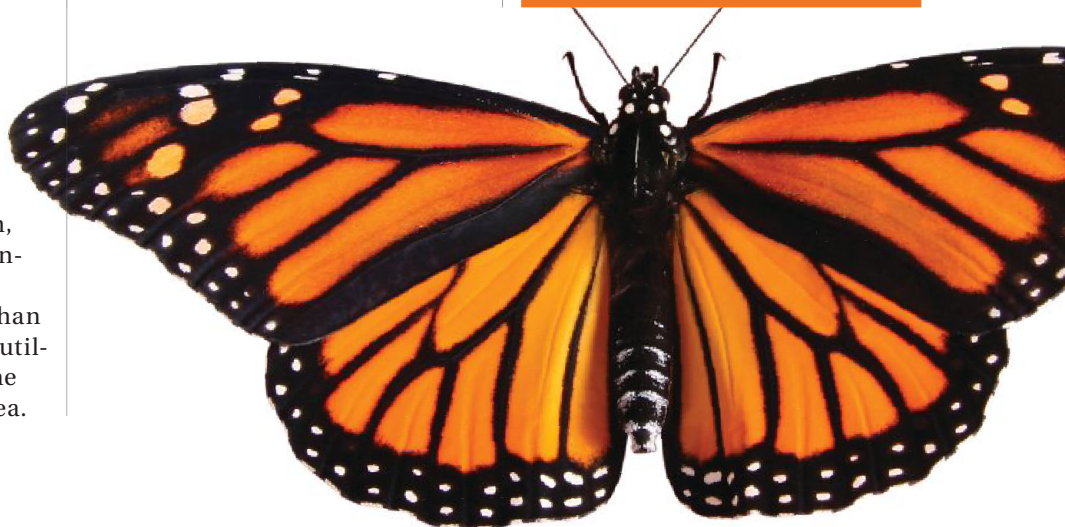
Xcel Energy, whose northern service territory includes much of the monarch migration corridor that parallels Interstate 35 from Minnesota to Texas, launched a Pollinator/Monarch Habitat Initiative last summer. The initiative identifies areas to plant milkweed and other pollinator-friendly vegetation within rights-of-way and Xcel-owned land at generating facilities and substations. The company also established a public/private partnership to create or restore 50 acres of pollinator habitat in the St. Croix Valley, an area of Minnesota and Wisconsin that stretches north from the Mississippi River, almost to Lake Superior.

Monarch Migration

Native to North America, monarchs are the only butterfly species known to perform a multiple generation migration. They are generally divided into two populations—eastern and western—divided by the Rocky Mountains. (See Figure 1.) While the western population is facing threats, the eastern population has experienced a more precipitous decline.

For the eastern population, the fall migratory generation arrives in the mountains of central Mexico in November, where the butterflies form dense clusters on oyamel fir trees at only a few high-altitude sites. They overwinter there, and then return northward in March and April to breed in the southern United States. A subsequent generation then moves farther north to reproduce in the agricultural heartland of the Midwest. A third and, sometimes, a fourth non-migrating generation expand the population through the summer until August and September, when juvenile butterflies begin the southward migration back to Mexico.

The western monarchs follow a similar migratory pattern, wintering along the Pacific coast in California. They usually arrive in October, and begin a breeding and migratory pattern in mid-February to other locations in California, Nevada, and the Pacific Northwest.





“There is a lot of national focus on utility rights-of-way as being ideal for restoring habitat for monarchs and other pollinators,” said Sage Tauber, senior siting and land rights agent for Xcel, who is spearheading the initiative. “Habitat restoration is compatible with our priorities of safety and reliability, and can even result in cost savings due to reduced maintenance associated with native plant species that attract pollinators.”

The National Wildlife Federation recently recognized Baltimore Gas & Electric (BGE) for six Certified Wildlife Habitats® within company-managed rights-of-way. Those habitats are part of the Million Pollinator Garden Challenge, a national effort to restore critical habitat for pollinators, including the monarch. The sites are part of BGE’s efforts to implement integrated vegetation

management practices in its high-voltage rights-of-way corridors to minimize clear-cut mowing and to encourage native plant communities that are compatible with safe and reliable operation of the electric system.

The “ground-up approach” that Pacific Gas and Electric Company (PG&E) is taking in the West begins with partnering with researchers and non-profits focused on pollinator conservation to understand how the utility’s use of integrated vegetation management (IVM) techniques may benefit pollinators. The flagship research project in this collaboration is the American River Parkway Pollinator Project—the first long-term comparative monitoring field study in the western region to examine pollinator communities on actively managed electric utility rights-of-way. Research

shows that rights-of-way managed using IVM techniques designed to control non-native invasive plants and to favor creation of low-growing native plant communities resulted in an almost threefold increase in bee abundance and a twofold increase in bee species richness. PG&E also has provided research funding to Sonoma State University to understand the potential benefits of implementing IVM in an oak woodland plant community.

“While this research does not specifically focus on monarchs, it is providing valuable information about the potential pollinator habitat benefits created by following utility vegetation management best practices,” said Peter Beesley, vegetation program manager for PG&E. “The low-growing, stable native plant communities that rights-of-way managers desire to support public safety and reliability goals are also proving to benefit pollinators. Accordingly, we’ve established a target of 50,000 acres being managed in a pollinator-friendly management regime by 2020.”

“We have a huge agricultural customer base in California. Our research results are showing that PG&E can help connect agricultural

Sand County Partnership

The Sand County Foundation is a non-profit conservation organization dedicated to working with private landowners across North America to advance ethical and scientifically sound land management practices that benefit the environment. The foundation has strong relationships with all aspects of the agricultural sector and extensive experience with voluntary efforts on species conservation.

While rail, utility, and highway infrastructure is sometimes criticized for fragmenting forests and other natural habitats, the foundation believes that utility and transportation rights-of-way eventually could serve as a network of effective and efficient conservation reserves. Those rights-of-way currently total approximately 9 million acres of electric power transmission lines, 12 million miles of pipeline, and 140,000 miles of railroad—or nearly one-third the area of the National Park system.

The foundation assembles partnerships that bring together easement holders, private agricultural landowners, science and conservation groups, and state and federal agencies. The intent is to build a network of habitat patches that, taken together, can help to reinforce the globally unique eastern monarch butterfly migration corridor. For more information, visit www.sandcounty.net.

Figure 1: Monarch Populations and Migration in North America



landscapes to important pollinator habitat being created within our natural gas and electric rights-of-way.”

Clean Line Energy is developing a series of long-distance direct current transmission lines to connect renewable energy resources to communities that lack access to renewable power. As the company secures permits for new infrastructure, it sees opportunities to go beyond legal requirements in creating wildlife habitat.

“We know that successful project development depends on substantial and widespread participation of diverse stakeholders,” said Jimmy

Glottelty, vice president of public affairs for Clean Line. “While specific pollinator management protocols have not been part of regulatory requirements, we view the issue as one of the best management practices and the good neighbor policies we like to promote.”

“Nobody wants the government telling them what to do with their property,” Taylor concluded. “What we really need is a ground-up approach; this can be solved by large-scale public and private landowner involvement.”

Utilities have an opportunity to play a leading role, partnering with agricultural interests and

others, to best manage rights-of-way for the recovery of this species without a federally imposed designation. The Sand County Foundation of Wisconsin is one organization spearheading such an effort. (See the sidebar, “Sand County Partnership.”) **EP**