

A collection of approximately 15 monarch butterflies in various sizes and orientations, scattered across the page. They are orange with black veins and white spots on the tails of their hindwings.

Vegetation Management

Moving from an access mindset to a stewardship opportunity

The marching orders of a gas distribution utility's vegetation management department are to provide for the safe and reliable transportation of natural gas across its system. Historically, this has primarily meant clearing all tall-growing plants and woody vegetation along the pipeline right of way (ROW) to allow leakage inspectors access for safety inspections and to prevent roots from damaging the integrity of the pipeline. At Columbia Gas, a subsidiary of NiSource, we are transforming our vegetation management approach from business as usual to a forward-thinking, environmental stewardship-driven practice.

Columbia Gas's journey has followed the path of a maturing integrated vegetation management (IVM) program. IVM is a system of managing plant communities through increasingly selective methods that control undesirable vegetation and promote compatible, stable, low-growing vegetation in its place. The methods can include a combination of chemical, biological, cultural, mechanical and/or manual treatments. IVM principles have been in practice in the electric industry for decades yet have been slower to adopt in the gas industry.

When I came to Columbia Gas's vegetation management department in 2008, our primary goal was to ensure that leakage inspectors could access the pipelines safely and efficiently. We would receive the inspection schedules, which noted which ROWs required clearing, then send out the vegetation planners to visit each site, assess vegetation and terrain, and create detailed work orders for ROW clearance based on the vegetation type, pipeline location and environmental considerations. In those days, many ROWs were heavily overgrown and contained dense woody vegetation. This would often require heavy clearing and labor-intensive practices to restore ROW accessibility and pipeline safety, a process known as ROW reclamation.

Reclamation typically involves nonselective, edge-to-edge clearing across the entire width of the ROW. In some cases, specialized equipment is necessary to remove the overgrowth. Woody vegetation, particularly trees, poses unique challenges, because the tree roots can grow aggressively and potentially damage the pipeline coating or even the pipe itself. Therefore, woody vegetation is removed within a certain distance of the pipeline.

While effective, reclamation can also be disruptive. It can cause extensive soil disturbance and vegetation damage, including to plants that are otherwise compatible with the pipeline and leakage inspections. Given the resulting barren landscape, the visual effect of a recently reclaimed ROW may be displeasing to neighboring landowners and passersby, not to mention representing a sudden loss of habitat for local wildlife.

BY TONY TIPTON

Fortunately, as is typical with IVM practices over time, reclamation transitions to a less disruptive maintenance cycle. We have seen a noticeable transformation in the vegetation on our ROWs since 2008. With regular maintenance, low-growing native grasses and forbs have become more prominent, thereby reducing the need for aggressive clearing methods and allowing us to adopt new strategies and approaches.

Where practical, Columbia Gas now employs the pipe zone-border zone management technique. Instead of clearing the entire width of the ROW, vegetation crews only mow a narrow pipe zone directly above the pipeline, ensuring safe access for inspectors while leaving much of the surrounding vegetation untouched. In the adjacent border zone, which runs between the pipe zone and the outer edge of the ROW, we implement a selective approach. This involves applying herbicides to only targeted woody shrubs and invasive species, while also using application techniques designed to minimize harm to beneficial vegetation.

We are no longer solely focused on removing vegetation. We also use these selective practices to protect and enhance what we have: diverse, compatible vegetation that provides biological control against undesirable plants and trees and also offers a range of other benefits, including wildlife habitat. While we still mow access paths for inspectors, we otherwise aim to disturb the environment as little as possible to support the overall ecological health of the ROWs.

This stewardship approach aligns with emerging industry best practices and Columbia Gas's environmental goals, particularly in preserving habitats for insect pollinators and supporting local biodiversity. My colleague, Susan Murray, has successfully championed the idea that our vegetation management program can create spaces where wildlife and native plants thrive alongside our infrastructure. She has been instrumental in our department establishing more than 20 pollinator habitat projects across our five-state operating area, including several that are certified by the Wildlife Habitat Council and registered as Monarch Watch waystations. We also look for other opportunities to integrate stewardship-driven components into our workflows, such as using pollinator-friendly seed mixes as part of post-construction revegetation, teaming with community partners to promote pollinator habitat and conducting habitat monitoring.

Columbia Gas also participates in the U.S. Fish and Wildlife Service's nationwide Candidate Conservation Agreement with Assurances for monarch butterflies, also known as the Monarch CCAA. The Monarch CCAA is a voluntary conservation effort aimed at protecting the monarch butterfly, an iconic pollinator species experiencing significant population declines. Through the Monarch CCAA, Columbia Gas has committed to creating, enhancing, and maintaining monarch butterfly habitat on a portion of our ROWs. This includes the selective IVM practices mentioned

above as well as planting and managing for milkweed — the sole food source for monarch caterpillars — and other nectar-rich plants that support adult butterflies. A second voluntary agreement is underway for 11 species of bumblebees that are also in decline.

Programs like the Monarch CCAA and the upcoming bumblebee agreement highlight the growing need for utilities and others to take action to protect biodiversity. Columbia Gas supported NiSource in publishing its first public biodiversity commitment statement in 2022 and provides updates on biodiversity as part of annual sustainability reporting and public disclosures, including on the Dow Jones Sustainability Index. By fostering pollinator-rich habitats on our ROWs, we are demonstrating that it is possible to balance our operational needs with a strong commitment to the environment.

Another important aspect of this work is maintaining communication with property owners and community partners to ensure transparency and address potential concerns, build public engagement and support and help people learn about and connect with nature. There is more work to be done, both in educating our customers and other stakeholders about the importance of biodiversity and environmental stewardship and responding to the increased public interest in nature-based sustainability. Columbia Gas's vegetation management department is growing to help meet these needs.

With the transformation from woody thickets to pollinator-friendly prairies, Columbia Gas's vegetation management strategy has shifted our focus from simply clearing access paths to also enhancing the ecosystems where we work. We are committed to delivering natural gas safely and reliably while also benefiting the environment — a combination we believe is not only possible but also in everyone's best interest. This mindset also positions us well to adapt in an ever-changing world, where the intersection of nature, people, and industry brings with it increasingly complex challenges. This balance between safety, reliability and environmental stewardship sets a hopeful vision for the future of Columbia Gas's vegetation management program. ★



Tony Tipton is a 1985 graduate of Morehead State University in Kentucky. He began his career with Columbia Gas/NiSource in April of 1995. He currently manages the Vegetation Management Program for the Columbia Gas companies within the NiSource portfolio which includes Kentucky, Maryland, Pennsylvania, Virginia and Ohio. In 2008, he was asked to develop and manage the IVM program, which he continues to lead today. He is married to his beautiful wife Jennique and has three children. His office is located in Lexington, Kentucky.

