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WHITE PAPER / **PROTECTED SPECIES MANAGEMENT**

FIELD COLLABORATION ENABLES SEAMLESS CONSTRUCTION IN PROTECTED SPECIES HABITAT

BY Edward Belmonte

Construction of new transmission lines can be complicated, especially when the project impacts a protected species habitat. A permitting consultant with an experienced on-site environmental team can help navigate the state or federal permit processes that protect wildlife and associated habitats without adding lengthy delays to the construction schedule.

Photo Credit: Jeffrey G. Davis

Even well-planned, properly permitted transmission line projects can encounter circumstances that have the potential to wreak havoc on budgets and schedules.

Consider one U.S. utility's recent project to install a new 2.2-mile-long segment of 138-kV double circuit transmission line, a portion of which would pass through 10 acres of delineated wetlands.

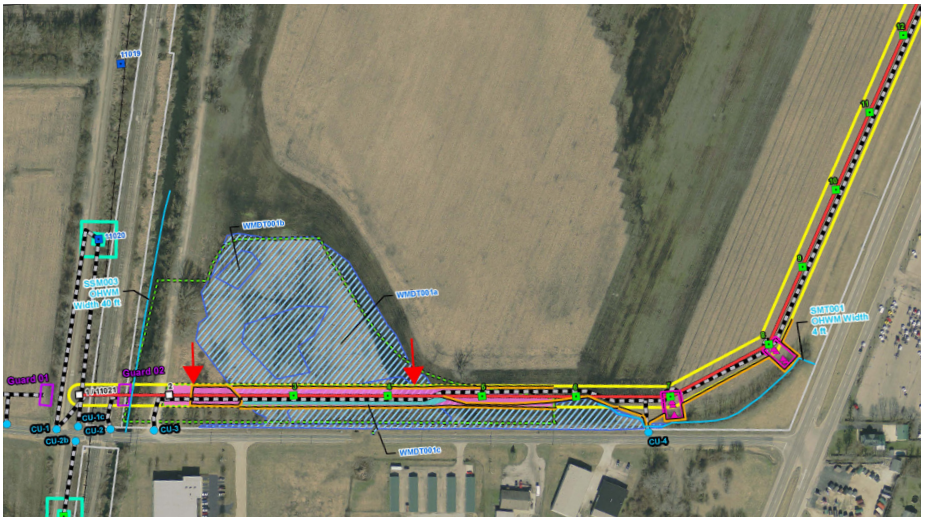

FIGURE 1: *Aerial view of exclusion zone.*

During a habitat assessment of the project site, the area surrounding the transmission line installation was found to contain crayfish burrows where two protected species of snakes — the Eastern Massasauga (Sistrurus catenatus) and the Kirtland's snake (Clonophis kirtlandii) — are known to make their homes. While the presence of the boroughs was no guarantee that either snake species actually resided in the area, their mere existence and historical records rendered the wetlands a protected snake habitat. To maintain the project schedule, the team would need to work under the presumption that both species were present.

Given these findings, the permits issued by the state's division of wildlife and the U.S. Fish and Wildlife Service (USFWS) called for the creation of a snake exclusion plan. That plan included the development of a construction access map for the project that considered easements, landowner agreements and engineering plans. In addition to identifying access points and spots where materials and poles could be laid down, the map included a snake exclusion zone for the two species of protected snakes. This zone established a 2-acre snake-free area to conduct construction safely within a smaller limit of disturbance and without harming any protected snakes.

The exclusion zone was designed so that snakes could be collected during a 28-day period. To create the zone, the project team began by clearing the designated area of vegetation and mowing it to within 1 inch of the ground.

Silt fencing, buried 6 inches in the ground, was then installed around the entire area to prevent the movement of snakes into or out of this zone.

Workers placed funnel traps and cover boards — 5-foot sheets of corrugated roofing tin — at 25-foot intervals both inside the fenced work area and outside the silt fence to trap amphibians and reptiles at the site. Snakes emerging from crayfish burrows inside the work area would find no vegetative cover and instinctively move to find a place to hide from predators. Their migration would be blocked by the silt fence, which the snakes would move along until finding a coverboard where they could take refuge. Snakes outside the fenced area that tried to move into the exclusion zone were also intercepted by the fence and took refuge under the cover boards placed along the outside edge.

Prior to starting construction, the plan called for a 28-day exclusion period when workers would count and capture any snakes found under the cover boards before moving them to a field away from the work area.

ADAPTING PLANS WITH NATURE

Less than a week after the March completion of the exclusion zone, heavy spring rain fell on the project area. An adjacent roadside ditch had allowed rainwater runoff to flow into the exclusion zone and compromised the silt fence, allowing any potentially protected snakes to move

freely in and out of the zone. According to the terms of the permit, the clock would need to start over on a new 14-day exclusion period. Every subsequent breach, in fact, would trigger an additional 14-day period. With more heavy rain forecasted for the next month, there was an ongoing threat to the snake-capturing effort and the overall construction schedule.

The permitting consultant originally obtained the protected species permits when the project schedule was still in development. Neither the consultant nor the regulators had reason to anticipate how rainy spring weather might impact the on-the-ground conditions and the on-site environmental team's ability to comply with the permit conditions. Meanwhile, the transmission line project could not move forward until the permit requirements were met.

When the rains hit, the on-site environmental team quickly recognized that the protected species permits would need to be renegotiated. The team provided state and federal regulators with photos that illustrated the flooding issue and invited them to visit the site to review the conditions. Following its own assessment, the team recommended dividing the fenced area into two distinct exclusion zones, allowing the flow of runoff water produced by heavy rains to pass between them. This solution was discussed with and approved by the state's division of wildlife and the USFWS, and the permits were modified.

Weeks later, the exclusion zone adjustments were completed and workers began lifting the cover boards inside and outside the fence two to four times daily to check for snakes. On cool cloudy days, when snakes tend to remain stationary, cover boards were checked twice. On sunny warm days when snakes are more mobile, they were checked three or four times. Any snakes or other animals found under the cover boards were captured and released into a field away from the fenced work area.

MITIGATING SCHEDULE DELAYS

After 28 days, workers had removed hundreds of nonprotected snakes, toads, frogs, mice and shrews from under the cover boards. No state or federally protected snakes were encountered, enabling both exclusion zones to be considered free of Eastern Massasaugas and Kirtland's Snakes.

Based on the permit guidelines, the fence surrounding the work areas remained in place, helping to see that neither species could migrate into the area during construction. Contractors were then allowed to enter the area to install a temporary access road and eight 138-kV transmission line poles. In collaboration with the permitting and construction team, all contractors were escorted to and from the site between exclusion zones, making a visual inspection with each construction vehicle so that no protected species were harmed.

The project was completed under budget and with no permit violations or delays. It was energized on schedule and met the in-service date that same year. No scheduled outages were missed — an achievement that would not have been possible if the permits had not been modified.

FIGURE 2: *Eastern Massasauga snake. Photo Credit: Jeffrey G. Davis.*

LESSONS LEARNED

While every transmission line project does not impact a habitat for protected snakes, all projects must be designed to accommodate the natural environments through which they pass. Neither the owner nor the project team, however, can control all site conditions that could potentially impact environmental permit compliance and, ultimately, the project schedule and budget.

As projects like this transmission line expansion demonstrate, some environmental permitting issues can only be addressed and remedied on-site. While the knowledge and experience of the permitting team is critical to the success of these projects, so is the experience of the environmental oversight team that must address conditions on the ground. The environmental oversight team's ability to engage with the original permitting consultants and regulators and to obtain amendments to permits in the field can be invaluable in keeping a complicated project on schedule.

BIOGRAPHY

EDWARD BELMONTE is experienced in a variety of permitting, environmental compliance, restoration and design-build projects. Adept at managing multiple projects concurrently, he effectively represents clients in managing construction contractors, consultants, suppliers and service providers on large programs. Edward is currently managing a diverse group of right-of-way solutions specialists, including those involved in environmental compliance, environmental and nonenvironmental permitting, vegetation management, GIS mapping, wetlands, protected species, real estate and public involvement.

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