Emerald Ash Borer: A Race Against Time

Kristin Wild, Asplundh Tree Expert Co. | T&D World Magazine

May 26, 2014

AEP takes a proactive approach to combating the emerald ash borer threat in Ohio.

What is in this article?:
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Larvae feed beneath the bark, fatally damaging the tree by disrupting the movement of nutrients through the cambium. Within two to three years of infestation, the tree dies. Photo courtesy of Therese Poland, U.S. Forest Service.

Why should electric utility managers be concerned about a small green beetle from Asia that only infests ash trees? The answer lies in the fact that in most of North America there are, or soon will be, thousands of dead or dying ash trees threatening the safety and reliability of power lines all because of that little green bug.

When the arrival of the emerald ash borer (EAB) was first confirmed in Detroit, Michigan, U.S., in 2002, no one knew how the economic and environmental costs might tally up. The impact of this pest is being compared to the destruction caused by the chestnut blight and Dutch elm disease of the previous century, but there is more critical infrastructure to protect today.

Now that this pest has been detected in 22 states and two Canadian provinces — and dead ash trees have fallen into power lines on blue-sky days — some electric utilities are...
learning the cost of not taking a proactive, focused approach to EAB mitigation.

This EAB-damaged ash tree is just one of millions, many of which pose a potential threat to power lines and passersby. Dead ash trees typically lose large limbs within two years and, after four years, larger trees will often fall at the base of the tree. This rapid decline threatens power reliability as well as the safety of tree workers trying to remove them.

The Initial Discovery

For a few years after the initial discovery of the EAB infestation, many government agencies and communities in Michigan, Ohio and Indiana hoped it could be confined by removing ash trees ahead of the infestation. For various reasons, this control effort did not work. By 2009, ash trees were failing at a significant rate, and it was clear the infestation would continue to spread.

Even now, there is no practical way to stop the ash tree species’ decline as a result of EAB. Although individual trees can be protected with repeated treatments of systemic pesticides, this is not a viable option for millions of ash trees in forests, wood lots and backyards, many of which are within falling distance of electric distribution and transmission lines throughout North America. Biological controls also are being tested, but researchers acknowledge these efforts will not stop the spread of EAB.

Meanwhile, utilities and municipalities are running out of time to manage the risk safely and efficiently.
AEP Ohio’s EAB mitigation program in the Columbus district begins with an Asplundh work planner identifying and marking ash trees outside the normal easement but within striking distance of lines, then contacting property owners for permission, followed by tree crews removing the trees. Asplundh collects and maintains data and documentation for AEP Ohio and PUCO review.

Avoid a Cycle and Budget Buster

Several utilities in Michigan, Ohio and Indiana, where EAB was detected earliest, have made a valiant effort to inventory ash trees on their rights-of-way and remove (or top for private removal) every ash tree within striking distance of electrical conductors. However, this work requires a significant amount of time to identify potential off-corridor threats and make customer arrangements to access them. Specialized equipment is often needed because dead ash trees are too unstable to climb.

Because of this extra time and equipment, simply absorbing EAB mitigation into a utility’s scheduled vegetation management cycle and budget is generally not sustainable. Mark Contat, manager of forestry services for Toledo Edison, a FirstEnergy company in northwestern Ohio, confirmed this. His utility’s EAB mitigation program began in 2009 with the removal of 380 ash trees during its normal vegetation management schedule. The following year, many more ash trees were falling and causing outages, so removals increased to more than 3,700 in 2010 and costs increased more than twelvefold.

Since the program began, Toledo Edison has removed approximately 15,000 ash trees from about 6,500 line miles (10,460 km). Contat reports that EAB mitigation has cost the utility an average of US$300 more per line mile.

AEP Ohio also came to understand the cost of this infestation as its Western Ohio district was the first to experience a large number of dead ash trees from EAB. Mike Chedester, supervisor of region forestry for the Western Ohio district, explained that much of the area is open farmland and not densely populated, but ash trees used to represent almost 20% of all trees in the region versus a 10% average statewide.

Initially, AEP Ohio was able to absorb the increased cost of EAB mitigation into its scheduled vegetation management program. However, as the impact of the pest became clearer in the urban and suburban Columbus district — and the costs/risks became greater — the utility proactively began to prepare a request to the Public Utilities Commission of Ohio (PUCO) in 2012.
Rich Simpson, supervisor of region forestry for AEP Ohio’s Columbus district, worked quickly with his foresters to formulate a plan and cost estimate for a dedicated EAB mitigation team. This would help to ensure work was done in an efficient and economical fashion, and the actual costs could be tracked better. The Columbus district plan was submitted to the PUCO and the request was approved in early 2013.

**Track Results**

In February 2013, AEP Ohio began its three-year program to identify and remove ash trees outside of its normal easement on 4,406 distribution line miles (7,091 line km) in the Columbus district. The objective is to mitigate ash trees that are at least 25 ft (8 m) tall and within 30 ft (9 m) either side of a single-phase conductor (60-ft [18-m] swath) or within 50 ft (15 m) either side of a three-phase conductor (100-ft [30-m] swath).

Asplundh Tree Expert Co., AEP’s vegetation management alliance partner, gathered a team of five experienced work planners, led by project coordinator Steve Young, to identify trees for removal and get permission to remove the trees. A skilled team of 15 Asplundh tree crews and two general forepersons perform the mitigation work in the wake of the work planners.

Young coordinates the activities of both groups so the work planners stay ahead of the tree crews as they move through each circuit. In addition, he communicates with municipal authorities, handles customer concerns, arranges for specialized equipment or planned outages, and maintains a database to track the units, hours, locations and refusals. This data is reported monthly to AEP Ohio and Asplundh management, and is available to the PUCO whenever requested.

In addition, the utility has brought representatives of the PUCO to observe the work planners and crews at work on the project.

“We are highly aware of the public impact of this program,” said Chedester, who has worked on the EAB problem with numerous communities in his territory, many of which are Tree City USA members. “AEP wants to be a good neighbor because we know we have to come back in four years. We have to make sure people understand that dealing with threats beyond the normal right-of-way will help reliability and safety.”

By the end of 2013, AEP Ohio was well on its way to meeting its goal of proactively cutting ash trees safely and efficiently before they fail. More than 13,700 ash trees were removed along 1,047 line miles (1,685 line km) in the Columbus district and there are still two more years of the EAB mitigation program to go. In addition, the PUCO approved an EAB mitigation program in the fall of 2013 for the nearby Newark district and this may continue into other AEP Ohio districts as the effects of the infestation are seen.

**Learn from Others**

Before EAB begins to kill trees, utilities can prepare by estimating the scale of the problem for their system. For example, in the fall of 2011, foresters from AEP’s Indiana Michigan Power — with assistance from Asplundh — sampled about 2% of the entire service territory and arrived at an estimate of 51,600 ash trees within falling distance of their lines systemwide. Of this number, an estimated 35,000 were posing an imminent threat to overhead lines based on the degree of mortality (“Ash Trees Under Siege” by B. Scott Bennett, *Transmission & Distribution World*, Vegetation Management supplement, June 2013).

The cost of obtaining this information is small in comparison to the cost and scale of the damage likely to occur, and it can help to justify a more proactive approach.
Utility management can only take a wait-and-see approach for so long. Simpson says that timing a request for financial support to mitigate EAB risk is almost as crucial as developing an efficient strategy to accomplish it. Although the PU CO and customers may want to wait to see some EAB-killed trees with their own eyes, waiting too long will increase the cost of mitigation.

“If you don’t get out ahead early enough, the outages creep up on you,” commented Contat, who is working to get the word out so utilities can prepare. He will be presenting information about Toledo Edison’s EAB experience at the Utility Arborist Association sessions during the annual conference of the International Society of Arboriculture in early August 2014. It will be an opportunity for utility arborists to learn from each other and find better ways to safely and efficiently manage the EAB risk.

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Editor’s note: This article was prepared with information provided by Rich Simpson, supervisor of region forestry, AEP Ohio (South); Mike Chedester, supervisor of region forestry, AEP Ohio (North); Mark Contat, manager of forestry services, Toledo Edison; and Kevin Gibson, supervisor of Asplundh Tree Expert Co., Chillicothe, Ohio; and Steve Young, project coordinator, Asplundh Tree Expert Co., Millersport, Ohio.