

a map of 573,000 ash trees on public and private property, city-wide. This enabled public planning and notification of private tree owners. This year the City is treating 28,000 high-value trees. According to Ian Brown, a city forest manager, Milwaukee is paying an average of \$35 per tree per year for insecticide management, while the cost of removing and replacing a tree is \$750.<sup>8,9</sup>

- **Naperville, IL:** This western suburb of Chicago is in its fourth year of treating 14,000 healthy ash trees located in the City's parkways. Since the City started treating citywide for EAB, more than 90 percent of the ash trees are in good shape with only minor or no visible EAB damage. As of April 2015, only 2,242 ash trees have declined and required removal. This is in contrast to untreated ash trees on private property within City limits, which are either in decline or expected to decline significantly in the next few years.
- **Perrysburg, OH:** In this suburb of Toledo, EAB was detected in 2004. When EAB management fell to municipalities in early 2006, plans were made, against conventional wisdom, to initiate treatment of right-of-way trees. The community followed research closely, adjusting strategy as necessary. Many trees were lost, but the majority remain.

### Recommendations for Action

Following are suggestions for developing a targeted local protection strategy in communities where ash trees have not yet been attacked.

- Understand that there are more pests on the horizon. Watch out for:
  - hemlock woolly adelgid,
  - thousand cankers disease of black walnut, and the
  - Asian longhorned beetle.

Hemlocks and walnuts are not typical right-of-way trees but are highly-valued in parks and private landscapes.

- Consider religious and cultural beliefs, like the fact that some Native Americans consider the black ash sacred.
- Think like a city councilperson. This is not easy for scientists,



Photo by Tyler Stevenson, former Grand Rapids City Forester

Typical look for an untreated, heavily-infested green ash in August. Physical damage to water transporting tubules has caused early leaf-drop and twig death. Resulting changes in internal chemistry triggers a flush of new growth from large, central limbs in a futile attempt to survive. It will take years to restore shade to this Grand Rapids area parking lot.

## BE PREPARED AS OPTIONS TO FIGHT EAB CHANGE

**W**hen dealing with something as new as emerald ash borer (EAB), researchers revise and refine their opinions based on new data, which arrives regularly. That makes it difficult for public officials to avoid making policy decisions based upon outdated information.

Consider the question of whether treating ash trees is cost effective. In 2009, a group of the top researchers in the field—including David Smitley and Deborah McCullough from Michigan State—wrote this: *“The economics of treating ash trees are complicated...Benefits of treating trees can be more difficult to quantify than costs.”* Hardly a ringing endorsement.

But in 2014, the research team published a second edition with important new information on effective pesticide options:

*“Results consistently show treatment costs are much lower than removal costs. As treatment options continue to evolve, costs of treatment will likely change...The economic benefits provided by trees increase with*

*the size of the tree, as does the cost of removal. Hence, it may be particularly economical to treat larger trees.”*<sup>2</sup>

McCullough put it this way in a recent interview: *“When we were first working on ash borer in 2004-2005, there weren't any really effective, systemic insecticides that you could apply, but now there are. Things have come a long way.”*

If you have a healthy ash tree that is relatively healthy, you can protect it, according to McCullough. *“There are places where ash borer is relatively new and there are places in Michigan where that ship sailed a few years ago,”* she says.

Local government policies are needed to deal with insect pests that do not fall under federal eradication protocols. Dutch elm disease and EAB are primary examples. When Dutch elm moved through the east coast and lower Midwest, there were no viable management options. But decades later, when the fungus hit the upper Midwest, tools were available, so this is where structured urban forestry programs developed to con-

serve elm trees.

Compared to Dutch elm disease, the pace of change with EAB management tools has been lightning fast. Since 2006 we have learned more every year, so policy makers need to be nimble. When new treatments were proven successful, efforts were made to spread the word to arborists and urban foresters. But EAB spread faster than did the word about best practices, leaving planners and other policy-makers trailing behind the knowledge curve.

### FOOTNOTES

1. Herms DA, McCullough DG, Smitley DR, Sadof C, Williamson RC, and Nixon PL. 2009. Insecticide options for protecting ash trees from emerald ash borer. *North Central IPM Center Bulletin*. 12 pp.
2. Herms DA, McCullough DG, Smitley DR, Clifford CS, Cranshaw W. 2014. *Insecticide options for protecting ash trees from emerald ash borer. North Central IPM Center Bulletin, 2nd Edition. 16 pp.* ([http://www.emeraldashborer.info/files/multistate\\_EAB\\_Insecticide\\_Fact\\_Sheet.pdf](http://www.emeraldashborer.info/files/multistate_EAB_Insecticide_Fact_Sheet.pdf))