

The Next Dutch Elm Disease?

By Dan Egan, Milwaukee Journal Sentinel

A Michigan doughnut shop will become ground zero this week in that state's desperate campaign to halt a rapid invasion of an ash-killing beetle that already has claimed millions of trees in the Detroit area and is threatening to spread to other states.

The Michigan Department of Agriculture has 155 full-time employees in a fight that, if lost, federal officials say could cause as much as \$60 billion in damage to U.S. forests and neighborhoods that turned to ash trees to patch the damage wreaked by Dutch elm disease in the 1960s and '70s.

The emerald ash borer has not been found in Wisconsin, but a monitoring campaign will be conducted this summer in state forests and parks.

The beetle was first discovered in the United States when Michigan officials found it just two years ago. It is believed to have hitched a ride from Asia in wood packing material or in wood used to stabilize loads in cargo ships.

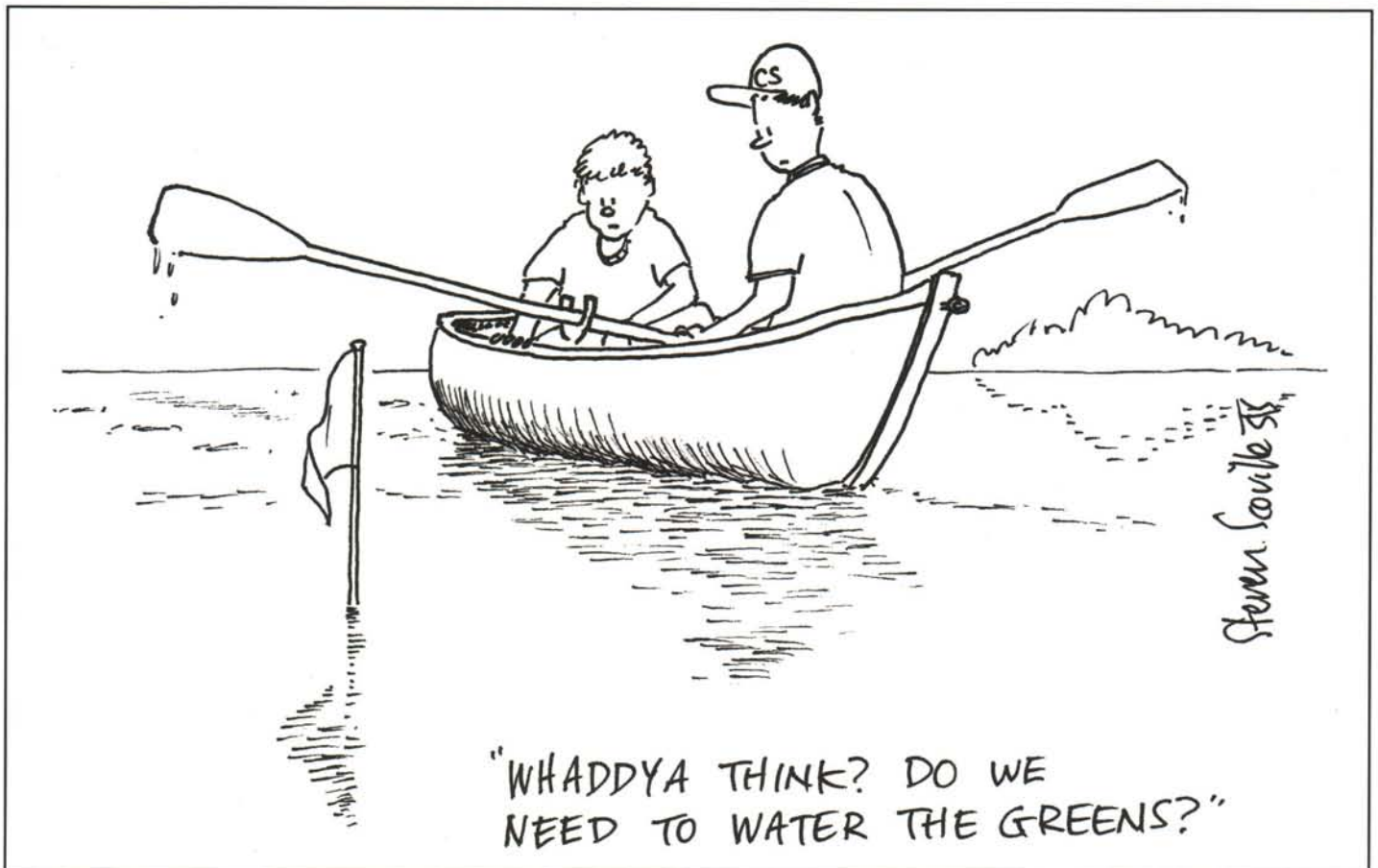
There are about 700 million ash trees in Michigan

and more than 600 million in Wisconsin, not counting those trees planted in urban areas. Ash are among the most popular street trees because of their durability, said John Kyhl, plant pest and disease specialist with the Wisconsin DNR.

"It's hard to impress upon people the impact of this insect," said JoAnn Cruse, Wisconsin director for plant protection and quarantine for the federal Animal and Plant Health Inspection Service. "It was even hard for us to comprehend until we saw it over there, when we saw how many trees had died."

The first target in the push to eradicate the bug - and its potential host trees - is a half-mile radius around a doughnut and coffee shop in Saginaw County in northeast Michigan. Some trees from an infested nursery in the Detroit area were planted at the site in July 2002.

Every ash tree inside that circle around the doughnut shop will be chopped down. Crews expect to take down about 20,000 trees at a cost of about



\$500,000. The job will take a few weeks, and then crews will move on to about a dozen other sites in the state as part of a federally funded control effort that could cost \$43 million this year alone.

"It's analogous to mad cow disease," said Therese Poland, a research entomologist with the U.S. Forest Service. "If you find an infected cow, you destroy the whole herd."

The tainted wood will be chipped and hauled to an electricity-generating incinerator.

CLANDESTINE KILLER

A 13-county region in southeastern Michigan in the Detroit area has already been put under quarantine, where no ash, dead or alive, can be transported out. Officials are now figuring how and where to build a "firebreak" that will level all the ash trees in a wide swath around the perimeter of the region's core infested area.

But, as was the case with the doughnut shop in Saginaw County, some infested nursery trees and firewood made it out before the quarantine took effect.

Those are the areas agriculture officials are most worried about now. Most are within Michigan, although some have been located in the southeast part

of the country, as well as in Ohio.

Emerald ash borer can be more of a problem than the tree-munching gypsy moth and the Asian longhorn beetle, largely because it does its work so clandestinely.

The beetle lays its eggs in the bark of a tree, where they are almost impossible to spot. The bugs then hatch and bore into the tree, where they devour a layer just underneath the bark. That cuts off the delivery of nutrients between the leaves and roots.

The adult bug then bores its way out the next year when, iridescent green, it is easy to spot. But by then it is too late to save the tree; the damage has been done. Even healthy trees can succumb to the bug within two or three years.

"You can't see any symptoms on these trees until it's too late," Poland said.

NOT IN WISCONSIN

The most likely way the beetle would make the jump from Michigan to Wisconsin would be through imports prior to the Detroit-area quarantine.

Wisconsin officials stress that a dead or dying ash tree doesn't mean the beetles have landed here.

"There is a lot of ash out there declining from other causes, and we don't want to give people the impres-

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sion that if you have an ash tree with dead branches that it is because of the emerald ash borer," said Jane Cummings-Carlson, forest health coordinator for the Wisconsin Department of Natural Resources.

Still, she said the state needs to be vigilant in looking for it and isolating pockets of infestation if they do pop up. Michigan is now paying the price for not identifying the sources of the problem in its early states.

"It really did sneak up on them, and when they realized what they were looking at... the extent of it is just amazing," Kyhl said.

Ash trees in the Detroit area had been dying for several years, but it wasn't until 2002 that researchers identified the source of the problem. But even when they found the culprit, they weren't sure what they had.

"Nobody in Michigan could identify what this insect was. The Smithsonian couldn't even identify it. Then it was sent to other scientists across the globe, and it was actually a Slovakian entomologist who was able to identify it as a beetle. Because the bug is kept in check in its native lands through tree resistance and natural predators, very little research has been done on it. Linsmeier-Wurfel said Michigan researchers could find less than two pages on it in Chinese literature.

Linsmeier-Wurfel said there are no firm plans yet on how and where to build the firebreak around the 2,500-square-mile core infested region near Detroit, though one federal official privately said it likely would have to be at least three miles wide.

State law allows Michigan to order the destruction of infested trees, and Linsmeier-Wurfel said most in Michigan are resigned to the sacrifice they must make to keep the pest from spreading.

"Nobody likes to see the trees go, but for the most part there is support because there is an understanding that if something isn't done now, it will just get that much worse," she said.

Researchers are working on insecticides to combat the bug, but early data shows that some are effective in wiping out about 85% of a population. That isn't good enough to eradicate the beetle. But it may offer hope for some homeowners in the core infested area around Detroit, where officials believe the tally of dead trees could soon reach 12 million.

It is already an ugly scene.

"It's like the old Dutch elm disease days, with rows and rows of dead ash in the urban areas," said Cummings-Carlson of the WDNR.

IDENTIFICATION, APPEARANCE AND SYMPTOMS

The emerald ash borer belongs to a group of insects known as metallic wood-boring beetles. Adults are dark metallic green in color, one-half inch in length and one-sixteenth inch wide and are present only from mid-May until late July. Larvae are creamy white

in color and are found under the bark.

The borer's host range is limited to species of ash trees (identified by their distinctive leaves, which are located directly across from each other on the leaf stem and bark). In Michigan, most ash trees are white, black or green. Emerald ash borer does not attack mountain ash, which is not related to white, black or green ash trees.

Usually the borers' presence goes undetected until the trees show symptoms of infestations - typically the upper third of a tree will die back first, followed by the rest the next year. This is often followed by a large number of shoots or sprouts arising below the dead portions of the trunk.

The adult beetles typically make a D-shaped exit hole when they emerge. Tissue produced by the tree in response to larval feeding may also cause vertical splits to occur in the bark. Distinct S-shaped tunnels may also be apparent under the bark.

Editor's note: For more information, see www.emeraldashborer.info. This article was reprinted with permission from the February 22, 2004 edition of the Milwaukee Journal Sentinel. ♡



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