

## Threat from Asian beetle expands beyond cities

### Study finds species can thrive in forest

By David Abel

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A new study has documented for the first time that the Asian longhorned beetle is not content to merely munch on urban trees but that the nonnative insects can thrive in forests, confirming scientists' fears about the possible scale of the destruction from an outbreak that has already claimed tens of thousands of trees in Worcester.

The study by scientists at Harvard University and the US Forest Service found beetles in dense pockets of woods in the city, areas where they had not been previously discovered or expected.

"This study shows that the Asian longhorned beetle is a real threat to the forests of our region," said Kevin Dodds, an entomologist from the US Forest Service, who coauthored the study that will appear today in the *Canadian Journal of Forestry*.

In its native habitats in Korea and China, the beetle usually remains on the periphery of forests, although it has been found to spread in nonnative trees in China. But in a study of two large patches of woods between 2008 and 2010 in Worcester, Dodds and his colleagues found a pervasive infestation of beetles, particularly in red maple trees.

In one 60-acre section, the scientists found the beetles in one-third of all maples. In the other 10-acre section, they discovered them in nearly two-thirds of the maples.

"This may seem like a no-brainer, but there have been very few papers showing how the insect would infest a forested area," said Michael Smith, an entomologist with the US Department of Agriculture's Agricultural Research Service, who has been studying the beetles. "These findings are unique."

The black-and-white insects, first detected in Worcester in 2008, are believed to have come to the United States from China in wooden shipping pallets. Officials at the USDA have sought to contain the infestation by searching for and removing trees in a 100 square-mile area around the city.

David Orwig, a forest ecologist at the Harvard Forest who helped lead the new study, said the beetle has probably been in the Worcester area for more than a decade.

“If the [beetle] continues to spread outside Worcester, the abundance of red maples could provide a pathway for its dispersal throughout New England and other parts of eastern North America,” he said in a statement.

The outbreak of the beetles in Worcester is the largest to date in North America.

There have been more than 20,000 infested trees found, nearly 30,000 removed, and more than 1 million trees searched.

In 2010, the beetles were found in six red maples bordering a parking lot at Faulkner Hospital in Jamaica Plain, across the street from the country’s oldest public arboretum. Since then, they have not been found elsewhere in Boston.

Forests surrounding Worcester are part of a heavily wooded corridor stretching from New York into New Hampshire, Vermont, and Maine.

Red maples are widespread in the region, but the beetles are also known to affect trees such as birch, horse chestnut, poplar, willow, elm, ash, mimosa, hackberry, sycamore, and mountain ash.

In the conclusion of their study, the scientists said urgent action is needed to protect the region’s trees. Otherwise, they warned, the economic damage could cost the nation hundreds of billions of dollars.

“Our results suggest that if [the beetle] is not contained immediately, it could migrate into and be a serious pest of natural forests,” they wrote. “Complete eradication is critical.”

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