

# Tree and human health may be linked

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Evidence is increasing from multiple scientific fields that exposure to the natural environment can improve human health. In a new study by the U.S. Forest Service, the presence of trees was associated with human health.

For Geoffrey Donovan, a research forester at the Forest Service's [Pacific Northwest Research Station](#), and his colleagues, the loss of 100 million trees in the eastern and midwestern United States was an unprecedented opportunity to study the impact of a major change in the natural environment on human health.

In an analysis of 18 years of data from 1,296 counties in 15 states, researchers found that Americans living in areas infested by the emerald ash borer, a beetle that kills [ash trees](#), suffered from an additional 15,000 deaths from cardiovascular disease and 6,000 more deaths from lower respiratory disease when compared to uninfested areas. When emerald ash borer comes into a community, city streets lined with ash trees become treeless.

The researchers analyzed demographic, human mortality, and forest [health data](#) at the county level between 1990 and 2007. The data came from counties in states with at least one confirmed case of the emerald ash borer in 2010. The findings—which hold true after accounting for the influence of demographic differences, like income, race, and education—are published in the current issue of the [American Journal of Preventive Medicine](#).

"There's a natural tendency to see our findings and conclude that, surely, the higher [mortality rates](#) are because of some confounding variable, like income or education, and not the loss of trees," said Donovan. "But we saw the same pattern repeated over and over in counties with very different demographic makeups."

Although the study shows the association between loss of trees and human mortality from

cardiovascular and lower respiratory disease, it did not prove a causal link. The reason for the association is yet to be determined.

The [emerald ash borer](#) was first discovered near Detroit, Michigan, in 2002. The borer attacks all 22 species of North American ash and kills virtually all of the trees it infests.

Provided by USDA Forest Service

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