

Study links Midwest tree losses and deaths, could raise health concerns locally

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The idea that human health is related to trees extends back to the story of Genesis, where a tree of life was planted in the Garden of Eden to bring immortality.

Now, researchers say a massive loss of trees in 15 Midwestern states, including Indiana, to an invading insect — the emerald ash borer — may be connected to thousands of premature deaths of people.

The paper, published this month in the American Journal of Preventive Medicine, summed up an 18-year study period and did not prove any particular cause. But the authors suggested a combination of reasons why losing 100 million trees might have led to more human death, including the fact that trees help clean the air of pollutants, lower temperatures and generally make people feel better and reduce stress.

“Maybe we need to start thinking of trees as part of our public health infrastructure,” said research forester Geoffrey Donovan, the lead author of the paper titled, “The Relationship Between Trees and Human Health: Evidence from the Spread of the Emerald Ash Borer.”

The study has implications for Louisville, which has lost many trees in recent years to ice, windstorms, thunderstorms, drought and neglect. On top of that, the ash borer gained a solid foothold in Louisville last year after moving down from the North.

If the borer does what it did in Northern states like Michigan, experts fear that tree cover in the Louisville area and elsewhere in Kentucky may never be the same. Estimates are that Jefferson County alone has about 2.5 million ash trees, constituting roughly 10 percent to 17 percent of the county’s tree canopy.

State officials have warned that just about every local ash tree left untreated likely will die.

Katy Schneider, co-chair of the new Louisville Metro Tree Advisory Commission, said she wasn't aware of the study and would look into it.

"Good Lord," she said of its findings, adding that they might provide one more incentive for Louisville to restore its depleted tree canopy.

Last year, the commission brought in a Georgia Tech researcher who found Louisville was getting hotter, compared with the surrounding countryside, than about any other city in the country. That researcher cited the city's declining tree cover as a potential reason.

The commission, meanwhile, has been touting other benefits of trees, including increased property values, lower electricity bills and better stormwater management, saying they are essential public infrastructure just like roads and sewer and water systems.

"Certainly trees have long been an important aesthetic aspect of the urban landscape," said Dave Langdon, spokesman for the Louisville Metro Department of Public Health and Wellness. "If the study's findings are confirmed by subsequent research, the maintenance and replacement of trees may, over time, take on added significance as a component of the urban public health infrastructure."

The study found an increase in deaths related to cardiovascular and lower-respiratory-tract illness in counties infested with the emerald ash borer.

The researchers weren't studying any specific effects from ash trees or the pest. Rather, they were looking at potential consequences when communities lose large numbers of trees.

"The magnitude of this effect was greater as infestation progressed and in counties with above-average median household income," according to the research. "Across the 15 states in the study area, the borer was associated with an additional 6,113 deaths related to illness of the lower respiratory system, and 15,080 cardiovascular-related deaths."

Affluent neighborhoods were more likely to have more trees, the study found.

"This is not a snapshot," Donovan said. "We looked at this over space and time."

Donovan, who is based at the U.S. Forest Service's Pacific Northwest Research Station in Oregon, said researchers took steps to factor out race, education and income as potential causes of early deaths.

He said he believed the research was first to associate tree losses with increased human mortality.

"This finding adds to the growing evidence that the natural environment provides major public health benefits," the study concluded.

