

# Trees in the U.S. facing devastating threats due to invasive species

13 August 2019, by Bob Yirka



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A team of researchers from Purdue University and the U.S. Department of Agriculture has found that trees in the United States are facing devastating threats due to invasive species. In their paper published in *Proceedings of the National Academy of Sciences*, the group describes analyzing thousands of forest plots across the U.S. and the mortality rates due to 15 major tree pest infestations, and what they found.

The United States has long been associated with large expanses of forest—but large-scale cutting has reduced forests over the past century. Now, [forest trees](#) confront a new threat—infestation by invasive pests unintentionally introduced into the country. Some infestations have already made headlines, such as the widespread loss of trees due to Dutch elm disease, the loss of most American chestnuts due to a fungal disease; additionally, ash borers have decimated ash tree populations in the Chicago area. In addition to providing wood-based products and beautiful parklands, forests are part of the carbon cycle—each tree sequesters a lot of carbon—when they die, they release that carbon into the

atmosphere, contributing to global warming. Prior research has shown that there are now approximately 450 invasive tree pests in the U.S. that damage or kill trees. Most are believed to have been carried into the country through international trade and travel. In this new effort, the researchers set a goal of learning the scale of the threat U.S. forests face.

To gain some perspective on the threats to U.S. forestlands, the researchers carried out an analysis of 92,978 forest plots from across the country. They noted tree types in each plot and the rates of infestation by 15 major tree-killing pests.

The researchers found that approximately 40 percent of all forested land in the U.S. is under threat from invasive species. They also found that such pests are already killing so many trees that 6 million tons of carbon is released into the atmosphere each year. They note that not much can be done for [trees](#) already infected, but quarantine programs could be implemented to prevent the spread of pests.

**More information:** Songlin Fei et al. Biomass losses resulting from insect and disease invasions in US forests, *Proceedings of the National Academy of Sciences* (2019). [DOI: 10.1073/pnas.1820601116](https://doi.org/10.1073/pnas.1820601116)

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