

## Tree-damaging pests pose ‘devastating’ threat to 40% of US forests

About 450 overseas pests have been introduced to US forests, a climate crisis resource, due to international trade and travel

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Dead trees line a clearing in the Stanislaus national forest in California, on 22 July 2018.

Photograph: Noah Berger/AFP/Getty Images

About 40% of all forests across the US are at risk of being ravaged by an army of harmful pests, undermining a crucial resource in addressing the climate crisis, new research has found.

Tree-damaging pests have already destroyed swathes of US woodland, with the American chestnut virtually wiped out by a fungal disease and elms blighted by Dutch elm disease. About 450 overseas pests that damage or feed on trees have been introduced to US forests due to the growth in international trade and travel.



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A PNAS-published study of the 15 most damaging non-native forest pests has found that they destroy so many trees that about 6m tons of carbon are expelled each year from the dying plants. This is the equivalent, researchers say, of adding an extra 4.6m cars to the roads every year in terms of the release of planet-warming gases.

This situation is set to worsen, with the spread of pests due to threaten 40% of the US forest biomass. Such a scenario would “have a devastating impact on the forests”, said Songlin Fei, a forestry expert and report author at Purdue University.

“It is turning forests from storers of carbon to a carbon source. The best way to control these pests is through inspections and quarantine – once they are in the system it's hard to stop them. For many trees it's too late.”

The threats range from the wood borer to pathogens and organisms that feed on tree sap. Some diseases, such as one that has infected trees across Hawaii, are little understood by scientists.

Together, these maladies pose a growing threat to US forests that are coming under increasing strain from rising temperatures and altered rainfall and wildfire patterns, particularly in the west of the country, due to global heating.

There are an estimated 6bn dead trees standing in the US west, with more trees now dying due to disease, insects and wildfire than are being felled for wood products.

The impact of pests is visible in urban settings, too. Ash trees in Chicago have been devastated by the emerald ash borer, with city authorities last year turning some of the dying trees into public artworks.

Trees are considered an invaluable resource in slowing global heating, due to their ability to soak up and store planet-warming carbon dioxide emissions.

A recent study found that planting more than a trillion trees around the world could remove two-thirds of all the emissions that humans have pumped into the atmosphere, potentially making it the biggest and cheapest way to tackle the climate crisis.