

Forest pests accumulating despite regulations

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Nonindigenous insects and pathogens continue to become established in US forests with regularity despite regulations intended to prevent this, according to a study published in the December 2010 issue of *BioScience*. The study, by a team led by Juliann E. Aukema of the National Center for Ecological Analysis and Synthesis in Santa Barbara, California, found that nonindigenous insects are being newly detected in US forests at a rate of about 2.5 per year, and high-impact insects and pathogens that cause significant effects in forests, including tree death, are being newly detected every 2 to 2.5 years. The rate of detection of harmful forest invaders seems to have increased in the past two decades.

Nonindigenous insects and [pathogens](#) have profound effects on US forests and inflict high costs on society, including direct market losses to the nursery and timber industries, the costs of control and eradication, and the loss of nonmarket benefits, including wildlife habitat and [carbon sequestration](#). In the case of one notorious example, the emerald ash borer, the cost to municipalities over the next 10 years is estimated to be close to \$10 billion for landscape tree treatment or removal. This pest threatens native ash species across North America.

The researchers analyzed 455 [insect species](#), of which 62 were considered high-impact, to arrive at their conclusions. Sap-feeding insects dominated the list of non-indigenous insects, especially aphids, adelgids, and scale insects. New nonindigenous sap feeders and foliage feeders have historically been detected more frequently than insects that bore into phloem or wood, the researchers found, although wood- and phloem-borers have increased markedly in recent decades.

Increased trade and travel probably explain why invaders keep arriving despite regulatory efforts, Aukema and her coauthors believe. They advocate strengthening broad-based efforts to prevent arrivals of nonindigenous organisms, because such efforts are much more effective than attempts to eradicate arrivals that have become established. But enhanced efforts to detect newly arrived forest [insects](#) could also help, the researchers maintain.

Provided by American Institute of Biological Sciences

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