

International standards significantly reducing insect stowaways in wood packaging material

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A new international standard for wood packaging material used in international trade is significantly slowing the inadvertent export of stowaway invasive bark- and wood-boring insects, according to a study by the National Center for Ecological Analysis and Synthesis (NCEAS). Lead author Robert Haack, a research entomologist with the U.S. Forest Service's Northern Research Station in East Lansing, Mich., and his colleagues found as much as a 52 percent drop in the infestation rate of wood packaging material associated with international imports entering the United States.

"The reduction in infestation rate would likely have been even higher if we had more years of data that predated U.S. implementation of these international standards," Haack said. "For example, based on infestation data of wood packaging material entering New Zealand from the early 1990s, when infestation rates were higher, ISPM 15 has achieved closer to a 97 percent reduction in the number of insect stowaways."

The study, "Effectiveness of the International Phytosanitary Standard ISPM No. 15 on Reducing Wood Borer Infestation Rates in Wood Packaging Material Entering the United States," was published today in the journal *PLOS ONE* and is available [online](#).

The International Standards for Phytosanitary Measures No. 15 (ISPM 15) is a set of standards developed by the International Plant Protection

Convention stipulating how wood packaging material used for [international trade](#), such as pallets and crating, should be treated before export. Wood [packaging material](#) has carried numerous non-native forest pest invaders to countries throughout the world. Several hundred non-native forest insect species have become established in the U.S., and recent arrivals such as the Asian longhorned beetle and the emerald ash borer have killed millions of trees and altered urban landscapes in the Northeast and Midwest.

The United States implemented the new standard in three phases between 2005 and 2006; as of October 2013, more than 78 countries had implemented ISPM 15. To evaluate whether the new standards were effective, Haack and his colleagues used data from the USDA Animal and Plant Health Inspection Service (APHIS) to compare wood packaging infestation rates from 2 years prior to U.S. implementation of the new international standards and infestation rates in the first 4 years after the standards were implemented.

A lack of data prior to implementation of the new international standards often limits scientists' abilities to evaluate their effectiveness, according to Haack. The analysis demonstrated a need for well-planned sampling programs before and after implementation of major phytosanitary policies so that their effectiveness can be assessed, Haack said.

"Destructive invasive insects have changed forest landscapes in the United States and throughout the world," said Michael T. Rains, Director of the Northern Research Station and the Forest Products Lab. "Forest Service research is vital to informing national and international policies addressing those problems."

Provided by USDA Forest Service

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