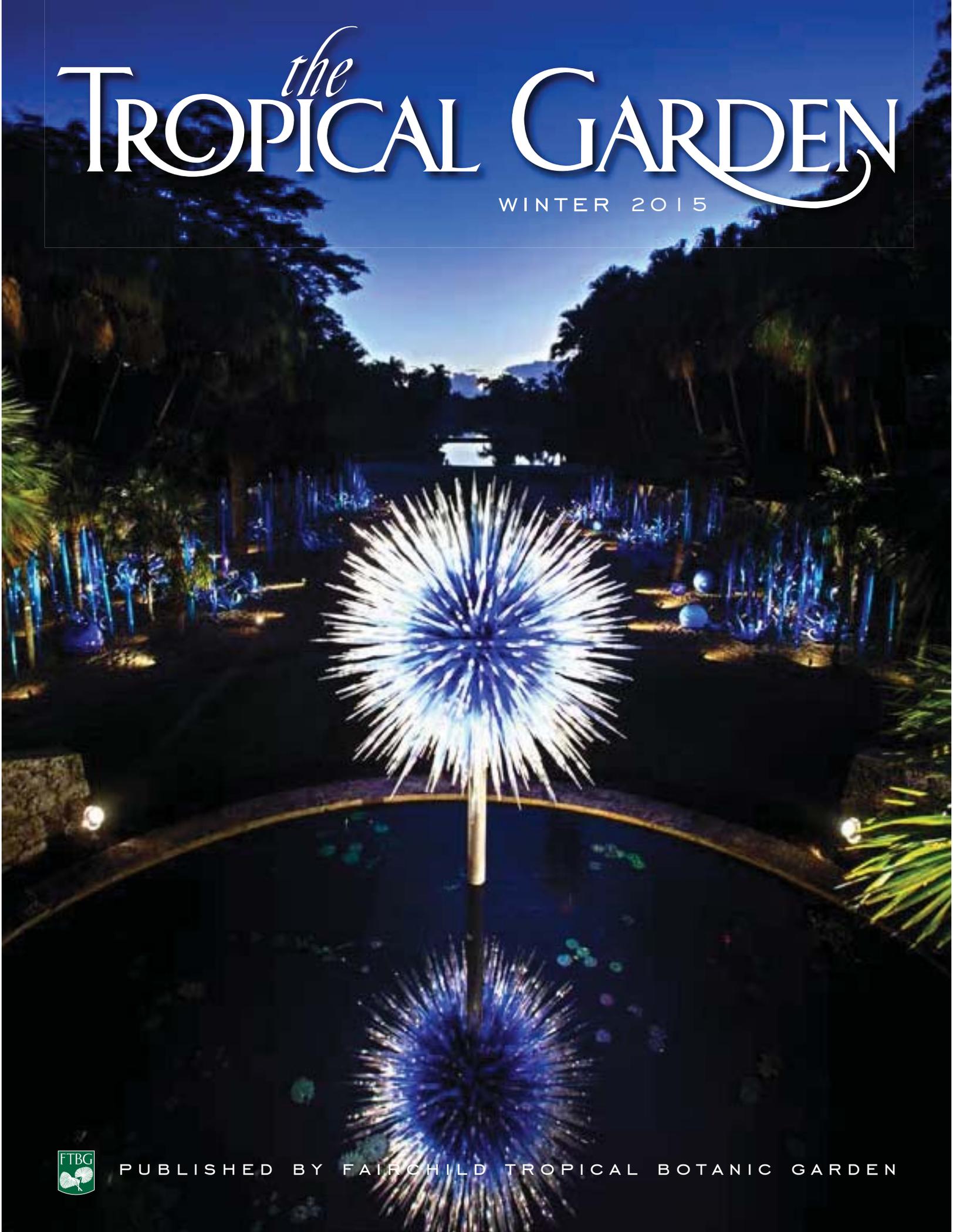


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# The Emerald Ash Borer A South Florida Threat?

A beautiful but horrendously destructive beetle species is decimating ash trees by the millions across North America. Are Florida trees at risk?

By Kenneth Setzer



The emerald ash borer is a highly destructive and invasive beetle.

Another invasive critter runs amok—the emerald ash borer beetle (EAB) has been big news for years now, first reported in 2002 in southeast Michigan. It is believed to have been introduced in ash wood used in shipping crates or pallets. By 2003, some 5 million to 7 million ash trees were dead or dying in a six-county area of southeastern Michigan, according to an article in *Annual Review of Entomology*, volume 59.

Since that time, EAB has spread out in all directions, north to the Canadian provinces of Ontario and Quebec, west to Colorado, and by 2013 as far south as Georgia. By now, EAB has killed tens of millions of trees.

The EAB beetle falls within the buprestid family, sometimes called the jewel beetles. Many of the jewel beetle species live up to their name with spectacular

metallic colorations. While there are jewel beetles native to the United States, their populations are kept in check by natural predators. The EAB beetle, however, hails from northeast Asia; its natural predators are absent in its new home here in North America. EAB adult beetles are indeed a dark, metallic emerald green. They're quite small compared to some other jewel beetles, at about one-half-inch long, and are shaped like a backwards-facing bullet, with a blunt head and tapering towards the rear of the body. While many buprestid beetles—including some natives—only attack stressed trees, the EAB utilizes healthy trees, both wild and in cultivation or landscapes.

While adult EAB beetles may consume some ash tree foliage, the damage is minimal. The catastrophic destruction results from the beetle's lifecycle: Adults lay eggs on the bark of ash trees, the larvae hatch and burrow under the bark and into the tree's phloem and cambium, where they feed and create labyrinthine tunnels known as galleries. It may be hard to believe such tiny creatures can kill a mature ash tree, but they do; by consuming the phloem layer of the tree, the larvae eventually starve the tree to death. The phloem layer is responsible for moving nutrients derived from photosynthesis throughout the tree, so by disrupting the phloem, the tree is starved, similar to when a tree is girdled.

The tiny EAB adult beetles can fly only about one-half mile from their tree, so most likely they've spread so widely through transportation of infected nursery trees, infected ash lumber and, especially, in firewood. The movement of ash is now regulated in affected states. The mantra for firewood use has become "buy local, burn local."

Is Florida at risk? The EAB survives in very warm areas of Taiwan, so it seems that it could survive even South Florida's subtropical weather. Florida isn't yet included on lists of affected states, but our northern neighbor Georgia is. Our ash species include white ash (*Fraxinus americana*) and pumpkin ash (*F. pennsylvanica*), as well as the only ash found in South Florida—Carolina or swamp ash (*F. caroliniana*), an inhabitant of wetlands. Its preference for wetlands unfortunately makes Carolina ash harder to monitor.

It gets worse: A professor at Wright State University (in Dayton, Ohio) has discovered EAB beetles utilizing a new host, white fringetree (*Chionanthus virginicus*) which is in the same family as ash (Oleaceae).

It turns out to be quite difficult to eradicate a wood-boring pest. Systemic insecticides, which must be applied individually to each tree and travel throughout the tree's circulatory system to be effective, have been used successfully against EAB. Unfortunately, this doesn't seem practical for treatment of innumerable wild ash trees over thousands of acres. At least three parasitic wasp species are being tested as a biocontrol, but even if effective, they would be a long-term solution.

In the meantime, if you live near ash trees, keep an eye out for canopy dieback, unusual sprouting from the roots or trunk and the characteristic "D"-shaped exit holes left by the EAB. Report signs of EAB or infected ash trees to the USDA at [www.hungrypests.com](http://www.hungrypests.com) or to the Florida Division of Plant Industry Helpline at 1.888.397.1517. 