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Hidden Menace Attacking Trees in Our Communities

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Randall Oliver, University of California Integrated Pest Management

The trees that line our streets and slopes are often some of the most attractive features of our communities. Today, those trees are under attack by a clandestine menace that often goes unrecognized until the threat is already pervasive.

Invasive shot hole borers are tiny beetles, no bigger than a sesame seed, that tunnel into trees, creating galleries where they introduce and "farm" a fungus to feed their larva. This fungus causes a tree disease called "Fusarium dieback." Over time, as the fungus spreads within the tree's inner layers, it disrupts movement of water in the tree. Deprived of water and nutrients, the tree suffers from branch dieback and breakage. When many of these trees eventually die, they are not only unsightly, but also pose a safety risk for residents and their homes due to falling limbs and potential fuel for fires.

Why are invasive shot hole borers such a dangerous threat to our communities?

Native to Southeast Asia, the beetles don't have any natural enemies in our area that could keep them in check. Invasive shot hole borers now are well established in Orange, Los Angeles, Riverside, and San Diego Counties. They have also been found in areas of Ventura, Santa Barbara, and San Bernardino Counties. The beetles appear to be spreading to the north and east, possibly by hitching rides in infested firewood or green waste.

Unlike many insect pests, these beetles don't just attack one type of tree or plant. Invasive shot hole borers affect a wide variety of tree species, including many common ornamentals, avocados, and California natives. They are equally happy to attack trees in urban and suburban neighborhoods as well as parks and wildlands. Ultimately, these beetles could infest and kill up to one third of Southern California trees.

The cost in terms of tree loss and containment efforts is enormous. For example, over the last six years, OC Parks has invested several million dollars in its efforts to manage the threat, removing thousands of trees and treating thousands more. That cost does not include the value of the trees themselves nor, for HOAs, the potential damage to homes and liability for injured homeowners in their communities.

What should HOAs and their managers know and do?

Since most homeowners and associations aren't aware of the problem, beetle infestations can cause extensive damage before they are identified. The beetles' small size and hidden lifestyle make them hard to spot and harder to control. Invasive shot hole borers spend most of their lives inside their galleries, where the females mate with their own brothers or sons. That makes it difficult to kill them with pesticide sprays. Also, pheromone traps don't attract already-mated females, so when they emerge to find new host trees, the trap and kill technique isn't an effective control method.

The best way to battle these bugs is to stop them before they spread to new trees. That requires awareness both of the pest and symptoms of infestation, as well as a willingness by associations and their residents to inspect and monitor their trees regularly. While it is unlikely to find a beetle on a tree's bark, there are a number of signs and symptoms to confirm their presence. Shot hole borers leave small, round entry-holes – about the size of the tip of a medium ball-point pen. In addition, trees under attack can exhibit a variety of other signs of infestation, like staining, gumming, presence of frass (thin sawdust) and sugary secretions. Each tree species reacts differently to attacks, so the combination of symptoms can be unique to that species.

If an infestation is suspected, it can be reported using the Detection/Assessment and Sample/Reporting tools found at www.ishb.org. That website also provides more details and photos of infestation symptoms in different tree species, outlines additional ways to help fight the battle against these bad bugs and offers links to other organizations and resources. Help and additional information also can be requested by emailing ishb@ ucanr.edu.

What are best practices for managing infested trees?

While just a couple of years ago there were no effective treatments for invasive shot hole borers, the science surrounding these pests and understanding of best management practices is advancing rapidly. Heavily infested trees may not be able to be saved and should be removed - including the stump - on a timely basis. For low to moderately infested trees, removal of actively infested branches and treatment with a combination pesticide and fungicide have proven effective control measures (hence the importance of pinpointing infestations as early as possible). Several trials of biological controls are currently underway at various University of California facilities.

A certified arborist is familiar with best practices with respect to both maintaining trees and disposing of infested wood and green waste. HOA managers should consult with their contracted landscapers/gardeners to ensure that they understand and follow such practices. Guidelines for appropriate disposal of infested green waste can be found at www.ishb.org.

HOA boards of directors and community managers can help further by using their existing homeowner communications to educate their residents about the threat posed by invasive shot hole borers and the fungus they carry. With coordinated action now, our communities can save their trees and avoid significant costs in the future.