

INVASIVE SHOT HOLE BORER



WHAT IS THE THREAT:

Invasive Shot Hole Borer (*Euwallacea fornicates*), or ISHB, is an exotic ambrosia beetle that was first detected in 2003 in Southern California and is responsible for attacking a diverse array of tree species. Adult beetles are either black or brown in color, whereas larvae are white and grub-like. The term "ambrosia" refers to a fungus that is carried by the female and inserted into tree via larval galleries. The fungus grows in the galleries, where developing larvae feed on it. The presence of both the galleries and the fungus increases tree stress and can lead to substantial tree mortality.

WHERE IS THE THREAT:

The ISHB is currently found in California, specifically, Los Angeles, Orange, San Bernardino, western Riverside, and San Diego Counties. While this beetle attacks a large number of plant species, the majority of which are hardwoods, it can now reproduce in over 60 species, including maple, sycamore, oak, willow, alder, and liquidambar.

SYMPTOMS:

The characteristics of ISHB attack and fungus infection differ among tree species. The beetle commonly attacks the main stem and larger branches of trees but injury can be found on twigs as small as 1 inch in diameter. It produces a very precise, perfectly round, tiny (< 0.1 inches in diameter) entry hole in most trees. Depending on the tree species attacked, ISHB injury can be identified either by staining, gumming, or a sugaring response on the outer bark. Fungal infection can cause leaf discoloration, wilting, branch dieback, and tree mortality.

WHAT TO DO ABOUT IT:

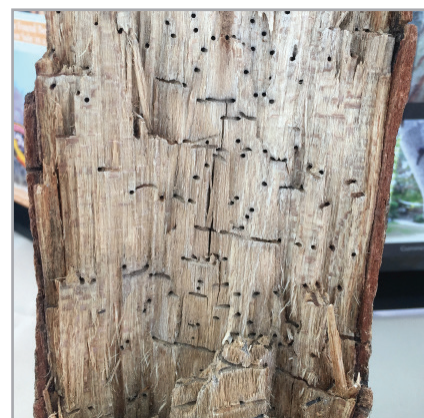
Preventative treatment with TREE-äge® or TREE-äge G4 prior to initial ISHB attack is the recommended management strategy. In addition, the systemic application of Propizol® will protect trees from the fungi introduced by the ambrosia beetle. Treatments should be reapplied every 2 years.



Internal galleries caused by ISHB attack on California sycamore



External bark staining caused by ISHB attack on California sycamore



Entry and exit holes caused by ISHB

Header Image taken by: Arborjet, Inc., Internal galleries taken by: Arborjet, Inc., Bark staining taken by: Arborjet, Inc., ISHB entry/exit hole taken by: Arborjet, Inc.