



Photocredit: Prof Wilhelm de Beer, FABI

## WHAT IS IT?

### The Polyphagous Shot-Hole Borer Beetle (PSHB):

- Is a tiny invasive black beetle
- Is native to South-east Asia
- Has also infested trees in California and Israel
- Was likely spread through packaging pallets
- Is approximately 2mm long – about sesame seed size
- Is rarely seen
- Females are weak fliers, and males are flightless
- They prefer to fly at temperatures over 20° C
- They reproduce prolifically
- They attack only living timber



Photocredit: G. Arakelian,  
LA County Dept of Agriculture



Photocredit: PressReader - The Village  
News, 24 July 2019

## HOW DOES IT INVADE?

### The PSH Beetle (PSHB):

- Mated females bore through the bark into the sapwood of the tree
- Make tunnels (galleries) into the trunk & branches
- Lay its eggs in these galleries
- Infest the galleries with fungus (*Fusarium euwallaceae*) that it carries in its mouth parts
- The fusarium grows within the galleries
- The PSHB larvae feed off the fusarium.

“ There is no way in which the PHSB invasion in South Africa can be stopped. ”  
WILHELM DE BEER, FABI

## HOW DOES IT KILL?

### The PSHB Beetle hits the trifecta:

1. The KEY PROBLEM is the symbiotic relationship between the PSHB and the Fusarium - it blocks the vascular channels of the tree, disrupting the flow of water and nutrients
2. As the PSHB tunnels, it weakens the tree trunk and branches, especially at the "collar"
3. As the tree is invaded by the PSHB, it develops defence wounds which further hampers its ability to recover

**All of the above conspire to cause TERMINAL BRANCH DIEBACK.**



BRANCH  
COLLAR

“The big danger of this beetle is its adaptability in terms of climate, but also in terms of its host range. It's just amazing,” says one expert.  
WILHELM DE BEER,  
FABI

## WHICH TREES ARE AFFECTED?

For a full list of Reproductive Host and Non-Reproductive Host Trees please refer to PNRA - PSHB Resource Sheets 1 and 2.



### REPRODUCTIVE HOST TREE

- This is an infested tree that supports PSHB reproduction
- The tree allows the fungus to be well-established
- The tree **WILL LIKELY DIE**
- Includes the London Plane tree and Box Elder tree



### NON-REPRODUCTIVE HOST TREE

- The tree allow the fungus to be established
- BUT PSHB DOES NOT REPRODUCE
- The fungus **may or may not** lead to the death of the tree

- Mainly exotic species are affected
- BUT there is a growing list of indigenous trees
- The list of susceptible species continues to grow

## Project EverGreen

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Subject to Disclaimer Notice to be found on the PNRA Website

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and Residents Association

in collaboration with

