Johannesburg City Parks and Zoo (NPC)

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Breakout of polyphagus shot hole bore (PSHB) in CoJ (Region B and E)

There is an outbreak of polyphagous shot hole borer (PHSB), which is the host of *Fusarium euwallacea* fungus in the City of Johannesburg. For now the affected areas in the city of Joburg are Craighall Park, Illovo, Parkveiw, Sandton and Houghton. There is probability that the pest has spread to other areas within the city of Joburg

Polyphagous Shot Hole Borer (PSHB) *Euwallacea spp* is a very small and difficult to see beetle (**Fig 1.a**). The boring beetle is commonly known as ambrosia beetle. The beetle holes penetrate 1-4 cm into the wood and there are often many exit holes on an infested tree. Females are black colored and about (1.8 – 2.5) mm long. Males are much less common than the females, and rarely found. They are small, wingless and brown colored, about 1.5-1.67 mm long. The exit hole is about 0.85 mm in diameter. The bore beetle drills into trees (**Fig 1.b**) and brings with it a pathogenic fungus (*Fusarium euwallacea*), as well as other fungal species that may to help establish the colonies. PSHB attack wide range of trees and shrubs but some species are resistant to the fungus they carry. *Fusarium* species is inoculated into its hosts by the beetle. The fungus destroys the food and water (Xylem and Phloem) conducting systems of the tree, eventually causing stress and dieback.

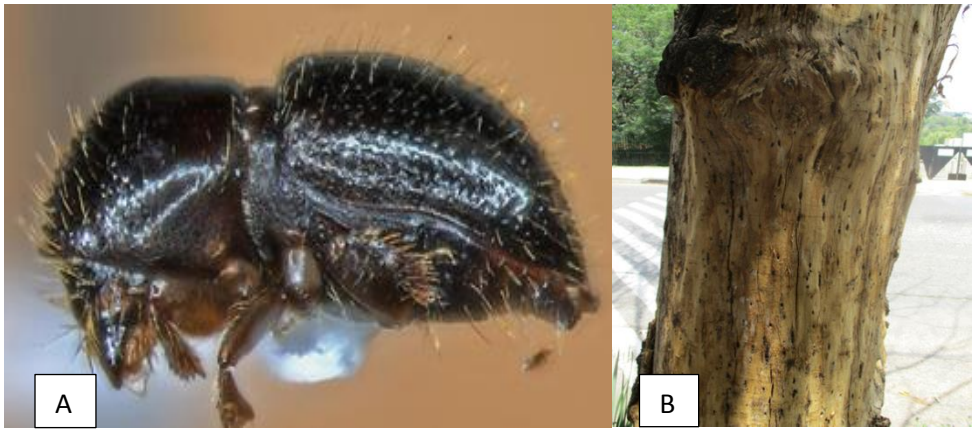

Figure 1: a. PSHB , b. Tree with holes drilled by PSHB.

The beetle and the fungus attack wide range of trees. Below are the trees that are susceptible to PSHB

Box elder (*Acer negundo*), Trident maple (*Acer buergerianum*), Japanese maple (*Acer palmatum*), Avocado (*Persea americana*), Mimosa (Albizia julibrissin) English Oak (*Quercus robur*), Coast live oak (*Quercus agrifolia*), London plane (*Platanus x acerifolia*), Weeping willow (*Salix babylonica*), Liquidambar (*Liquidambar styraciflua*), *Acacia* spp. London plane (*Platanus x acerecifolia*).

PSHB attack and fungus infection differ among tree species. The beetle commonly attacks the main stem and larger branches of trees and shrubs, but injury can be

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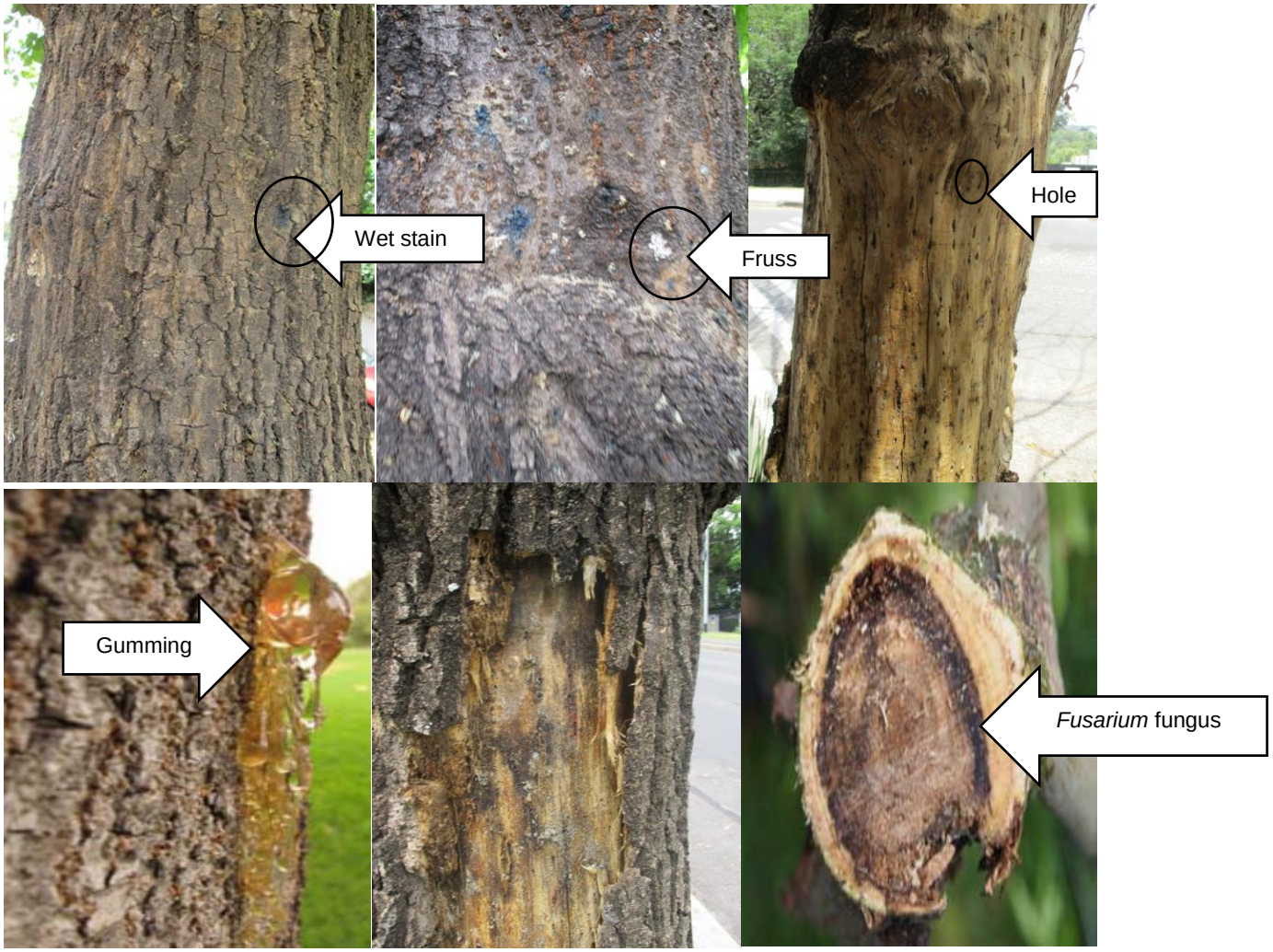
found on twigs. The beetle produces a very precise, perfectly round, tiny entry hole in most trees. Wet staining and discoloration on the bark of the main stem and branches are early symptoms of beetle attack. Depending on the tree species attacked, PSHB injury can be identified either by staining, gumming, or a sugaring response on the outer bark. Infection with the fungus can cause leaf discoloration and wilting, dieback of entire branches and tree mortality.



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There is no available remedy to treat PSHB, JCPZ must ensure that trees are well-maintained and healthy as it will help the tree to resist fungal infection. Pruning equipment's must be sterilized after each use to reduce contamination.

JCPZ employees are requested to report any signs of the infestation in their area to Regional Maintenance department.

Prepared by: EOD (Urban Forestry and Nurseries).

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