

Polyphagous shot hole borer (PSHB)

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The polyphagous shot hole borer (PSHB) was recently introduced into South Africa from East Asia. It is spreading rapidly within our urban forests and it is indiscriminately attacking our trees. The PSHB infested tree's vascular system begins to fail, leaves start to turn brown, eventually the tree dies.

The PSHB is very difficult to control if we don't know where it is. You can help..!!

The following info sheet was compiled by FABI to assist with identification:

Polyphagous Shot Hole Borer (*Euwallacea* sp.) and Fusarium dieback (*Fusarium euwallaceae*)

The Polyphagous Shot Hole Borer (PSHB) is an ambrosia beetle native to Southeast Asia. In 2017 this pest was detected on London Plane trees in the KwaZulu-Natal National Botanical Gardens, Pietermaritzburg. It has been confirmed in Durban, Hartswater, Bloemfontein, George, Knysna and Johannesburg. The beetle has a symbiotic relationship with the fungus *Fusarium euwallaceae* which serves as a food source for the adults and their larvae. In susceptible trees the fungus causes Fusarium dieback which can lead to branch dieback and tree death. The beetles can attack a wide range of exotic and indigenous trees in urban, agricultural and natural landscapes.

PSHB is not able to complete its life cycle on all of the tree species it attacks, those that the beetle is able to breed on are referred to as 'reproductive hosts'. Important reproductive hosts include species of oaks, maples, willows and coral trees, avocado and castor bean. The full list of confirmed hosts in South Africa can be viewed at www.fabinet.up.ac.za/index.php/research/7

The movement of infested wood is an important pathway for spread of the beetle and appropriate disposal of infested trees (by chipping/composting, solarisation or burning) will be key to reducing the spread of this damaging pest.

Surveys to monitor the spread of the beetle and fungus in South Africa are continuing. The public can assist by looking out for symptoms. Suspected instances can be reported on iNaturalist.

Private residents, community organisations, service providers and City Parks are joining hands to respond to the problem.

Infested and dead trees are a breeding ground for shot hole borer. Recent chemical tests indicate that one heavily infested tree contains over 100,000 beetles – these dead trees need to be removed and disposed of responsibly.

We need to fully notify government of the magnitude of this devastating invasion of this bug. Currently known areas of established infestation are Johannesburg, Durban, Pietermaritzburg, George, Knysna and Hartswater.

Boxelder, London Plane, English Oak and Chinese Maple trees are attacked particularly hard.

Affected trees develop wilted brown leaves on infested branches. The most obvious sign of infestation is that branches have brown stains around each hole where the borer has penetrated the tree.

It is important to note that the borer beetle itself does not kill the tree. The problem is the fungus (*Fusarium euwallaceae*) that grows in the tunnels made by the borer. Fusarium dieback occurs when your tree's vascular system becomes blocked, leaves begin to thin on the ends of branches, they turn brown, the branch and eventually the tree will die.



The adult female is 1.8 - 2.6 mm long. Males are smaller and flightless.



Chinese maple killed by PSHB and its fungus



Reproductive galleries in pecan

PSHB galleries in coral tree

Shot gun-like symptoms on London Plane

For more information, contact Darryl Haron at 012-420 352 or visit our website on www.fabinet.uo.ac.za