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Cape Town experts battle invasive tree killing borer beetle

The City of Cape Town has brought in a number of experts to assist residents in removing trees infested with the invasive Polyphagous Shot Hole Borer beetle (PSHB).

The infestation was observed in Somerset West in March.

Professor Wilhelm de Beer, of the Forestry and Agricultural Biotechnology Institute ([FABI](#)) at the University of Pretoria, said the beetle was a risk to South Africa's biodiversity.

"The beetle's behaviour is unpredictable. We already know it can kill some native tree species, but we do not have any idea or prediction of what it will do to the many other species. Even if it removes one native tree species from an ecosystem, there will be an ecological impact. If that tree species is a keystone species in a specific ecosystem, the impact can be dramatic," De Beer told News24.

READ: [Cape Town races to save trees from destructive beetle borer](#)

Dr Trudy Paap of FABI first identified the beetle in KwaZulu-Natal, where it was infesting London plane trees. However, the infestation has since spread and De Beer said the list of susceptible trees was constantly growing.

Dedicated team

The City of Cape Town said that a dedicated team has been working to remove infected trees.

"An experienced invasive species removal team from the City has since then removed 46 trees from the Somerset West area in an attempt to contain and limit the spread of this invasive Asian borer beetle," the City said in a statement.



Trees are chipped on site. (City of Cape Town)

The trees have to be chipped on site and the wood carefully sealed and removed in order to prevent the spread of the PSHB.

The beetle, no bigger than 2mm, can also spread via clothing, on vehicles, and on horticultural equipment.

It is native to Asia and has a symbiotic relationship with ambrosial fungi, which are inoculated into host trees.

According to a 2016 paper titled "Polyphagous Shot Hole Borer and Fusarium Dieback in California" by Colin Umeda, Akif Eskalen and Timothy D Paine, beetle infestation is deadly to the trees.

"High levels of infestation of susceptible host trees have resulted in high levels of mortality. The currently recognised host range for the beetle-fungus complex includes more than 200 tree species that can be attacked by the beetle, more than 100 species that can support growth of the fungus, and 37 species that can be used as a reproductive host by the beetles," they write.



Symptoms of infestations are seen. (City of Cape Town)

De Beer said that the beetle poses a real risk of control if it infects agricultural, urban and forest environments.

Best practice

Other parts of South Africa have also experienced problems with the beetle, with the exception of Limpopo province.

The best practice for managing trees infected with the beetle is to burn them, says the City of Cape Town.

"The movement of infested wood is an important pathway for the spread of the beetle. Appropriate disposal of infested trees - by chipping and then incineration, solarisation, or composting - is therefore essential for reducing the spread of the pest."



Workers remove infected trees. (City of Cape Town)

De Beer agreed with the City's management strategy, saying that transportation of infested wood was the biggest risk for spread of the beetle.

"Municipalities should designate dedicated dumping sites where infested wood can be chipped and composted. In a private yard, wood can be 'solarized' by storing the cut wood under a tightly sealed plastic sheet in direct sunlight for a couple of months."

According to Cape Town mayoral committee member for spatial planning and environment Marian Nieuwoudt, the City's Invasive Species Unit has an annual budget of R14m to implement the EPWP Kader Asmal Integrated Catchment Management Programme.

The interdepartmental programme seeks to create jobs by removing invasive species and "improve the condition of the city's freshwater and terrestrial ecosystems".

Measured response

De Beer warned that, while there was a considerable risk, the situation called for an urgent but measured response.

"Not all trees will die, but based on what we have seen so far, certain familiar trees will disappear from urban areas, most notably English oak, Chinese and Japanese maple, and Liquidamber. The trick is to get

a high level of awareness in the media that appropriate action is being taken, but we do not need panic."

[Click here for an updated list](#) of trees that may be susceptible

Symptoms of trees with infection:

- Gum or sap oozing on the bark;
- Visible entry and exit holes;
- Sugary exudates;
- Sawdust or frass visible around holes;
- Fungal staining on sapwood or outer bark;
- Dieback of part of the tree or the entire tree.

What to do:

- Burning of the infected wood is the preferred method;
- Chipping of the wood into small pieces for compost is also recommended as the heat build-up in the composting process will kill the beetle;
- Once the tree has been felled the debris should be cleared as soon as possible and if required, the area should be sanitised;
- Infested plant material can be placed in refuse bags and sealed. The bags must be put in direct sunlight for solarisation, as the heat from the sun helps to kill the beetle and its larvae.