

Monitoring PSHB infestation in sentinel sites: botanic gardens and arboreta

PSHB Research Network Day

Trudy Paap & Mesfin Gossa

28 May 2019

University of Pretoria

'Sentinel Research'

- An early warning system
- Identify new pest-host associations
- Requires global coordination



International Plant
Sentinel Network

SANBI funded project

- Initiated in 2016 under the framework of IPSN
- Monitoring tree health in botanic gardens and arboreta
- First term: Mid 2016 to end 2018 - Trudy Paap
- Second term: 2019 and 2020 - Mesfin Gossa

KZN National Botanical Gardens Pietermaritzburg

Polyphagous shot hole borer and *Fusarium euwallaceae*



London plane trees
(*Platanus x acerifolia*)



1 mm



Progress during the second term

- Conducted surveys in 5 gardens
- First record of PSHB in Pretoria – National Zoological Gardens
 - 175 trees assessed (57 tree species), 20% (33 trees representing 11 tree species) were found infested

	Tree species	Common name
1	<i>Acacia galpinii</i>	Monkey thorn
2	<i>Acer negundo</i>	Box elder
3	<i>Brachychiton discolor</i>	Pink flame tree
4	<i>Dombeya rotundifolia</i>	wild pear
5	<i>Erythrina lysistemol</i>	Coral tree
6	<i>Erythrina</i> sp.	Coral tree
7	<i>Platanus x acerifolia</i>	London Plane
8	<i>Quercus kelloggii</i>	Californian black oak
9	<i>Searsia lancea</i>	karee
10	<i>Liquidambar styraciflua</i>	Liquid ambar
11	Unknown tree species	



Future Work

- Conduct tree health surveys in the gardens regularly
 - helps to determine the host range of PSHB (beetle-fungus complex)

	Garden	Category	Province
1	Pretoria NBG	SANBI	Gauteng
2	Pretoria NZG	SANBI	Gauteng
3	Walter Sisulu NBG	SANBI	Gauteng
4	KwaZulu Natal NBG	SANBI	KZN
5	Durban BG	Non-SANBI	KZN
6	Kirstenbosch NBG	SANBI	Western Cape
7	Arderne Gardens	Non-SANBI	Western Cape
8	Harold Porter NBG	SANBI	Western Cape
9	Garden Route	Non-SANBI	Western Cape
10	Karoo Desert NBG	SANBI	Western Cape
11	Free State NBG	SANBI	Free State
12	Lowveldt NBG	SANBI	Mpumalanga
13	Kwelera NBG	SANBI	Eastern Cape

- Build capacity of garden staff to detect and manage PSHB and its symbiotic fungus