

SANBI Team Member: Nolwethu Jubase

Main University Supervisor: Mlungele Nsikani

Location: Western Cape (Stellenbosch University / Cape Peninsula University of Technology)

Level of project: Masters

Working title: Assessment of the invasive potential and management of four *Melaleuca* species in South Africa

Background

Myrtaceae is a predominantly woody family native to subtropical and tropical Asia, America, and Australia. It contains several important horticultural species, and as such has a long history of dissemination world-wide (Gordon 2011). While invasions by certain members of the Myrtaceae family are well-documented in South Africa (e.g. *Eucalyptus* spp.), some species (such as *Melaleuca* spp.) have recent invasion histories and represent a new wave of Myrtaceae invasions (Jacobs et al. 2017). The genus *Melaleuca* has about 290 species of shrubs and trees, a number of which are planted as ornamentals in many parts of the world. Several species are recorded as weedy within Australia, indicating that these mostly fire-adapted species could pose a risk to areas with similar fire-prone habitats, such as the Cape Floristic Region of South Africa which has been invaded by many other woody plants from Australia.

Melaleuca elliptica, *M. quadrifida* and *M. cruenta* are present on Table Mountain but anecdotal evidence suggests that they are not naturalised, whilst *M. armilaris* is found at several sites across the country. This project aims to: 1) assess the distribution of these four *Melaleuca* species in South Africa including the extent to which they are cultivated and the number of naturalised populations; 2) assess the invasive potential of these four *Melaleuca* species in South Africa and conduct risk analyses, and 3) determine whether nation-wide eradication might be feasible, both by looking at the ease with which individual populations can be controlled, and by assessing the probability of being able to detect all populations.

This is a project suitable for students interested in invasion biology.

Key contacts

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Further Reading

Gordon AJ (2011) Biological control endeavours against Australian myrtle, *Leptospermum laevigatum* (Gaertn.) F.Muell. (Myrtaceae), in South Africa. *African Entomology* 19: 349–355.

<https://hdl.handle.net/10520/EJC32910>

Hickley KI, Kaplan H, Van Wyk E, Renteria JL, Boatwright JS (2017) Invasive potential and management of *Melaleuca hypericifolia* (Myrtaceae) in South Africa. *South African Journal of Botany* 108: 110–116.

<https://doi.org/10.1016/j.sajb.2016.10.007>

Jacobs LEO, Richardson DM, Lepschi BP, Wilson JRU (2017) Quantifying errors and omissions in the Listing of Alien Species: *Melaleuca* in South Africa as a Case-Study. *Neobiota* 32: 89–105.

<https://doi.org/10.3897/neobiota.32.9842>