

SANBI Team Member: Nolwethu Jubase

Main University Supervisor: Mlungele Nsikani

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

Level of project: Hons or Masters

Working title: Assessment of the uses, invasive potential and management of *Castanea sativa* in South Africa

Background

Castanea sativa, commonly known as the sweet chestnut, is a long-lived deciduous tree in the family Fagaceae, native to Southern Europe and Asia Minor, and widely cultivated throughout the temperate regions. *Castanea sativa* can grow up to 20–35 metres in height with a trunk that is often two metres in diameter. *Castanea sativa* is monoecious with male flowers in the upper part and female flowers in the lower part. It is naturally self-incompatible making cross-pollination necessary for fruit production. *Castanea sativa* is an important multi-purpose tree used for both nut and wood production in Mediterranean region. Its fruit is extensively consumed by humans and is an ingredient in many recipes.

In South Africa, *C. sativa* is currently not listed under the National Environmental Management: Biodiversity Act's Alien & Invasive Species Regulations, and the threat and benefits the species poses have not been determined. This project therefore aims to: 1) assess the distribution of *C. sativa* in South Africa; 2) assess the risk and impacts of *C. sativa*; 3) identify its uses in South Africa and potentially develop guidelines for using the plant in the context of the benefits it can bring; 4) determine whether 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; and 5) combine the results in terms of a risk analysis.

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

Key contacts

Nolwethu Jubase, N.jubasetshali@sanbi.org.za, 021 799 8762/ 0834791955

Mlungele Nsikani, M.nsikani@sanbi.org.za, 021 799 8707

Further Reading

Du Plessis SP, Rink A, Goodall V, Kaplan H, Jubase N, van Wyk E (2018) Assessment and management of the invasive shrub, *Cistus ladanifer*, in South Africa. South African Journal of Botany 117: 85–94.

<https://doi.org/10.1016/j.sajb.2018.04.021>

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>

Potgieter LJ, Richardson DM, Wilson JR (2014) *Casuarina cunninghamiana* in the Western Cape, South Africa: determinants of naturalization and invasion, and options for management. South African Journal of Botany 92: 134–146. <https://doi.org/10.1016/j.sajb.2014.02.013>