

SANBI Team Member: Thulisile Jaca

Main University Supervisor: T. Sebitloane

Location: North-West University (Mafikeng Campus)

Level of project: Honours or Masters

Working title: Evaluating the efficacy of *Harrisia bonplandii* control in response to ecological factors and its ecological and livelihood impacts.

Background

Harrisia bonplandii is a cactus species native to Bolivia and Paraguay and adjoining parts of Brazil (Mato Grosso do Sul) and Argentina (Anderson, 2001). It is listed under category 1a on the NEM:BA regulation (as *H. balansae*) therefore it requires compulsory control. There is no information on how the species came to South Africa, however, like other cactus species, it is suspected that *H. bonplandii* was introduced as an ornamental plant because of its large showy white tubular flowers that open at night. It produces large apple-size red fruit covered with large scales. Many small black seeds are imbedded in the white sweet pulp which is eagerly eaten by birds, monkeys, and baboons.

In South Africa, *H. bonplandii* invades savanna and forest habitats mostly dominated by native thorn trees and shrubs. It is a very spiny succulent shrub and causes injury to livestock and humans. It is unpalatable and outcompetes native vegetation, thereby making utilisation of land very difficult. However, the spread and biodiversity and socio-economic impacts have not been investigated and quantified in depth.

Management efforts using biocontrol, mechanical, and chemical control have been implemented in South Africa, however the success of these methods have not been evaluated. Understanding the best management efforts might benefit future clearing programs for this species, as the limited resources available for invasive alien plant control require research into factors improving efficacy. Therefore the aim of this study will be to evaluate management decisions, such as time between clearing treatments, amount of effort exerted, clearing methods used, and time of year clearing takes place, as well investigating *H. bonplandii*'s ecological and livelihood impacts.

Key contacts

Thulisile Jaca t.jaca@sanbi.org.za

Further Reading

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Oakley, L. & Kiesling, R., 2017, '*Harrisia balansae*, 'The IUCN Red List of Threatened Species 2017', <https://www.iucnredlist.org/species/152667/121544455>.

Walters, M., Figueiredo, E., Crouch, N.R., Winter, P.J.D., Smith, G.F., Zimmermann, H.G., & Mashope, B.K., 2011, 'Naturalised and invasive succulent of southern Africa,' *Abc Taxa*, 11.