

SANBI Team Member: Dr Ruan Veldtman

Main University Supervisor: Dr Ruan Veldtman

Location: Dept. of Conservation Ecology and Entomology, Stellenbosch University

Level of project: MSc

Working title: Socio-economic cost of social wasp invasions and appropriate control strategies

Background

Invasive wasps have resulted in ecological and economic damage in countries where they have become invasive. Two invasive Vespidae, *Vespula germanica* and *Polistes dominula* are currently found in the Western Cape of South Africa. Both species are listed as 1b species and are thought to have minimal impact on native ecosystems. However, both species thrive in human modified environments that eventually result in negative interactions with humans or human related activities such as agriculture and beekeeping.

This project will entail compiling all existing recent data on the distribution and recorded negative interactions of both invasive wasp species. Passive management of current invasive populations may thus be socially unacceptable and demand government co-ordinated interventions. Predicting future levels of wasp invasion and extent are thus important in selecting the appropriate management response to these two species' invasions. This also serves as a good case study for investigating the range of costs associated with invasive invertebrate species.

Prospective candidates should have an Honours qualification in a relevant biological field and should have a valid driver's licence. Previous field experience with social Hymenoptera is a distinct advantage.

Key contacts

Prospective students can contact Dr Ruan Veldtman (Veldtman@sun.ac.za) to discuss the issue.

Further Reading

Benadé, P.C., Veldtman, R., Samways, M.J. & Roets, F. (2014) Rapid range expansion of the invasive wasp *Polistes dominula* (Hymenoptera: Vespidae: Polistinae) and first record of parasitoids on this species and the native *Polistes marginalis* in the Western Cape Province of South Africa. *African Entomology*, 22(1), 220–225.

Born, W., Rauschmayer, F., & Bräuer, I. (2005) Economic evaluation of biological invasions – A survey. *Ecological Economics*, 55, 321–336.

Haupt, K. (2015) Assessment of the invasive German wasp, *Vespula germanica*, in South Africa. MSc thesis, Stellenbosch University.

Veldtman, R., Addison, P. & Tribe, G.D. (2012) Current status and potential future impact of invasive vespid wasps (*Vespula germanica* and *Polistes dominulus*) in South Africa. *IOBC/wprs Bulletin*, 75, 217-221. ISBN 978-92-9067-252-4 [VI + 245 pp.].

van Zyl, C. (2016) Status of the invasive wasp species, *Vespula germanica* and *Polistes dominula* in South Africa, and the feasibility of various management strategies. PhD thesis, Stellenbosch University.