

SANBI Team Member: tbc

Main University Supervisor: tbc

Location: tbc

Level of project: MSc / PhD

Working title: The use of herbicides in the control of biological invasions in South Africa

Background

The management of invasive plants relies heavily on the use of herbicides (Wagner et al. 2017), and while classical biological control has been a very valuable tool in combatting some invasive plants, the widespread and in some cases intensive use of herbicides will continue to be necessary if the environmental and socio-economic impacts of plant invasions are to be countered (van Wilgen and Wilson 2017).

Of course herbicidal control can have direct, and in some cases, indirect impacts on the environment, the socio-economy, and human health, therefore when assessing the efficacy of control measures the impact of undesirable outcomes need to be considered (Wilson et al. in press).

The project will involve reviewing the scale of usage of herbicides in the context of the expected benefits produced and the risks involved, and explore scenarios of what would happen under different usage patterns.

This research will feed directly into the National Status Report on Biological Invasions, and hopefully provide recommendations for governmental and non-governmental agencies dealing with invasions on the ground. It will suit someone with an interest in policy, economics, and ecology.

Key contacts

While the project has been identified as a priority, a suitable supervisory team willing to work on the project has not been identified, although several researchers have expressed interest in the project. Please contact John Wilson jrwilson@sun.ac.za if you have ideas of suitable hosts for the project (or could potentially host it).

Further Reading

- van Wilgen, B. W. & Wilson, J. R. (2017) The status of biological invasions and their management in South Africa in 2017. South African National Biodiversity Institute and DST-NRF Centre of Excellence for Invasion Biology, Cape Town. [note: not currently released but see a journal special issue for more details <https://abcjournal.org/index.php/abc/issue/view/113>]
- Wagner, V., Antunes, P. M., Irvine, M. & Nelson, C. R. (2017) Herbicide usage for invasive non-native plant management in wildland areas of North America. *Journal of Applied Ecology*, **54**, 198–204.
- Wilson, J. R. U., Faulkner, K. T., Rahlao, S. J., Richardson, D. M., Zengeya, T. A. & van Wilgen, B. W. (in press) Indicators for monitoring biological invasions at a national level. *Journal of Applied Ecology*. <http://dx.doi.org/10.1111/1365-2664.13251>