

**Main University Host:** Sabrina Kumschick

**SANBI Team Members:** Tsungai Zengeya and John Wilson

**Location:** Kirstenbosch Research Centre, Cape Town OR Centre for Invasion Biology, Stellenbosch University

**Level of project:** Post-doc

**Working title:** Collating and interpreting data on the impact of invasive species to facilitate decisions

## Background

South Africa has set up a process of reporting on the state of biological invasions every three years (Zengeya & Wilson, 2023). A post-doctoral position is available to conduct research in support of the report, with specific topics identified as priorities, noting that additional research that will assist with producing the next status report will be strongly encouraged.

Biodiversity monitoring requires access to rapid, reliable, and repeatable monitoring data that can be used to inform policy, decision-making, and interventions. The status report is one of four case studies for the Biodiversity Building Blocks for Policy project (<https://b-cubed.eu/>). The overarching objective of the B-Cubed project is to develop pipelines to improve the integration of biodiversity data into data cubes that are then used as the basis for models and indicators to monitor biodiversity status and change. The data cubes, models and indicators developed under the B-Cubed project will feed into the status report on biological invasions in South Africa and show the usefulness of the B-Cubed project from an end-user perspective (SANBI). The B-Cubed project will provide information on indicators that are used to monitor biological invasions and the information will help address three of the six identified key gaps in previous reports (Zengeya and Wilson 2023) on invasive alien species (alignment of indicators; mobilisation of spatial data; mobilisation of impact data); and assist the automation and standardisation of the process and how reports are communicated (i.e., including workflows and dashboards). This project will focus on research that will assist with the mobilisation of impact data. Potential aspects include:

- An increasing number of estimates of the impact of biological invasions are available (recently reviewed for South Africa by van Wilgen et al. 2022), but current reports on impact still rely on a few key studies from many years ago. Estimates of impact of particular species from the EICAT and SEICAT schemes (<https://www.iucn.org/theme/species/our-work/invasive-species/eicat>; Bacher et al. 2018) need to be integrated with other estimates of impact to assist decision-makers.
- How do social perceptions of invasive species affect regulation and management? How can we evaluate awareness of invasions in key sectors and with key stakeholders as a baseline against which regulatory and management interventions can be made? Research in invasion science is increasingly exploring these issues (e.g., from South Africa: Woodford et al. 2016, Zengeya et al. 2017, Novoa et al. 2016, 2018). It is unclear how best to collate and report such data.
- Information on impact can be integrated with species occurrence and modelled projections to provide estimates of current and potential impact. This would demonstrate impact for specific case systems and study taxa related to various indicators and metrics [8 and 11 from the status report (Wilson et al. 2018); impact indicators proposed by sTwist (Henriksen et al. 2024; see also McGeoch et al. 2023);

and to estimate invasion impact-debt as a tool for prioritisation.

- Biological invasions affect environment, human, and animal health. Can the different sectors involved be better integrated through a One Health approach (Ogden et al. 2019) linking with the concept of One Biosecurity (Hulme 2020)? How should such information be incorporated into reports?

## Key contacts

Tsungai Zengeya [T.Zengeya@sanbi.org.za](mailto:T.Zengeya@sanbi.org.za)

John Wilson [jrwilson@sun.ac.za](mailto:jrwilson@sun.ac.za)

Sabrina Kumschick [sabrinakumschick@sun.ac.za](mailto:sabrinakumschick@sun.ac.za)

## Further Reading

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