

The Status of Biological Invasions and their Management in SA 2017

This extensive report (420 pages) on the status of biological invasions and their management in SA 2017, has just been released by Minister Derek Hanekom. The lead editors are Brian van Wilgen and John Wilson, independent researchers. This is the first comprehensive attempt to assess the status of biological invasions across all aspects of the problem at a national level. This report provides a framework for future reports, which are due every three years. The report does not cover social benefits associated with alien species control programs.

The report is structured around aspects of:

- a) pathways of introduction and dispersal
- b) individual species numbers, distribution and impact
- c) alien species richness and abundance in defined areas and their impacts
- d) effectiveness of interventions of control measures and regulations.

Improved regulations have seen a decline in intentional introductions of high risk species, but the rate at which species are arriving in the country is gradually increasing due to unintentional introductions with increases in trade and tourism.

To date the number of invasive species is 775, out of 2034 the alien species listed. Most of these are terrestrial and freshwater plants (574) or terrestrial invertebrates (107). The negative aspects of these species are to:

- reduce the carrying capacity of rangeland (veld)
- reduce surface water runoff and ground water recharge (estimated to be 1 500-2 500 million cubic metres of water per year)
- increased fire hazard
- eroded biodiversity

The Western Cape is the most invaded province, based on 20 year-old data, and the problem has become worse. The Fynbos biome is particularly at risk. Of the 13 worst invasive species, Port Jackson, Rooikrans, pine and gum have invaded the Fynbos: the richest species diversity area in the world.

There are very few studies that cover the combined impacts of invasive species on particular areas. Rangeland impacts are still low but are expected to grow rapidly as invasive plants enter a stage of exponential growth. Reduced water runoff and ground water recharge are considerable and the Cape Town water crisis is particularly mentioned. Increased fire hazard is a major problem, such as the Knysna fires. Minister Hanekom noted recently, flying over the George area fires, that it was noticeable that most of the fires were in invaded areas, more than in planted forests and very little in indigenous forests. Biological invasions account for 25% of the reduction in South African biodiversity seen to date.

The invasive species regulations are substantial. Large sums of money have been spent, especially on the control of terrestrial and freshwater plant species. However, data on outcomes of control measures are sorely lacking. The report concludes that while the situation would arguably have been worse had there been no control, current control efforts have not been effective in preventing the ongoing spread of invasive species. Less than 1% of invaded land has been reported to have been the subject of control measures.

The report concludes that it should be imperative to improve management efficiency, given the substantial economic and social consequences that would be associated with a failure to address the problem of biological invasions adequately.

The report and messages distilled from the assessment provide an excellent basis for management guidelines and formulating environmental policy for the country as a whole. The lack of adequate planning and monitoring of the outcomes of control measures have been identified as a major weakness in South Africa. Positive returns on investment from spending on invasive species control measures is still possible, provided steps are taken to improve planning and management effectiveness.

This is a well written, unbiased report and makes interesting reading for anyone with concerns about invasive species in SA, or at a local level. A more extensive summary of the whole report, plus each of the nine chapters is available (about 20 pages, from Botfriends).

Bot River estuary and its environs

This report is particularly relevant at local level as a background, national level report. This summary provides the main relevant points which need to be considered at a local level such as the Bot River estuary and its immediate environs.

The Bot River estuary and its environs is one of the richest species diversity areas within the Fynbos biome. The great diversity in the geology of this area and the blending of these geologies provide for a great diversity of species with many undocumented variants of species over short distances. The numerous wetlands usually carry more species diversity than surrounding areas. The area has been considered to be of low priority in the past due to non-environmental factors, and five of the worst invasive alien species are rampant here. A management plan has not existed and much of the control methods have been inadequate and improperly applied.

Extensive detailed local data has been gathered on the area and properly devised, cost-effective control methods implemented in limited areas, through private funding. Friends of the Bot River Estuary and Environs is in a position to extend this work and provide guidance on methodologies. Timing is becoming critical as the invasive species have already entered a stage of exponential growth in this area.

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An excellent summary of research conducted in the Fynbos was written in 2016 by Brian van Wilgen and others. Rather heavy reading but very comprehensive.

References

Van Wilgen, B.W. & Wilson, J.R. (Eds.) 2018. The status of biological invasions and their management in South Africa in 2017. South African National Biodiversity Institute, Kirstenbosch and DST-NRF Centre of Excellence for Invasion Biology, Stellenbosch.

Van Wilgen, B.W., et. al. (2016) Ecological research and conservation management in the Cape Floristic Region between 1945 and 2015: History, current understanding and future challenges, Transactions of the Royal Society of South Africa, 71:3, 207-303, DOI: 10.1080/0035919X.2016.1225607