

South African National Biodiversity Institute's Succulent Poaching Working Group

A growing international demand to collect and grow rare succulents has resulted in South Africa experiencing a rapid increase in illegal succulent plant poaching. This poaching, in the Western and Northern Cape provinces, is driving restricted range endemic species to extinction.

Custodians of the region have observed that there is a notable trend in the worsening conservation statuses of plant species across several in-demand plant groups. For example, 34 species in the group *Conophytum* were uplisted to more threatened categories according to conservation assessments undertaken for South African plants. Many other such species are being targeted by collectors.

The Succulent Karoo is a national treasure

The Succulent Karoo Biome lies in the arid western parts of South Africa that receive rainfall in winter. Its uniqueness is summarised as follows:

- The Succulent Karoo is one of South Africa's three globally recognised biodiversity hotspots.
- The hotspot is the most biodiverse arid ecoregion in the world with an exceptional richness and diversity of flora, especially succulent plant species.
- Of the ~6,356 plant species described from this region, almost 40% are endemic. This means that South Africa houses (and is responsible for preserving) just under 2,500 succulent plant species (representing around 100 genera) that are found nowhere else on Earth.
- The high diversity of dwarf leaf-succulent shrubs (~1,700 species) is the biome's most distinctive character, however, the region also supports a notable diversity of bulbs, insects, reptiles, birds, small- to medium-sized mammals, as well as a host of microorganisms (such as fungi and cyanobacteria).
- The observed massive speciation has emerged in response to unique climatic conditions and high environmental heterogeneity, including the geology, topography and soils. Adding to this, many species are so specialised in their habitat requirements, as they have adapted to life within a limited range of environmental conditions and across very limited areas (<50 km²), resulting in a phenomenon known as point or local endemism.
- Only a small percentage (<10%) of the Succulent Karoo is formally conserved. The current protected area network is, unfortunately, not representative of the region's biodiversity and does not incorporate key ecological processes and evolutionary biodiversity drivers.



Figure 1. The highly poached and targeted *Conophytum* succulent plant species.

- Approximately 5% of the Succulent Karoo Biome has already been lost to anthropogenic land use, the majority to croplands. Although this leaves 95% of the area as 'natural', there is no comprehensive land degradation dataset for the biome and various studies indicate that degradation through overstocking of the natural rangelands is widespread. The soon to be released 'Red List of Ecosystems 2020/2021' includes four threatened ecosystem types in the Succulent Karoo.

- The region has, until recently, received limited conservation focus in relation to its global biodiversity value, however, the large areas of available extant (degraded and pristine) habitat, low human population densities, relatively low conservation costs in most of the region, and options for biodiversity-friendly forms of land use in many areas present many opportunities for conservation and sustainable development centred around the hotspot's remarkable biodiversity.

SANBI's role in the succulent poaching issue

Various divisions and directorates at SANBI are affected by the succulent poaching issue, as follows:

- The recent observed surge in poaching of succulent plants is affecting the operations at some of SANBI's national botanical gardens, as they struggle to process and care for the thousands of confiscated plants.
- The institute has also taken steps to improve the security of its biodiversity data, as citizen science platforms are known to have been used by poachers to locate sought-after plants.
- SANBI's Threatened Species Programme monitors the status of in situ (on-site) populations of succulent plant species and undertakes national conservation assessments of all South Africa's species. Updates of Red List assessments for key succulent species will be needed.
- SANBI also provides technical support to the Scientific Authority of South Africa, which advises government on sustainable use and trade in South Africa's wildlife.

Recently, SANBI has been involved in co-leading a working session with colleagues from the Department of Forestry, Fisheries and the Environment (DFFE), which brought various stakeholders together with the aim of developing a national response strategy.

In addition, SANBI has created an internal Succulent Poaching Working Group (SPWG), which is an inter-divisional group that aims to coordinate efforts across SANBI to

identify and undertake key activities that will contribute to alleviating the impacts of this crisis. To date the SPWG has identified the following objectives:

1. Co-lead the development of the national response strategy with DFFE, ensuring stakeholders are adequately consulted.
2. Establish ex situ (off site) conservation collections that ensure genetically diverse repositories. This will include a *Conophytum*-specific collection at the Karoo Desert National Botanical Garden and additional seed collection for the Millennium Seed Bank.
3. Optimise the use of confiscated plant material for conservation benefit – which may include using this material as mother stock to produce seed and seedlings.
4. Explore options for reintroduction and restoration if reintroduction sites can be secured from further poaching.
5. Seek, secure and manage funding to address SANBI's ability to undertake these objectives.

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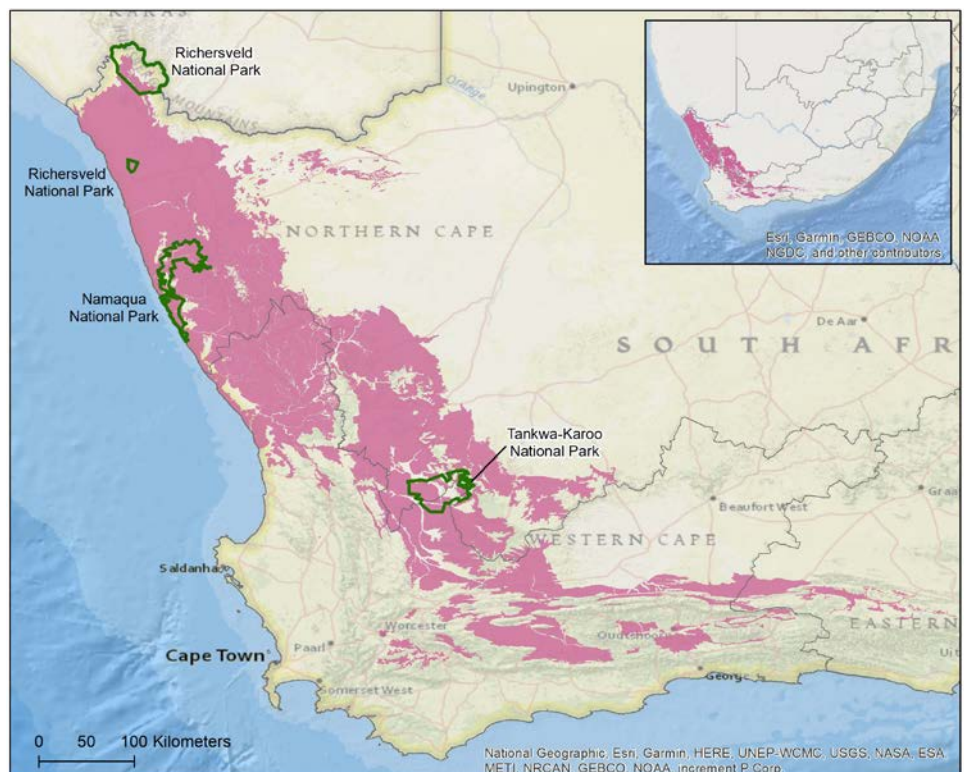


Figure 2. A map of the Succulent Karoo Biome. Map produced by Sediqa Khatieb.

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