

PROTECTING HIGHLY THREATENED SOUTH AFRICAN CYCADS

FROM EXTINCTION:

A NEW APPROACH

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A THREATENED ORDER

The International Union for Conservation of Nature (IUCN) reports that cycads (order Cycadales) are the most threatened plant group in the world. The order Cycadales includes over 340 named species in three families: Zamiaceae and Stangeriaceae (represented in South Africa by the genera *Encephalartos* and *Stangeria* respectively) and the Cycadaceae. Around 60% of the known and named species of the order Cycadales are presently threatened with extinction in the wild. Over 90% of the South African representatives of this plant order are considered to be Species of Conservation Concern!



Training enforcement officials on cycad identification using the SANBI Cycad ID Tool App.

All photos by: Adam Pires.

Protecting South Africa's endemic cycad (*Encephalartos*) species has been high on the South African government's agenda for well over a decade. Despite stringent trade controls, cycad populations nonetheless continue to dwindle. The decline is due largely to irrepressible demand by local and international consumers to have these plants in their gardens, in some cases at almost any cost.

SOUTH AFRICAN HOTSPOT

South Africa, with 38 species in the order Cycadales, has long been recognised as one of the global hotspots for cycad diversity but the country is also one of the hotspots for threatened cycads. More than 25 of South Africa's cycads are threatened with extinction and, of the four cycad species classified as Extinct in the Wild globally, three are from South Africa. Two of these species became extinct in the wild in the period between 2003 and 2010.

The most recent IUCN Red List statuses for South African *Encephalartos* species are as follows: three Extinct in the Wild (EW), twelve Critically Endangered (CR), four Endangered (EN), nine Vulnerable (VU) and seven are Near Threatened (NT), which means that they too are "likely to become at risk of extinction in the near future" – to quote the chilling words of the national Red List categories (<http://redlist.sanbi.org/redcat.php>). Threatened by development and excessive exploitation, *Stangeria eriopus* is also considered Vulnerable to extinction, leaving only three South African representatives of the order Cycadales to be categorised as Least Concern (LC).

Seven of South Africa's Critically Endangered *Encephalartos* species presently number fewer than 100 individuals remaining in natural habitat. If measures are not taken to halt the illegal harvesting of these plants, South Africa runs the risk of losing them within the next decade. Through relentless pressure from illegal cycad trading many more of South Africa's *Encephalartos* species are likely to become extinct in the wild in the immediate to near future.

NO SIMPLE SOLUTIONS

No single solution can be applied to protect our cycad species in the wild and, while we commend the legislative efforts put in place

by the South African government, we need additional tools to support enforcement efforts and heighten consumer awareness.

The Endangered Wildlife Trust (EWT) and TRAFFIC, in collaboration with the South African National Biodiversity Institute (SANBI), have recently completed the roll-out of the South African Cycad Species Protection Project. This project focused on providing skills and knowledge to 194 enforcement officials, enhancing their capability to counter the illegal cycad trade. It also included a campaign to raise awareness about the trade that reached over 200 state prosecutors and members of the judiciary.

Provincial nature conservation agencies are responsible for issuing the Threatened or Protected Species (TOPS) permits that allow for the use/harvest of wildlife as well as permits for wildlife import and export, as prescribed under the Convention of International Trade in Endangered Species of Wild Fauna and Flora (CITES). The burden of determining whether a consignment for export matches the attached documentation, such as the TOPS certificates and CITES permits, falls primarily on the customs officials, border police and Environmental Management Inspectors (EMIs). One of the major challenges facing these officials is the ability to correctly identify protected flora observed in gardens, at border posts, in nurseries, or for sale in local- or regional markets. There is usually a limited time available for identification

of a species down to the taxonomic level required to make critical law enforcement decisions such as whether to confiscate a specimen or whether or not to issue the relevant permit.

USING TECH TO TRAIN

In an effort to address these problems, SANBI – in collaboration with TRAFFIC and with the expertise of cycad specialist, Robert Kunitz (Way to Grow) – developed the electronic SANBI Cycad Identification Tool, the development of which coincided perfectly with the project's training activities.

The practical identification of cycad species is a pivotal part of the training. South Africa has a large diversity of *Encephalartos* species and identification to species level is not easy unless one knows which specific characteristics or features to look for and even then it can be tricky since there are hybrids and variations within species. Leaf colour and length can differ depending on whether a plant is grown in the sun or in shade; whether it is a seedling or a mature plant; or, whether it is grown in the wild or cultivated.

The SANBI Cycad Identification Tool provides a solution that offers law enforcement officials an interactive, easy-to-use, photo-based electronic tool that, through an elimination process, supports them in the identification of South Africa's *Encephalartos* species. The tool also includes factsheets, which contain important information such as

SELECTED ORGANISATIONS AND INSTITUTIONS SUPPORTING CYCAD AND THREATENED SPECIES CONSERVATION

Endangered Wildlife Trust: www.ewt.org.za

IUCN/SSN Cycad Specialist Group: www.cycadgroup.org

SANBI – Biodiversity Science: www.sanbi.org/biodiversity-science

Save Our Species (SOS): www.sospecies.org/sos_projects/plants/cycads/south_african_cycads

South African Cycad Species Protection Project: www.cycads.org.za

The Cycad Society of South Africa: <http://cycadsociety.org>

The Millennium Trust: <http://mtrust.co.za/projects/cycad-species-protection>

TRAFFIC: www.traffic.org

World List of Cycads: <http://cycadlist.org>

conservation status, identifying features, geographic locations as well as pointers to similar-looking species. The tool was designed to enable better regulation and monitoring of the local and international trade in these highly threatened and endangered species and to assist law enforcement officials to carry out their work more effectively. Although originally created for law enforcement, it will soon be available to the general public as a free download via the Apple iStore as well as the Google Play Store.

A LONG ROAD AHEAD

The tool is one more step towards protecting some of South Africa's most threatened species from unscrupulous and illicit poaching. The ideal is to protect these species in habitat and every South African can play a role by helping the conservation law enforcement teams to monitor and control cycad poaching before plants are removed from the wild.

For more information, please contact:

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Report illegal trade in cycads, phone the Cycad Hotline: 0800 205 005



Various confiscated *Encephalartos* species. Photo by Adam Pires.

ROLE PLAYERS IN THE FIGHT TO CONSERVE CYCADS

The South African National Biodiversity Institute (SANBI) leads and coordinates research, and also monitors and reports on the state of biodiversity in South Africa. The Institute provides knowledge and information, gives planning and policy advice and also pilots best-practice management models in partnership with stakeholders. SANBI engages in ecosystem restoration and rehabilitation, leads the human capital development strategy of the sector and manages the National Botanical Gardens as 'windows' to South Africa's biodiversity for public enjoyment and education.

TRAFFIC is a strategic alliance of the World Wide Fund for Nature (WWF) and the International Union for Conservation of Nature (IUCN). It is the leading non-governmental organisation working globally on trade in wild animals and plants in the context of both biodiversity conservation and sustainable development. TRAFFIC has experience and expertise that complements the mandate of SANBI and the Scientific Authority. It actively monitors and investigates wildlife trade, and provides information to a diverse audience world-wide, as a basis

for effective conservation policies and programmes. TRAFFIC supports regulatory and training programmes aimed at combating wildlife crime and its considerable reputation, credibility and influence are built on its development of carefully researched, reliable knowledge, its sound and impartial analysis of wildlife trade issues, its awareness of the wider socio-economic setting, its strategic approach to catalysing change and its wide experience of assisting the practical application of solutions.

The Endangered Wildlife Trust (EWT), one of South Africa's leading biodiversity conservation organisations, strives to facilitate the protection and sustainable use of key ecosystems. It is a registered Non-Profit Organisation and a member of the International Union for Conservation of Nature (IUCN) and the United Nations Global Compact. The EWT has a cohesive and integrated approach to the conservation of species, habitats and ecosystem processes and therefore focuses much of its work on protecting both threatened species and habitats.

The organisation identifies the key factors threatening biodiversity and develops innovative methodologies and best practice guidelines to reduce these and promote harmonious co-existence and sustainable living for both people and wildlife. The EWT believes that sustainable conservation requires inclusive approaches, to not only address biodiversity objectives, but also the interests of the people and industries relying on the ecosystem services. This is achieved by developing innovative and adaptive conservation and management solutions, aligned and compatible with the broader economic and social imperatives of the region.

Save Our Species (SOS) is a "joint initiative of IUCN, the Global Environment Facility (GEF) and the World Bank supported by Nokia and the Fonds Français pour l'Environnement Mondial (FFEM). Its objective is to ensure the long-term survival of threatened species and their habitats."

The Millennium Trust (MT) was established in 2010 as a non-profit organisation with the broad aim of contributing to the success of South Africa.

SANBI Cycad Identification Tool



TRAFFIC
the wildlife trade monitoring network

SANBI
Biodiversity for Life



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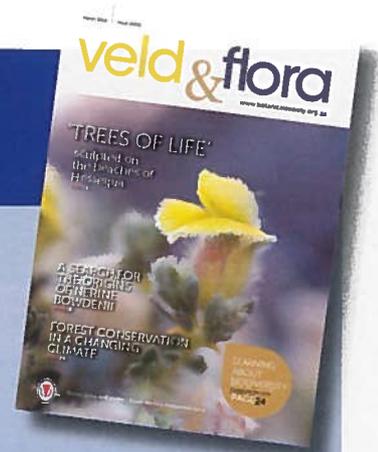
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Beaking news: Plant rescue at Ingula Pumped Storage Scheme

By Sthembile Zondi, Chief Horticulturist, KZN National Botanical Garden, S.Zondi@sanbi.org.za

Ingula Pumped Storage Scheme, Eskom's first pumped storage scheme in almost three decades, borders on the Free State and KwaZulu-Natal, northeast of Van Reenen in the Drakensberg escarpment, on the site originally known as Braamhoek. Ingula is one of a series of new power stations developed by Eskom to meet an increase in energy demand.

The Bedford- and Bramhoek dams form part of the scheme. Both dams are complete and Bramhoek Dam is full, while Bedford Dam will be filled once the scheme is commissioned, which is imminent.

Historically, livestock have utilised the site intensively, large tracts of erosion are evident and the area has been subject to high-intensity poaching and illegal plant-harvesting. Recently, livestock numbers have been reduced and eroded areas are being rehabilitated. A protected area has been developed to increase the numbers of indigenous animals and to establish, and protect, viable populations. Various options are being investigated to ensure that the harvesting of plant species – used in traditional medicines – can be brought to sustainable levels

(information supplied by PA Nelson, A Rhode and AM Campbell).

SANBI's KwaZulu-Natal National Botanical Garden (KZN-NBG) is collaborating with the Eskom managers in charge of the Ingula Scheme and personnel from the KZN-NBG have been allowed to visit the site to rescue indigenous species occurring in the soon-to-be-filled Bedford Dam footprint. Permission was granted by Peter Nelson, the Conservation Manager for Ingula, and we have been guided in the field by Alastair Campbell, an environmental officer for the scheme.

During December 2015, the KZN NBG team visited the site and collected plants such as *Tephrosia*, *Haemanthus*, *Disa* and *Cephalaria*. We were overwhelmed by the fields of *Watsonia densiflora* and *Schizocarphus nervosus* (*Scilla nervosa*) and are planning more trips because, according to Campbell, Bedford Dam is due to be filled in the coming months.

I would like to urge other conservationists to contact us to help to rescue more plants before the Bedford Dam is filled and these habitats disappear forever.