SANBI science

SANBI
Biodiversity for Life
South African National Biodiversity Institute

News on SANBI's science and policy advice activities and outputs

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In this issue:

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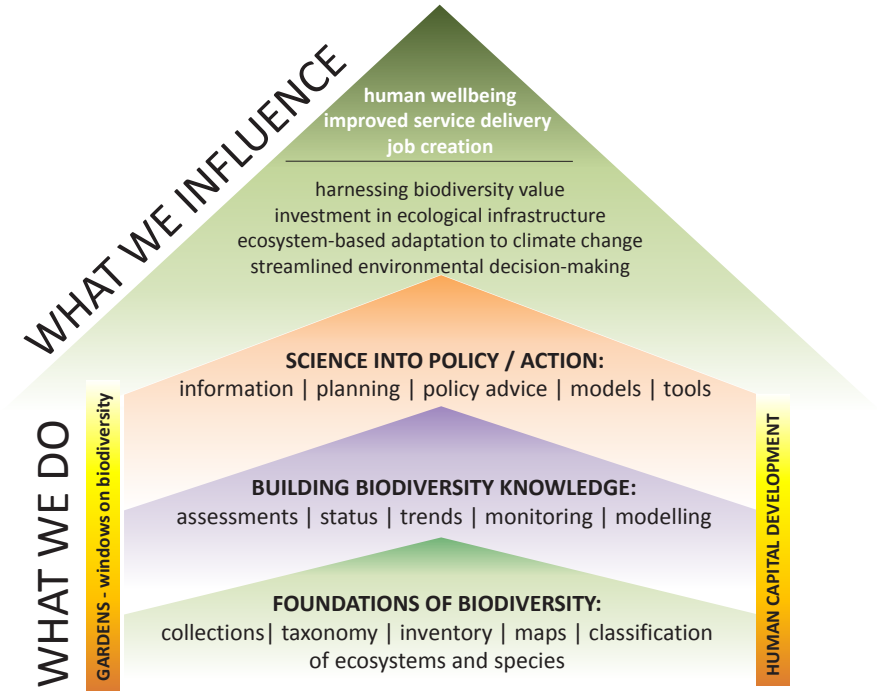
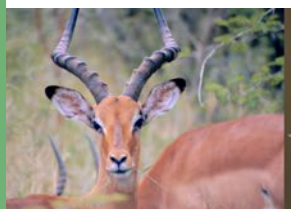
Welcome to the first edition of *SANBI Science*, our biodiversity science newsletter. Through this newsletter we hope to illustrate how our research forms part of a value chain that starts with very basic information on biodiversity and builds on these foundations with assessments, experiments, models and tools. In this way we influence policymakers and contribute to government's higher objectives of poverty alleviation, job creation and improving human wellbeing.

This edition contains snippets of news from the biodiversity science-related divisions at SANBI and includes highlights of the latest taxonomic and classification findings, the latest monitoring and assessment work, and news about how our projects are influencing planning and policy.

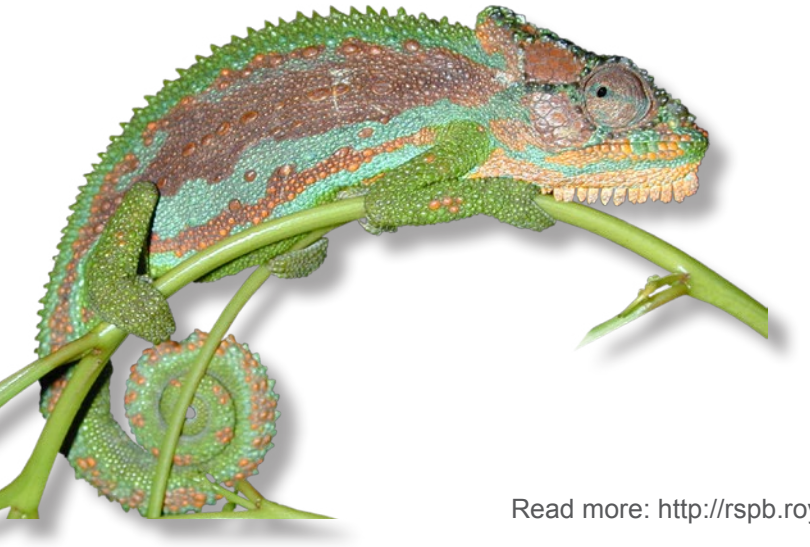


The SANBI value chain showing how our scientific research influences government priorities.

Changing the world through BIODIVERSITY SCIENCE




Foundations of biodiversity



Chameleons are proudly African

After several years of debate, new research with SANBI in the lead shows that chameleons are proudly African! Using DNA methods, the research showed that the chameleon family most probably originated in Africa, with two separate oceanic dispersals to Madagascar during the Palaeocene and the Oligocene – a time when prevailing oceanic currents would have favoured eastward dispersal. This research was published in the leading journal, *Proceedings of the Royal Society of London*.

Read more: http://rspb.royalsocietypublishing.org/content/280/1759/20130184.short

Cape endemic frog at risk due to hybridisation

SANBI's molecular research shows that a Cape endemic frog, the Cape Platanna, is losing the battle against hybridisation with the invasive Common Platanna. Urgent conservation actions are required in the southwestern Cape to control habitat loss as a result of alien invasive vegetation, and prevent hybridisation. Download the full article from *PeerJ*.

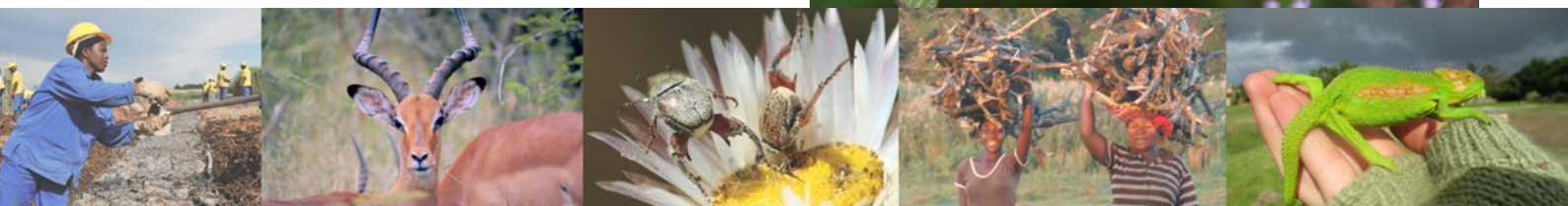
Read more: https://peerj.com/articles/166/#HG427449-51

Building biodiversity knowledge – assessing, modelling, reporting, monitoring

Pollination services by wild insects

This collaborative SANBI research was published in the top journal, *Science*. The findings show universally positive associations of fruit set with flower visitation by wild insects in 41 crop systems worldwide. The results suggest that new practices for integrated management of both honeybees and diverse wild insect assemblages will enhance global crop yields.

Read more: http://www.sciencemag.org/content/339/6127/1608.abstract



Lizards can adapt to all sorts of habitats

Sometimes several species can show a similarity in morphology as a result of adaptation to similar, local environments. This has, at times, confused the taxonomy of these species. A recent SANBI PhD graduate shows this through studying lizard adaptation. Read all about it in *PLOS-One*.

Read more: http://www.plosone.org/article/info%3Adoi%2F10.1371%2Fjournal.pone.0051636

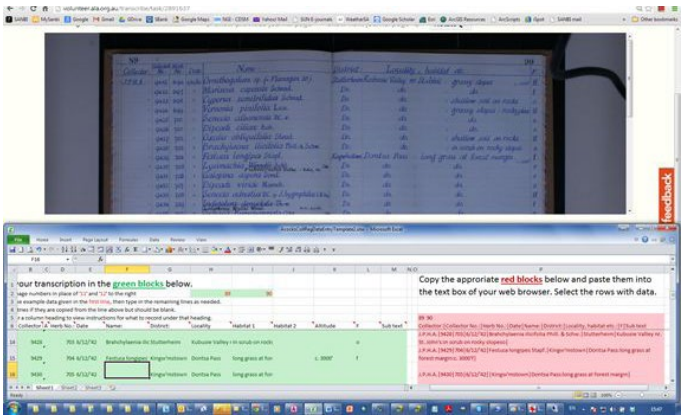
Dispersal, overcrowding and climate change

The speed of range expansions, be it invasive species colonising a new area, or species tracking a moving climatic niche, critically depends on dispersal. Models for species' range expansions generally assume dispersal to be independent of local population densities. However, animals often disperse in response to high population size or alternatively may avoid or leave areas of very low population sizes. This study explored whether such density dependence in dispersal can safely be ignored when predicting the speed of range expansions. Find out about it in *Diversity and Distributions*.

Read more: http://onlinelibrary.wiley.com/doi/10.1111/j.1472-4642.2012.00943.x/abstract

Translating and enabling science into policy / action – implementing, influencing, advising, mainstreaming

From paper to cloud: elevating text from notes to the web



Biodiversity planning depends on the best available baseline data. It is essential to know which species are in an area, or have been previously found in an area but now apparently absent, or that was not previously reported but is apparently new (possibly due to under sampling, range expansion or invasion). There are an estimated 2.8 million specimens in the eight largest herbaria of South Africa. Furthermore, there are 10 million non-botanical specimens in 67 collections in 21 institutions in South Africa. SANBI is leading a project that is mobilising and georeferencing data from museum and herbarium specimens and field notes, making it possible to search, find and view the specimens and information online. Images of specimens or field notes are put online for volunteers or others to transcribe text on the image. This information can be used in practical ways to address research, knowledge, conservation, management and policy aims, essentially taking information from paper and elevating it into the clouds of cyberspace and thereby sometimes helping to clear some of the fog of the mind.

SANBI's success with the GEF 5 project development process

Early in July 2014, the Global Environment Facility (GEF) endorsed SANBI's full-sized project proposal for the project: Mainstreaming biodiversity into land use regulation and management at the municipal scale. This $8.17 million project is set to start with implementation within the next six months and will run until 2019. GEF is a partnership for international cooperation where 183 countries work together with international institutions, civil society organisations and the private sector to address global environmental issues. This is done to support activities related to biodiversity, climate change, international waters, land degradation, chemicals and waste in the context of development projects and programs.

Read more: http://www.capeaction.org.za/index.php/news

Farewell to the Grasslands Programme

On 29 May 2014, the Grasslands Programme hosted its close-out celebration at Mokha Restaurant at the Pretoria National Botanical Garden. The celebration looked back on the milestones and successes achieved by the programme with its partners over the past six years.

It was a moment to reflect on the lessons learnt, to celebrate, and to look forward to the next phase of biodiversity mainstreaming in South Africa. The Grasslands Programme paid special tribute to its partners, without whom it could not claim the achievements it does today. Presentations, audio-visual displays and international video-conferences showcased the history of the programme, its progress, achievements and wider relevance. The bittersweet atmosphere of the event was captured in the grateful, complimentary and nostalgic words of the partners, who felt that it was 'a pleasure and an honour to attend on this auspicious day'.

Read more: http://www.grasslands.org.za/news/entry/farewell-to-the-grasslands-programme-in-the-words-of-its-partners

Read more about *SANBI Science* and find out about current news and events on the 'Biodiversity Science' section of the SANBI website: www.sanbi.org/biodiversity-science

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