

Snapshot Safari provides an opportunity to inform wildlife management in SANParks

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In several national parks, Snapshot Safari has established a highly effective baseline monitoring platform over the last 5 years with cutting edge technology, a large established researcher network, as well as novel data processing capabilities.

Snapshot Safari is an initiative of the Department of Conservation Management, Nelson Mandela University (NMU, George campus) in collaboration with SANParks, South African National Biodiversity Institute (SANBI) and National Research Foundation (NRF). This is a transnational programme that aims to provide greater knowledge about mammal populations across southern Africa. It is intended that data from Snapshot Safari can be used to monitor species abundance and other factors, such as competition, coexistence and trophic interactions in different habitats and under different management strategies. The Snapshot Safari programme operates in a number of protected areas which includes several national parks, e.g. Augrabies Falls, Camdeboo, Garden Route, Golden Gate Highlands, Karoo, Kgalagadi, Kruger, Mapungubwe, Marakele, Mokala, Mountain Zebra, Namaqua and Tankwa Karoo. Images are processed using artificial intelligence (AI) enabled algorithms in Traptagger. TrapTagger allows for a hybridised approach between automatic AI classifications and manual annotations which are processed and managed by staff and students in the Wildlife Ecology Lab (NMU). The dataset contains hundreds of thousands of species

records spanning the last 5 years and is considered the largest continuous camera trap-based monitoring effort in Africa.

Snapshot Safari monitoring in the Kalahari first started in November 2018 with 20 cameras in the southern part of the park, and recently, it was expanded by adding two more transects and another 20 cameras in the most northern parts of the park. During the day, each camera is programmed to take a series of three images within 5 seconds of a capture event when passive infrared sensors are triggered by motion or heat. During the night, when a flash is activated, one image is taken. The usual suspects, such as gemsbok, eland and duiker, are caught on camera regularly. Some interesting species have included leopard, cheetah, caracal, cape fox and black footed cat.

The variety of Snapshot locations provides numerous opportunities to answer questions on wildlife ecology and conservation, test ecological

hypotheses and analytical methods and measure the impacts of anthropogenic disturbances across multi spatiotemporal scales. In the Kalahari, the University has built strong relationships with Khomani San local communities and managers of private reserves where camera trap grids are deployed.

Snapshot Safari has established a highly effective baseline monitoring platform over the last 5 years with cutting edge technology, a large established researcher network, as well as novel data processing capabilities. Locally, the data improve checklists of species in protected areas, provide a baseline for monitoring change in the environment over time and increase our knowledge of the biology and behaviour of cryptic and crepuscular species. The data feed directly into national priority programmes and projects, such as protected area planning, threatened species conservation, and mitigation of risks such as over-exploitation and human induced climate change.