

# Historical & repeat photographs as a source of qualitative & quantitative biodiversity information

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Project coordinator: rePhotoSA

Open Data Day, UCT

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rePhotoSA

The repeat photography project  
of southern African landscapes



Plant Conservation Unit



FitzPatrick Institute of  
African Ornithology





*"Gouritz River Poort from South"*

A W Rogers  
08/09/1898

slopes covered  
in vegetation

phenology

alien invasives

bank erosion

infrastructure

river was flowing

hydrology

Aloes in foreground

abundance



# FIXED-POINT REPEAT GROUND PHOTOGRAPHY



**Pole Evans 1928**

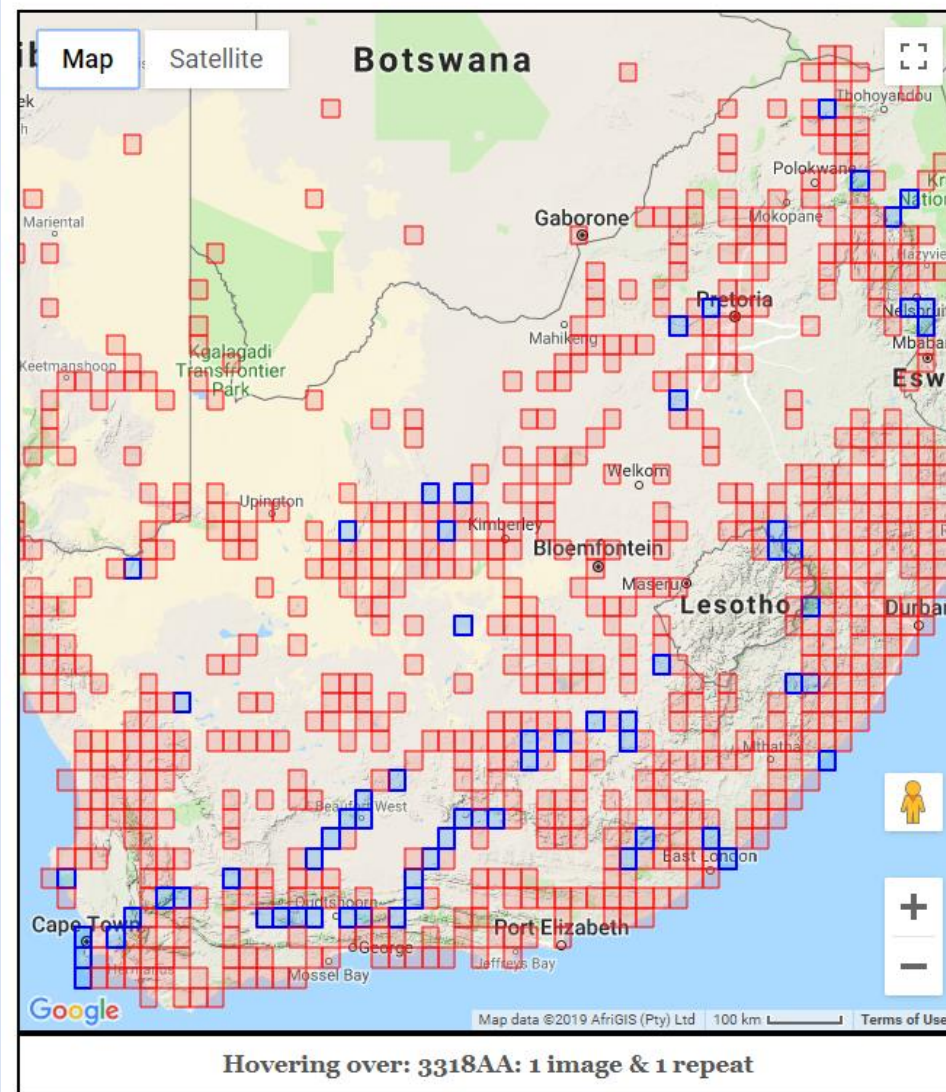


**du Toit 2016**



## Map showing QDSs with historical photos

To see the photos for a particular QDS, click on the relevant block. **RED** squares contain historical images only and turn **BLUE** when repeat images have been uploaded



**From our citizen scientists...**

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# **#335: *"Schier Island from Langebaan"***

Pole Evans 1921





# **#335: *"Schier Island from Langebaan"***

Bull 2016





# #3585: *"Effect of grazing on Spekboomveld"*

Acocks 1968





# **#3585: "Effect of grazing on Spekboomveld"**

du Toit 2016





# #2261: "*Highmoor, Natal Drakensberg*"

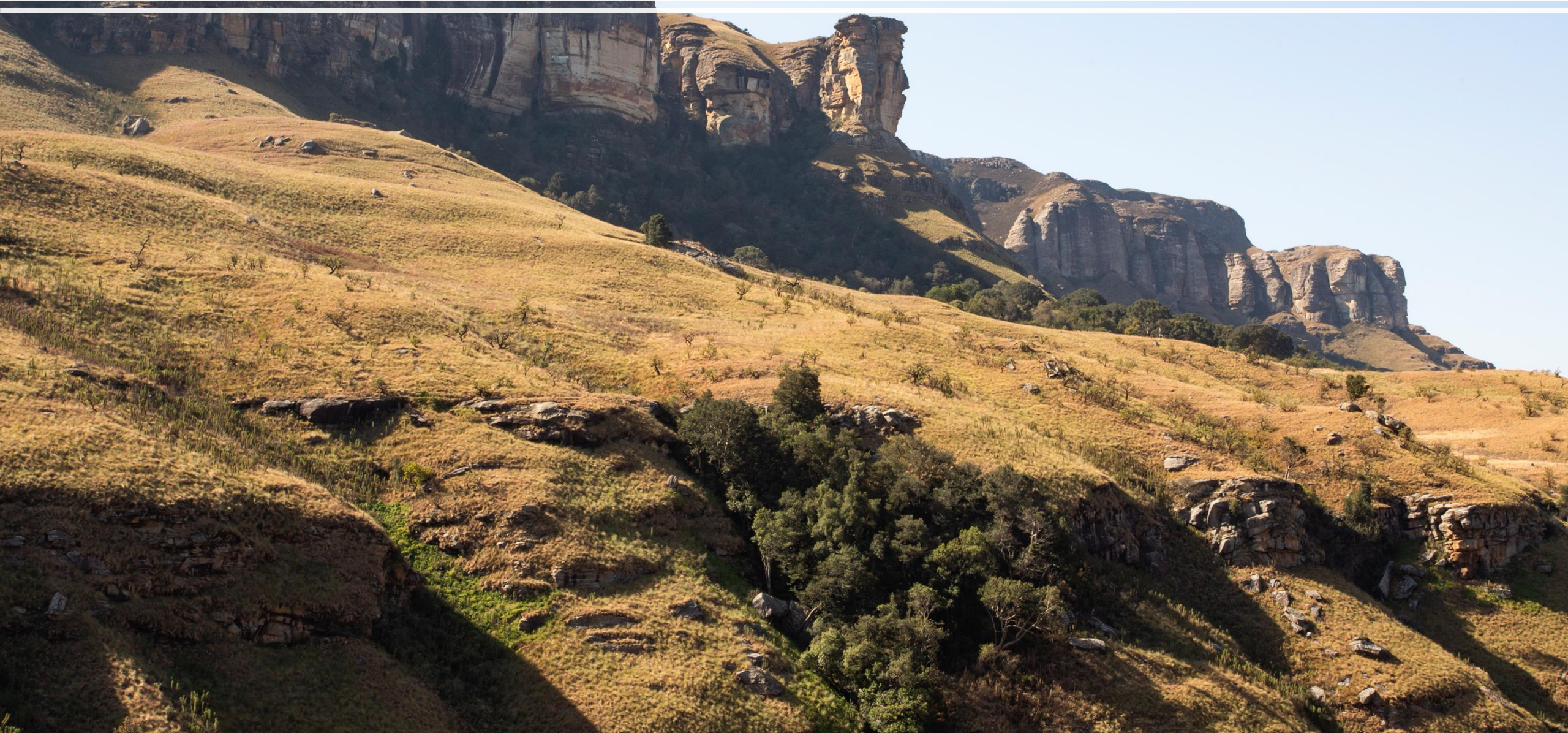
Nanni 1968





# #2261: "*Highmoor, Natal Drakensberg*"

Hundermark & Petersen 2019





# **Applications of repeat photography**

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# Monitoring broadscale landscape changes

South African Journal of Botany 101 (2015) 139–147



Contents lists available at ScienceDirect

South African Journal of Botany

journal homepage: [www.elsevier.com/locate/sajb](http://www.elsevier.com/locate/sajb)



Biome stability and long-term vegetation change in the semi-arid, south-eastern interior of South Africa: A synthesis of repeat photo-monitoring studies



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## Changes in hydrology:

The change in hydrology of the Fish River has resulted in an increase in cover of the widespread reed, *Phragmites australis* which now covers the full breadth of the river bed at this site.

Lidbetter 1900



Hoffman & Masubelele 2009





# Monitoring population-level changes

Biodivers Conserv (2016) 25:2153–2170  
DOI 10.1007/s10531-016-1183-x



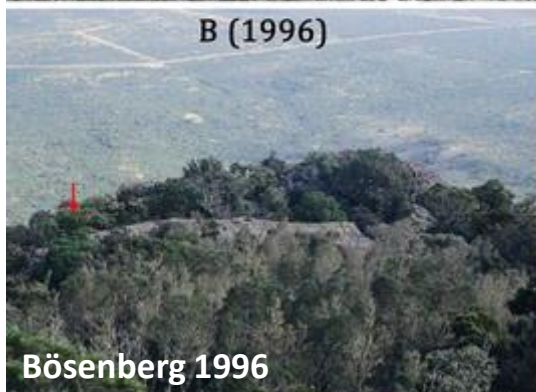
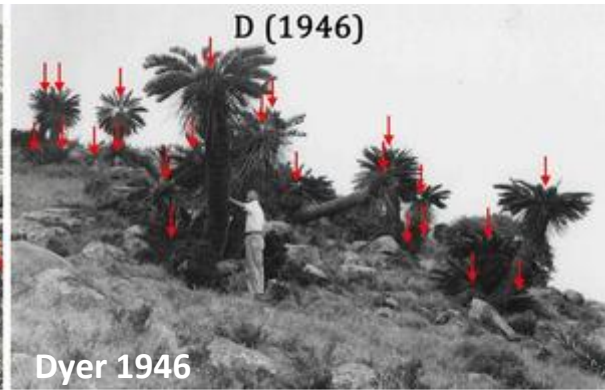
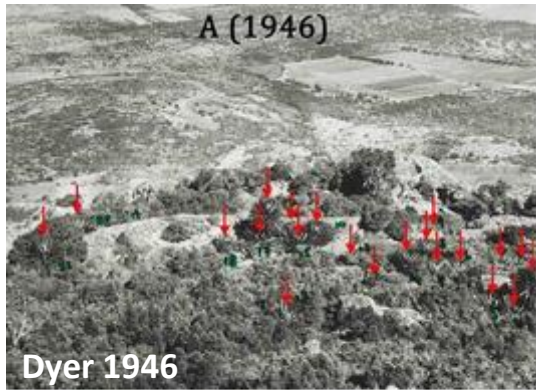
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ORIGINAL PAPER

## Repeat photography confirms alarming decline in South African cycads

Desale Y. Okubamichael<sup>1</sup> · Sam Jack<sup>1</sup> · J. De Wet Bösenberg<sup>2</sup> ·  
M. Timm Hoffman<sup>1</sup> · John S. Donaldson<sup>1,2</sup>





## Changes in population size:

- 1940 – mid-1990s: **78%** survival
- 1940 – 2014: **16%** survival



# Not without its limitations:

- Photographer perspective
- Film quality before scanning

Best used in conjunction with field surveys and/or satellite imagery



Photo credit: Timm Hoffman (2015)



# Join rePhotoSA as a citizen scientist



<http://rephotosa.adu.org.za>



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