

# Population trends, movements and habitat use of the Secretarybird *Sagittarius serpentarius*

Sally Hofmeyr<sup>1,2</sup>

Craig Symes<sup>1</sup>

Les Underhill<sup>2</sup>



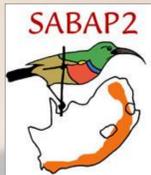
<sup>1</sup> School of Animal, Plant & Environmental Sciences, University of the Witwatersrand, Johannesburg, South Africa

<sup>2</sup> Animal Demography Unit, Department of Zoology, University of Cape Town, Rondebosch, South Africa

Email: salhofmeyr@gmail.com

## Background

- The Secretarybird has declined throughout Africa (Baker *et al.* 2010)
- Classified as Vulnerable globally in 2011 (BirdLife International 2012)
- Analysis of South African bird atlas data suggests the species has declined here, especially in the north-east, including the Kruger National Park.



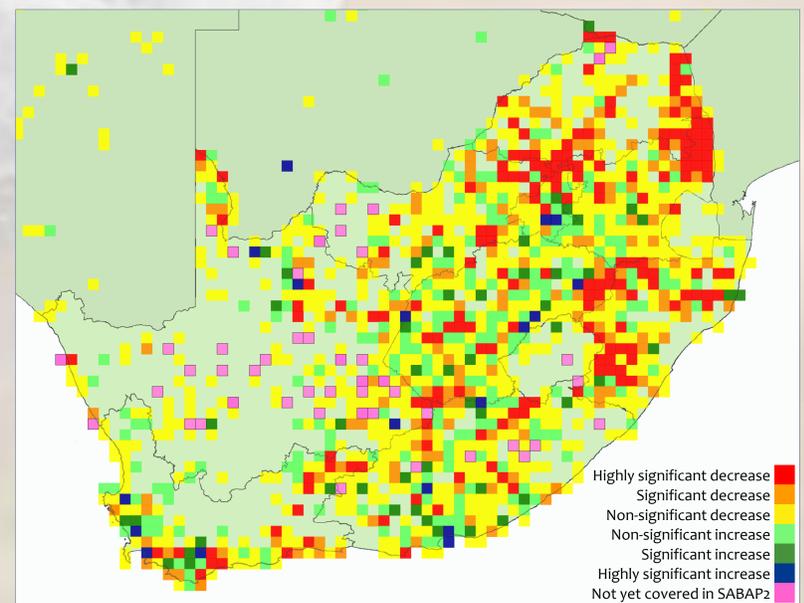
## Southern African Bird Atlas Projects (SABAP1 & SABAP2)

### Methods

- Checklists of bird species recorded in grid cells by citizen scientists
- **SABAP1:** 15' x 15' grid cells, mostly 1987–1991; 7.3 million records, 15 792 for the Secretarybird
- **SABAP2:** 5' x 5' grid cells, 2007 ongoing; 4.0 million records, 2 737 for the Secretarybird
- Average checklist lengths for both projects are similar, therefore reporting rates can be compared.

### Data analysis

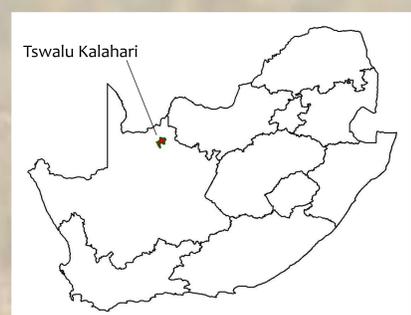
For each 15' x 15' grid cell, reporting rates from SABAP2 were compared with SABAP1 reporting rates, using the standard test statistic for proportions. This test takes into account the number of checklists available for both SABAP1 and SABAP2. A map was produced with grid cells colour-coded according to significance.



SABAP comparison map for the Secretarybird, extracted 8 October 2012. This map shows the extent of the statistical difference between the reporting rates for SABAP1 and SABAP2. Coloured squares are quarter-degree grid cells (15' x 15') in which the species was observed in either project. Significance levels correspond approximately to  $p < 0.001$  for blue and red cells and  $p < 0.05$  for dark green and orange cells.

## Project proposal

- GPS tracking of adults using the University of Amsterdam Bird Tracking System (UvA-BiTS) high resolution tracking devices ([www.uva-bits.nl](http://www.uva-bits.nl))
- Adults and chicks will be colour-ringed and sexed
- Nests will be monitored manually and by camera trap
- High spatial and temporal resolution tracking will allow detailed study of movements, ecology and habitat use of adults during and between breeding attempts



South Africa and the study site: Tswalu Kalahari, a private reserve in the Northern Cape



Photograph: Nico Myburg



Photograph: Dawie de Swardt

## Acknowledgements

**Funding:** Tswalu Foundation, Tswalu Kalahari Reserve, E. Oppenheimer & Son., Wits University URC, UCT Equipment fund, NRF

**Assistance and advice:** Michael Brooks, Victor Garcia, Kotie Herholdt, Ben Hoffman, Megan Murgatroyd, Ernst Retief, Jessica Shaw, Dirk and Karen van Stuyvenberg, Dawie de Swardt, Tswalu staff, Ronelle Visagie, Arnold van der Westhuizen



Photograph: Dawie de Swardt

Background photograph by Wicus Leeuwen