

## The Rufford Foundation

### Final Report

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Congratulations on the completion of your project that was supported by The Rufford Foundation.

We ask all grant recipients to complete a Final Report Form that helps us to gauge the success of our grant giving. The Final Report must be sent in **word format** and not PDF format or any other format. We understand that projects often do not follow the predicted course but knowledge of your experiences is valuable to us and others who may be undertaking similar work. Please be as honest as you can in answering the questions – remember that negative experiences are just as valuable as positive ones if they help others to learn from them.

Please complete the form in English and be as clear and concise as you can. Please note that the information may be edited for clarity. We will ask for further information if required. If you have any other materials produced by the project, particularly a few relevant photographs, please send these to us separately.

Please submit your final report to [jane@rufford.org](mailto:jane@rufford.org).

Thank you for your help.

**Josh Cole, Grants Director**

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Grant Recipient Details	
Your name	Dr Lindy Thompson
Project title	Ecology and movements of the Hooded Vulture in the Kruger-to-Canyons Biosphere Reserve, South Africa.
RSG reference	21859-2
Reporting period	7 March 2017 to 6 March 2018
Amount of grant	£5000.
Your email address	LindyJane.Thompson@gmail.com
Date of this report	1 May 2018

1. Please indicate the level of achievement of the project's original objectives and include any relevant comments on factors affecting this.

Objective	Not achieved	Partially achieved	Fully achieved	Comments
Investigate breeding biology of Hooded Vultures in South Africa.				This second grant from Rufford supported our 3 <sup>rd</sup> field season. We have published two peer-reviewed papers with these results: (i) highlighting previously unrecorded behaviour for this species (nest material theft) and (ii) identifying a new species of nest predator. We have shown that hooded vultures monitor their nests year round.
Investigate nest site preference of Hooded Vultures in South Africa.				Dr Campbell Murn and I are approximately mid-way through our data collection for this goal. I have collected data on the nest sites that I am monitoring, and now need to collect the same data on 'randomly chosen' sites, and then compare these. We will combine our data and I will write the paper this year, acknowledging Rufford's support.
Investigate movement ecology of Hooded Vultures in Africa.				I have completed a draft manuscript which will be submitted to 15 co-authors for their comments, and then submitted for publication this year. Our manuscript describes differences in home range size between hooded vultures from different regions, and of different ages and sexes.
Investigate feeding ecology of Hooded Vultures in South Africa.				We have collected 3 years of data so far from supplementary feeding sites in South Africa. We now need to find a student to analyse this data as part of an MSc or PhD project. We hope to use the same methods of analysis as Dr Evan Buechley is using in his study in Ethiopia, so that our studies will be comparable.

2. Please explain any unforeseen difficulties that arose during the project and how these were tackled (if relevant).

One challenge was that two of our camera traps funded by the Rufford Foundation were lost; the first camera trap was removed from its position at a vulture feeding site

by an animal (staff at Selati Game Reserve found it squashed, and lying face-up in mud, and the last picture taken was of a spotted hyaena), and the second camera trap 'disappeared' from a site where toilet paper was also found, suggesting that someone had chosen the site to defecate and seen the camera and taken it – this would have been someone trespassing on the property along the river, since the property is a private wildlife estate. Since then, I will no longer attach cameras within reach of people or hyaenas.

**3. Briefly describe the three most important outcomes of your project.**

- (i) We have gathered a huge amount of camera trapping data, which has been used for two scientific publications so far, shedding light on the breeding behaviour of our study species. We also have tens of thousands of camera trap pictures (from feeding sites) for an MSc or PhD student to use, which we hope will be used to learn about best-practises for supplementary feeding sites.
- (ii) We have helped to raise awareness about hooded vultures in our study area, and further afield, and we have trained others in research techniques, including tree climbing using ropes and harness, data collection etc.
- (iii) We are investigating the factors affecting their nest site selection, which will help us to define which areas to conserve as actual/potential core breeding areas.

**4. Briefly describe the involvement of local communities and how they have benefitted from the project (if relevant).**

- (i) Environmental education: We have increased awareness of the importance of vultures through school visits and talks for the public. This is important as vultures directly benefit the local community by removing carcasses of livestock in community areas.
- (ii) Skills development: I have trained a number of volunteers in tree-climbing (using a rope and harness), and I have worked with some Environmental Monitors (employed by South African National Parks) and other volunteers from the local community, so that they have been exposed to research techniques, and learned how and why we are doing this project.
- (iii) Temporary work: Some of the previously mentioned Environmental Monitors and volunteers were paid for their assistance in the field, using funds kindly donated by the Hawk Conservancy Trust in the UK.

## 5. Are there any plans to continue this work?

Yes. I began this project for my postdoctoral studies through the University of KwaZulu-Natal, in South Africa. My 3-year position at the university came to an end on 1 February 2018, and on 1 April 2018 I was employed by the Endangered Wildlife Trust, a South African NGO, which is happy for me to continue my studies on hooded vultures as part of my full-time work with them. The Endangered Wildlife Trust is a conservation NGO, and my new role will focus on coordinating all vulture projects in southern Africa, under their Birds of Prey Programme. My work will include applied conservation projects aimed at conserving vultures, as well as continuing my research and monitoring on Hooded Vultures.

## 6. How do you plan to share the results of your work with others?

My work has been and will continue to be shared with others via the following mediums:

- (i) **Scientific publications in international peer-reviewed journals.** Two papers have been published for far, and we envisage a further four papers submitted over the next 12 months, from this work which Rufford has supported.
- (ii) **Facebook.** Our 'group' page had close to 500 members. I am in the process of switching this to a 'page', which enables a larger audience to be reached, and it allows us to monitor how many people have seen our posts, etc.
- (iii) **Newspaper/magazine articles.** In 2017, I published one newspaper article and one magazine article on work conducted using Rufford funds. These media outlets have circulations of 5 000 and 65 000 people respectively.
- (iv) **Public talks and school visits.** During the period of this grant (one year), I did one school visit (where I spoke to the whole school at Hoedspruit Christian School) and one public talk (for the Lowveld Bird Club in Nelspruit).

## 7. Timescale: Over what period was The Rufford Foundation grant used? How does this compare to the anticipated or actual length of the project?

The grant from The Rufford Foundation was used over 1 year, which was the anticipated and actual length of the project.

8. Budget: Please provide a breakdown of budgeted versus actual expenditure and the reasons for any differences. All figures should be in £ sterling, indicating the local exchange rate used. **£1 = R15.57\***

Budgeted Item	Budgeted Amount	Actual Amount	Difference	Comments
Spherical densiometer	£73 = <b>R1136</b>	£0 = <b>R0</b>	£73 = <b>R1136</b>	Bought on 29 May 2017 and paid for by <b>Hawk Conservancy Trust, UK</b> .
Fuel	£1730 = <b>R26930</b>	£2442 = <b>R38012<sup>a</sup></b>	-£712 = - <b>R11082</b>	Paid for using <b>Rufford</b> money.
Nikon laser rangefinder	£410 = <b>R6382</b>	£0 = <b>R0</b>	£410 = <b>R6382</b>	Paid for by <b>Hawk Conservancy Trust</b> .
Vortex spotting scope	£610 = <b>R9495</b>	£0 = <b>R0</b>	£610 = <b>R9495</b>	Loaned to us by <b>John Davies</b> (collaborator), so I didn't need to buy this.
Tripod	£190 = <b>R2958</b>	£0 = <b>R0</b>	£190 = <b>R2958</b>	Loaned to us by <b>John Davies</b> (collaborator), so I didn't need to buy this.
Spotting scope case	£70 = <b>R1090</b>	£0 = <b>R0</b>	£70 = <b>R1090</b>	Loaned to us by <b>John Davies</b> (collaborator), so I didn't need to buy this.
10 x Ltl Acorn cameras	£1767 = <b>R27506</b>	£2382 = <b>R3707</b>	-£615 = - <b>R9571</b>	Paid for using <b>Rufford</b> money. After much research, we bought Bushnell cameras, as these seemed better for nest-site studies.
Kestrel weather meter	£150 = <b>R2335</b>	£162 = <b>R2518</b>	-£12 = - <b>R183</b>	Paid for using <b>Rufford</b> money.
<b>Not budgeted:</b> 3 x DNA sexing kits	£0 = <b>R0</b>	£14 = <b>R225</b>	-£14 = - <b>R225</b>	Paid for using <b>Rufford</b> money.

\*The initial deposit of £5 000 (ZAR, R77 831.50, was received by Lindy on 22 March 2017), which equates to an **exchange rate of £1 = R15.57**

<sup>a</sup> R77,831.50 (initial deposit from Rufford) - R37076.86 (10 x camera traps) - R2518.00 (1 x kestrel weather meter) - R225.00 (3 x DNA avian sexing kits) = **R38 011.64** (this is the remainder of the funds from Rufford, after my spending, and this is owed to Prof Colleen Downs, my supervisor, to reimburse her for fuel for the field vehicle).

## SUMMARY OF SPENDING

	Amount in GBP	Amount in ZAR	Exchange rate
Initial deposit from Rufford	£5 000.00	R 77 831.50	15.57
<b>Item purchased:</b>	<b>Amount in GBP</b>	<b>Amount in ZAR</b>	<b>Exchange rate</b>
10 x Bushnell cameras	£2 381.87	R 37 076.86	£1 = R15.57
Kestrel weather meter	£161.76	R 2 518.00	
3 x DNA sexing kit	£14.45	R 225.00	
fuel for field vehicle	£2 441.92	R 38 011.64	
<b>Total spending:</b>	<b>£5 000.00</b>	<b>£77 831.50</b>	

### 9. Looking ahead, what do you feel are the important next steps?

I think that protection of both nest sites and feeding sites is important. I hope to implement projects on both in my new role with the Endangered Wildlife Trust in South Africa. Finalising our study on factors affecting nest-site selection in hooded vultures will help us pinpoint the areas we should be protecting in terms of breeding habitat. I also think that education is important, and I hope to do fundraising for this, and guide the formatting of education activities, to raise awareness about vultures in the local communities. Lastly, I will assist with implementing the recommended actions of the Vulture Multi-species Action Plan, which was adopted by parties to the Convention on Migratory Species in October 2017.

### 10. Did you use The Rufford Foundation logo in any materials produced in relation to this project? Did The Rufford Foundation receive any publicity during the course of your work?

Yes. I used the Rufford logo on my final PowerPoint slide (my Acknowledgement's page) in the following oral presentations at scientific conferences:

**Thompson, L.J. (presenter), Bildstein, K., Downs, C.T., Botha, A., Willows-Munro, S. & Murn, C.**

Breeding ecology and genetics of the Hooded Vulture *Necrosyrtes monachus* in the Kruger-to-Canyons Biosphere Region, South Africa. Raptor Research Foundation conference, Salt Lake City, Utah, USA, 7-12 Nov 2017.

**Thompson, L.J. (presenter), Bildstein, K., Downs, C.T., Botha, A., Willows-Munro, S. & Murn, C.**

**(2017)** Ecology of the Hooded Vulture *Necrosyrtes monachus* in the Kruger-to-Canyons Biosphere Region, South Africa. SESYNC meeting: 'Saving Africa's Vultures', Annapolis, Maryland, USA, 1 Nov 2017.

**Thompson, L.J. (presenter), Downs, C.T., Botha, A., Bildstein, K. & Murn, C. (2017)**

Breeding ecology of the Hooded Vulture *Necrosyrtes monachus* in the Kruger-to-Canyons Biosphere Region, South Africa. Combined biennial conference of the ESSA and ZSSA, CSIR International Convention Centre, Pretoria, 3-7 Jul 2017.

**Thompson, L.J. (presenter), Downs, C.T., Botha, A., Bildstein, K. & Murn, C. (2017)**

Ecology of the Hooded Vulture *Necrosyrtes monachus* in the Kruger-to-Canyons Biosphere Region. 12th

Annual Conference of the Endangered Wildlife Trust's Birds of Prey Programme, Witsand Nature Reserve, 27-31 Mar 2017.

I acknowledged the generous support of the Rufford Foundation in two scientific peer-reviewed papers, and we have a third paper currently in draft-form, which we will submit for publication later this year, which will also acknowledge the Rufford Foundation:

**Thompson, L.J., Davies, J.P., Gudehuys, M., Botha, A., Bildstein, K., Murn, C. & Downs, C.T. (2017)** Visitors to Hooded Vulture *Necrosyrtes monachus* nests in north-eastern South Africa. *Ostrich* **88**:155-162

**Thompson, L.J., Davies, J.P., Bildstein, K.L. & Downs, C.T. (2017)** Removal of material from a Hooded Vulture *Necrosyrtes monachus* nest by a starling and a Hooded Vulture. *Ostrich* **88**:183-187

**Thompson, L.J., Bildstein, K.L. et al. (2018)** Variation in monthly home-range size of Hooded Vultures *Necrosyrtes monachus* in West, East and southern Africa. *In prep.*

**11. Please provide a full list of all the members of your team and briefly what was their role in the project.**

**Dr Lindy J. Thompson – Principal Investigator**, University of KwaZulu-Natal, RSA

- Planned and conducted all fieldwork
- Managed databases, conducted analyses, wrote drafts of scientific papers.

**Mr André J. Botha – collaborator**, Endangered Wildlife Trust, RSA

- André was essential in networking at the beginning of the project, and throughout. He introduced me to two important landowners at the start of the project, and showed me some nests in Phalaborwa. His encouragement and support have been vital to the project. He assisted with trapping birds for fitting transmitters, and taught me and John how to trap vultures. Andre provided constructive comments on all papers.

**Dr Keith L. Bildstein – collaborator**, Hawk Mountain Sanctuary, USA

- Keith provided access to movement data for Hooded Vultures tagged throughout Africa. His networking abilities and excellent working relations with other researchers allowed us to form a collaboration of many people who all provided tracking data, which will become the largest tracking study of African vultures to date. Keith also very generously paid for me to visit Hawk Mountain Sanctuary (USA) twice, to work on the tracking data, and covered my expenses while I was there. He also provided constructive comments on all papers.

**Prof Colleen T. Downs – Project Supervisor**, University of KwaZulu-Natal, RSA

- Prof Downs was aware of all work, and supervised all research. She encouraged me to attend local and international conferences, and provided some of the funding for these. Her support was essential to the project. She loaned me a field vehicle, until it was in an accident (not caused by me) in late 2017, but luckily the vehicle could be repaired. Prof Downs also

generously provided a laptop (in 2015), paid for me to attend a tree-climbing course and bought climbing kit (in 2015), and covered most of my project expenses (2015 to 2018), partly through monies I secured through the National Research Foundation of South Africa (in 2016 and 2017). Prof Downs provided constructive comments on all papers.

**Dr Campbell Murn – collaborator**, Hawk Conservancy Trust, UK

- Campbell has been conducting similar fieldwork to me, in the southern and northern sections of the Kruger National Park, while my fieldwork has been done in the centre of the Kruger National Park, and in the surrounding private nature reserves. Our results will be pooled for the purposes of publications on factors affecting nest-site selection of Hooded Vultures. Campbell has been also very kindly arranged for generous funding through the Hawk Conservancy Trust, which has covered toll fees, batteries for camera traps, repairs to punctures, printing of posters for landowners etc., and well as some of the items I applied for in this grant (e.g. the Nikon rangefinder), and so I have diverted those funds to fuel. Campbell also provided constructive comments on all papers.

**Mr John P. Davies – collaborator**, Endangered Wildlife Trust, RSA

- John has assisted with much of the fieldwork, logistics (particularly in the Kruger National Park), and new concepts for papers.

**12. Any other comments?**

I am extremely grateful to the Rufford Foundation for their generous support over the last 2 years. I have learned a great deal, and am even more passionate now about vultures and their conservation. We have achieved a lot with the funding from the Rufford Foundation, and we plan to continue and expand our work in the years to come, under the umbrella of the Endangered Wildlife Trust and our collaborators. I plan to continue working with my collaborators, and keep the good working relations I have formed during this project.



Left: Lindy Thompson and John Davies installing a climbing rope in a Hooded Vulture nest tree. Right: Hooded Vulture breeding habitat along the Blyde River.