

THE FITZPATRICK INSTITUTE OF AFRICAN ORNITHOLOGY



Field research assistant: managing microclimates for nesting desert hornbills
FitzPatrick Institute of African Ornithology, Department of Biological Sciences,
University of Cape Town



We invite applications for this 2.5 month field research assistant position at Kuruman River Reserve in the southern Kalahari, Jan – mid-March 2025. The position will consist of collecting field data on breeding success of Southern Yellow-billed Hornbills *Tockus leucomelas*, nesting in experimental nest boxes. The aim of the project is to verify whether an insulated nestbox design can buffer breeding females and nestlings against hot weather conditions which are becoming increasingly frequent under climate change. The project is funded by WWF-USA and led by A/Prof. Susan Cunningham.

The core threat to Kalahari Southern Yellow-billed Hornbills is climate change, operating mainly through the strong negative effect of high temperature on nesting success. In the Kalahari, hornbills are also highly reliant on camelthorn trees *Vachellia erioloba* for nest cavities, posing additional risk as this tree species is declining (Raimondo et al. 2009). Nest boxes will therefore likely become an increasingly important conservation tool for hornbills and other cavity-nesting birds in this habitat. However, there is a high risk that nest boxes can become ‘ecological traps’ under changing climates, due to their propensity to be poorly thermally-buffered compared to natural cavities (Larsen et al. 2018): this is especially important given the rapid rates of temperature rise in the area. Our data on the critical importance of cavity temperatures for hornbill nest success suggest a very strong need for development of a simple, low cost nest-box design that is ‘climate proof’ and can (a) buffer current negative impacts of high temperatures on nest success and (b) be rolled out in future as a ‘safe’ conservation tool for management of hornbills and other cavity nesters in an increasingly hot future in which cavity-providing trees (camelthorns) are rarer in the environment. We have designed just such a nestbox, and this project aims to assess the efficacy of this box in buffering negative temperature effects on the birds.

MAIN DUTIES:

- performing nestbox checks and monitoring the status of the breeding attempts
- collecting morphometric measurements on nesting adult female hornbills and nestlings
- maintaining and downloading data from an onsite weatherstation, ibuttons in nest boxes, and perch scales at nests
- 4x4 driving and responsible car maintenance
- maintaining meticulous data records
- occasional nestbox maintenance and repair

SPECIFIC ATTRIBUTES:

The successful applicant will need to independently manage and keep track of all aspects of the research. Office work will entail keeping meticulous records of all collected data, and fieldwork involves driving in sandy conditions and bird handling skills. It is thus essential that the candidate meet the following criteria:

- Undergraduate degree in zoology or equivalent;
- Attention to detail and organized as data management is a crucial part of the post;
- Demonstrated history of field work in demanding environments collecting biological data;
- Curious, self-motivated and well-organized;
- Self-sufficient, as you will need to work without direct supervision for ~2 months;
- Computer literacy with strong experience in data management;
- Previous experience in handling birds including (ideally) measurements and ringing;
- A valid drivers licence;
- Be someone who thrives in remote/isolated field conditions and is in good physical and mental shape;
- A can-do attitude and ability to get on with diverse colleagues.

BACKGROUND INFORMATION:

The field site is called the Kuruman River Reserve, closest to the village of van Zylsrus, in the Northern Cape of South Africa. The reserve has a diverse and abundant animal and bird life with approximately 120 recorded bird species, including many endemics. The mammals include large study populations of suricates and ground squirrels, as well as aardvark, aardwolf, cape fox, eland, blue wildebeest, steenbok, duiker, gemsbok (oryx), and springbok. For those interested in smaller creatures, there is an abundance of insects and arthropods, including several scorpion and solifuge species. The reserve is characterised by dunes and a dry riverbed interspersed with large camelthorn trees. The mean daily maximum temperature is approximately 36 °C (97 Farenheit), but regularly exceeds 40 °C (104 Farenheit).

The researcher will be staying at a well-equipped research station at the field site and get their own room, alongside 5-10 other researchers. There are approximately 35 research personnel at the field site, so there is opportunity for social interaction despite the remoteness of the field site. These personnel including volunteers and researchers from all over the world working primarily on suricates, cape ground squirrels, and mole rats. This is the site of the long running, internationally acclaimed Kalahari Meerkat Project (<http://kalahari-meerkats.com/kmp/>).

REMUNERATION:

We will provide a stipend of R10 000 per month. Food and accommodation in the field are provided.

TO APPLY:

To apply, please send your CV including contact details of at least two referees and a short (250-500 word) letter of motivation to benjaminmurphy2406@gmail.com and susan.cunningham@uct.ac.za with the subject "yourlastname_hornbillproject_2025". For more information on the FitzPatrick Institute visit www.fitzpatrick.uct.ac.za and the Department of Biological Sciences at UCT visit www.biologicalsciences.uct.ac.za

Candidates from historically disadvantaged backgrounds are especially encouraged to apply.

Closing date: 30 November 2024

We reserve the right to disqualify ineligible, incomplete and/or inappropriate applications, and reserve the right not to appoint.