FitzPatrick Institute of African Ornithology

UNIVERSITY OF CAPE TOWN
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APNR Southern Ground-Hornbill Research & Conservation Project

QUARTERLY REPORT

April 2025

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ABOUT US

The APNR Southern Ground-Hornbill Project is dedicated to the research and conservation of Southern Ground-Hornbills in the Greater Kruger region of South Africa. Researchers from the FitzPatrick Institute of African Ornithology, UCT, have been at the forefront of critical research that informs conservation efforts by understanding the habitat use, reproductive success, and behaviour of these iconic birds. The project installs and monitors artificial nests which are vital to enhance their breeding success and allows for comprehensive studies of the birds in their natural environment.

2024/2025 BREEDING SEASON SUMMARY

- 11 breeding attempts
- 9 chicks fledged
- 8 tracking rings deployed
- Perch scale and internal nest camera deployed
- Completed Carrie's PhD data collection
- 14 798 (82 hours) camera trap videos analysed
- 1 artificial nest installed
- 202 sightings of birds recorded in APNR

2024/2025 BREEDING SEASON

Despite the late start to the breeding season, 11 groups attempted to breed within the APNR, with 9 successful attempts (81.8% success rate). Predation rates were noticeably low this season, being confirmed at just one nest (Ingwelala nest on Umbabat PNR). Sedumoni nest, on Olifants North, was the only other nest failure we had this year, but the reason for the failure is unknown. All chicks fledged between mid-March and mid-April after being measured and ringed, and have since been sighted with their respective groups.

Breeding attempts:

Balule PNR:	1) Olifants North (failed)
Klaserie PNR:	2) Ntoma, 3) Copenhagen
Thornybush PNR:	4) Thornybush central
Timbavati PNR:	5) Addger, 6) Caroline, 7) Tawane, 8) Lornay
Umbabat PNR:	9) N'tsiri, 10) Yankee Dam, 11) Ingwelala (failed)

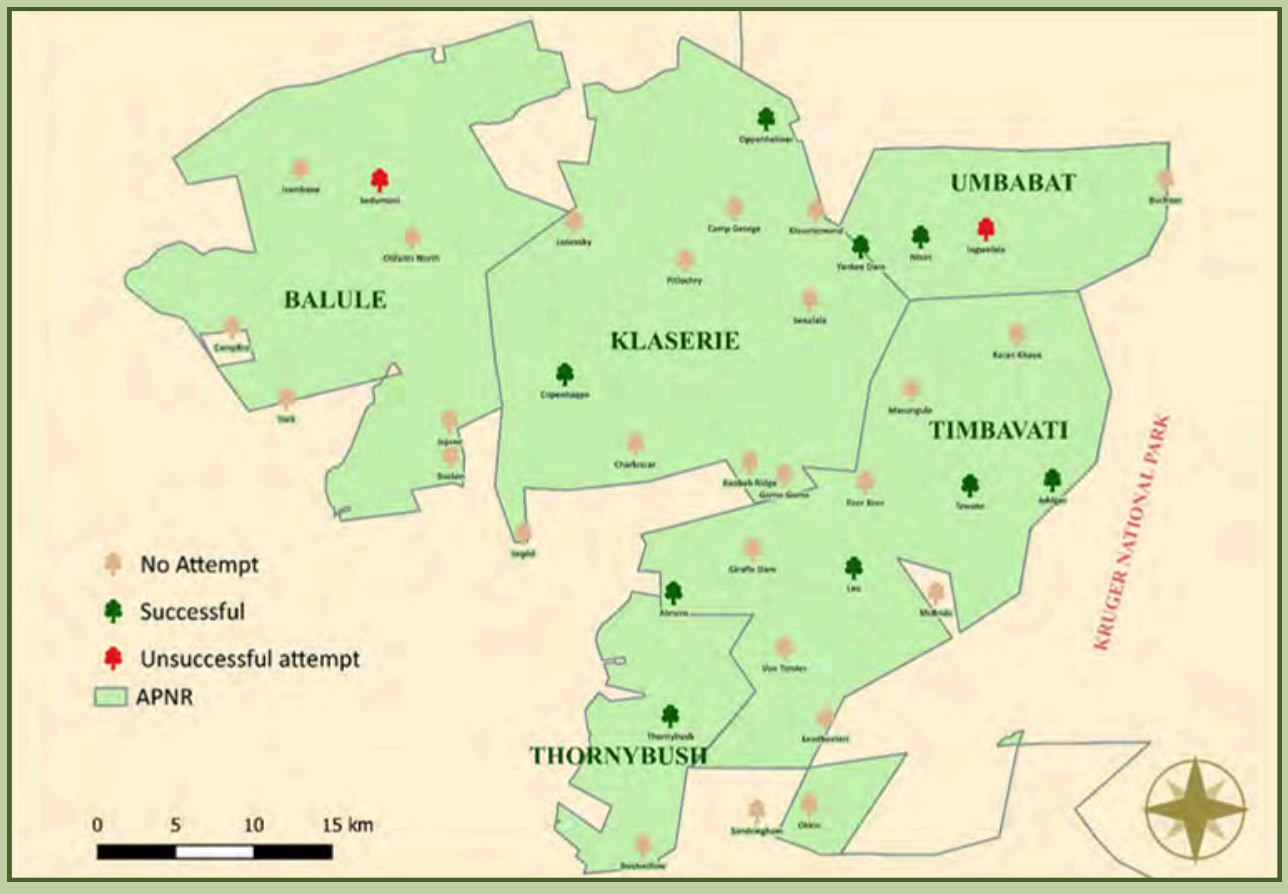


Figure 1. Map showing locations of nests that had successful (green), unsuccessful (red), and no (beige) breeding attempts within the APNR.

THE UNFORTUNATE FATE OF THE INGWELALA CHICK

The Ingwelala nest (Umbabat PNR), one of the few natural nests, was discovered in 2024, with the chick successfully fledging last season. The nest entrance has a width of just 16 cm, making it the smallest nest we know of within the APNR. Therefore, movement inside this nest is quite difficult, an issue that proved costly this season.

On March 14 at 20:44, a genet attacked the chick when it was 56 days old and large enough to realistically fend the genet off. Initially, the chick managed with some success in the early stages of the interaction. However, as the genet climbed above and around the nest, the chick tracked its movement, and in doing so, accidentally wedged its wing in the entrance to the nest. With its wing stuck and inability to move, the result was inevitable, and the chick died at 21:30.

Given the extremely small size of the nest and that the chick most likely would have defended itself had its wing not gotten stuck, we will provide this group with an artificial nest near the natural nest as an alternative nesting site for the 2025/2026 breeding season.

Figure 2. Camera trap footage of the genet attacking the chick, and how the chick became stuck at the entrance of the nest where it was unable to defend itself (left). Female when incubating, showing how small the nest is (right)

GIRAFFE NEST REPLACEMENT

An artificial nest was installed on Timbavati PNR as a replacement for a resident group. The original nest was installed in 2020; however, despite evidence that the group found the nest, there has been no interest in breeding from the birds. A camera trap was placed at the nest to investigate the possible reasons for this, and the nest appears to be used exclusively by a genet. In addition to this, we were also informed that a resident leopard frequently visits the nest tree, which is likely the reason for the birds not using it.

The new nest was installed about 1 km away in a location that is near a historically used nest by the group. This will hopefully provide the group with the opportunity to breed, and we will monitor it closely.

Figure 3. New replacement nest on Giraffe property in Timbavati PNR

GROUND-HORNBILLS ON OTHER RESERVES

Figure 4. Chick prior to the nest tree collapse

With the natural dispersal of birds from the APNR to nearby reserves, breeding is now occurring elsewhere, helping to bolster the population.

This season, the group on Moditlo/Blue Canyon Conservancy (which consists of at least two individuals from the APNR) attempted to breed in a dying tree. Unfortunately, however, the tree collapsed after some heavy rain when the chick was approximately 40 days old and it died of the injuries sustained. Although sad, this is a rare and largely undocumented circumstance of a nesting tree collapsing with a chick inside.

Interestingly, the group continued to return to the collapsed nest for several days in an attempt to feed the chick on the ground. Thanks to residents and staff in the area for keeping us informed.

If you spot a bird with a metal, colour, or tracking ring, please reach out to us and let us know. This information is crucial for us to keep track of the different groups and individuals.

RESEARCH

TRACKING RING DEPLOYMENT

Of the nine fledged chicks this season, eight were successfully fitted with the newly developed tracking rings which have already collected valuable data on the species. So far, we are able to see how they are using the landscape within their territories, and which areas are being favoured. However, the fledglings are still very young and are still learning how to fly and forage, so we expect that these patterns will likely change as the birds gain more experience and become more independent.

These tracking devices are a big milestone for the project; however, they are not without their flaws. In order to access the data, it needs to be downloaded from the devices when within visual distance of the birds. Therefore, if anyone within the APNR is willing to help collect this data or frequently sees any birds with tracking devices, please reach out the us.

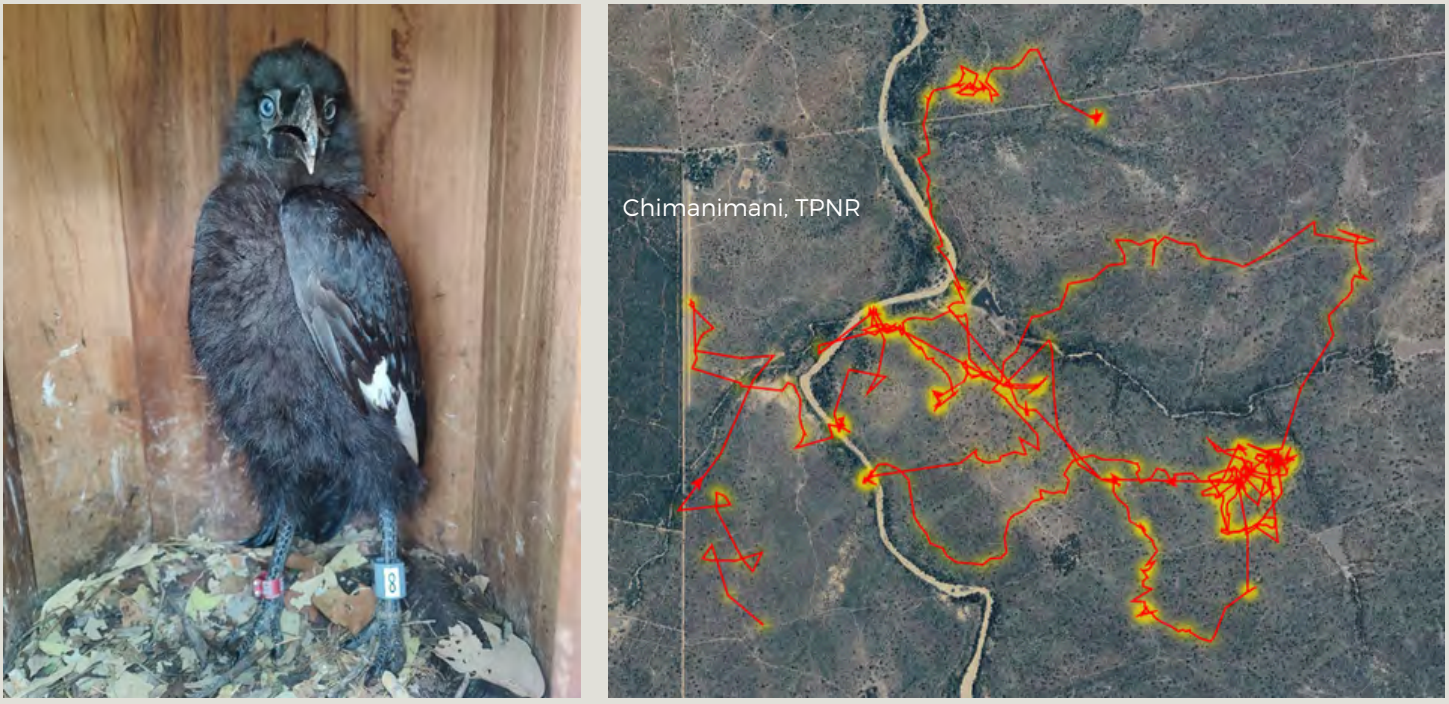


Figure 5. Nestling inside the nest with recently fitted tracking device and colour ring (left) and tracking data post-fledging (right).

PERCH SCALE DEPLOYMENT

With the assistance of the engineering department at the University of Cape Town, the first automatic perch scale was installed at Karan Khaya nest on Timbavati PNR. This scale, in conjunction with camera traps, will enable us to monitor birds' body condition throughout the season and investigate the environmental factors that determine the birds breeding decisions and outputs.

Before the next breeding season, additional scales will be implemented at 15 other nesting sites throughout the reserves

Figure 6. Perch scale fitted at Karan Khaya nest on Timbavati PNR

INTERNAL NEST CAMERA

In an attempt to understand what is going on inside the nests during breeding, new artificial nests were created with a hidden compartment that would accommodate an internal nest camera (and other equipment). Therefore, to get proof-of-concept, we trialled a camera trap in the nest of a non-breeding group. Even when groups do not breed, nesting sites remain a limited resource and they will return occasionally to ensure that all is as it should be.

Figure 7. Internal nest camera footage of a non-breeding female

Although one of the birds attacked the camera briefly, it was quickly forgotten about and the proof-of-concept was achieved. This opens the door for additional research into the breeding behaviours of ground-hornbills. Next season, a camera will be trialled on a breeding group.

FIELDWORK WRAP FOR CARRIE

The end of this breeding season also marked the end of Carrie's data collection and fieldwork for her PhD research looking into the impact of high temperatures on chick growth and physiology.

Over the past six years, Carrie measured a total of 62 chicks and has collected data on growth rates, behaviour, nest temperatures, and shade within the landscape, and extracted data from tens of thousands of videos from camera traps placed at nesting sites.

With all her data collection completed, the only tasks remaining are the analyses of the data and the write-up of the thesis. This valuable information will add to the growing knowledge about the impacts of climate change on not just ground-hornbills, but other species living in savannah ecosystems experiencing similar increases in temperature trends.

Figure 8. Some of the experiences and challenges of Carrie's fieldwork.

HOW TO HELP

SUBMIT SIGHTINGS

We have set up WhatsApp groups for members of the APNR (guides, wardens, mangers etc.) to log sightings of ground-hornbills.

This is an effective way to gather information on group movements and we encourage anyone who is interested in joining an already established WhatsApp group or would like to set one up for their area to get in touch with us.

Alternatively you can email sightings to: **info@apnrhornbill.com** or WhatsApp **(+27) 72 345 6584** or submit on our website: apnrgroundhornbillproject.com

Info we require:

1. **Location details, coordinates/ WhatsApp pin drop**
2. **Date and time of the sighting.**
3. **Group details; numbers, ages, sexes.**
4. **Photos/videos**

Map of the APNR with all of the current viable known nesting site locations.

Balule PNR - 6 nests
Klaserie PNR - 11 nests
Thornybush NR - 2 nests
Timbavati PNR - 13 nests
Umbabat PNR - 4 nests

SUPPORT

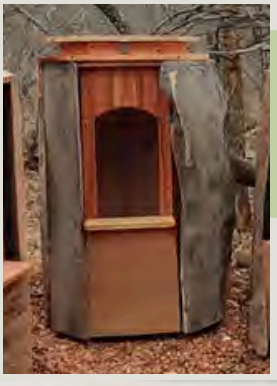
By purchasing one of our exclusive Ground-Hornbill paintings by renowned South African artist Mark Middleton, you not only acquire a beautiful piece of artwork, but also contribute to our research and conservation efforts.

Painting sizes: A1 or A3

Contact us if you would like to place an order

NOTE: Image is watermarked for display only

Please get in touch if you would like to **donate** to the project. Funding for ecology and conservation research is becoming increasingly hard to obtain, even as the critical need for these activities increases. This means that every donation to our research and conservation project is enormously welcomed and makes a positive impact on the conservation of the species.



R7 500 can pay for a new artificial nest box + materials for repairing already installed nests.

R5 000 can pay for a new camera trap, R200 can pay for a pack of batteries to power camera traps.

R10 000 will pay for a new tracking ring for us to monitor fledgling movements and conduct research

R1 700 can pay for a tank of fuel for us to carry out nest checks

R700 can pay for an aluminium colour ring to ID an individual

2024/2025 ACKNOWLEDGMENTS

We thank the APNR for their continued support, funding, and permission to research the ground-hornbill groups on their properties.

Thanks to John Solomon & Caroline Buckway, Bruce and Judy Neill, Wild Wonderful World, Mesker Park Zoo and Botanic Garden, The Rufford Foundation, The Timothy Hancock Charitable Trust, Marc Solomon, Iron Man 4x4 Africa, Janovsky family, Casey Cole, Frame the Wild, Ingwelala members, Warren Cary Wildlife Gallery, & Wild in Africa for their generous donations and funding which supports the continuation of this long-term project.

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Thanks to The Conservation & Research Centre at Royal Malewane for providing accommodation and to Kyle Brand and JJ's Bones Of The Earth for designing and constructing artificial research nests. Thanks to GKEPF for assisting with data collection from the tracking devices.

Thanks to all APNR members and staff who have been of great help, both logistically and by reporting ground-hornbill sightings.

APNR GROUND HORNBILL PROJECT

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