



APNR Southern Ground-Hornbill Research & Conservation Project



January Quarterly Report 2023

Breeding Season 2022/2023

The season got off to a great start at the end of October, with 15 groups attempting to breed. So far, 11 nestlings are still thriving, most of which have now made it halfway through the nestling period. The last time the project saw this number of attempts was back in 2011 (Fig.1).

Breeding Attempts

<i>Timbavati PNR:</i>	Karan Khaya, Johnniesdale, Java, Addger, Hermansburg, Masungulo, Lornay
<i>Klaserie PNR:</i>	Copenhagen, Pitlochry, Senalala, Dover
<i>Umbabat PNR:</i>	Ntsiri, Yankee Dam
<i>Balule PNR:</i>	Jejane, York

Failed Attempts

<i>Timbavati PNR:</i>	Addger, Masungulo, Hermansburg
<i>Klaserie PNR:</i>	Dover

From camera trap footage, we confirmed that both Addger and Masungulo groups abandoned the nests before any chicks had hatched. No predators were seen on the footage; therefore, the reason for these nest abandonments remains unknown. However, we identified a new young female in Addger's group, who did not appear to spend much time in the nest incubating, and a new group named 'Masungulo', comprising a young adult female along with an adult male and a subadult. Therefore, we assume that these young females are inexperienced breeders, which may be the reason for these abandonments. Interestingly, the young female in this new group, Masungulo, has been identified by her unique ring, as a chick that hatched from the Yankee Dam nest on Ndolpfu reserve and was ringed by Dr. Kate Carstens in February 2012 (Fig.2). Unfortunately, the Dover group laid only one egg, which

failed to hatch, and Hermansburg's chick was predated sometime between 20 and 40 days old, most likely by a leopard since there were no remains of the chicks inside the nest.

To-date, a total of 152 chicks have fledged from nests in the APNR and the success here is spilling out on to the neighbouring reserves with dispersal birds beginning to repopulate other areas of their historic range and subsequently helping to form part of the Lowveld Expansion Project.

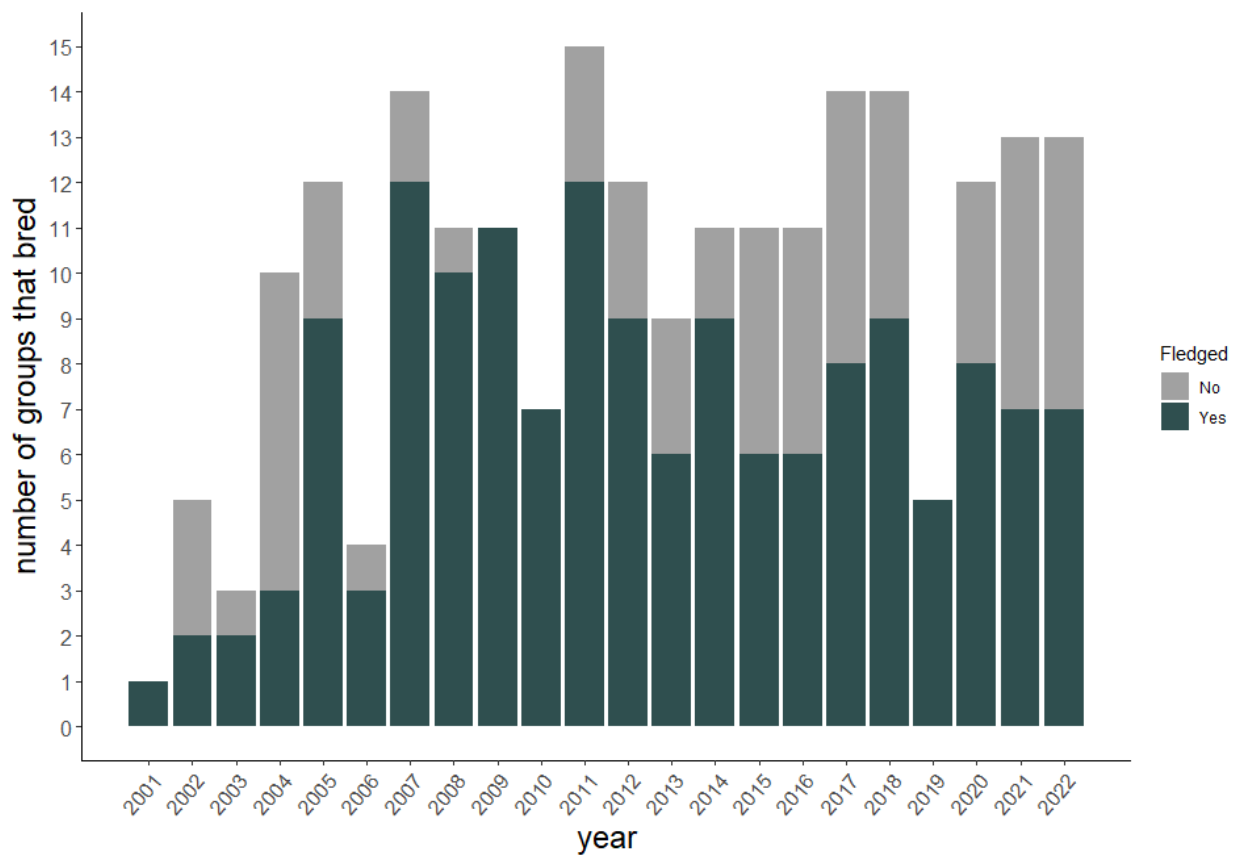


Figure 1. Graph showing number of breeding attempts (light grey) and number of successfully fledged chicks from those attempts (dark green) per year from 2001.



Figure 2. Camera trap footage allowed us to identify a brand-new group (Masungulo) and identify the young female, from her unique ring, as a chick that hatched from Yankee Dam nest on Ndlopfu reserve in 2012.

Research

A massive congratulations to Kyle, whose PhD thesis has officially been accepted by the University of Cape Town and he will graduate in March 2023! He has now joined the Mabula Ground-Hornbill Project team but will remain in the lowveld and continue to assist with research and nest monitoring in the APNR, as well as coordinate the Lowveld Expansion Project for the species.

Carrie's research (the effects of high temperatures on nestlings' growth and physiology) has progressed well this season as she continues to measure and weigh the nestlings to monitor their growth rates, as well as investigate nest temperatures.

We would really like to encourage anyone who has photos or videos of the birds to email (nghututu@gmail.com) or WhatsApp (0723456584) these to Carrie. This research project uses photos of ground-hornbills, submitted by citizen scientists, which will allow us to investigate changes in ground-hornbills behaviour and microsite use in response to high temperatures. From this, we can identify important threshold temperatures and design conservation interventions to help protect not just ground-hornbills, but other large ground-foraging birds that are dealing with the devastating effects of a warming climate.

WE NEED YOUR HELP
Seen a Ground-hornbill?

The APNR Ground-Hornbill Project are calling on citizen scientists

What we need:
PHOTOS/VIDEOS
of the birds along
with **DATE, TIME**
and **LOCATION** of
the sighting

Send to:
✉ nghututu@gmail.com
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apnrgroundhornbillproject.com

Fitpatrick Institute of African Ornithology
UNIVERSITY OF CAPE TOWN
UNIVERSITEIT YAKESIPA - UNIVERSITEIT VAN KAAPSTAD




We recently installed black bulbs to measure operative temperatures, which will be used to describe environmental temperatures experienced by ground-hornbills. These are made of copper spheres, about the size of a ground-hornbill body, which are painted black and hold a temperature logger inside (Fig.3). These have been installed in microsites that the birds typically use and will allow us to describe the thermal environment in these different microsites (e.g., in a dead tree exposed to full sun, under a shady tree canopy, full sun on the ground, and shade on the ground). These will also be put out during the winter months to determine how these operative temperatures differ between seasons.



Figure 3. Black bulbs installed in different microsites to measure operative temperatures, used to describe environmental temperatures experience by ground-hornbills in different microsites. Left: in a tree exposed to full sun. Right: in a tree with shade.

Harvest

In December, we successfully harvested four redundant nestlings from Senalala (Klaserie PNR), Hermansburg (Timbavati PNR), Ntsiri (Umbabat PNR), and York nests (Balule PNR), which were carefully transported in an incubator from the APNR to the Mabula Ground-Hornbill Projects Baobab Rearing Facility at Loskop Dam. While harvesting from the field, the utmost care is taken to minimise disturbance to incubating females; therefore, we harvested the nestlings at dawn when females leave the nests to produce their territorial calls with the rest of the group. This made for some interesting fieldwork and climbing up to nests when it was still dark! (Fig.4).

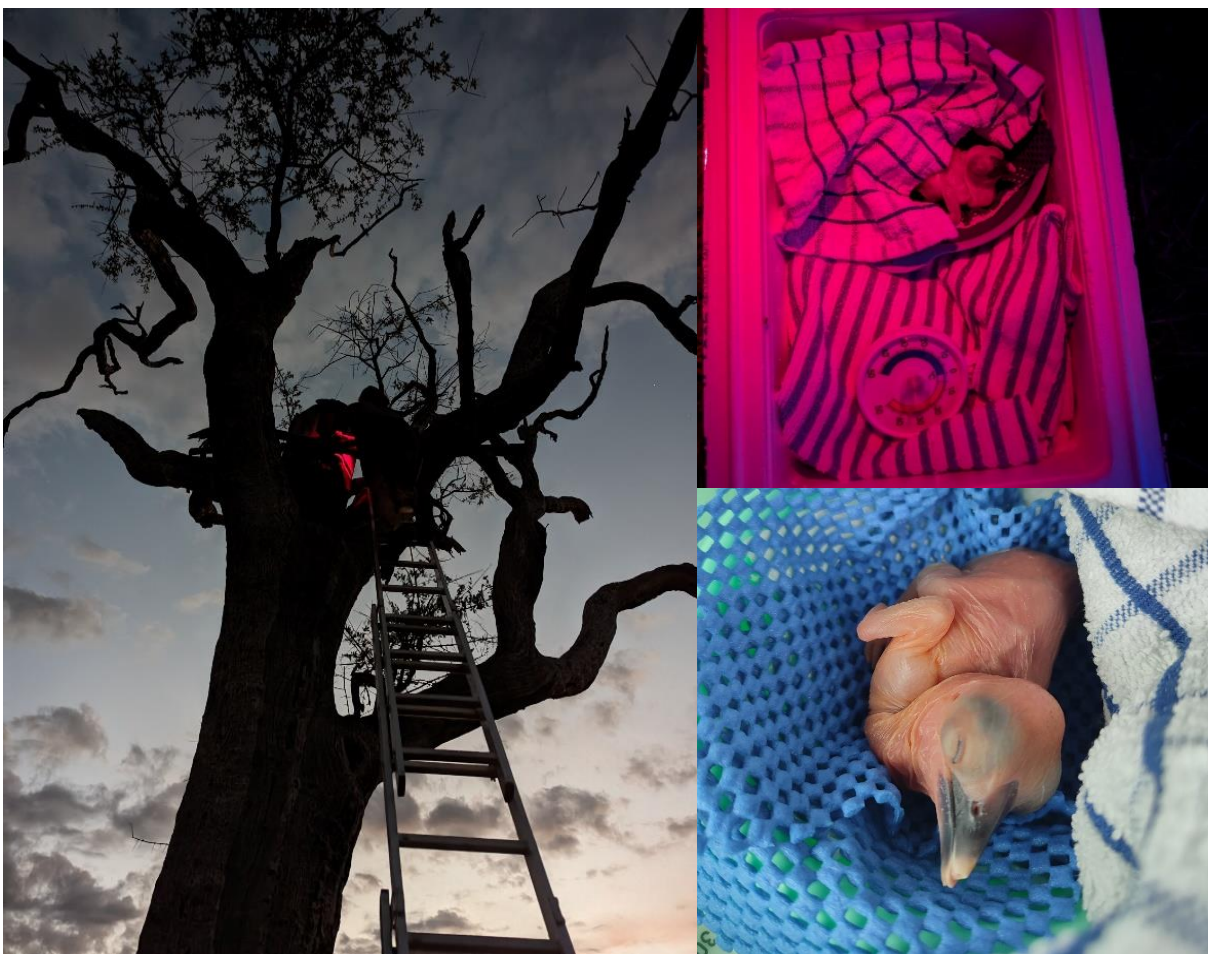


Figure 4. Checking the nest at dawn while the female is off the nest (left). A second hatched chick removed from the nest to a warm incubator ready for transport to the Baobab facility (top right). A healthy second hatched one day old chick (bottom right).

Since we strategically monitor the nests and candle any eggs that we find, we were able to estimate hatching dates accurately. Therefore, these four chicks were harvested in good time (1-2 days old) and were nice and healthy. As such, the rearing process during the first few

vulnerable days is made slightly easier when hydrated and healthy chicks are received. Interestingly, York's second chick hatched nine days after the first (usually three to five days apart) and was being pushed around the nest by its much bigger sibling. On the other extreme, Ntsiri's second chick hatched just two days after the first, resulting in chicks that were of similar size. The younger of the two was taken no matter the size and age difference between chicks, only one will survive.

These harvested chicks continue to do well and will become part of the Mabula Ground-Hornbill Projects reintroduction programme.

Acknowledgements

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We thank one and all!

Contact us

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