APNR Southern Ground-Hornbill Research & Conservation Project

UNIVERSITY OF CAPE TOWN
IYUNIVESITHI YASEKAPA • UNIVERSITEIT VAN KAAPSTAD

September Quarterly Report 2021

Upcoming Breeding Season 2020/21

The breeding season is fast approaching for the ground-hornbills, and we have recently begun our round of nest checks to determine if the nest boxes are in working order and if any groups have begun to line them with leaves. No signs of breeding have been found so far, but we have not managed to check all the nests yet.

Upon our first nest check of the season at Ntsiri nest, we were surprised to find an Egyptian goose inside the nest with chicks (Figure 1). Egyptian geese are known to occupy the nests of other birds such as hamerkops and vultures and will aggressively defend them if necessary. These geese have been seen inside ground-hornbill nests in other parts of the country, however, it is a first for us. We have installed a camera trap at the nest to catch any potential interaction between the geese and the ground-hornbills.

We are also pleased to announce that several of the chicks which fledged in the beginning of the year are still alive. Juvenile survival rates in the first year once leaving the nest are usually quite low in ground-hornbills, so receiving confirmation of survival is promising.

Figure 1. Carrie checking Karan Khaya nest (left) Egyptian goose inside Ntsiri nest (right)

New nests

This year we will be receiving five new nests from the Mabula Ground-Hornbill Project (Figure 2). Two of these will be installed in new locations for groups which we suspect do not have viable nesting sites. Two more will replace old wooden nests which have deteriorated and need to be replaced, and the last will be used to replace a plastic drum nest.

New locations:

1. Baobab Ridge (Klaserie PNR)
2. Olifants North (Balule PNR)

Replacements:

1. Addger nest (Timbavati PNR)
2. Drum nest (Timbavati PNR)
3. Karan Khaya nest (Timbavati PNR)

Figure 2. Latest ground-hornbill nest design

Research

Kyle is in the final year of his PhD and is making steady progress. He is currently analysing camera trap data to investigate how the different individuals within the groups contribute towards the provisioning of the incubating female and surviving nestling, as well as how these provisioning rates might be affected by temperature.

This camera trap footage has also allowed for further investigation into what the ground-hornbills are eating and provisioning to their offspring. Ground-hornbills are opportunistic, generalist feeders, meaning that they will eat anything they can overpower when they encounter it (Figure 3).

Over the past 4 years, we have monitored the nests at different stages of the reproductive process. Overall, there were 29 breeding attempts monitored, totalling 547 days of camera trap data, where a total of 2 434 food items were identified from a wide array of species. 60.9% of items brought to the nest were invertebrates, 17.2% were reptiles, 10.9% were amphibians, 5.7% were mammals, and 5.3% were birds (Figure 4). So far, reptiles and mammals have been further classified.

Mammals (Figure 5): Of the 138 mammals identified, 59.4% were scrub hares, 10.1% were rodents, 5.1% were mongooses, 1.5% were bats and genets, and 23.9% could not be further categorised due to the animals not being whole.

Reptiles (Figure 6): of the 419 reptiles identified, 50,4% were small lizards/skinks, 38.9% were snakes, 8.4% were chameleons, 1.7% were tortoises and 1% were larger lizards (plated and monitor lizards).

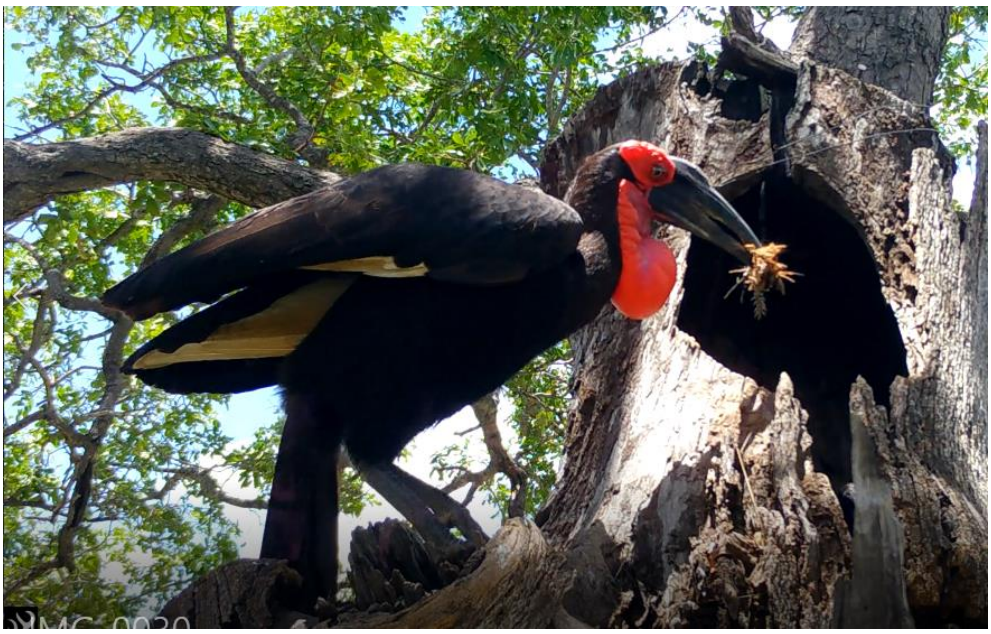

Figure 3. Camera trap footage of an adult male bringing and array of invertebrates including a centipede to the incubating female in the nest.

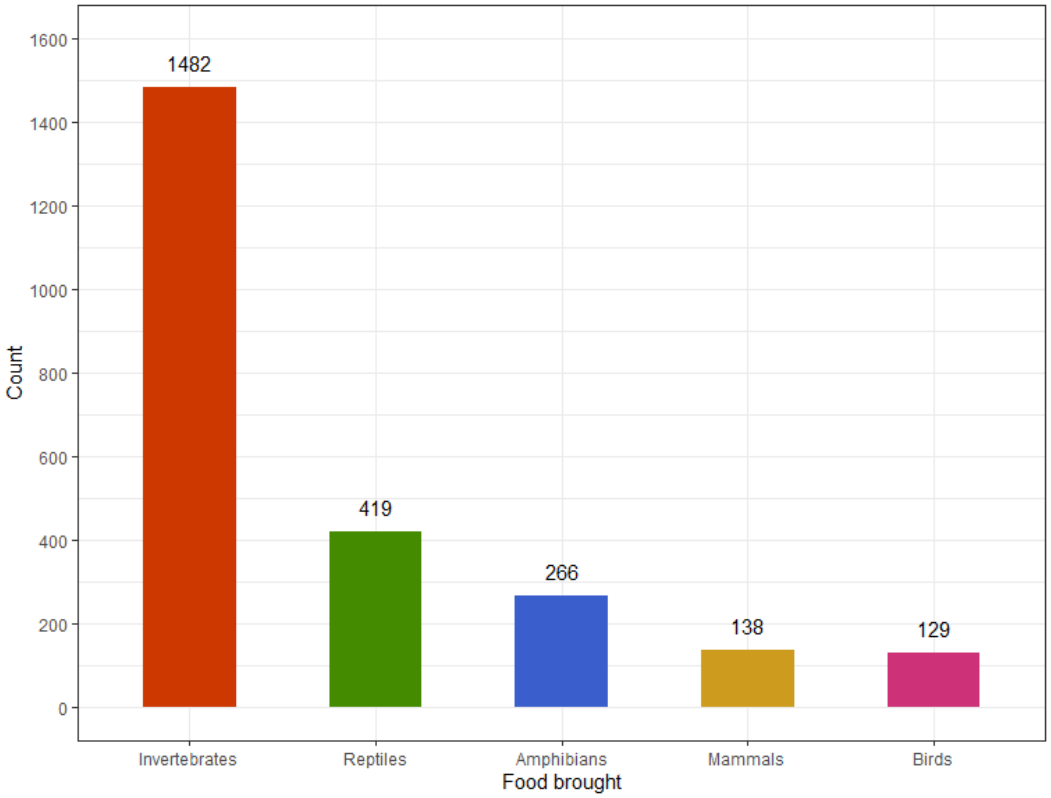

Figure 4. Number of prey items caught from 2434 observations

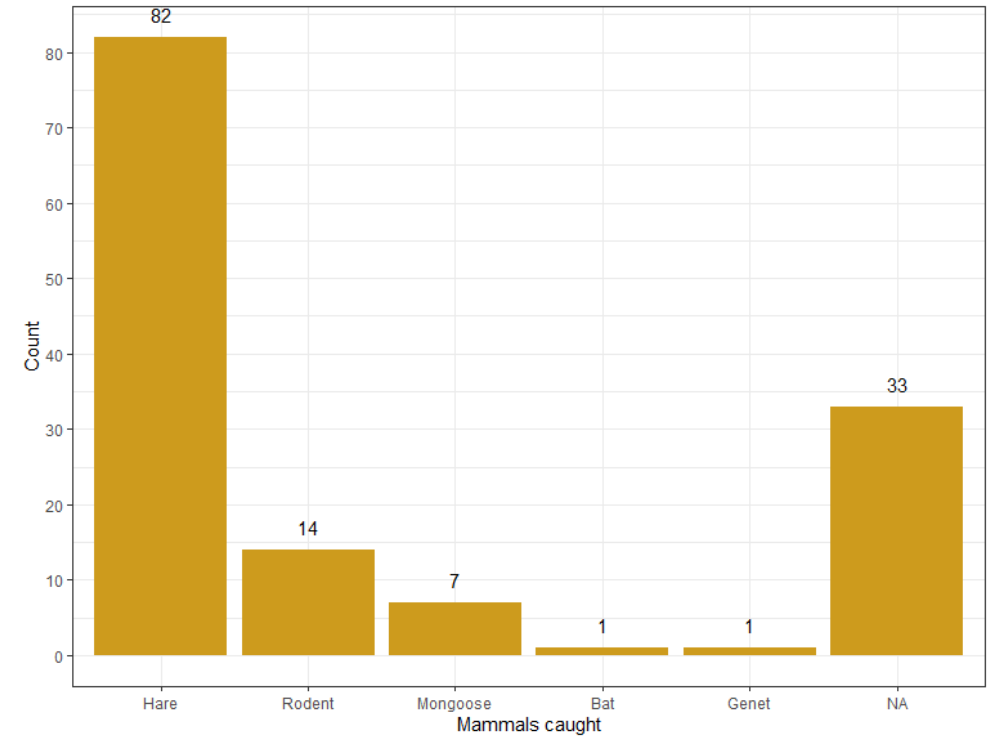

Figure 5. Breakdown of mammals caught from 419 observations

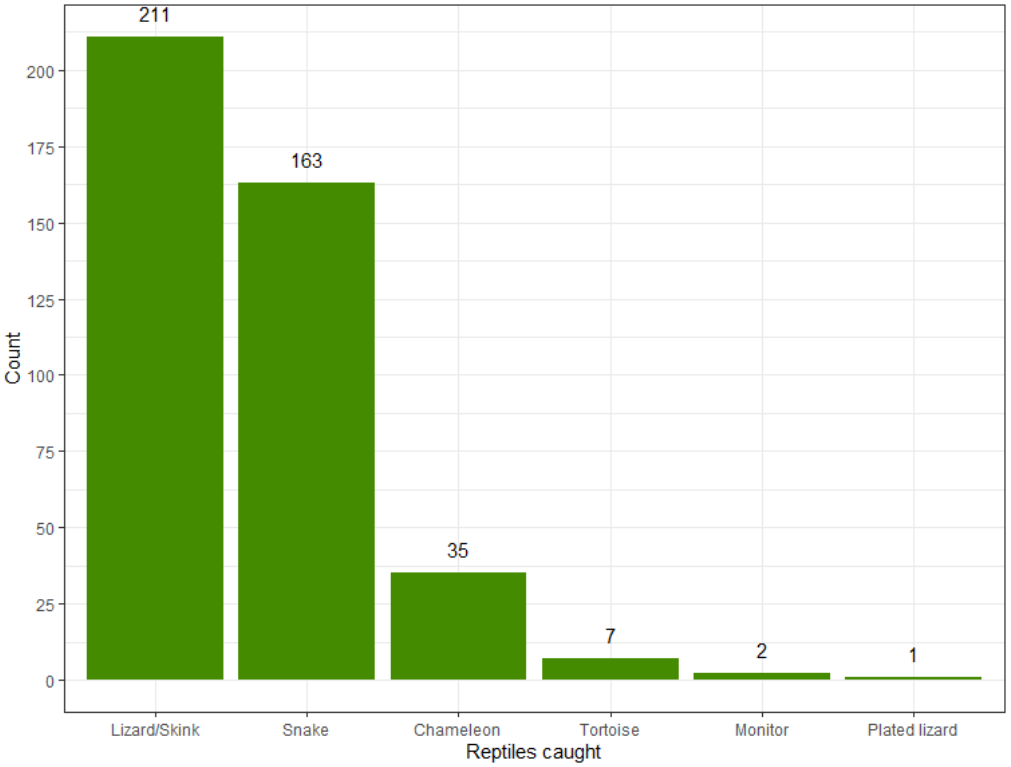

Figure 6. Breakdown of reptiles caught from 138 observations

Hot Birds Research Project Conference

In August, Carrie and Kyle attended the Hot Birds Conference in Skukuza, KNP. The Hot Birds Research Project is an interdisciplinary team of physiologists and behavioural ecologists consisting of professors, lecturers, post-docs, students and research assistants from South Africa, USA, and Australia. The core goal is to understand how and why species are likely to cope – or fail to cope – in a hotter world.

The conference addressed a variety of issues on the effects of temperature and humidity on birds, bats, and other small rodents. Both Kyle and Carrie presented some of their preliminary results on the effects of temperature on ground-hornbills (Figure 7).

The conference also hosted a workshop to discuss ways in which to minimise our carbon footprints as researchers.

Figure 7. Kyle presenting at the Hot Birds Conference (left) – A ground-hornbill offloading heat on a hot winters day, seen during the trip to Skukuza (right)

Fund-Raising Event

On September 25th, 2021, Carrie will be running the Karkloof 50-mile (80km) trail run to raise funds for the project.

If you would like to support her in this fund-raising effort you can donate by following this link:
https://www.gofundme.com/f/help-the-southern- groundhornbill-project

Citizen Science

We are once again asking for people to send through their sightings of the birds to us. These sightings contribute significantly to our research and help us gather information on group movements.

In addition to sightings and photographs, we are also asking that people report any ground-hornbill audio to us. Ground-hornbills produce chorus calls each morning during the sunrise hours to advertise and defend their territories. During the incubation stage of the breeding season, these calls can also help us to identify the locations of possible nesting sites. Whilst the female is incubating the eggs, the rest of the group returns to the nest each morning from which they will collectively produce their chorus calls. Please contact us, particularly if you hear the birds calling from a similar area over the course of several consecutive mornings. Natural nesting sites are difficult to find, and this crucial incubation stage is to-date, the best method in finding these nest locations.

Acknowledgements

We thank the landowners and wardens of the APNR for their continued support and permission to work with the Ground Hornbill groups on their properties. Special thanks to National Geographic Society, The Rufford Foundation, Bateleurs Nest, Mary Oppenheimer & Daughters Foundation, Alan Whyte, Peter Janovsky, Clive Coetzee, The Timothy Hancock Charitable Trust, Wild in Africa, Blue Sky Society, WildScapes Veterinary and Conservation Services, and Wild Wonderful World for their generous donations and funding, as well as Timbavati PNR, Klaserie PNR, Tanda Tula Lodge, Ntsiri PNR, Ndlopfu, and Peter Smelting for fuel donations. Thanks to The Mabula Ground Hornbill Project for providing artificial nests and for their valuable support and knowledge. Many APNR members and staff have been of great help, both logistically and by reporting ground-hornbill sightings.
We thank one and all.

Contact the Project:

Kyle-Mark Middleton, APNR Ground-Hornbill Project, FitzPatrick Institute, PhD student

Email: nghututu@gmail.com ~ Cell: 071 325 8956

~

Carrie Hickman, APNR Ground-Hornbill Project, FitzPatrick Institute, MSc student

Email: carriejhickman@gmail.com ~ Cell: 072 345 6584

~

https://apnrgroundhornbillproject.com

http://www.fitzpatrick.uct.ac.za

https://www.facebook.com/GroundHornbillResearch

https://www.instagram.com/apnr_ground_hornbill_project/