

ANNUAL REPORT



2016/17

Mabula
Ground
Hornbill
Project



a summary of the past year by number



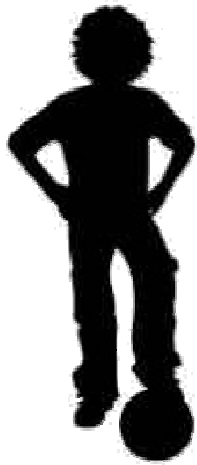
new reintroductions



new artificial nests

9/9

chicks hand-reared



15950

learners



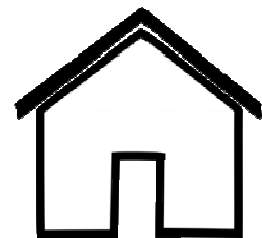
new PhD



documentaries



conservation award



19

schools

from the Board's Chair: the year in review

"With Critically Endangered and Endangered species, that by definition have small populations, it is important to increase the population as rapidly as possible and hence address the proximate limiting factors while at the same time working towards rectifying the ultimate causes of species rarity"

Prof Carl Jones, 2004

This is exactly what the Project has been doing over the past year – rebuilding populations through reintroductions and working hard to address the various threats that the remaining population still faces. This past year has been one of consolidation by the Project's research team, to ensure that conservation planning for the species has all the relevant data to make sound decisions. This research has encompassed a range-wide review across the species' distribution and conservation status from Kenya to the Eastern Cape; an analysis of past reintroduction attempts to guide future planning of reintroductions; habitat modelling with a focus on expected population losses due to climate change and how genetic structure will impact conservation plans.

This research and hard work by the entire team has led to valuable new collaborations for the Project:

- Yielding a doctorate for the Project Manager, Lucy Kemp;
- In collaboration with Dr Katja Koeppel an analysis of the development of a Newcastle Disease Vaccine was completed;
- Sophie Neller has almost completed her analysis of endocrine function in relation to colour dimorphism between males and females, and alpha and beta ground-hornbills, which will allow for better management of captive pairs;
- Nthabiseng Monama graduated with a Diploma in Nature Conservation and began her Advanced Diploma;
- Heinrich Nel passed his Trails' Guide qualifications;

- Natasha Nel passed her first year in Animal Health through UNISA, and
- Research intern Patience Shito has started her MSc, based in Zimbabwe.

This is a team that is constantly striving to grow their skills, and have grown more supportive of each other over the last year, all having worked together for over four years.

Much of our work was presented at the 7th International Hornbill Conference in Kuching, Sarawak and we were proud that in some aspects of our work we are developing ground-breaking conservation solutions. An example of this is the development of a 'super-nest', an artificial nest structure manufactured from artificial materials to ensure longevity and the best possible micro-climate. Within hours of being put up in a fig tree a group of hornbills started collecting leaf lining for the new prototype. We are now able to share this knowledge with other hornbill projects in India, Indonesia and Thailand.

Still in the international sphere, the Project Manager was invited to contribute to conservation planning for the Critically Endangered Helmeted Hornbill, presenting at the CITES CoP 2017, Johannesburg, and also contributing to the conservation planning workshop held in Sarawak. For the Project to be able to contribute skills to even more endangered species is invaluable, as are the lessons that can be learnt by taking part in such important conservation planning for other species.

The Project's local community engagement work has:

- Seen the reworking of the Intsikizi Tapestries by the Keiskamma Arts Trust;
- Visited communities in the Musina, Campbell and Vivo areas;

- Entered into a partnership with sangoma Nokulinda Mkhize to tackle issues of local trade;
- Supported with clothing donations for the Matopos ground-hornbill custodians; and
- Assisted capacity building with Nomusa Mkhongo presenting the collaborative work on the cultural value of the species to an international audience.
- The outreach programme has reached several rural communities engaging with over 500 people.

Twelve supporters renewed their commitment to the Project with eleven new sponsors coming on board. In-kind donations allowed better use of existing funding, and included artwork by David Mocke, and time and skills by Charles and Ros Bezuidenhout.

Nthabiseng has grown the environmental education programme, which has added a meter long colouring page to its activities, much to the delight of learners. The school outreach programme has reached 15 950 learners and 268 teachers.

Outreach again included presentations at numerous bird clubs, conservation groups, NAMPO and Bird Fairs and Environment Day at Montecasino Bird Gardens. Print media exposure was gained through the *Farmer's Review*, the *Sunday Times*, *SANPARKS Times* and the *Middleburg Post*. Documentaries were also aired for SATY 2016 and Wild Treasures.

Another year of forming new collaborations with Deon Cornelius at Ubhetyan-o-Africa building two exquisite aviaries for captive breeding stock, with Melville Tattoo studios who trained the team to permanently mark birds which negates the risks associated with banding, and both Elandsberg and Rotavi Private Game Reserves properties as custodians of a new reintroduced group. The harvest from wild nests was the successful with all nine chicks surviving to fledging age. This enhanced the success of the reintroduction programme with successful augmentation to two bush-schools, the

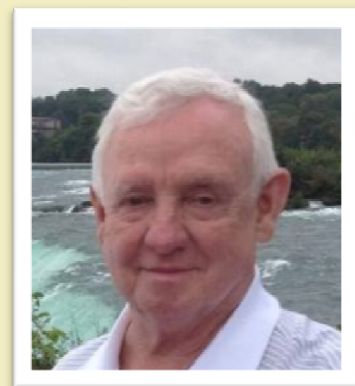
formation of a new group and two further augmentations planned. In total, 18 Southern Ground-Hornbills are now free-roaming. As the vital next step to up-scaling, the Project successfully fund-raised R1.5 million for the construction of the specialised hand-rearing centre at Loskop Dam and construction has begun. And finally, the Project won the RCI Nature Conservation Award for 2016 in recognition of their work.

While the above is an outline of what has been achieved over the last year, on behalf of the entire Mabula Ground Hornbill Board I sincerely applaud each and every one of the Project team, not only for what they have achieved as evidenced by what has been set out in this report, but as much for their everyday unstinting loyalty and hard work on the ground, over many hours undertaking menial tasks that become the lifeblood of Projects such as ours.

Well done and long may we see the fruit of all your efforts reported and recognised, locally and internationally.



R. M. Cumming
Board Chairman



governance

BOARD OF DIRECTORS

- Malcolm Cumming(Chairman)
- Dr Rob Little (Vice Chairman)
- Mrs Elsa Taylor (Treasurer)
- Prof Antoinette Kotze
- Prof Ray Jansen
- Dr Hanneline Smit-Robinson
- Mr Jaishankar Ramchandran
- Mr Wouter Pienaar
- Mr Kobus Havemann

FOUNDER

- Ann Turner (1999)

The Mabula Ground Hornbill Project has a multi-disciplinary Board of Directors. The Board meets quarterly and is responsible for the key elements of governance, annual budget approval and financial management.

LEGAL STATUS

The Mabula Ground Hornbill Project is a non-profit organisation with NPO registration number 016-183 and is sanctioned by the South African Revenue Service as Public Benefit Organisation, number PBO 13/00/00/723, in terms of Section 18a of the Income Tax Act (Act 58 of 1962).

TEAM

Project manager

Dr Lucy Kemp

Assistant project manager

Natasha Nel

Environmental education

Nthabiseng Monama

Camp manager and research assistant

Heinrich Nel

Conservation interns

Sophie Neller (2014 ongoing)

Patience Shito (end December 2016)

Angela Ferguson (end December 2016)

Maintenance

Nomphele Mketo (part-time)

Lerato Mahlaela (part-time)

Volunteers

Ros and Charles Bezuidenhout

Accountant & NPO compliance

Elsa Taylor & Associates CC



thanks for sharing our mission & strategy

Mission statement

To reverse the decline of the Southern Ground-Hornbill (*Bucorvus leadbeateri*) population in its historical range in South Africa, and in the rest of its range.

Long-term goals

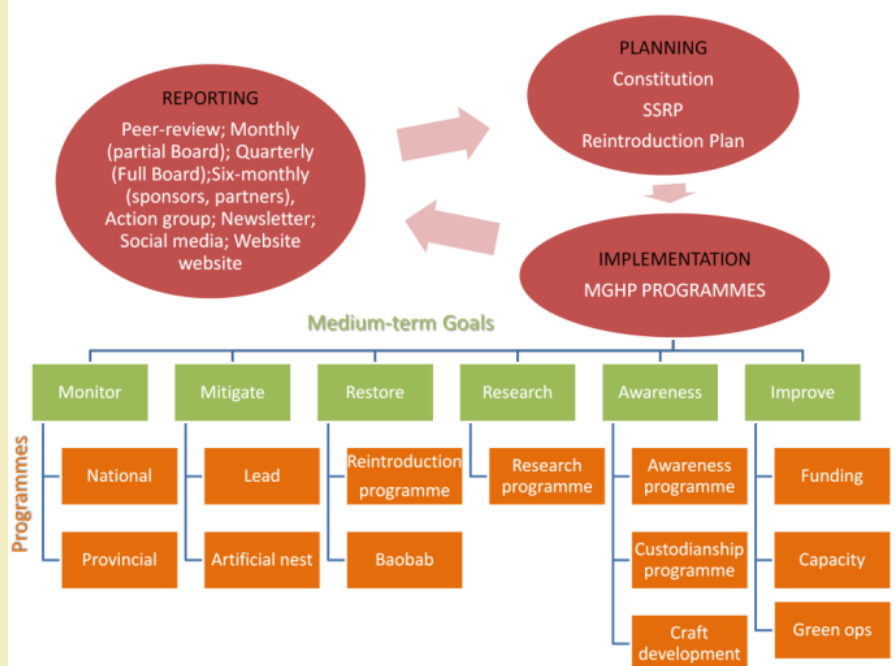
✦ To secure current ecologically stable Southern Ground-Hornbill population in South Africa, with no concomitant increase in persecution for window-breaking. This will require reducing all current threats – poison, persecution, electrocution, trade - and increasing community engagement.

✦ To rebuild, through a trans-disciplinary reintroduction programme based on best-practice and sound peer-reviewed research, Southern Ground-Hornbill populations in areas where they have become locally extinct. These populations will need to rely on natural dispersal rather than being formed as isolated populations needing meta-population management. Focus will be on numerical targets that take into account the species complex social requirements in addition to being physiologically and genetically well chosen. An off shoot of this programme is enhanced awareness about the species plight.

✦ To use the Southern Ground-Hornbill as flagship species for all savanna species. Any successful threat mitigations will thus be gains for species such as vultures and Secretarybirds. In addition a locally relevant, sustainable environmental education and skills training program will enhance local landowner participation in conservation and continue to nurture conservation as a career option in these communities, ensuring MGHP is able to help grow conservation capacity in Africa.

How?

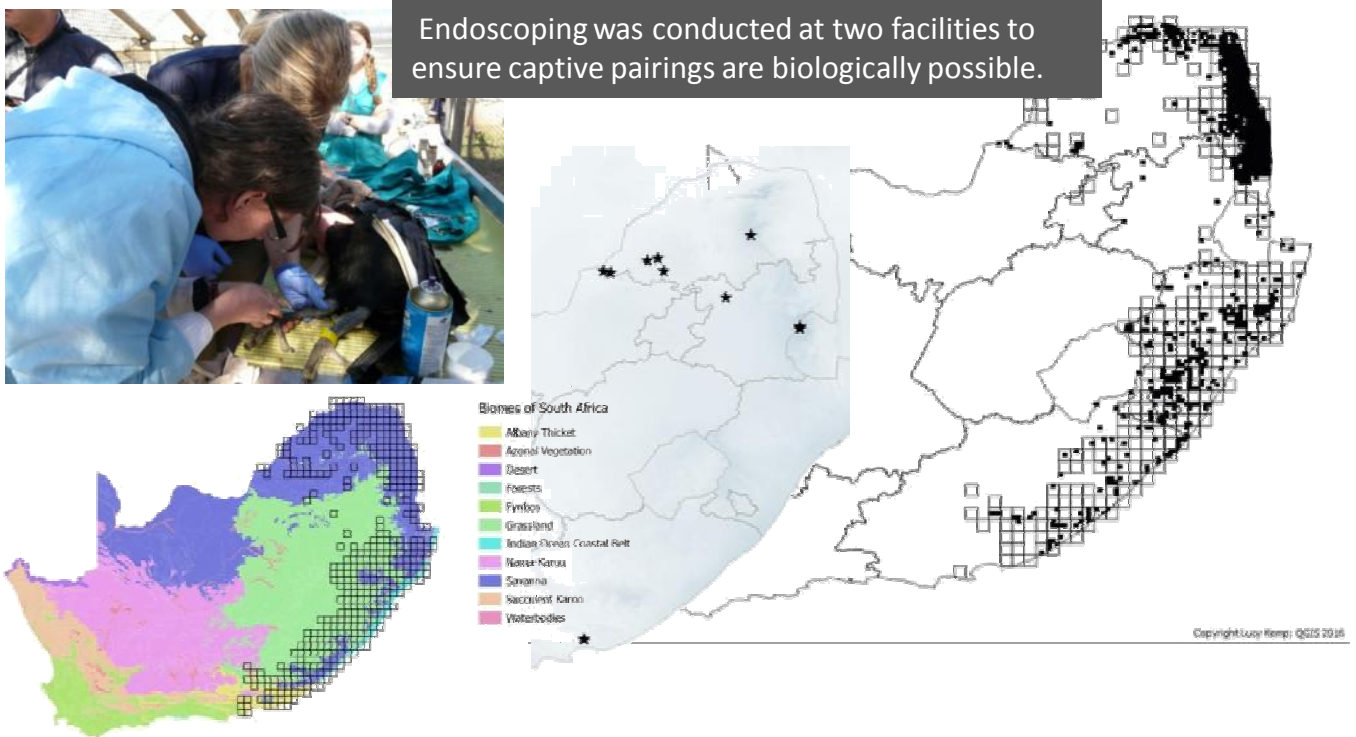
All MGHP activities are achieved in collaboration with local communities, collaborators and stakeholders with the intention of being a world-class conservation programme.



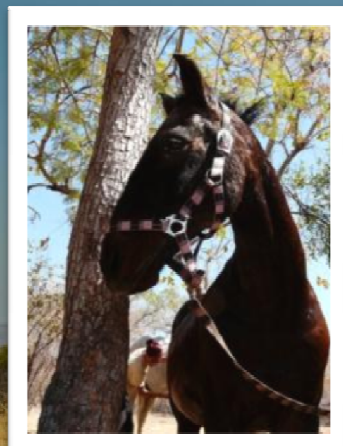
monitor

Provide long-term monitoring of the status of SGH and their threats to assess trends in populations and success of interventions: Thresholds of Potential Concern.

The national sighting database has over 9 000 sightings recorded to date. This allows us to contrast historic data with current distributions (map on the right). We have also been able to assess variances within and between habitat types (map on the left), land-use and even map rainfall gradients accurately for the reintroduction sites (center map). The nature conservation agency for the Eastern Cape has requested the formulation of a monitoring plan for the province. All birds moved for captive breeding and reintroductions underwent full health screening. The annual nest surveys in the Limpopo River Valley were completed. Genetic screening of all captive birds was completed. The national mortality database has been updated (see [here](#) for the online survey sheet) and we are seeking data on aggression in captive populations ([here](#)). Digitization of hand-rearing records continues.



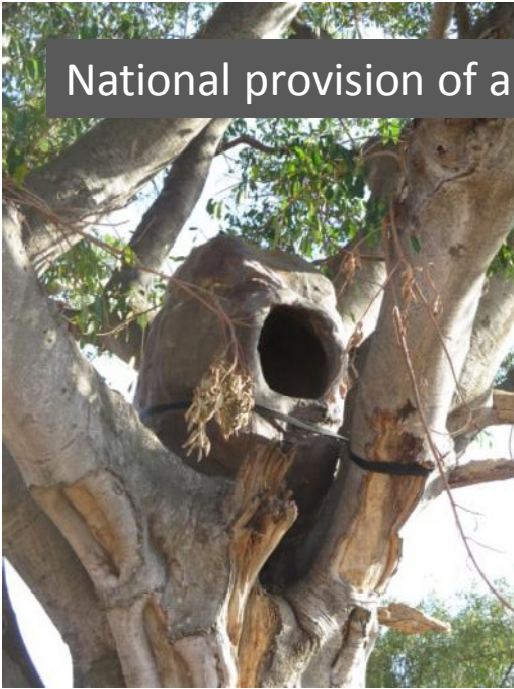
We lost Flea (left), one of our reintroduction monitoring ponies when he broke his leg and had to be put down, but Horizon Back Safaris gave us Rusty (right) who took to his new role immediately, and Jamtin has a companion again.



mitigate

We work to reduce direct human impacts (abusive use of pesticides, lead poisoning, snaring, electrocution, trade) and reduce conflict (window-breaking) by developing and implementing sustainable and effective solutions in collaboration with local communities, NGO,s, provincial and national conservation bodies.

National provision of artificial nests



Prototype II has been installed at Loskop Dam Nature Reserve for the reintroduced group and they have started lining the nest.



Prototype III is under construction to resolve a few drainage and air vent issues and then they will be tested in captivity and in the wild for one season before mass production. We are taking into account the recent research by Kate Carstens and Dr Leigh Combrink in the fine-tuning of this nest, which we hope will ensure existing groups breed successfully if the rains are sufficient, and for expansion into areas where the habitat is still viable.



NEW NESTS FOR CAPTIVE PAIRS

The breeding pairs at Loskop Dam Nature Reserve and Bester Birds have received a spring gift – a new nest box. We hope that they will produce several more generations of Southern Ground-Hornbills.

Reduce lead ammunition in the landscape



“ I hunt on the odd occasion for some venison for the fridge and pot at home. I have been following your stories regarding the lead and I want to make the switch to reduce my footprint in that regard.my family and I had this discussion last week, and all of us are willing to make the switch in time for next years hunting season. Thank you once again for all your work ”

David-Hein Schermers

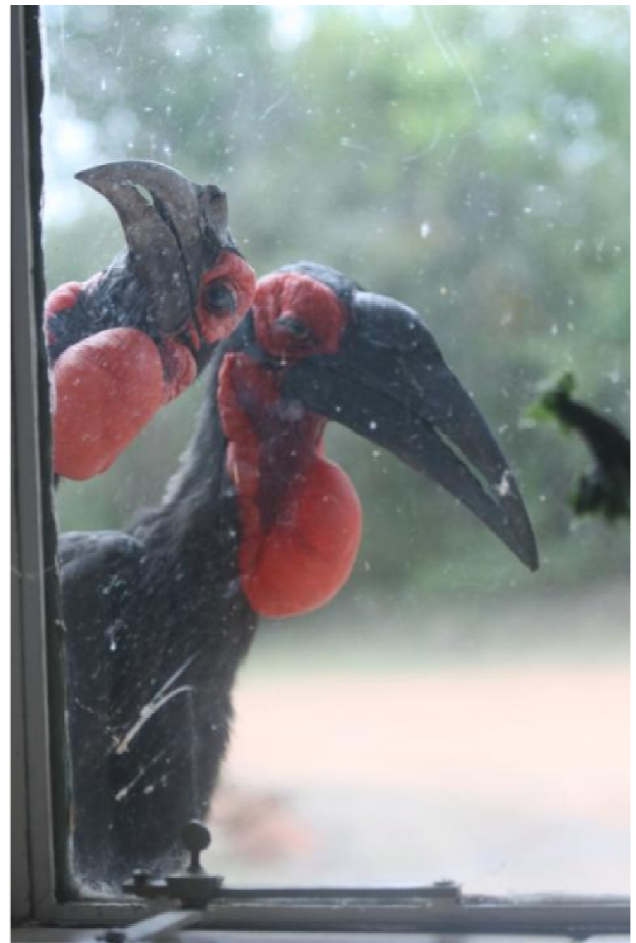
Natasha Nel is seen above testing the lead levels of nestlings in the Limpopo River Valley to add to our baseline study of lead levels in Southern Ground-Hornbills.

Reduce persecution due to window-breaking

We continue to cover school windows with perforated vinyl or, like pictured here, install 5mm glass that is then hornbill proof.

Support traditional healers

We are working with Nokulinda Mkhize to find ways of reaching a wide audience of traditional leaders throughout South Africa for an outreach programme on sustainability of traditional uses of the Southern Ground-Hornbill, and how to reduce consumption.



restore

Reintroduction of sufficient numbers of viable founder groups to build sustainable sub-populations, without using meta-population management and ensuring that existing populations maintain sufficient genetic diversity



THE BAOBAB SPECIALISED HAND-REARING CENTRE

In July 2017 we broke ground for the new specialized hand-rearing facility. After two years of fund-raising and needing to re-home over twenty ground-hornbills off the site, we were finally ready to commit to Phase 1 and Phase 2 – the construction as required for the birds and the staff. Phase 3 will require further fund-raising.



After the annual nest checks four chicks were harvested from wild nests in the APNR and five from captive pairs. Delecia Gunn excelled in rearing all nine to fledging successfully.



Two years in and the Loskop bush-school is going strong.

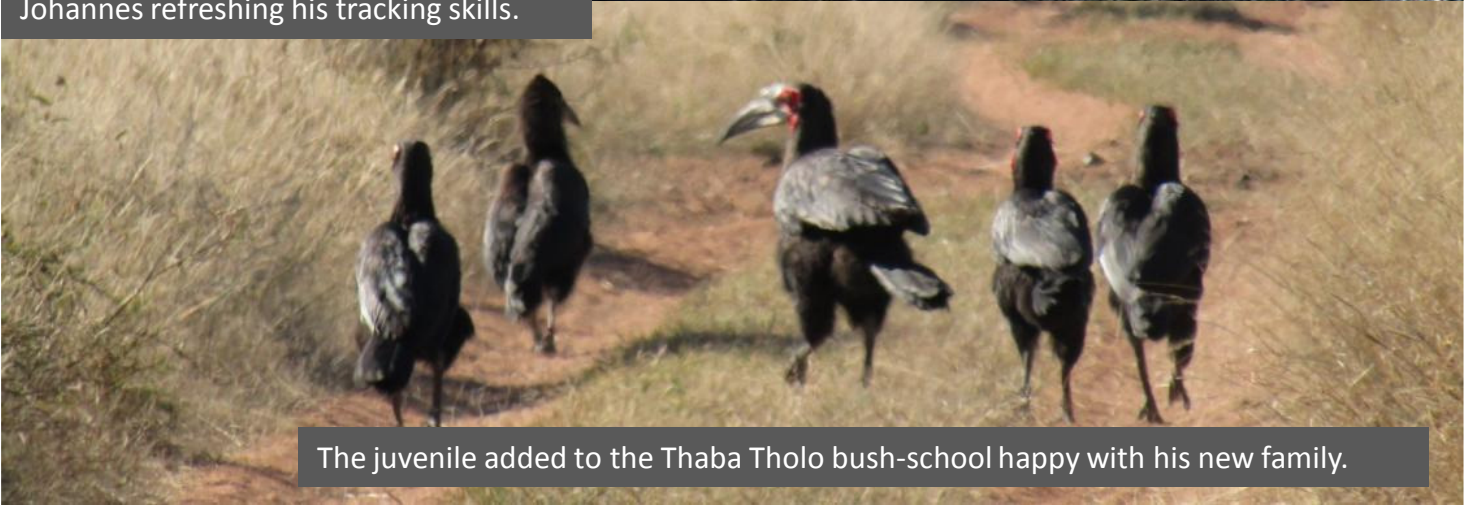
The first time we have used our collapsible aviary for a reintroduction. It took just two days to erect and less than three hours to dismantle. We slept well knowing the birds were safe as houses.



The Mabula group at the release aviary met the newest juvenile due for their group. However, on release they completely ignored him and after leaving him for two months, with supplementary feed, to see if their mood changed, we had to recapture him and return him to his original aviary. We have no idea why he was 'unwanted'.



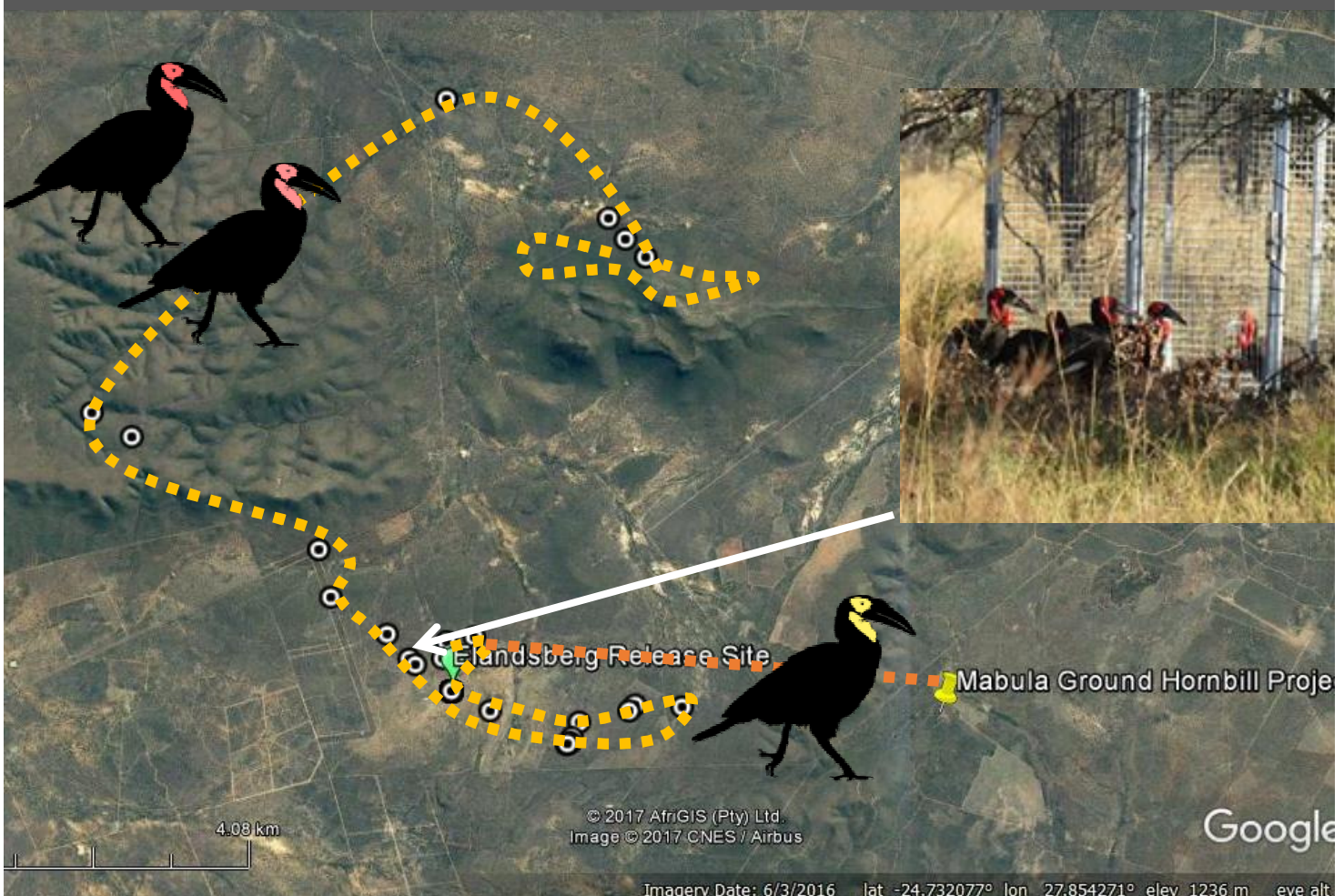
More training for the monitors: here is Johannes refreshing his tracking skills.



The juvenile added to the Thaba Tholo bush-school happy with his new family.



This year saw the first experimental attempt to reintroduce a group next to an existing group in an area where the species has been locally extinct since the late 1960's, photographed above at release after a month of acclimatization. The Mabula group, ignoring the youngster augmented into their group visited the aviary twice during the acclimatization period of the second group (photo below). On release the pair went off on a wide arc exploring their new landscape but they left there juvenile behind. The Mabula group covered a distance of 6 km from their nest and kidnapped him and brought him back to their nest (see the map below). The juvenile has completely integrated into the group and the youngest male has taken on the role of carer – sharing every meal and being preener-in-chief.



research

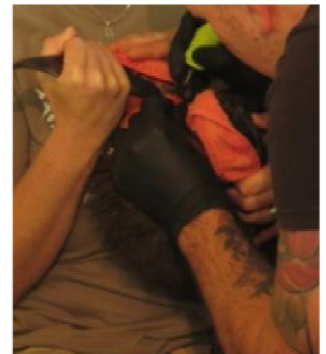
Lead, collaborate, support and encourage research into aspects of the ecology of the species relevant to their conservation management and ensure this information is easily available.



PROJECT MANAGER AWARDED HER DOCTORATE

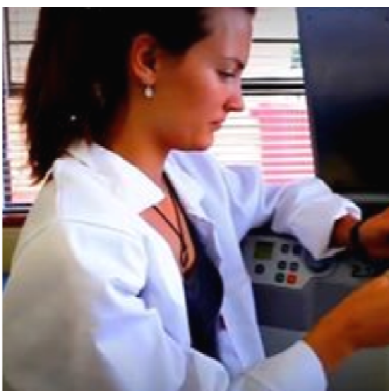
Lucy Kemp, the project manager, graduated in June 2017, her thesis title: **CONSERVATION BIOLOGY AND MOLECULAR ECOLOGY OF THE SOUTHERN GROUND-HORNBILL**

Tattooed: Professional tattoo artists were part of the team that, together with a veterinary team, tested the use of facial tattoos to individually mark ground-hornbills to prevent the risks associated with banding. It was successful and will be used as a field tool from now on.



Papers currently in preparation with various collaborators

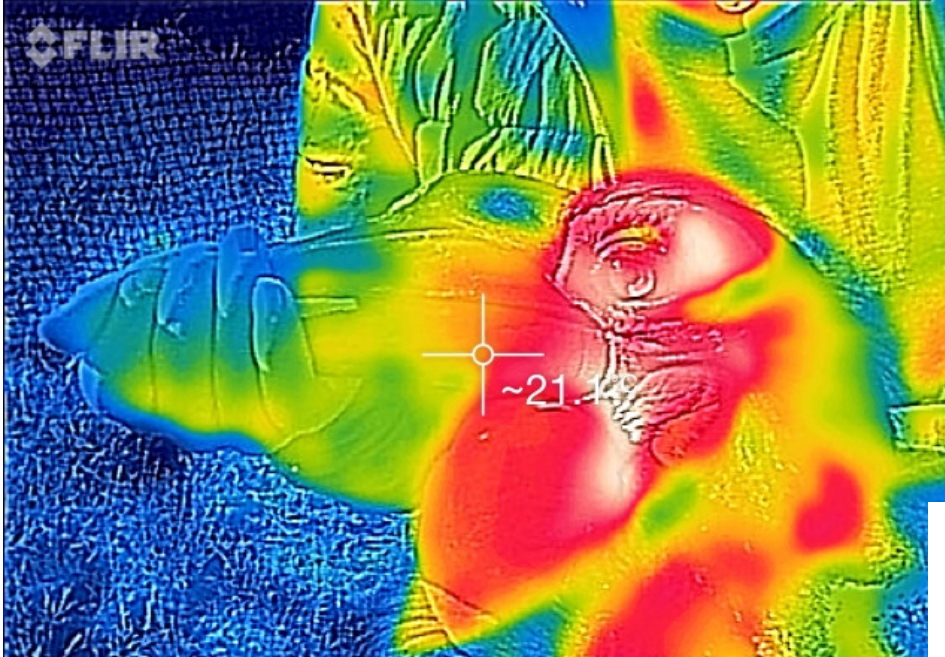
- 🦜 The importance of cultural protection for endangered species: The Southern Ground-Hornbill as a case-study.
- 🦜 Increased success in monitoring reintroductions using horseback methodology.
- 🦜 Using modeling to determine both spatial and intra-population placement for reintroductions.
- 🦜 Densities of Southern Ground-Hornbills in Gorongosa National Park.
- 🦜 Effect of a changing climate on the persistence of Southern Ground-Hornbill across their range.
- 🦜 Lessons learnt from reintroductions of a long-lived, cooperative breeding bird.
- 🦜 Molecular ecology of the Southern Ground-Hornbill (3 papers)
- 🦜 Status and distribution of the Southern Ground-Hornbill across its sub-Saharan range.
- 🦜 Development of a vaccine for prevention of Newcastle's Disease in reintroduced Southern Ground-Hornbills as a reintroduction tool.
- 🦜 Analysis of variance's in fledging success of Southern Ground-Hornbills.
- 🦜 Incidences of kidnapping in a cooperative breeding species.
- 🦜 Development of a national artificial nest programme as a tool for restoration of endangered species.
- 🦜 Veterinary chapter for Fowlers.
- 🦜 Investigating population reintroduction or reinforcement for Southern Ground-Hornbills in South Africa.



ENDOCRINE ANALYSIS

Sophie Neller is completing her MSC. She gathered 282 faecal samples, using a non-invasive method, which have been analysed using an enzyme immunoassay for faecal androgen metabolite concentrations, to establish whether any correlations exist between testosterone levels and throat colouration.





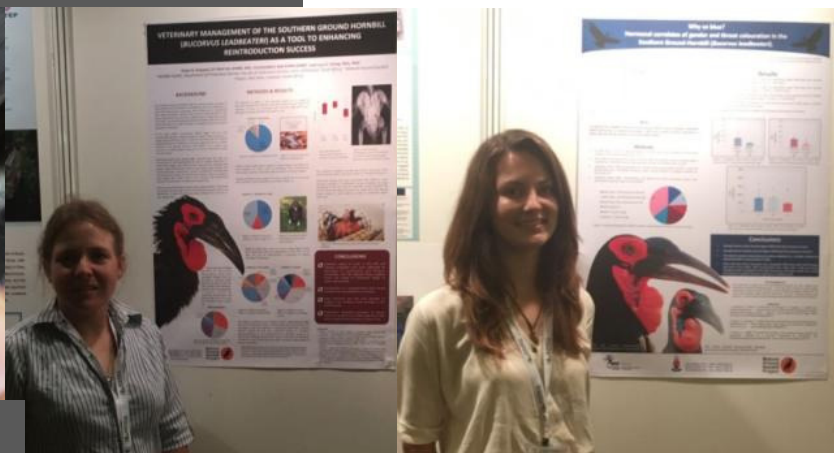
We have been experimenting with the use of infra-red technology to ensure stress is minimised in birds handled as part of the reintroduction or research programmes. This will also be used to find inflammation in the harvested chicks.



Team ground-hornbill South Africa:
Dr Katja Koeppel, Dr Lucy Kemp, Kate Carstens, Sophie Neller and Nomusa Mkhongo-Mthungwa presented research findings at the 7th International Hornbill Conference held in Kuching, Sarawak.



Attaching dummy solar tracker from e-Obs



Team training on how to age failed embryos.

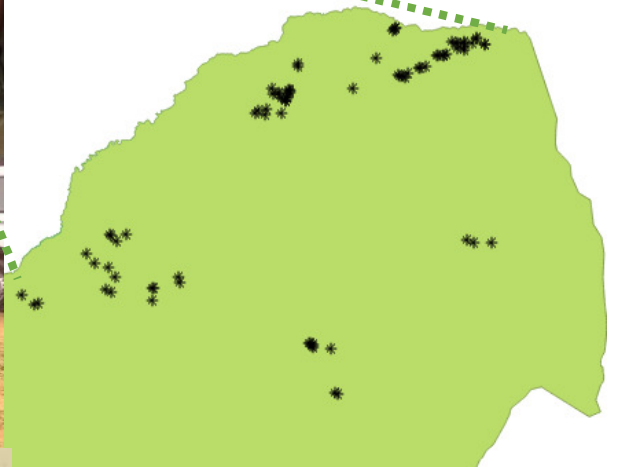
education

Ensure that the effective education programme reaches all intended release zones and remaining wild population areas beyond the protection of protected areas

'We learnt to protect the birds because they help us eat the pests'
N. Nethavhani, Manenzhe Primary School



Nthabiseng presenting to the Extended Public Works Programme at Loskop Dam



Location of the schools reached thus far through the outreach programme



The Project has been involved in four documentaries during the past year.



School visit to Mabula – for many the first glimpse of a wild place



The giant colouring page is a hit at every school – and there it remains with all the bird's biology and threat highlighted.



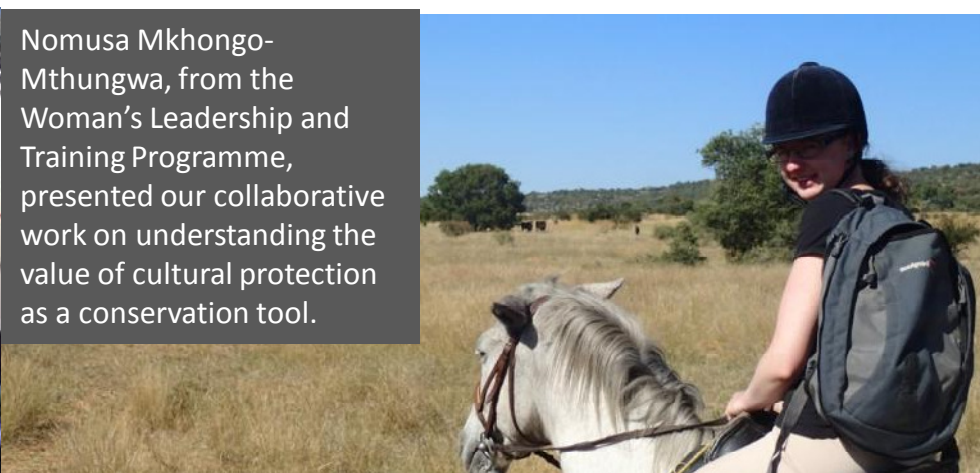
Completing the schools in the Limpopo River Valley

improve

Improve and retain capacity, efficiency and stability of the MGHP to enable it to continue to make a long term contribution to conservation in South Africa and beyond. Build local capacity nationally, and regionally, through provision of training, mentorship and where possible funding.



Nomusa Mkhongo-Mthungwa, from the Woman's Leadership and Training Programme, presented our collaborative work on understanding the value of cultural protection as a conservation tool.



This year saw the completion of a year-long internship for two Zimbabwean budding conservationists. Angela Ferguson (above right) and Patience Shito (below right). Angela is now Research Manager at Lion Encounter and Patience is enjoying motherhood before returning to her MSc.

We are finally able to upgrade accommodation for our of our team from these cozy little caravans

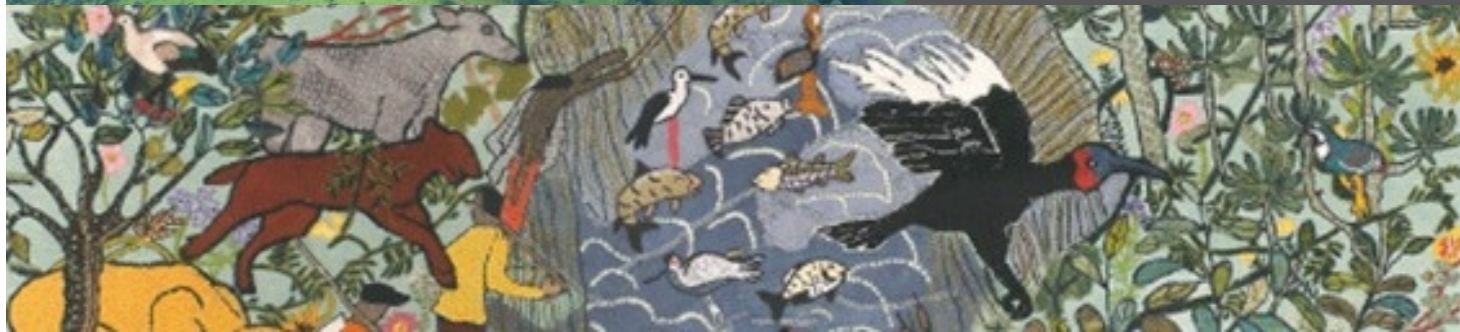


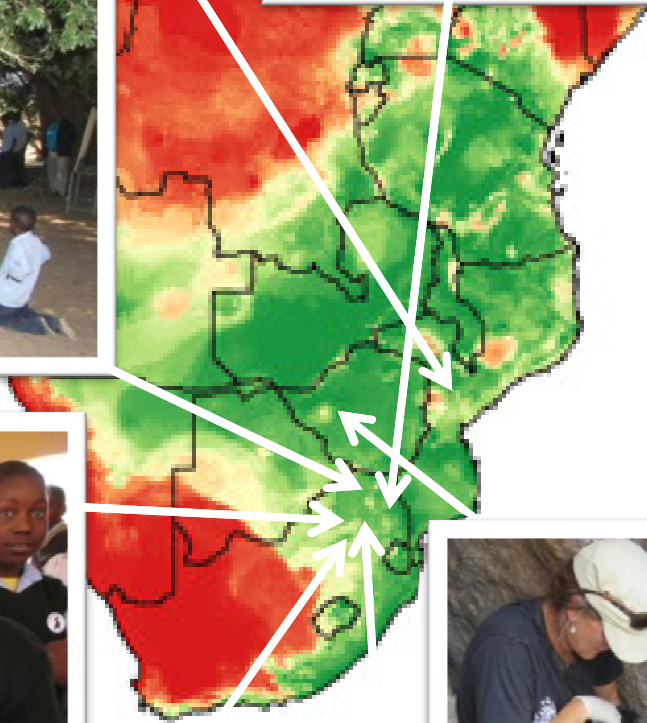
We are supporting PhD candidate Matthew Hutchinson where possible in his research in Gorongosa National Park, Mozambique.



The best way to improve is enhanced collaboration and this year we have new collaborations with:

- Ubhetyan-o-Africa;
- The Living Museum, Vaalwater;
- Rotavi Private Game Reserve;
- Elandsberg Private Game Reserve.





our African footprint

above & beyond



Lucy Kemp, as an active member of the Critically Endangered **Helmeted Hornbill Working Group**, helped draft the conservation plan for the species at a two-day IUCN-CPSG workshop at Kubah National Park, Sarawak (left) and presented on behalf of the Thailand Hornbill Foundation at the CITES CoP held in Johannesburg, South Africa (above).

strategic plans for 2017/18

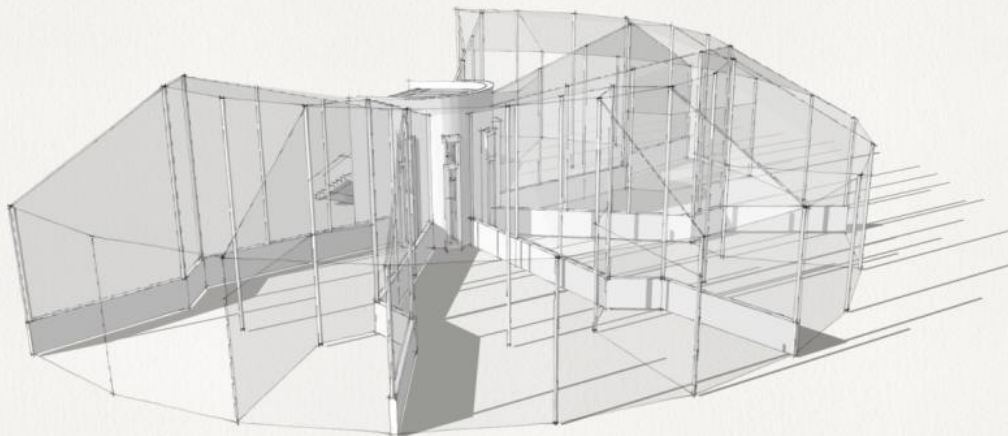
- Host the 2nd Population and Habitat Viability Analysis for the species at Mabula Private Game Reserve (21st – 24th August 2017) in collaboration with:



CONSERVATION GENETICS
SPECIALIST GROUP



- Complete construction of Phase I and Phase II of the specialized hand-rearing facility;

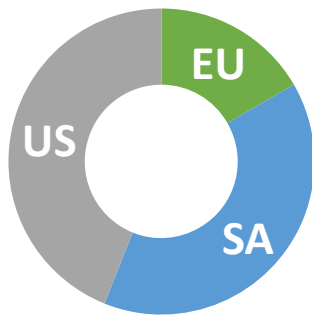


- Conduct annual nest checks and harvest of redundant chicks for captive-rearing;
- Complete provincial monitoring plan for KwaZulu-Natal and the Eastern Cape;
- Refurbish staff accommodation;
- Publish research in peer-reviewed scientific journals

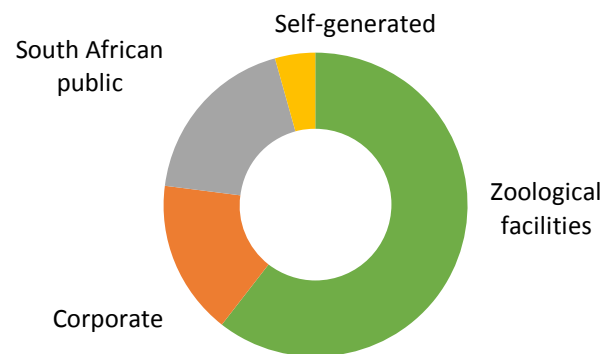
financial summary

sources of revenue

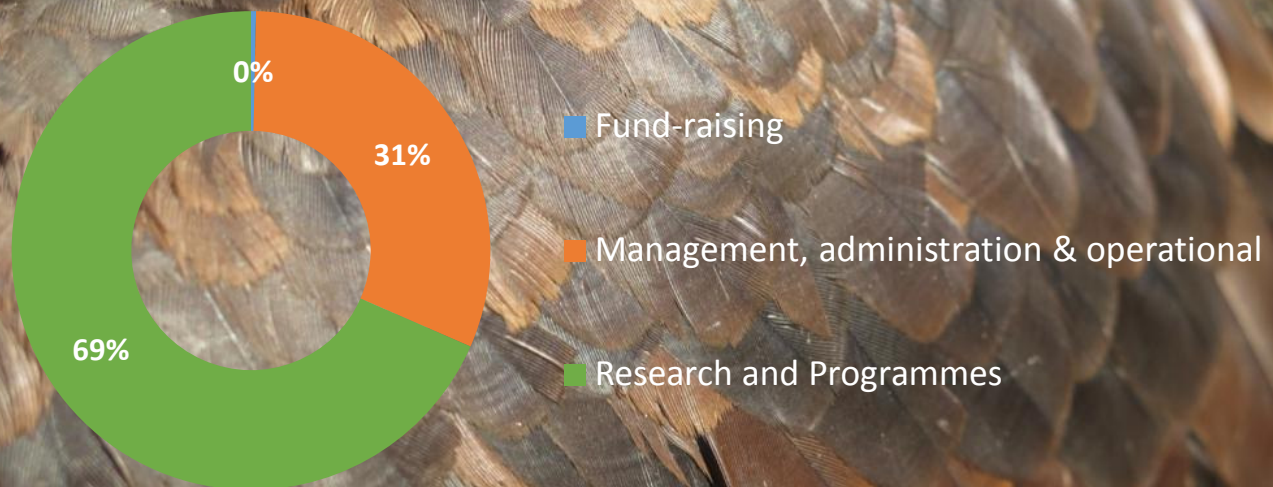
LOCAL VS. INTERNATIONAL



WHO SUPPORTS US?



allocation of resources



supporters

MGHP is sincerely grateful for support from the following individuals, organisations and companies who supported us to the value of R1 000 and above, either as financial support or as in-kind support during the past financial year (July 2016 – June 2017).

Financial partnership

American Association of Zookeepers (AAZ)
AAZ - Battle Creek Chapter
Artis Zoo
Avifauna
Beauval Nature
Bester Birds
Boissiere Mervent Conservation
Cash Deposit (Ground Hornbill Project)
Darling Brewery
Disney Conservation Fund
Honolulu Zoological Society
Knoxville Zoological Gardens
Mabula & Mokaikai Private Game Reserves
Mallafri Bird Club
Montecasino Bird Gardens
North Carolina Zoo Society
Paulton's Park
Sacramento Zoological Society
Staten Island Zoo
Toronto Zoo
Tulsa Zoo
Vaaldam Bird Club
Virginia Zoological Society

In-kind support

Imperial Truck Rental
SATIB
Deltamune
National Zoological Gardens of South Africa
Belanet
Gareth Leonard
SAPPI
NCT Cooperative
Little Estate
Konica Minolta
Identipet
AMT Composites
David Mocke
Rugged Wear
Sue White

Individuals

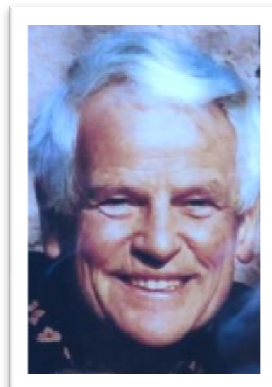
The Lemonade Boys Fund Raiser



Callum James, Callum Luc, Josh and Liam set up a lemonade stand to fundraise for the project

Our supporters of the MySchools MyPlanet Programme;
Patrons of the weekly Modjadji Tea and Hornbill experience drives;
Brenda Shaw;
Supporters of our craft and skills development initiative;
Donations in memory of Eberhard Schmidt; and
Donation of household goods in memory of Peter Little.

NCT Cooperative
IDEXX
Equus
Horizon Back Safaris



Eberhard Schmidt



Peter Little

In memoriam

ways to help: join us

As a proud South African, your financial donation to the Mabula Ground-Hornbill Project is tax deductible (reducing the amount of tax you pay) and is the most cost-effective way to support us. But there are many other ways you can get involved and support our work. We welcome any offers of support of building materials, office furniture or anything on our wish-list.

Once-off donation

Your donation can be attributed to a specific objective of our work (monitor, mitigate, restore, educate, research or improve), or can be a general donation which allows us to allocate it to where it is needed most, for less sexy items such as vehicle maintenance, salaries, tyres and so forth. You can donate online or by direct deposit.

Regular donation

A regular and ongoing donation, such as a monthly gift, is easy for you because you can 'set and forget', and instead of donating a large sum each year, you can donate in smaller increments throughout the year. Regular donations allow us to plan ahead, knowing that we have a steady and predictable source of income.

Fundraise

The Mabula Ground Hornbill Project enthusiastically supports individuals, groups or companies who wish to fundraise on our behalf. Simply pick a fundraising idea and we'll provide you with the assistance you need to make it a success.

Charitable gifts in wills

Many people do not have the means to leave a significant gift to conservation during their lifetimes. Leaving a gift for ground-hornbill conservation in your will is a powerful way of supporting our work and will ensure you leave an ongoing legacy for future generations.



Winner
2016 RCI Nature
Conservation Award

Finalist
2016 SATY
Conservationist of the
Year Award



Contact: Lucy Kemp

Postal address: P O Box 876, Bela Bela, Limpopo, 0480, South Africa

Tel: +27 (0) 83 289 8610

E-mail: project@ground-hornbill.org.za

Website: www.ground-hornbill.org.za

Images: June Cumming, Gareth Leonard, Alan Kemp, Evans Mabisa, Joanne Meyer, Jonah Gula, Cissy Maritz, Robyn Little, Delecia Gunn, Eike Schmidt, Kyle Brand, all others by MGHP team.

