

# Mabula Ground-Hornbill Project

## Progress Report

Reporting Period:  
October 2013 – March 2014



**Summary:** The last six months have been about learning and growth. The more we investigate the more we understand the habitat needs for hornbills persisting in large protected areas but also what keeps them surviving in communal grazing lands and the strips of habitat between timber plantations and sugar cane. From this we can work on developing techniques that will help them shift from survival to thrive. The donation of two new vehicles has vastly expanded our scope together with receiving the Disney Conservation Grant and we are able to respond quickly to concerned farmers and spend more time in the field. The value of good conservation interns has been realized and we will be expanding on this model to allow for capacity building in the field.

Executant: Lucy Kemp  
**The Mabula Ground-Hornbill Project**  
(016-183 NPO)

# HIGHLIGHTS OF THE PAST SIX MONTHS

## Formal advisor to the project: Prof. Carl Jones

Prof Carl Jones has agreed to come on board as a formal advisor to the project. His ground-breaking work in Mauritius turned the extinction tide for a number of species including the Mauritius Kestrel and Pink Pigeon and this experience, together with a number of other avian reintroduction projects he advises on, makes his input priceless. The Durrel Trust sponsored much of his initial site visit, where we were able to show him most aspects of the full national programme and introduce him to many of our collaborators. He has brought insights that have provided clarity on how to expand the project to where it needs so that it can make a significant difference for the species. We are very grateful for his input.

## Museum samples do yield enough DNA for analysis:

The first samples (from the wonderful Bulawayo Museum, Zimbabwe) have yielded useable DNA from samples dating as far back as 1948.

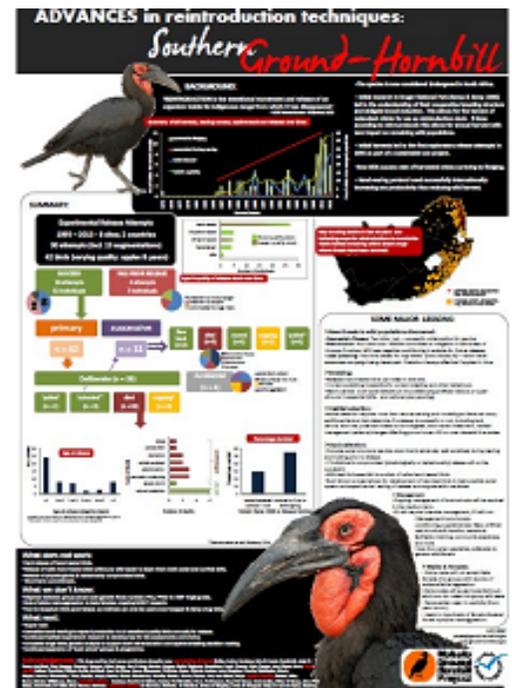
## Sabi Sands Research Site:

We are making good headway with the initial, non-invasive assessment of territory structure in the Sabi Sands Private Game Reserve as a base line for artificial nest manipulation. The site is also proving to be a perfect study site for actively managed vs. non-managed savannahs and the effect this has on bush encroachment and grass height.

## Understanding hornbills in communal grazing lands:

We visited the study site of a recently published paper on the SGH populations in Tribal Trust land in Zimbabwe and found similar patterns to our communal grazing lands – cattle create the short grass environment that hornbills prefer and people and hornbills live well together.

**Preliminary analysis of past releases:** Our preliminary analyses of past releases are complete and we have presented a poster at several conferences and have a paper in the pipeline – lots of lessons lurking in the data but lack of standardization in hand-rearing over time (all good as it led to better quality birds over time) makes it difficult to do any statistical work. This will form the basis of a formal reintroduction plan as more studies broaden our understanding of the species.



**New nests:** The nest monitoring in Limpopo River Valley and KZN led to the discovery of six new nests in total to be kept safe through land-owner engagement.

**Hand-rearing workshop and APP meeting:** both meetings were held together this year and were very productive. Hosted by Montecasino Bird Gardens.

The support and interest for the species in our Melmoth study site has been overwhelming and led to the discovery of new nests and new ideas (assisted by the new brochures and posters donated by Sappi)

## NEWS FROM CURRENT RELEASE SITES

### Madikwe:

The two release birds starting the 'girl' group are doing well. They remain on the five farms where they have settled about 20km N of the release site. Once we have the collapsible aviary designed and built we will add to this group. Ceon, the lead female, was originally harvested from the Limpopo River Valley.



**Thabazimbi:** All five released birds lost their tail transmitters when they moulted their tail feathers shortly after release but they are doing well despite the difficulty of tracking them. Albert still monitors them as best he can and the neighbouring farmers report sightings. The group, tight-knit unit are moving between the release site and a neighbouring cattle farm, and are extremely skittish of people – increasing the difficulty of managing and monitoring them but obviously much better for them in the long term.



### Mabula:



A new female and Kingfisher's chick were brought to the aviary for release. The birds remained in the aviary for one month and were then released. The group roosted together for the first night and then the female went her own way. She spent three days moving around the reserve – her behaviour very similar to the previous female released. She then encountered the northern fence of the reserve and her behaviour changed. She spent days pacing the fence as if still in an aviary and succumbed to dehydration as, despite being provisioned with food, she was too stressed to feed sufficiently and the heat waves experienced that week proved too much for her. Looking back on her records she had a very difficult week during her hand-rearing and that this is likely what led to these behaviours. The young male is fully integrated into the group and the other adult males are doing fine.



# ACTIVE THREAT MITIGATION

## **Chemical poisoning:**

We hosted a poison workshop facilitated by Dr Gerhard Verdoorn, with both Tim Snow and Arnaud le Roux there to add their wealth of experience. It was an extremely good workshop and a complete eye-opener to the scale of poisoning of wildlife in this country and what it means for hornbills (and a host of other species in trouble). We produced a report that was circulated to the Action Group and are now starting to address the actions that were highlighted. We have started with a call to the Ministry of Agriculture, Forestry of Fisheries to make it illegal to use aldicarb in South Africa.

**Lead poisoning:** Two of the birds at the Thabazimbi release site tested positive for lead toxicity, from lead fragments from lead-based ammunition, and were moved to Johannesburg Zoo for (successful) chelation therapy. We now have reports from farmers in the Limpopo River Valley saying they have witnessed hornbills feeding of the offal left behind in the veld after a hunt. This is a serious warning for us of a new threat and a challenge we will have to take up.

**Disease:** We are in the process of testing the next Newcastle's Disease vaccine with birds from the Tanzanian stock.

**Window-breaking:** Continued discussion with affected farmers.

**Habitat destruction & degradation:** Zululand investigations are ongoing and this is a valuable study site for studying SGH in a range of transformed habitats. We presented the work in KNP on the shorter grass requirements to SANParks since the closure of artificial waterholes is likely to have an impact on the habitat quality of the remaining core population and requires further investigation.

**Loss of nests:** We also hosted an artificial nest workshop, facilitated by Dr Alan Kemp. We have produced a report for circulation. We will start testing new designs in the next few months for the various variables discussed. The nest searches in KZN have added another dimension to our understanding of their nesting with most of the nests being in hollows in earth banks. We have ordered iButtons for testing various environmental variables on the experimental nests.

**Electrocution:** No progress for this period.

USE OF ARTIFICIAL NEST CAVITIES IN  
SOUTHERN GROUND-HORNBILL  
CONSERVATION:  
PREPARING A NATIONAL STRATEGY  
A. C. Kemp, L. K. Kemp, R. Swales & S. E. Steyn  
December 2013



Our reports based on the poison and artificial nest box workshops. Please contact us if you would like a digital copy.

# LOWLIGHTS

•The harvest season was disappointing but nine chicks were harvested. Three were too compromised (dehydration and egg sac infection) to survive. We are now working on an egg density graph that can assist the field teams to get the dates closer to the critical ‘within two days of hatch’ period that produces chicks that the rearers can grow into good, strong, non-compromised stock for both the reintroduction and captive breeding programme. Some of the rearers who were committed to the programme were not able to get any chicks to rear but we thank Delecia Gunn and Lara Jordan and her team, for the six chicks that have joined the managed population.

•One of our staff was involved in an accident. Luckily they are unharmed but our old monitoring vehicle is now in need of replacement. Anyone who may have an old game drive vehicle that needs a new home.....

# PLANS FOR THE NEXT FEW MONTHS

**Boma:** The Madikwe boma is being taken down and the materials reused at Mabula.

**Mobile Boma:** We have sponsorship from Montecasino Bird Gardens for two mobile units and once the plans are complete we will start construction.

**Loskop release:** We are still looking for funding for the salary of a monitor.

**Mabula release:** We will release a new male and female onto the property.

**Museum samples:** We will continue gathering museum samples for analysis.

**Reintroduction Plan:** We are compiling a draft plan for circulation and comment.

**Education & Awareness:** Melmoth, Thabazimbi, Limpopo River Valley focus.

**Threat mitigation:** We are looking for funding to start a ‘green’ ammunition campaign to tackle the threat of lead poisoning.

**Custodianship Programme:** We are completing the first draft of a custodianship agreement to start testing the model on a sub-set of landowners.

The new poster for distribution in areas outside of formally protected areas



# EDUCATION & AWARENESS in the last six months

\*(all sponsors and collaborators are acknowledged in presentations and reports)

## Print media:

Our new posters have been printed and they look great! We have started distributing.

- Fourways Review Magazine article.
- Wild Ways e-zine article
- Radio 702
- SABC 3 News Prime Time
- Times and Beeld newspaper articles
- Front Cover photo: Ecological Applications

**Online:** Facebook page updated regularly.

**Newsletter:** Boom December Newsletter

## Presentations:

- Weekly Modjadji teas and hornbill drives;
- Filming for NZG showcase;
- Montecasino Media PR Day



Our new brochures in English with Zulu and Tswana coming soon

## Conferences:

- Symposium for Contemporary Conservation (Ezemvelo KZN Wildlife) – Presentation.
- Wildlife Ranchers of South Africa KZN Chapter AGM – Presentation.
- SANParks Savannah Networking Meeting: Skukuza: Presentation and Poster.
- LAB Flock Conference (BirdLife & Fitzpatrick Institute) Mont Aux Sources: Presentation.
- American Zoos and Aquariums Conference: Memphis, USA – Two presentations and poster.
- San Diego Zoo Safari Park: Presentation.

## Land Owner engagement:

- Mapungubwe Conservation Forum presentation.
- Musina 'wildstudiegroep' - a talk on the dangers of lead and other poison for SGH and other species and what effect it has on the national population.
- Melmoth landowner meetings (October & December).
- Farmers, managers & labourers on farms surrounding latest release site – 40km radius

## Schools:

- Nthabiseng has done outreach work at the two schools closest to the release site and is currently setting up for the remaining schools in the area.
- Presentations to four schools in Mabula region.



Binoculars (even loo-roll ones) provide a new view on the world around you.

# FINANCIAL STATE OF THE PROJECT: SUSTAINABLE

We are extremely grateful for all the sponsorship and support that we received in the last six months as this Project continues to grow (see Table 2 for details). It meant that we are able to offer our staff contracts longer than a year, thus making it easier to build good capacity.

**PLEASE NOTE:** We meet the requirements for a Section 18a NPO and as such a percentage of any new monetary donations to the project are tax deductible. Please contact us for more information.

**Table 2: Details of sponsorship over last six months and staff developments.**

sponsorship	staff
<p><b>Primary:</b>            Disney Conservation Fund            SASOL Ltd.            Mabula Private Game Reserve            Seaworld &amp; Busch Gardens            Natural Encounters            Virginia Zoo</p> <p><b>Contributing:</b>            Beauval Nature            Chester Zoo            Val Kuperberg            Sacramento Zoo            Montecasino Bird Gardens            Honolulu Zoological Society            Avifauna Vogelpark            Awesome Foundation</p> <p><b>In-Kind:</b>            SAPPI: Poster &amp; brochure printing            Chocolate Horse: Design            AZA: Conference registration            Bester Birds: Travel sponsorship            Virginia Zoo: Accommodation</p>	<ul style="list-style-type: none"> <li>•Nthabiseng Monama gets her driver’s license.</li> <li>•Natasha &amp; Hein are engaged to be married 😊</li> </ul> <p><b>Conservation Interns:</b>  <b>Nicole Weprin (USA)</b> brought her raptor rehab and fieldwork (Horned Owl and others) experience to the Project.  <b>Kevin Cannaday (USA)</b> brought his data management and field experience skills to the Project.  <b>Peter Hamming (SA)</b> assisted us again for a short period to assist in the gap between interns.</p> 

Our team (clockwise from top right): Hein, Nthabiseng, Natasha and Lucy

## SUMMARY OF SOME OF THE ACTIVITIES OF OUR COLLABORATORS AND PARTNERS:

<b>National Zoological Gardens</b>	Maintains the stud book and captive propagation programme, post-mortems, nutritional & behavioural advice and undertakes all genetics analyses at their state-of-the-art laboratory.
<b>Percy FitzPatrick Institute of African Ornithology</b>	Undertakes APNR harvest, wild capture, research into spatial use of habitats and dispersal.
<b>Mpumalanga Tourism and Parks Agency</b>	Delecia Gunn rears harvested chicks, continues education and awareness and acts as the main advisor on hand-rearing and captive socialisation.
<b>Johannesburg Zoo</b>	Hosts captive birds; hand-rearing harvested chicks; growing hand-rearing capacity; continued education and awareness; veterinary support; vaccine development.
<b>North West University</b>	Research into tools for selecting reintroduction sites and social/human aspects of the conservation of the species.
<b>Endangered Wildlife Trust</b>	Undertakes nest monitoring, harvest and ringing of fledglings in Kruger National Park, research into habitat use & dispersal.
<b>Montecasino Bird Gardens</b>	Hosts two pairs of breeding pairs; awareness campaign; rearing both harvested and captive-bred chicks.
<b>Umgeni River Bird Park</b>	Hosts a pair for captive breeding and is increasing awareness in KwaZulu-Natal.
<b>Boscia Birds</b>	Host captive pair and young birds and hand-rear harvested chicks.
<b>Zaagkuilsdrift Bird Sanctuary</b>	Hosts birds for the captive breeding programme.
<b>Lory Park Zoo</b>	Hosts birds for the captive breeding programme.
<b>Hoedspruit Endangered Species Centre</b>	Hosts birds for the captive breeding programme.



# THANK YOU TO ALL OUR CURRENT SPONSORS

## PRIMARY CORPORATE SPONSORS:



## CONSERVATION GRANTS:



## IN-KIND SPONSORSHIP:



*Thank you*

Table 1: Our commitments with regards to the Single Species Recovery Plan (available in full on our website) is the basis for all our planning and fund-raising, and will be used as the basis for all reporting. In addition to these commitments, we assist wherever we can with other objectives within the Action Plan.

The five (of a total of six) objectives within the Species Recovery Plan where the MGHP plays a role.	1. Generate an increase in the SGH population by expanding the population into parts of its historic range	2. Understand the genetic relationships within family groups and the mechanisms behind female and immature dispersal.	3. Collect population data and information on threats and mortalities for SGH to determine their importance.	4. Design and implement <i>in-situ</i> management and conservation interventions to increase SGH populations in SA, and neighbouring countries that could potentially act as a sink or source for RSA birds.	5. Increase awareness of the SGH and the threats acting upon the species to increase tolerance towards the species and reduce persecution
<b>Specific objectives for which MGHP is responsible within each objective.</b>	Create new nest sites; check existing artificial nests and alter if not used.	Attach transmitters to females prior to dispersal and leg rings; continue to improve on the use of scientific technology: satellite tracking and use of transmitters. Analyse genetic structure and relatedness across the entire range of SGH populations & compare individual relatedness between and within families using DNA samples from family groups.	Quantify the extent to which human-induced threats are negatively affecting the population of SGH (poisoning, trade, loss of habitat); continue with ground-truthing throughout the SGH's range to calibrate existing data.	Develop further and test suitable methods used to re-establish captive-released birds successfully back into the wild; continue and expand the programme of rescuing redundant second hatched chicks from wild nests.	Continue to conduct awareness and education programs in areas where SGH occur, occurred recently, or that are still suitable for re-establishment in the future.
<b>SEPT 2013</b> — <b>MAR 2014</b>	Continue Zululand and Sabi Sands research; continued monitoring of Limpopo River Valley population expansion, continue reintroduction work; analysis of past releases; monitor current release sites.	Continue to collect museum specimens; radio mounts on release birds; vocalizations.	Contravision Limpopo; initiate 'green' ammunition media campaign; initiate CITES process.	Release at Thabazimbi site - 4M: 1F; revise custodianship requirements; call to South African vet and rehab centres for data on past incidents.	New brochures and posters; school outreach; landowner outreach; maintain active Facebook feed; 3 conferences; newspapers; primetime news; magazine articles; radio; zoo outreach; public presentations.