

Answering the call of the Thunder Bird



South Africa's thunder bird

The Southern Ground-Hornbill (*Bucorvus leadbeateri*) is an African icon. Its long eyelashes, flash of white primary flight feathers against a backdrop of black and red gular pouch along with its characteristic tiptoe gait make it impossible to confuse with anything else.

Known to be the avian world's largest co-operative breeder, these ground-hornbills live in groups of two to 12, made up of mostly male helpers that help defend the territory and aid the breeding pair with raising their young. Surviving on insects, reptiles, amphibians and small to medium sized birds and mammals, Southern Ground-Hornbills need to defend such large territories in order to find sufficient prey and ensure that within that territory is a suitable nest hollow.



The Southern Ground-Hornbill is ecologically important as a top-order predator which has earned it a place in the 'African Big Six' of the bird world. It is also culturally important, fondly deemed to be the 'bringer of rain'. Yet the future of South Africa's thunder bird has never looked more uncertain.

This makes them sparsely distributed over their natural range - which in the 1900's covered most of Limpopo, Mpumalanga, KwaZulu-Natal, the northern Eastern Cape and even parts of Gauteng. Sadly, this area has shrunk greatly over the past century as habitat has been lost and groups exterminated with devastating effect to their populations.

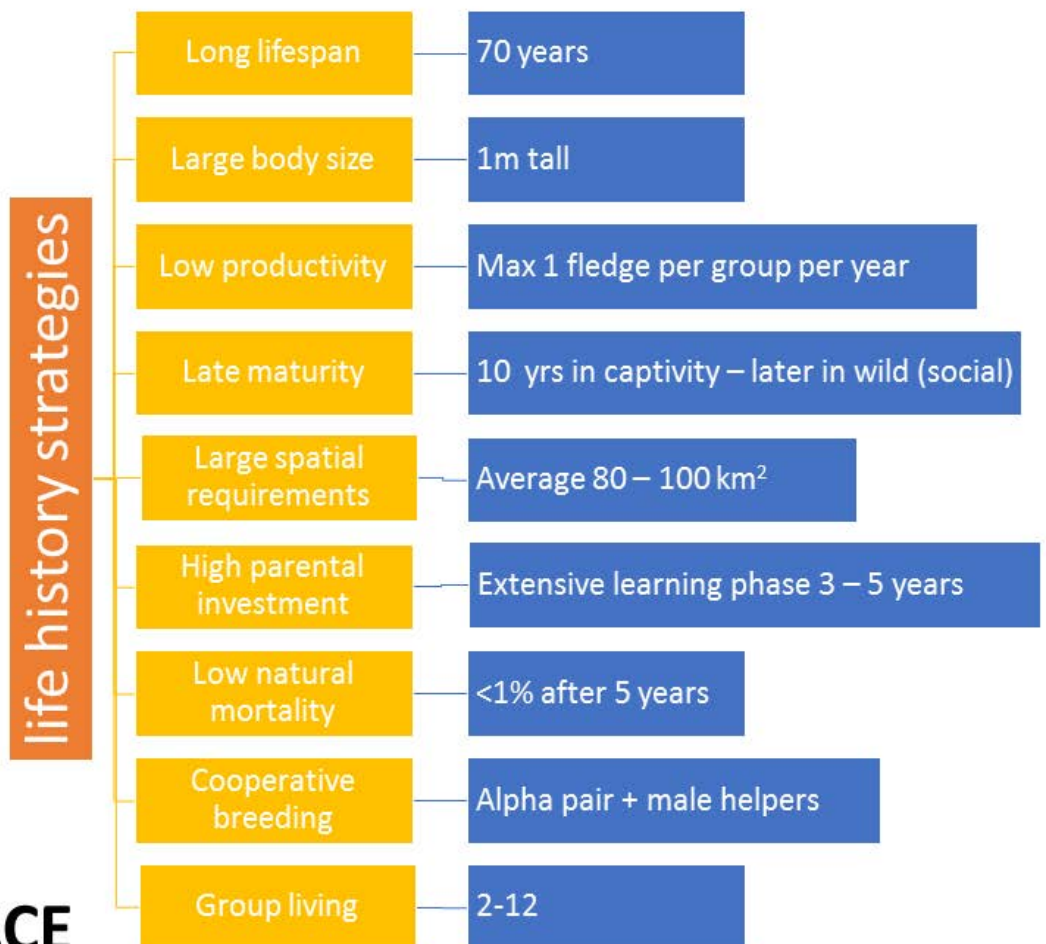
Today only three core concentrations remain:

1. Kruger National Park and adjacent private reserves that make up the greater Kruger region.
2. The Limpopo River Valley.
3. Conservation areas, rural and commercial farmland of northern and eastern KwaZulu-Natal and the Eastern Cape, as far south as Alexandria.



AN UNCERTAIN FUTURE

Current estimates suggest there are only 400 – 500 family groups, and therefore breeding females (there is only adult female per group), left in the whole of South Africa. This has seen the Southern Ground-Hornbill listed as regionally Endangered on the Red List of the International Union for Conservation of Nature (IUCN). More worrying is that the population still seems to be declining, as threats escalate, with numbers rapidly falling towards Critically Endangered levels.



TIME + SPACE

Population and habitat viability assessments do little to allay conservationists' fears. The 2005 and 2017 population models suggest that the population beyond the borders of formal conservation areas and areas without strong cultural protection cannot recover without conservation intervention and will become extinct if nothing is done.

Aside from further loss of habitat, the primary threats to ground-hornbills beyond the borders of sufficiently large formally protected areas include:

- Lead toxicosis from spent-lead ammunition left available in the veld after a hunt,
- Secondary poisoning from bait put out for so-called 'pest' species such as feral dogs, jackal and leopard,
- Electrocution on transformer boxes where they may try to roost at night,
- Wind-farm development,
- Loss of nest trees due to elephant impact, extreme floods, fires and wind and felling, clearing or harvest of indigenous trees;
- Opportunistic use in traditional medicine and rituals across their distribution range. In some countries they are regarded as the bearer of bad news, while others see it as a protector against evil spirits, witchcraft, lightning and drought.
- Persecution for breaking windows, which is a common territorial response to their reflection as an enemy.

REVERSING THE DECLINE

There are many agencies supporting the work of the Mabula Ground-Hornbill Project to reverse the Thunder Bird's fate. Through research, harvest, rearing, reintroduction, captive breeding, education and artificial nests, their work is aligned and co-ordinated through the national Southern Ground-Hornbill Working Group. This group comprises representatives of various national and provincial conservation agencies, land-owners, zoos and bird sanctuaries and academic institutes, many of whom also financially support the Mabula Ground Hornbill project.

The Mabula Ground Hornbill Project's long-term goal is to ensure the birds are down-listed to Vulnerable in South Africa by 2050, ensuring there is a sustainably growing population throughout their full historical home range.

To do this, the working group needs to:

- Raise the current population to over 2500 mature individuals, roughly 700 – 800 groups.
- Extend their current home range outside protected areas, producing connectivity between these areas to prevent populations becoming isolated.
- Enhance knowledge sharing, using Indigenous Knowledge Systems (the knowledge that is already held by people who coexist with this species everyday) and stakeholder engagement by promoting custodianship across all land-use types.



To measure success and inform adaptive management of the existing conservation plans, a national monitoring plan is required. This is no small task, as Southern Ground-Hornbills are almost impossible to census due to the vast areas they inhabit.

ANSWERING THE CALL OF THE THUNDER BIRD

The Mabula Ground Hornbill Project can support populations with reintroductions, threat mitigation, education and artificial nest boxes by knowing how many family groups exist, monitoring their sustainability and identifying areas where action is needed.

In formally protected areas, there is an abundance of Southern Ground-Hornbill data being collected year-in and year-out. The challenge for conservationists is to survey areas beyond the commonly known range and formally protected areas. This requires the involvement of multiple landowners, including the South African forestry sector. Citizen science holds the key. Will you answer the call?

What's citizen science? Citizen science is the collection, and in some circumstances the analysis, of data relating to the natural world by members of the general public, typically as part of a collaborative project with professional scientists.



FORESTRY AS A CONSERVATION LANDSCAPE

Southern Ground-Hornbills have simple habitat requirements:

- A large, productive expanse of short grass in which to forage and chase down their prey but where they are safe.
- Large trees for roosting and nesting, although they will use hollows in erosion gullies or cliff ledges if they have no alternatives.

In this respect, forestry-owned and -managed land could provide the perfect protection for the Thunder Bird with the conservation corridors within planted areas linking the core concentrations in protected areas outside the plantations. However, currently very little is known about how Southern Ground-Hornbills are using forestry habitats and how many groups forestry-owned land may harbour.

GIVING THE THUNDER BIRD THE GREEN LIGHT WITH THE HELP OF THE FORESTRY SECTOR

A number of forestry companies have provided sighting records in the past, as well as allowing the Mabula Ground Hornbill Project teams access to their properties. This suggests that Southern Ground-Hornbills can inhabit forestry land, but more conclusive data is needed to understand how they are using forested landscapes, so we better support the birds' conservation.

The pentad-as-proxy approach

Pentads are the units of scale used by the South African Bird Atlas Project 2 (SABAP2) to monitor all bird species and happens to be roughly the same area as the average Southern Ground-Hornbill territorial range. This is a perfect way to map and monitor groups, their persistence and breeding success in a sustainable way.

So how does it work? The monitoring system works on a four-year cycle. Every Southern Ground-Hornbill group sighting is reported (with the location as accurate as possible). The team then digitally colour-codes the relevant pentad green for that year. If no group is seen in that pentad by the end of the second year it is coded orange. If the group is still not re-sighted in the third year it changes to red. If the group is re-sighted then that pentad reverts back to green. Areas where several adjacent pentads have turned red require urgent assessment and intervention to address the population declines.

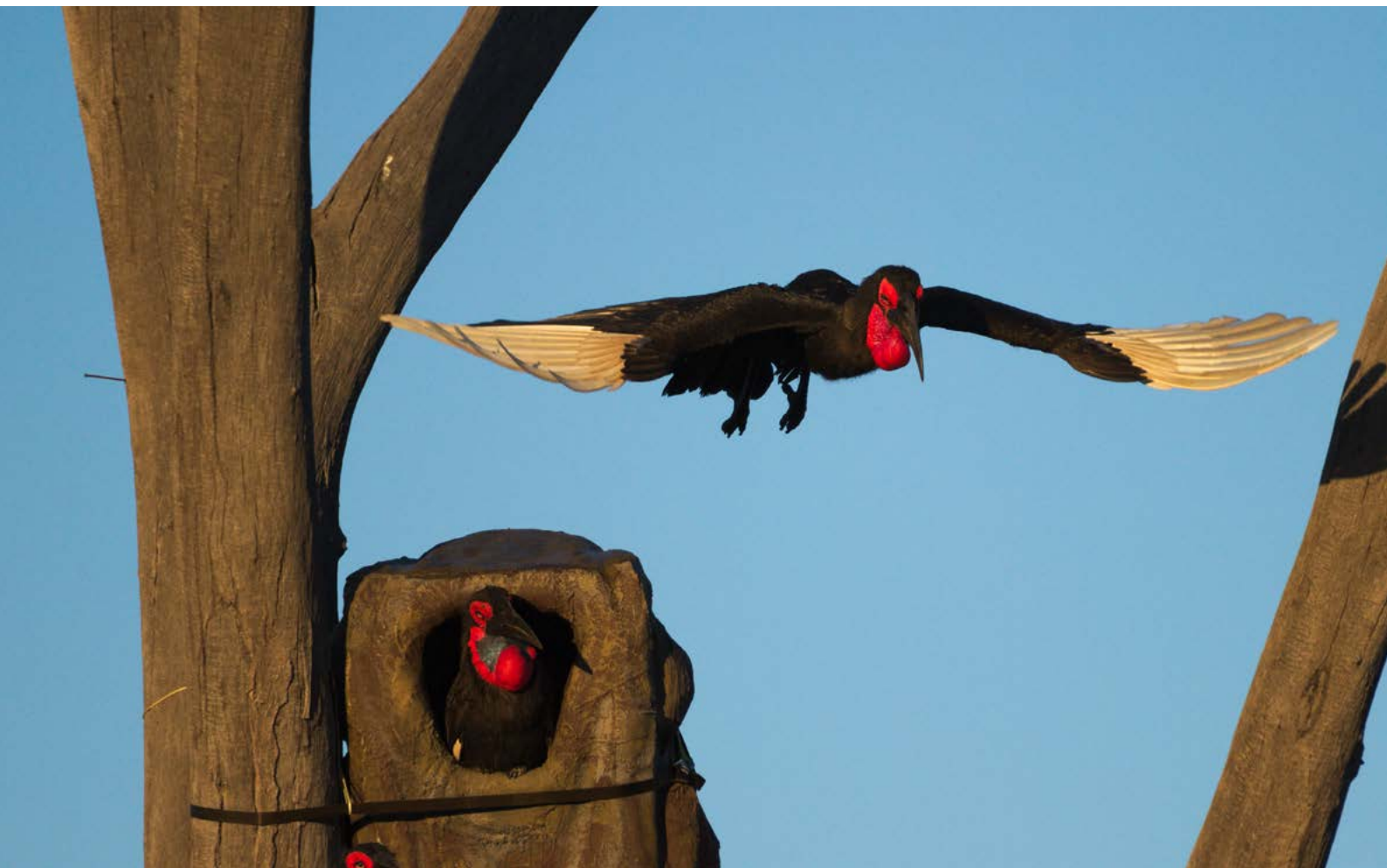
The overall objective is to add more continuous, green pentad squares to the map, regardless of the land-use type. This will ensure movement between home ranges and facilitate the natural gene flow required to ensure the population remains viable.



GOING FORWARD

At a time when every family group is fundamentally important, forestry landowners have the potential to both protect existing populations, and expand them, allowing growth and restoration of the Southern Ground-Hornbill to a level where they can survive in this human-dominated landscape

By getting a better picture of their populations within the forestry landscape, it will also be possible to identify potential reintroduction sites. Often these areas are not utilised by the birds due to the lack of suitable natural nesting sites; this can however be addressed with the installation of state-of-the-art artificial nests. These have the potential to re-open areas of historic habitat, bringing a bird back from the brink of extinction.





FINAL THOUGHT

The Southern Ground-Hornbill is unlikely to persist outside of protected areas without our help. Through committed involvement in the national monitoring plan and the Custodian Programme, the forestry industry could make a lasting difference when it comes to the future of one of southern Africa's most iconic birds.

"These great birds are an incredible part of our heritage, that deep call in the early morning light is special to all South Africans and must simply not be lost from our landscapes."

Dr Lucy Kemp, Mabula Ground-Hornbill Project

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Photo courtesy of Mabula Ground Hornbill Project