



# Government Gazette Staatskoerant

REPUBLIC OF SOUTH AFRICA  
REPUBLIEK VAN SUID AFRIKA

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**PART 1 OF 2**

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government  
printing

Department:  
Government Printing Works  
REPUBLIC OF SOUTH AFRICA

## HIGH ALERT: SCAM WARNING!!!

### TO ALL SUPPLIERS AND SERVICE PROVIDERS OF THE GOVERNMENT PRINTING WORKS

It has come to the attention of the *GOVERNMENT PRINTING WORKS* that there are certain unscrupulous companies and individuals who are defrauding unsuspecting businesses disguised as representatives of the *Government Printing Works (GPW)*.

The scam involves the fraudsters using the letterhead of *GPW* to send out fake tender bids to companies and requests to supply equipment and goods.

Although the contact person's name on the letter may be of an existing official, the contact details on the letter are not the same as the *Government Printing Works*. When searching on the Internet for the address of the company that has sent the fake tender document, the address does not exist.

The banking details are in a private name and not company name. Government will never ask you to deposit any funds for any business transaction. *GPW* has alerted the relevant law enforcement authorities to investigate this scam to protect legitimate businesses as well as the name of the organisation.

Example of e-mails these fraudsters are using:

[PROCUREMENT@GPW-GOV.ORG](mailto:PROCUREMENT@GPW-GOV.ORG)

Should you suspect that you are a victim of a scam, you must urgently contact the police and inform the *GPW*.

*GPW* has an official email with the domain as [@gpw.gov.za](mailto:@gpw.gov.za)

Government e-mails DO NOT have org in their e-mail addresses. All of these fraudsters also use the same or very similar telephone numbers. Although such number with an area code 012 looks like a landline, it is not fixed to any property.

*GPW* will never send you an e-mail asking you to supply equipment and goods without a purchase/order number. *GPW* does not procure goods for another level of Government. The organisation will not be liable for actions that result in companies or individuals being resultant victims of such a scam.

*Government Printing Works* gives businesses the opportunity to supply goods and services through RFQ / Tendering process. In order to be eligible to bid to provide goods and services, suppliers must be registered on the National Treasury's Central Supplier Database (CSD). To be registered, they must meet all current legislative requirements (e.g. have a valid tax clearance certificate and be in good standing with the South African Revenue Services - SARS).

The tender process is managed through the Supply Chain Management (SCM) system of the department. SCM is highly regulated to minimise the risk of fraud, and to meet objectives which include value for money, open and effective competition, equitability, accountability, fair dealing, transparency and an ethical approach. Relevant legislation, regulations, policies, guidelines and instructions can be found on the tender's website.

## Fake Tenders

National Treasury's CSD has launched the Government Order Scam campaign to combat fraudulent requests for quotes (RFQs). Such fraudulent requests have resulted in innocent companies losing money. We work hard at preventing and fighting fraud, but criminal activity is always a risk.

### How tender scams work

There are many types of tender scams. Here are some of the more frequent scenarios:

Fraudsters use what appears to be government department stationery with fictitious logos and contact details to send a fake RFQ to a company to invite it to urgently supply goods. Shortly after the company has submitted its quote, it receives notification that it has won the tender. The company delivers the goods to someone who poses as an official or at a fake site. The Department has no idea of this transaction made in its name. The company is then never paid and suffers a loss.

OR

Fraudsters use what appears to be government department stationery with fictitious logos and contact details to send a fake RFQ to Company A to invite it to urgently supply goods. Typically, the tender specification is so unique that only Company B (a fictitious company created by the fraudster) can supply the goods in question.

Shortly after Company A has submitted its quote it receives notification that it has won the tender. Company A orders the goods and pays a deposit to the fictitious Company B. Once Company B receives the money, it disappears. Company A's money is stolen in the process.

Protect yourself from being scammed

- If you are registered on the supplier databases and you receive a request to tender or quote that seems to be from a government department, contact the department to confirm that the request is legitimate. Do not use the contact details on the tender document as these might be fraudulent.
- Compare tender details with those that appear in the Tender Bulletin, available online at [www.gpwonline.co.za](http://www.gpwonline.co.za)
- Make sure you familiarise yourself with how government procures goods and services. Visit the tender website for more information on how to tender.
- If you are uncomfortable about the request received, consider visiting the government department and/or the place of delivery and/or the service provider from whom you will be sourcing the goods.
- In the unlikely event that you are asked for a deposit to make a bid, contact the SCM unit of the department in question to ask whether this is in fact correct.

Any incidents of corruption, fraud, theft and misuse of government property in the *Government Printing Works* can be reported to:

Supply Chain Management: Ms. Anna Marie Du Toit, Tel. (012) 748 6292.  
Email: [Annamarie.DuToit@gpw.gov.za](mailto:Annamarie.DuToit@gpw.gov.za)

Marketing and Stakeholder Relations: Ms Bonakele Mbhele, at Tel. (012) 748 6193.  
Email: [Bonakele.Mbhele@gpw.gov.za](mailto:Bonakele.Mbhele@gpw.gov.za)

Security Services: Mr Daniel Legoabe, at tel. (012) 748 6176.  
Email: [Daniel.Legoabe@gpw.gov.za](mailto:Daniel.Legoabe@gpw.gov.za)

# Closing times for **ORDINARY WEEKLY** **2023** **GOVERNMENT GAZETTE**

The closing time is **15:00** sharp on the following days:

- **08 December**, Thursday for the issue of Thursday **15 December 2022**
- **15 December**, Thursday for the issue of Friday **23 December 2022**
- **22 December**, Thursday for the issue of Friday **30 December 2022**
- **29 December**, Thursday for the issue of Friday **06 January 2023**
- **06 January**, Friday for the issue of Friday **13 January 2023**
- **13 January**, Friday for the issue of Friday **20 January 2023**
- **20 January**, Friday for the issue of Friday **27 January 2023**
- **27 January**, Friday for the issue of Friday **03 February 2023**
- **03 February**, Friday for the issue of Friday **10 February 2023**
- **10 February**, Friday for the issue of Friday **17 February 2023**
- **17 February**, Friday for the issue of Friday **24 February 2023**
- **24 February**, Friday for the issue of Friday **03 March 2023**
- **03 March**, Friday for the issue of Friday **10 March 2023**
- **10 March**, Friday for the issue of Friday **17 March 2023**
- **16 March**, Thursday for the issue of Friday **24 March 2023**
- **24 March**, Friday for the issue of Friday **31 March 2023**
- **30 March**, Thursday for the issue of Thursday **06 April 2023**
- **05 April**, Wednesday for the issue of Friday **14 April 2023**
- **14 April**, Friday for the issue of Friday **21 April 2023**
- **20 April**, Thursday for the issue of Friday **28 April 2023**
- **26 April**, Wednesday for the issue of Friday **05 May 2023**
- **05 May**, Friday for the issue of Friday **12 May 2023**
- **12 May**, Friday for the issue of Friday **19 May 2023**
- **19 May**, Friday for the issue of Friday **26 May 2023**
- **26 May**, Friday for the issue of Friday **02 June 2023**
- **02 June**, Friday for the issue of Friday **09 June 2023**
- **08 June**, Thursday for the issue of Thursday **15 June 2023**
- **15 June**, Thursday for the issue of Friday **23 June 2023**
- **23 June**, Friday for the issue of Friday **30 June 2023**
- **30 June**, Friday for the issue of Friday **07 July 2023**
- **07 July**, Friday for the issue of Friday **14 July 2023**
- **14 July**, Friday for the issue of Friday **21 July 2023**
- **21 July**, Friday for the issue of Friday **28 July 2023**
- **28 July**, Friday for the issue of Friday **04 August 2023**
- **03 August**, Thursday for the issue of Friday **11 August 2023**
- **11 August**, Friday for the issue of Friday **18 August 2023**
- **18 August**, Friday for the issue of Friday **25 August 2023**
- **25 August**, Friday for the issue of Friday **01 September 2023**
- **01 September**, Friday for the issue of Friday **08 September 2023**
- **08 September**, Friday for the issue of Friday **15 September 2023**
- **15 September**, Friday for the issue of Friday **22 September 2023**
- **21 September**, Thursday for the issue of Friday **29 September 2023**
- **29 September**, Friday for the issue of Friday **06 October 2023**
- **06 October**, Friday for the issue of Friday **13 October 2023**
- **13 October**, Friday for the issue of Friday **20 October 2023**
- **20 October**, Friday for the issue of Friday **27 October 2023**
- **27 October**, Friday for the issue of Friday **03 November 2023**
- **03 November**, Friday for the issue of Friday **10 November 2023**
- **10 November**, Friday for the issue of Friday **17 November 2023**
- **17 November**, Friday for the issue of Friday **24 November 2023**
- **24 November**, Friday for the issue of Friday **01 December 2023**
- **01 December**, Friday for the issue of Friday **08 December 2023**
- **08 December**, Friday for the issue of Friday **15 December 2023**
- **15 December**, Friday for the issue of Friday **22 December 2023**
- **20 December**, Wednesday for the issue of Friday **29 December 2023**

# LIST OF TARIFF RATES FOR PUBLICATION OF NOTICES

**COMMENCEMENT: 1 APRIL 2018**

## NATIONAL AND PROVINCIAL

Notice sizes for National, Provincial & Tender gazettes 1/4, 2/4, 3/4, 4/4 per page. Notices submitted will be charged at R1008.80 per full page, pro-rated based on the above categories.

Pricing for National, Provincial - Variable Priced Notices		
Notice Type	Page Space	New Price (R)
Ordinary National, Provincial	1/4 - Quarter Page	252.20
Ordinary National, Provincial	2/4 - Half Page	504.40
Ordinary National, Provincial	3/4 - Three Quarter Page	756.60
Ordinary National, Provincial	4/4 - Full Page	1008.80

## EXTRA-ORDINARY

All Extra-ordinary National and Provincial gazette notices are non-standard notices and attract a variable price based on the number of pages submitted.

The pricing structure for National and Provincial notices which are submitted as **Extra ordinary submissions** will be charged at **R3026.32** per page.

## GOVERNMENT PRINTING WORKS - BUSINESS RULES

The **Government Printing Works (GPW)** has established rules for submitting notices in line with its electronic notice processing system, which requires the use of electronic *Adobe Forms*. Please ensure that you adhere to these guidelines when completing and submitting your notice submission.

### CLOSING TIMES FOR ACCEPTANCE OF NOTICES

1. The *Government Gazette* and *Government Tender Bulletin* are weekly publications that are published on Fridays and the closing time for the acceptance of notices is strictly applied according to the scheduled time for each gazette.
2. Please refer to the Submission Notice Deadline schedule in the table below. This schedule is also published online on the Government Printing works website [www.gpwonline.co.za](http://www.gpwonline.co.za)

All re-submissions will be subject to the standard cut-off times.

**All notices received after the closing time will be rejected.**

Government Gazette Type	Publication Frequency	Publication Date	Submission Deadline	Cancellations Deadline
National Gazette	Weekly	Friday	Friday 15h00 for next Friday	Tuesday, 15h00 - 3 working days prior to publication
Regulation Gazette	Weekly	Friday	Friday 15h00 for next Friday	Tuesday, 15h00 - 3 working days prior to publication
Petrol Price Gazette	Monthly	Tuesday before 1st Wednesday of the month	One day before publication	1 working day prior to publication
Road Carrier Permits	Weekly	Friday	Thursday 15h00 for next Friday	3 working days prior to publication
Unclaimed Monies (Justice, Labour or Lawyers)	January / September 2 per year	Last Friday	One week before publication	3 working days prior to publication
Parliament (Acts, White Paper, Green Paper)	As required	Any day of the week	None	3 working days prior to publication
Manuals	Bi- Monthly	2nd and last Thursday of the month	One week before publication	3 working days prior to publication
State of Budget (National Treasury)	Monthly	30th or last Friday of the month	One week before publication	3 working days prior to publication
<i>Extraordinary Gazettes</i>	As required	Any day of the week	<i>Before 10h00 on publication date</i>	<i>Before 10h00 on publication date</i>
Legal Gazettes A, B and C	Weekly	Friday	One week before publication	Tuesday, 15h00 - 3 working days prior to publication
Tender Bulletin	Weekly	Friday	Friday 15h00 for next Friday	Tuesday, 15h00 - 3 working days prior to publication
Gauteng	Weekly	Wednesday	Two weeks before publication	3 days <b>after</b> submission deadline
Eastern Cape	Weekly	Monday	One week before publication	3 working days prior to publication
Northern Cape	Weekly	Monday	One week before publication	3 working days prior to publication
North West	Weekly	Tuesday	One week before publication	3 working days prior to publication
KwaZulu-Natal	Weekly	Thursday	One week before publication	3 working days prior to publication
Limpopo	Weekly	Friday	One week before publication	3 working days prior to publication
Mpumalanga	Weekly	Friday	One week before publication	3 working days prior to publication



## GOVERNMENT PRINTING WORKS - BUSINESS RULES

Government Gazette Type	Publication Frequency	Publication Date	Submission Deadline	Cancellations Deadline
Gauteng Liquor License Gazette	Monthly	Wednesday before the First Friday of the month	Two weeks before publication	3 working days <b>after</b> submission deadline
Northern Cape Liquor License Gazette	Monthly	First Friday of the month	Two weeks before publication	3 working days <b>after</b> submission deadline
National Liquor License Gazette	Monthly	First Friday of the month	Two weeks before publication	3 working days <b>after</b> submission deadline
Mpumalanga Liquor License Gazette	Bi-Monthly	Second & Fourth Friday	One week before publication	3 working days prior to publication

### EXTRAORDINARY GAZETTES

3. *Extraordinary Gazettes* can have only one publication date. If multiple publications of an *Extraordinary Gazette* are required, a separate Z95/Z95Prov *Adobe* Forms for each publication date must be submitted.

### NOTICE SUBMISSION PROCESS

4. Download the latest *Adobe* form, for the relevant notice to be placed, from the **Government Printing Works** website [www.gpwonline.co.za](http://www.gpwonline.co.za).
5. The *Adobe* form needs to be completed electronically using *Adobe Acrobat / Acrobat Reader*. Only electronically completed *Adobe* forms will be accepted. No printed, handwritten and/or scanned *Adobe* forms will be accepted.
6. The completed electronic *Adobe* form has to be submitted via email to [submit.egazette@gpw.gov.za](mailto:submit.egazette@gpw.gov.za). The form needs to be submitted in its original electronic *Adobe* format to enable the system to extract the completed information from the form for placement in the publication.
7. Every notice submitted **must** be accompanied by an official **GPW** quotation. This must be obtained from the *eGazette* Contact Centre.
8. Each notice submission should be sent as a single email. The email **must** contain **all documentation relating to a particular notice submission**.
  - 8.1. Each of the following documents must be attached to the email as a separate attachment:
    - 8.1.1. An electronically completed *Adobe* form, specific to the type of notice that is to be placed.
      - 8.1.1.1. For National *Government Gazette* or *Provincial Gazette* notices, the notices must be accompanied by an electronic Z95 or Z95Prov *Adobe* form
      - 8.1.1.2. The notice content (body copy) **MUST** be a separate attachment.
    - 8.1.2. A copy of the official **Government Printing Works** quotation you received for your notice. (*Please see Quotation section below for further details*)
    - 8.1.3. A valid and legible Proof of Payment / Purchase Order: **Government Printing Works** account customer must include a copy of their Purchase Order. **Non-Government Printing Works** account customer needs to submit the proof of payment for the notice
    - 8.1.4. Where separate notice content is applicable (Z95, Z95 Prov and TForm 3, it should **also** be attached as a separate attachment. (*Please see the Copy Section below, for the specifications*).
    - 8.1.5. Any additional notice information if applicable.

## GOVERNMENT PRINTING WORKS - BUSINESS RULES

9. The electronic *Adobe* form will be taken as the primary source for the notice information to be published. Instructions that are on the email body or covering letter that contradicts the notice form content will not be considered. The information submitted on the electronic *Adobe* form will be published as-is.
10. To avoid duplicated publication of the same notice and double billing, Please submit your notice **ONLY ONCE**.
11. Notices brought to **GPW** by “walk-in” customers on electronic media can only be submitted in *Adobe* electronic form format. All “walk-in” customers with notices that are not on electronic *Adobe* forms will be routed to the Contact Centre where they will be assisted to complete the forms in the required format.
12. Should a customer submit a bulk submission of hard copy notices delivered by a messenger on behalf of any organisation e.g. newspaper publisher, the messenger will be referred back to the sender as the submission does not adhere to the submission rules.

### QUOTATIONS

13. Quotations are valid until the next tariff change.
  - 13.1. **Take note:** **GPW**'s annual tariff increase takes place on **1 April** therefore any quotations issued, accepted and submitted for publication up to **31 March** will keep the old tariff. For notices to be published from 1 April, a quotation must be obtained from **GPW** with the new tariffs. Where a tariff increase is implemented during the year, **GPW** endeavours to provide customers with 30 days' notice of such changes.
14. Each quotation has a unique number.
15. Form Content notices must be emailed to the *eGazette* Contact Centre for a quotation.
  - 15.1. The *Adobe* form supplied is uploaded by the Contact Centre Agent and the system automatically calculates the cost of your notice based on the layout/format of the content supplied.
  - 15.2. It is critical that these *Adobe* Forms are completed correctly and adhere to the guidelines as stipulated by **GPW**.
16. **APPLICABLE ONLY TO GPW ACCOUNT HOLDERS:**
  - 16.1. **GPW** Account Customers must provide a valid **GPW** account number to obtain a quotation.
  - 16.2. Accounts for **GPW** account customers **must** be active with sufficient credit to transact with **GPW** to submit notices.
    - 16.2.1. If you are unsure about or need to resolve the status of your account, please contact the **GPW** Finance Department prior to submitting your notices. (If the account status is not resolved prior to submission of your notice, the notice will be failed during the process).
17. **APPLICABLE ONLY TO CASH CUSTOMERS:**
  - 17.1. Cash customers doing **bulk payments** must use a **single email address** in order to use the **same proof of payment** for submitting multiple notices.
18. The responsibility lies with you, the customer, to ensure that the payment made for your notice(s) to be published is sufficient to cover the cost of the notice(s).
19. Each quotation will be associated with one proof of payment / purchase order / cash receipt.
  - 19.1. This means that **the quotation number can only be used once to make a payment.**

**GOVERNMENT PRINTING WORKS - BUSINESS RULES****COPY (SEPARATE NOTICE CONTENT DOCUMENT)**

20. Where the copy is part of a separate attachment document for Z95, Z95Prov and TForm03
- 20.1. Copy of notices must be supplied in a separate document and may not constitute part of any covering letter, purchase order, proof of payment or other attached documents.
- The content document should contain only one notice. (You may include the different translations of the same notice in the same document).
- 20.2. The notice should be set on an A4 page, with margins and fonts set as follows:
- Page size = A4 Portrait with page margins: Top = 40mm, LH/RH = 16mm, Bottom = 40mm;  
Use font size: Arial or Helvetica 10pt with 11pt line spacing;
- Page size = A4 Landscape with page margins: Top = 16mm, LH/RH = 40mm, Bottom = 16mm;  
Use font size: Arial or Helvetica 10pt with 11pt line spacing;

**CANCELLATIONS**

21. Cancellation of notice submissions are accepted by **GPW** according to the deadlines stated in the table above in point 2. Non-compliance to these deadlines will result in your request being failed. Please pay special attention to the different deadlines for each gazette. Please note that any notices cancelled after the cancellation deadline will be published and charged at full cost.
22. Requests for cancellation must be sent by the original sender of the notice and must be accompanied by the relevant notice reference number (N-) in the email body.

**AMENDMENTS TO NOTICES**

23. With effect from 01 October 2015, **GPW** will not longer accept amendments to notices. The cancellation process will need to be followed according to the deadline and a new notice submitted thereafter for the next available publication date.

**REJECTIONS**

24. All notices not meeting the submission rules will be rejected to the customer to be corrected and resubmitted. Assistance will be available through the Contact Centre should help be required when completing the forms. (012-748 6200 or email [info.egazette@gpw.gov.za](mailto:info.egazette@gpw.gov.za)). Reasons for rejections include the following:
- 24.1. Incorrectly completed forms and notices submitted in the wrong format, will be rejected.
- 24.2. Any notice submissions not on the correct *Adobe* electronic form, will be rejected.
- 24.3. Any notice submissions not accompanied by the proof of payment / purchase order will be rejected and the notice will not be processed.
- 24.4. Any submissions or re-submissions that miss the submission cut-off times will be rejected to the customer. The Notice needs to be re-submitted with a new publication date.

**GOVERNMENT PRINTING WORKS - BUSINESS RULES****APPROVAL OF NOTICES**

25. Any notices other than legal notices are subject to the approval of the Government Printer, who may refuse acceptance or further publication of any notice.
26. No amendments will be accepted in respect to separate notice content that was sent with a Z95 or Z95Prov notice submissions. The copy of notice in layout format (previously known as proof-out) is only provided where requested, for Advertiser to see the notice in final Gazette layout. Should they find that the information submitted was incorrect, they should request for a notice cancellation and resubmit the corrected notice, subject to standard submission deadlines. The cancellation is also subject to the stages in the publishing process, i.e. If cancellation is received when production (printing process) has commenced, then the notice cannot be cancelled.

**GOVERNMENT PRINTER INDEMNIFIED AGAINST LIABILITY**

27. The Government Printer will assume no liability in respect of—
  - 27.1. any delay in the publication of a notice or publication of such notice on any date other than that stipulated by the advertiser;
  - 27.2. erroneous classification of a notice, or the placement of such notice in any section or under any heading other than the section or heading stipulated by the advertiser;
  - 27.3. any editing, revision, omission, typographical errors or errors resulting from faint or indistinct copy.

**LIABILITY OF ADVERTISER**

28. Advertisers will be held liable for any compensation and costs arising from any action which may be instituted against the Government Printer in consequence of the publication of any notice.

**CUSTOMER INQUIRIES**

Many of our customers request immediate feedback/confirmation of notice placement in the gazette from our Contact Centre once they have submitted their notice – While **GPW** deems it one of their highest priorities and responsibilities to provide customers with this requested feedback and the best service at all times, we are only able to do so once we have started processing your notice submission.

**GPW** has a 2-working day turnaround time for processing notices received according to the business rules and deadline submissions.

Please keep this in mind when making inquiries about your notice submission at the Contact Centre.

29. Requests for information, quotations and inquiries must be sent to the Contact Centre **ONLY**.
30. Requests for Quotations (RFQs) should be received by the Contact Centre at least **2 working days** before the submission deadline for that specific publication.

## GOVERNMENT PRINTING WORKS - BUSINESS RULES

### PAYMENT OF COST

31. The Request for Quotation for placement of the notice should be sent to the Gazette Contact Centre as indicated above, prior to submission of notice for advertising.
32. Payment should then be made, or Purchase Order prepared based on the received quotation, prior to the submission of the notice for advertising as these documents i.e. proof of payment or Purchase order will be required as part of the notice submission, as indicated earlier.
33. Every proof of payment must have a valid **GPW** quotation number as a reference on the proof of payment document.
34. Where there is any doubt about the cost of publication of a notice, and in the case of copy, an enquiry, accompanied by the relevant copy, should be addressed to the Gazette Contact Centre, **Government Printing Works**, Private Bag X85, Pretoria, 0001 email: [info.egazette@gpw.gov.za](mailto:info.egazette@gpw.gov.za) before publication.
35. Overpayment resulting from miscalculation on the part of the advertiser of the cost of publication of a notice will not be refunded, unless the advertiser furnishes adequate reasons why such miscalculation occurred. In the event of underpayments, the difference will be recovered from the advertiser, and future notice(s) will not be published until such time as the full cost of such publication has been duly paid in cash or electronic funds transfer into the **Government Printing Works** banking account.
36. In the event of a notice being cancelled, a refund will be made only if no cost regarding the placing of the notice has been incurred by the **Government Printing Works**.
37. The **Government Printing Works** reserves the right to levy an additional charge in cases where notices, the cost of which has been calculated in accordance with the List of Fixed Tariff Rates, are subsequently found to be excessively lengthy or to contain overmuch or complicated tabulation.

### PROOF OF PUBLICATION

38. Copies of any of the *Government Gazette* or *Provincial Gazette* can be downloaded from the **Government Printing Works** website [www.gpwonline.co.za](http://www.gpwonline.co.za) free of charge, should a proof of publication be required.
39. Printed copies may be ordered from the Publications department at the ruling price. The **Government Printing Works** will assume no liability for any failure to post or for any delay in despatching of such *Government Gazette*(s)

## GOVERNMENT PRINTING WORKS CONTACT INFORMATION

**Physical Address:**
**Government Printing Works**

149 Bosman Street

Pretoria

**Postal Address:**

Private Bag X85

Pretoria

0001

**GPW Banking Details:**
**Bank:** ABSA Bosman Street

**Account No.:** 405 7114 016

**Branch Code:** 632-005

**For Gazette and Notice submissions:** Gazette Submissions:

**For queries and quotations, contact:** Gazette Contact Centre:

**E-mail:** [submit.egazette@gpw.gov.za](mailto:submit.egazette@gpw.gov.za)
**E-mail:** [info.egazette@gpw.gov.za](mailto:info.egazette@gpw.gov.za)
**Tel:** 012-748 6200

**Contact person for subscribers:** Mrs M. Toka:

**E-mail:** [subscriptions@gpw.gov.za](mailto:subscriptions@gpw.gov.za)
**Tel:** 012-748-6066 / 6060 / 6058

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## GOVERNMENT NOTICES • GOEWERMENTSKENNISGEWINGS

### DEPARTMENT OF AGRICULTURE, LAND REFORM AND RURAL DEVELOPMENT

NO. 3919

29 September 2023

#### GENERAL NOTICE IN TERMS OF THE RESTITUTION OF LAND RIGHTS ACT, 1994 (ACT NO.22 OF 1994)

Notice is hereby given in terms of section 11 (1) of the Restitution of Land Rights Act, 1994 (Act No.22 of 1994 as amended) that a claim for restitution of land rights on:

**Reference** : 6/2/2/D/1078/0/0/101

**Claimant** : Alfred David Thomas

Property Description	Extent of Land	Title Deed
Surprise Farm 332, FortBeaufort	2.1699 Hectares	T23657/85
Phillipton Farm 353, FortBeaufort	3.007 Hectares	T23657/85
Portion 3 of Phillipton Farm 354, FortBeaufort	0.2359 Hectares	T884/85
Portion 4, of Phillipton Farm 354, FortBeaufort	0.4901 Hectares	T884/85

All properties are situated in Raymond Mhlaba Local Municipality in Fort Beaufort, Amathole District, Eastern Cape Province

**Date Submitted** : 03/09/1998

**Current Owner & Address** : Department of Agriculture, Land Reform and Rural Development

Has been submitted to the Regional Land Claims Commissioner for the Eastern Cape and that the Commission on Restitution of Land Rights will investigate the claim in terms of the provisions of the Act in due course.

Any person who has an interest in the above-mentioned land is hereby invited to submit, within fourteen (90) days from the publication of this notice, any comments/information to:

**Office of the Regional Land Claims Commissioner : Eastern Cape**  
**Department of Agriculture, Land Reform and Rural Development**  
**PO Box 1375**  
**East London**  
**5200**  
**Tel : 043 700 6000, Fax : 043 743 3687**

  
**Mr. C.H. Maphutha**  
**Regional Land Claims Commissioner**

## DEPARTMENT OF AGRICULTURE, LAND REFORM AND RURAL DEVELOPMENT

NO. 3920

29 September 2023

**AMENDING GOVERNMENT NOTICE NO. 32515 OF 2009 PUBLISHED IN THE GOVERNMENT GAZETTE NO. 32515 DATED 28 OF AUGUST 2009 INTERMS OF SECTION 11(A) OF THE RESTITUTION OF LAND RIGHTS ACT, ACT NO. 22 OF 1994, AS AMENDED.**

Notice is hereby given in terms of Section 11A (4) of the Restitution of Land Rights Act, No. 22 of 1994, as amended, that the Commissioner for Restitution of Land Rights is amending the said Gazette Notice to reflect the correct affected property and total affected extent for the land claim lodged by Mr. Pawo Paulos Dhladhla ID NO 361115 5180 087 registered as KRP 11484. The property should reflect the exact extent claimed and it will be Portion 1 of the farm Naaupoort 46 HT situated at Same Local Municipality at Gert Sibande District Municipality, therefore this seeks to clarify that.

**CURRENT PARTICULARS OF THE PROPERTY**

**NAAUWPOORT 46 IT**


Description of property	Owner of Property	Title Deed Number	Extent of Property	Bonds	Bond Holder	Other Endorsements
Portion 1	Sibambisene Prop PTY LTD Identity Number (201962651307)	T10144/2021	1953.7595 ha <b>(13.4374 ha)</b> extent claimed	B4889/2021	Fist National Bank Ltd	K2680/1986RM in favor of Moolman Hans Jurie  K3653/1976RM in favor of Kromhoek Pty Ltd  VA3409/1999 in favour of Kromhoek Pty Ltd

Notice is hereby given in terms of Section 11A (4) of the Restitution of Land Rights Act, No. 22 of 1994, as amended, that the Commissioner for Restitution of Land Rights is amending the said Gazette Notice to reflect the correct affected property and total affected extent for the land claim lodged by Mr. Pawo Paulos Dhladhla ID NO 361115 5180 087 registered as KRP 11484. The property should reflect the exact extent claimed and it will be Portion 1 of the farm Naauwpoort 46 HT situated at Same Local Municipality at Gert Sibande District Municipality, therefore this seeks to clarify that.

The Regional Land Claims Commissioner, Mpumalanga Province will investigate all the claims in terms of the provisions of the Act, any party interested in the above-mentioned property is hereby invited to submit within **30 [thirty days]** from the date of publication of this notice to submit any comments, or further information to:

**Commission on Restitution of Land Rights**  
30 Samora Machel Drive  
Nelspruit  
1200

Tel No. 013 756 6000



**MR. L.H. MAPHUTHA**  
**REGIONAL LAND CLAIMS COMMISSIONER**  
**MPUMALANGA PROVINCE**

DATE: 2023/09/13

Notice is hereby given in terms of Section 11A (4) of the Restitution of Land Rights Act, No. 22 of 1994, as amended, that the Commissioner for Restitution of Land Rights is amending the said Gazette Notice to reflect the correct affected properties and total affected extent for the land claim lodged by the late Graham



## DEPARTMENT OF FORESTRY, FISHERIES AND THE ENVIRONMENT

NO. 3921

29 September 2023

**NATIONAL ENVIRONMENTAL MANAGEMENT: BIODIVERSITY ACT, 2004  
(ACT NO. 10 OF 2004)****BIODIVERSITY MANAGEMENT PLAN FOR THE SOUTHERN GROUND-HORNBILL (*BUCORVUS LEADBEATERI*)**

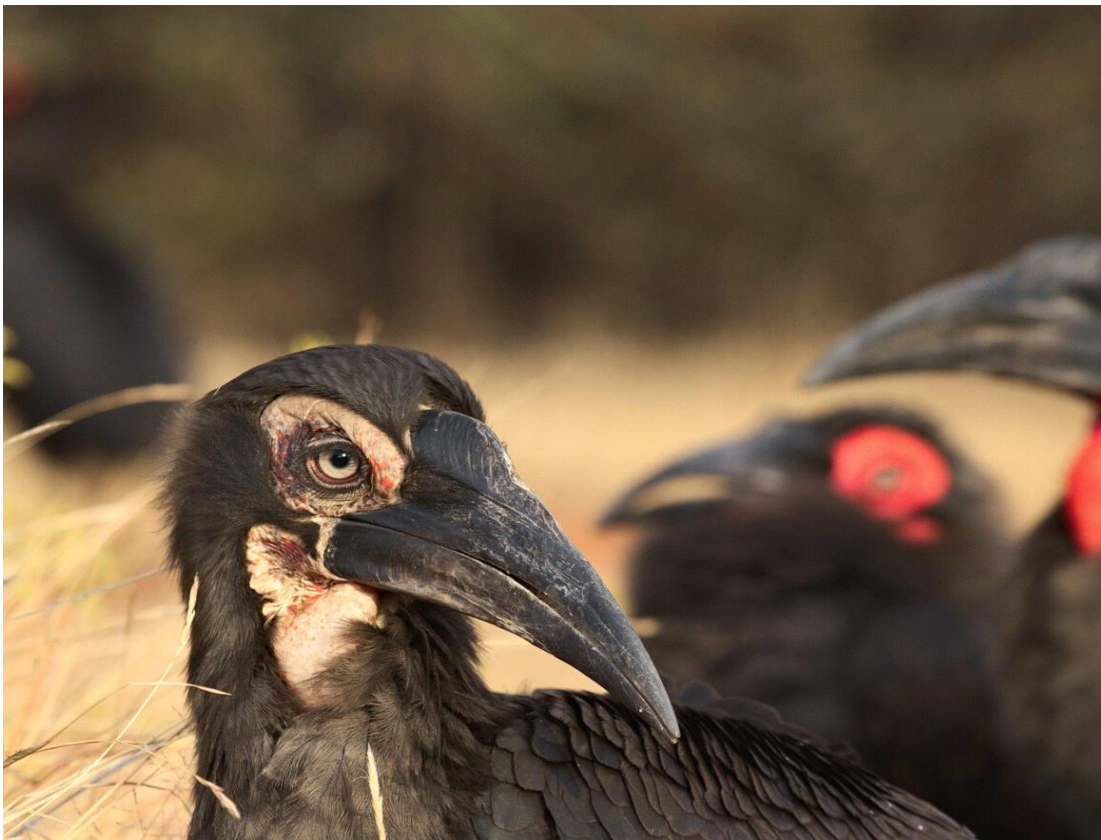
I, Barbara Dallas Creecy, Minister of Forestry, Fisheries and the Environment, hereby, in terms of section 43(1)(b) and 43(3)(a) and (b) of the National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004), publish the Biodiversity Management Plan for the Southern Ground-Hornbill (*Bucorvus leadbeateri*), as set out in the Schedule hereto, for implementation.

In terms of section 43(2) and 43(3)(c) of the National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004), I hereby assign the responsibility for implementation of the Biodiversity Management Plan for the Southern Ground-Hornbill to the South African National Biodiversity Institute (SANBI).



**BARBARA DALLAS CREECY**  
**MINISTER OF FORESTRY, FISHERIES AND THE ENVIRONMENT**

SCHEDULE



2023

BIODIVERSITY  
MANAGEMENT PLAN  
FOR THE SOUTHERN  
GROUND-HORNBILL  
*Bucorvus leadbeateri*  
IN SOUTH AFRICA

Lead agency :  
South African National Biodiversity Institute

Editors:  
Lucy Kemp, Coral Birss, Hanneline Smit -  
Robinson, Antoinette Kotze, Gareth Tate, Rob  
Little

**This plan was developed jointly by the following contributing organisations:**

Department of Forestry, Fisheries and the Environment, Mabula Ground Hornbill Project, South African National Biodiversity Institute, FitzPatrick Institute of African Ornithology, BirdLife South Africa, Endangered Wildlife Trust, South African National Parks, Mpumalanga Tourism and Parks Agency, Limpopo Department of Economic Development, Environment and Tourism, Gauteng Department of Agriculture and Rural Development, Department of Economic Development and Environmental Affairs, Ezemvelo KwaZulu-Natal Wildlife, Eastern Cape Parks and Tourism Agency, Eastern Cape Department of Economic Development, Environmental Affairs and Tourism, University of KwaZulu-Natal, Montecasino Bird Gardens, Johannesburg City Parks: Joburg Zoo, Umgeni River Bird Park, CapeNature, South African Hunting and Game Conservation Association, the IUCN SSC Hornbill Specialist Group and Conservation Planning Specialist Group.

**Citation:** *Kemp, L.V., Birss, C., Smit-Robinson, H.A., Kotze, A., Tate, G and R.M. Little. 2023. Biodiversity Management Plan for the Southern Ground-Hornbill in South Africa. Jointly developed by the South African Southern Ground-Hornbill Action Group and the Department of Environment, Forestry and Fisheries. Version 1.0*



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## FOREWORD – Dr Alan Kemp

Initial fieldwork on the Southern Ground-Hornbill started over 50 years ago in the Kruger National Park but, in the last decade, there has been a surge in both research and conservation activities, theses and publications on the species, particularly in South Africa, of which this Biodiversity Management Plan (BMP-S) is the latest collation. Initially, research constituted field studies of behaviour, home range size and population dynamics, then began to explore the species' previous, current, national, and sub-Equatorial ranges. These studies highlighted at least four aspects of the species' biology that have proved significant in subsequent biological studies and conservation action. The first is that the total range in South Africa had decreased historically by an estimated 50-70%. Second, each cooperatively breeding group, led by an alpha breeding pair, permanently occupies an extensive home range (70-250 km<sup>2</sup>) and hence exists at a low overall density. Third, no more than a single chick is raised during the summer breeding season, but any second-hatched chick dies early of neglect, is redundant to the population's dynamics and hence available as extra stock for management interventions. Fourth, suitable nest holes in natural cavities may be inadequate or lacking in a group territory but can be successfully refurbished or replaced with artificial nests.

Based on these discoveries, a programme of wild-harvesting, captive-breeding, and hand-rearing of newly hatched second chicks was initiated in 1999, followed by an attempt to re-establish a new group at Mabula Private Game Reserve in part of the original range of the species. Southern Ground-Hornbills are a large, long-lived species that take 8-10 years to reach maturity, so such artificial management is inevitably slow but, by now, chick-rearing, and juvenile reintroduction are efficient, three groups have been re-introduced at different historical localities and a younger neighbouring group already established alongside each of them. Over the same period, a range of studies, including under- and post-graduate theses, have extended our knowledge of the species biology, both nationally and internationally, so that this BMP-S is based on a complete revision of our previous knowledge and experiences.

All these efforts have been informally coordinated at a national level by a national Action Group, led by a member-elected chairperson. It has included, among others, field and laboratory researchers, veterinarians, husbandry experts, ecologists, government and non-governmental organisations, conservation managers, landowners, and community representatives, both local and visiting. In 2005, the first Population and Habitat Viability Assessment (PHVA) was held under independent local facilitators, a multi-authored national Recovery Plan was published in 2011 and by 2017 a second PHVA was conducted with an IUCN SSC facilitator and population modeler. This draft BMP-S in 2020 is the latest national conservation management plan for the species and, most importantly, it has included input and buy-in from all major provincial and national conservation agencies in the Limpopo, Gauteng, Mpumalanga, KwaZulu-Natal, and Eastern Cape Provinces where the species still occurs or has occurred.

Incidentally for the species, from my perspective of being actively involved in its study and conservation from their inception, management of the species has almost always been collaborative between various *in-* and *ex-situ* organisations, private, provincial, national, and both local and international. Currently, there are only an estimated 400-450 breeding females left in the wild in South Africa, each one living within its territorial group. Over half of these groups occur within the area of the Greater Kruger National Park, the remainder scattered across smaller conservation areas, private and commercial landowners, and various rural communities, while any natural em- and immigration is only expected via Botswana, Zimbabwe, Mozambique, and Swaziland. The species used to occur across the northern and eastern savannas of South Africa, but a gap has developed south of the Kruger National Park and extended into northern KwaZulu Natal and Swaziland, while a substantial population, still being documented, has survived in the rural areas of KwaZulu Natal and the Eastern Cape, especially the areas of previous apartheid *homelands*.

The permanent residency of each group on their territory is both an advantage and a disadvantage. It means that conservation managers do not have to pay particular attention to plans for age, seasonal or breeding movements, but rather can concentrate on sustaining the security and ecology of each known territorial aggregation or isolated territory. The national monitoring plan proposed in the BMP-S addresses this range-wide requirement and will provide an important index of the success of national and regional conservation measures. Attempts to manage the stability, and hopefully, the expansion and recolonization of populations, depends much more on management, even re-creation, of local or individual territories, especially by eliminating known and newly discovered threats to the species. Given the average extensive size of one territory, albeit those managed by a game ranger, neighbouring farmers, a village, or a community, it will require as much their commitment as that of any biologists involved, and this BMP-S will go a long way to directing, justifying and facilitating the various inter-organisational and inter-personal interactions and the associated funding that are involved and required.



## EXECUTIVE SUMMARY

One of only nine African savanna hornbill species, the Southern Ground-Hornbill (*Bucorvus leadbeateri*: hereafter SGH) is listed as being of both international and national conservation concern (Taylor, Peacock & Wanless, 2015; BirdLife International, 2018; NEMBA), and is known across its sub-equatorial range as the rain bird or thunder bird by indigenous people who share its habitat. The species is one of just two species in the genus *Bucorvus*.

The species is an apex predator and thus ecologically important, as well as holding immense cultural value to most of the language groups across its range. It is a typical K-selected species that breed slowly and cooperatively with massive spatial requirements. The life-history traits, social structures and behaviours of the SGH interest both scientists (Kemp, 1988; Kemp & Kemp, 1980, 2007; Chiweshe, 2007) and followers of traditional lore (Msimanga, 2000; Coetzee & Wilkinson, 2007; Muiruri & Maunda, 2010; Bruyns, Williams & Cunningham, 2013). Coincidentally, these are the same traits that make them ill-suited for survival under the growing ecological pressures of the Anthropocene (Crutzen, 2006). It is the long-lived, slow-breeding nature of the species that prevents it from being able to maintain stability against the myriad of anthropogenic threats that it faces.

The SGH is proposed to be one of the swiftest declining bird species in South Africa. The species is listed as regionally Endangered in South Africa, Lesotho, eSwatini, and Namibia (Taylor, Peacock & Wanless, 2015) and globally Vulnerable (Birdlife International, 2018). In South Africa, the population range declined to less than 50% in just 15- 20% of a hornbill generation (Kemp, 2017). It is projected that, in Kenya, Zimbabwe and Botswana, populations also meet the criteria for being listed as Endangered (Simmons, Brown & Kemper, 2015). In South Africa, the species has strongholds in only the largest protected areas (e.g., the Greater Kruger National Park) and in areas where cultural protection is still strong (i.e. southern KwaZulu-Natal).

A 2<sup>nd</sup> Population and Habitat Viability Assessment (PHVA) workshop held in August 2017 reviewed the knowledge base for the species, to ensure that conservation planning is sound and evidence-based, and to maximise limited conservation resources in terms of strategic capacity, funding and effort. In recognition of the immediate need for a legislated, nationally coordinated, conservation action plan at the PHVA workshop, the Mabula Ground Hornbill Project (MGHP) and the South African National Biodiversity Institute (SANBI) initiated a primary workshop to initiate the development of this Biodiversity Management Plan (BMP-S).

This document was produced because of that workshop, held between 13-15 May 2018, with four subsequent regional workshops in 2019. The BMP-S for the SGH will be subject to iterations brought about through realistic and relevant management dynamics. As such, it is important that those responsible for the implementation of this BMP-S recognise the need for, and apply, active adaptive management where necessary. This document is based on the outcomes of the 2nd PHVA (Kemp & Bruford, 2018), and includes elements of the Single Species Recovery Plan (Jordan, 2011 (Jordan, 2011) that required further attention.

Section 9(1)(a)(i) and 43 of NEMBA 2004 (Act no 10 of 2004) provides for the issuing of national norms and standards for the management and conservation of South Africa's biodiversity and its components. To this effect, the department developed the Norms and Standards for the development of BMP for Species (BMP-S), which were gazetted in March 2009 (Department of Environmental Affairs and Tourism 2009). The purpose of these norms and standards is to provide a national approach and minimum standards for the development of a BMP-S.

Stakeholder engagement during several workshops identified threats and challenges, including persecution for window-breaking, falling foul of poison bait set out for so-called pest species, electrocution on transformer boxes, loss of nest hollows, and trade, both for aviculture and for traditional belief-based use.



**VISION FOR THE FUTURE OF SOUTHERN GROUND-HORNBILLS:**

*An increasing and healthy population with an increased conservation and cultural value in the Southern Ground-hornbill.*

**AIM:** to improve the conservation status of the SGH and secure its survival in perpetuity in the wild

This is underpinned by the following **GOALS**.

1. Conservation of the SGH population.
2. Mitigate and manage the impact of current threats, including emerging diseases.
3. Long-term monitoring of SGH population dynamics and habitat.
4. Aligned legislation and mandates.
5. Effective communication, collaboration, and coordination among stakeholders.

The prioritised **STRATEGIC OBJECTIVES** of the SGH BMP-S are as follows:

- i. Protect the remaining wild population to allow for population stability and initiate growth from the current estimated 439 groups supporting breeding females to the criteria needed to down list the species from Endangered to Vulnerable.
- ii. A target of 5% growth in the number of pentads where groups are reported per annum, through a combination of reintroduction, artificial nest provision, range-expansion, custodianship or enhanced monitoring, is required to meet this objective by 2042.
- iii. Long-term monitoring of SGH through citizen science and the Custodianship Programme.
- iv. Strong integration of cultural and ecological values in the conservation of the species.
- v. Effective communication, collaboration and coordination between stakeholders and the public for SGH conservation.

The implementation of this BMP-S will benefit the following:

- i. The SGH population is stabilised as a basis for population growth.
- ii. The population is ecologically healthy and secure.
- iii. Indigenous knowledge systems will be formally incorporated into conservation planning.
- iv. The threats affecting various other threatened species that utilise the savanna and grassland biomes, for example, African wild dog *Lycaon pictus*, vulture species and Secretary birds *Sagittarius serpentarius*, will be addressed through the implementation of this BMP.

The BMP-S for the SGH is aimed at **identifying**, **allocating** and **undertaking** the required, identified actions to enable stakeholders to contribute to the overall desired outcome for the species. This will enable the long-term survival of the species in nature and thereby ensuring that South Africans take responsibility for supporting a viable future for this Endangered species.

The BMP-S process for the SGH has so far included 42 representatives from various groups of role-players and has prioritised a set of threats and commensurate actions towards achieving the overall aim and objectives of the BMP- S, the overall aim is to improve the conservation status of the SGH and secure its survival in perpetuity in the wild.

The aim will be achieved through the following actions:

1. Improve the conservation status of SGH and improve its protection as part of meeting international biodiversity objectives through applied conservation action.
2. Address the threats responsible for declines in SGH population sizes.
3. Expand educational and awareness campaigns to improve public knowledge about the SGH and the importance of its role in the ecosystem and cultural heritage.
4. Identify and conduct research to generate knowledge and provide information relevant to conservation management requirements, both *in-* and *ex-situ*.
5. Improve and enforce legislation on SGH threats within its distribution range.

The specificity of the operational goals and actions that are captured under the objectives is required to ensure that progress with implementation of the BMP-S can be tracked and those to whom responsibilities have been allocated can be held accountable for delivery. The National Environmental Management: Biodiversity Act (NEMBA), 2004 (Act No. 10 of 2004) specifies that all BMP-S be revised five years after approval. This BMP-S for the SGH is the first in a series of five-year iterations where each BMP-S will measure the success of the previous BMP-S and make the necessary revisions. This will be done to ensure that the plan for the next five years is appropriate and applicable to any changes which may have occurred.

## ACKNOWLEDGMENTS

This plan was jointly developed at a stakeholder's workshop organised by the Mabula Ground Hornbill Project (MGHP) and South African National Biodiversity Institute (SANBI) attended by South African members of the South African Southern Ground-Hornbill Action Group and invited stakeholders (see Appendix C for the full list of participants). Without their dedication to the species and this process, developing this plan would not have been possible.

Cape Nature is thanked for the excellent facilitation skills of Coral Birss. Lucy Kemp (MGHP) and Antoinette Kotze (SANBI) kindly facilitated and organised the workshop. Core sponsors of the MGHP funded travel and accommodation costs for the facilitator and participants: Disney Conservation Fund and San Diego Zoo Global.

The plan represents the consensus view of those at the workshop. They represented the: Department of Forestry, Fisheries and the Environment; Eastern Cape Department of Economic Development and Environmental Affairs and Tourism; South African Hunters and Game Conservation Association; Gauteng Department of Agriculture and Rural Development; Endangered Wildlife Trust; FitzPatrick Institute of African Ornithology; Children and Nature Conservation Trust Zimbabwe; Montecasino Bird Gardens; Pan-African Association of Zoos and Aquaria; BirdLife South Africa; University of KwaZulu-Natal; Mabula Ground Hornbill Project; South African Hunters and Game Conservation Association; IUCN Species Survival Commission Hornbill Specialist Group; and SANBI.

As not all relevant stakeholders were able to attend the first workshop, Dr Kemp facilitated additional SGH BMP-S Actions and Relevant Agreements Workshops held at Howick (Ezemvelo KwaZulu Natal Wildlife: EKZNW), Loskop Nature Reserve (Mpumalanga Tourism and Parks Agency: MTPA), Modimolle (Limpopo Department of Economic Development, Environment and Tourism: LEDET) and Skukuza (South African National Parks: SANParks). These participants, representing EKZNW, MTPA and SANParks, are also thanked for their input and support.

The BMP-S document represents the consensus view of the workshop, and not necessarily that of the editors, organizations or sponsors represented at the workshop(s).

Dr Alan Kemp is thanked for invaluable inputs and the expert review.

The editorial committee (L. Kemp, C. Birss, H. Smit-Robinson, A. Kotze, G. Tate and R. Little,) would also like to acknowledge: Marilyn Aitken, Vivienne Williams, Joseph Heymans, Melissa Whitecross, Kyle-Mark Middleton, Craig Whittington-Jones, Yvette Ehlers-Smith, Derek Engelbrecht, Lizanne Nek and Brent Coverdale (on behalf of EKZNW) are thanked for their contributions to the final draft.

## ACRONYMS AND ABBREVIATIONS

AEWA CMS	Agreement on the Conservation of African-Eurasian Migratory Waterbirds Convention of Migratory Species
APNR	Associated Private Nature Reserves
AOO	Area of Occupancy
a.s.l.	above sea level
AZA	Association for Zoos and Aquariums
B-Tech	Bachelor of Technology
BMA	Biodiversity Management Agreement
BMP-S	Biodiversity Management Plan for Species
CITES	Convention on International Trade in Endangered Species
Cytb	Cytochrome b
CBD	Convention on Biological Diversity
DE	Department of Energy
DFFE	Department of Forestry, Fisheries and the Environment
DNA	Deoxyribonucleic acid
DPhil	Doctor of Philosophy
DoTa	Department of Traditional Affairs
DRC	Democratic Republic of Congo
DRDLR	Department of Rural Development and Land Reform
EAZA	European Association of Zoos and Aquariums
EC DEDEAT	Eastern Cape Department of Economic Development, Environmental Affairs and Tourism
ECPTA	Eastern Cape Parks and Tourism Agency
EKZNW	Ezemvelo KwaZulu-Natal Wildlife
EOO	Extent of Occupancy
EWT	Endangered Wildlife Trust
FAO	Food and Agriculture Organization
GAPDH	Glyceraldehyde 3-phosphate dehydrogenase
GDARD	Gauteng Department of Agriculture and Rural Development

HEI	Higher Education Institutions
IUCN	International Union for Conservation of Nature
KNP	Kruger National Park
KZN	KwaZulu-Natal
LTT	Lead Task Team
LEDET	Limpopo Department of Economic Development, Environment and Tourism
MGHP	Mabula Ground Hornbill Project
MTPA	Mpumalanga Tourism and Parks Agency
MCP	Minimum Convex Polygon
MSc	Master of Science
MTech	Master of Technology
MtDNA	Mitochondrial DNA
NCD	Newcastle Disease
NDA	National Development Agency
NEMA	National Environmental Management Act
NEM: BA	National Environmental Management Biodiversity Act
NEM: PAA	National Environmental Management Protected Areas Act
NGO	Non-Governmental Organisation
NZG	National Zoological Gardens
NWPPWG	National Wildlife Poison Prevention Working Group
OAU	Organisation of African Unity
PAAZA	Pan African Association of Zoos and Aquaria
PFIAO	Percy FitzPatrick Institute of Africa Ornithology
PhD	Doctor of Philosophy
PCoA	Principal Components Analysis
PHVA	Population and Habitat Viability Assessment
PPMV-1	Pigeon paramyxovirus
QDGC	Quarter Degree Grid Cell
SABAP2	South African Bird Atlas Project 2

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SACNASP	South African Council for Natural Scientific Professions
SAHGCA	South African Hunters and Game Conservation Association
SANBI	South African National Biodiversity Institute
SANParks	South African National Parks
SARS	South African Revenue Service
SGH	Southern Ground-Hornbill
SOP	Standard Operating Procedure
SSC	Species Survival Commission
Tmax	Full temporal data set
ToPS	Threatened or Protected Species
TTT	Thunderbird Task Team
UCT	University of Cape Town
UFS	University of the Free State
UKZN	University of KwaZulu-Natal
UL	University of Limpopo
UP	University of Pretoria
USA	United States of America
WITS	University of the Witwatersrand
WG	Working Group
WLTP	Women's Leadership and Training Programme
WRSA	Wildlife Ranching South Africa

## GLOSSARY OF DEFINITIONS, SCIENTIFIC AND TECHNICAL TERMS

In this BMP-S, unless the context indicates otherwise, a word or expression defined in the National Environmental Management: Biodiversity Act (NEM: BA, Act 10 of 2004) or Protected Areas Act (NEM: PAA, Act 57 of 2004) has the same meaning.

**“Biodiversity Management Plan for species”** means a species management plan in terms of section 43 of the National Environmental Management: Biodiversity Act (Act No. 10 of 2004).

**“Biodiversity Management Agreement”** – means an agreement concluded in terms of section 44 of the National Environmental Management: Biodiversity Act (Act No.10 of 2004)

**“Biodiversity Management Agreement Annual Report”** – means an annual report to be submitted to the Minister to ensure that key actions have been conducted in terms of biodiversity management agreements concluded

**“Conservation and Maintenance Expenditure”** – means expenditure incurred to conserve or maintain land in terms of a biodiversity management agreement.

**“Qualifying Taxpayer”** – means a person who has incurred expenditure to conserve or maintain land in terms of a biodiversity management agreement and who complies with the requirements of section 37C(1) of the Income Tax Act (Act No.58 of 1962)

**“Collaborators”** means the parties approached to assist or included in the process to complete the actions of the Biodiversity Management Plan.

**“Dispersal”** means the movement of SGH individuals from out of the group and territory, potentially to another group or available territory.

**“Ex-situ conservation”** means the conservation of wild organisms and/or their genetic resources off-site or outside of their natural habitats.

**“Generation length”** means the turnover rate of breeding individuals in a population.

**“Fledgling”** means the stage where an SGH is ready to leave the nest, the stage between the chick and adult phases.

**“Habitat”** is the natural home of the species. Often depending on the vegetation, topography and climate of the area.

**“In-situ conservation”** means the conservation of biodiversity in the wild through the management of ecosystems and habitats natural to SGH, the maintenance of viable populations or the recovery to viability by populations of the species in their natural surroundings.

**“IUCN Red Data List”** means the global list providing information on a species’ risk of extinction (usually by taxonomic unit), prepared under the auspices of the International Union for Conservation of Nature.

**“K-selected”** species possess relatively stable populations fluctuating near the carrying capacity of the environment. These species are characterized by having only a few offspring but investing high amounts of parental



care.

**“Monitoring”** The collection and analysis of repeated observations, counts or measurements to evaluate the change in status, distribution or integrity, to track the impacts of directed management implemented to achieve a stated management objective.

**“Protected area”** is any of the protected areas referred to in Section 9 of the National Environmental Management: Protected Areas Act, 2003 (Act No. 57 of 2003).

**“Rehabilitation”** means the return of the SGH to its natural state, as it would be in the wild.

**“Stakeholder”** means a natural or juristic person that has an interest in, or maybe affected by, a particular obligation or decision or activity relating to or resulting from a management plan, either as individuals or representatives of a group and including landowners where appropriate.

**“Species”** means a kind of animal, plant or other organisms that do not normally interbreed with individuals of another kind, and includes any sub-species, geographic race, strain, hybrid or geographically separate population.

**“Threat”** means any action or species that causes a decline in and compromises the future survival of one or more populations of a species, or anything that has a detrimental effect on the species. Threats can be human-induced or natural. The BMP-S should focus on mitigating human-induced threats to the species.

**“Viable”** when referring to a population, means a population that can persist (and/or multiply over many generations) in the long-term without longterm intervention or assistance. When referring to habitat, it means suitable to the survival and persistence of the species.

**“Working group”** means a number of individuals invited to form a group, in order to complete an action or actions set out in the Biodiversity Management Plan.

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## 1. INTRODUCTION

One of only nine African savanna hornbill species, the Southern Ground-Hornbill (*Bucorvus leadbeateri*; hereafter SGH) is listed as being of conservation concern (Taylor *et al.* 2015). It is known across its range as the *rainbird* or *thunder bird* by indigenous people who share its habitat. The SGH is one of just two species in the genus *Bucorvus*. Both species are top-order predators and thus ecologically important, besides holding immense cultural value to most indigenous language groups across its range. Both are typical K-selected species and have several significant life history characteristics, each independently increasing their vulnerability to extinction: they are diurnal, long-lived, large, conspicuous, apex avian predators, with large spatial needs that result in low densities and therefore small population sizes per unit area (Kemp, 1995a). For the SGH, these features, together with its cooperative breeding and other complex social structures, combine to produce a naturally slow rate of reproduction and recruitment (Purvis *et al.*, 2000). Added to this, the species faces many anthropogenic threats (BirdLife International, 2018), each growing in scale as human population growth expands across sub-equatorial Africa.

The SGH has been described as one of the swiftest declining bird species in South Africa (Underhill, 2014). The species is formally listed by IUCN Red List criteria as globally Vulnerable (BirdLife International, 2018), but regionally Endangered in both South Africa (Taylor & Kemp, 2015) and Namibia (Simmons, Brown & Kemper, 2015), with populations in decline in most other adjacent range states (Kemp, 2017). In South Africa, it is also listed as a Threatened or Protected Species (ToPS), and thus accorded national protection (in terms of section 56(1) of the NEMBA, with permits required in terms of restricted activity (in terms of section 11), and yet populations are still declining and are already occupy less than 50% of their historical range in just 15-20% of a generation (Kemp, 2017).

The SGH has strongholds in only the largest protected areas (i.e., the Greater Kruger National Park) and in areas where cultural protection is still vigorous (i.e. southern KwaZulu-Natal). The remaining groups inhabit mixed-land-use commercial farmlands (crop cultivation, viticulture, forestry, livestock, and game) and communal farming areas.

Ground-Hornbills act as “flagship species” for savanna and grasslands since they require large areas and significant protection measures that help to conserve a wide range of biodiversity with similar savanna and grassland requirements. Ground-hornbills are a vital part of our national heritage and have spiritual and experiential value for many people.

### 1.1. THE NEED FOR A BMP-S FOR THE SOUTHERN GROUND-HORNBILL

A full review of the conservation biology of the species (Kemp, 2017) highlighted the need for increased coordination and implementation of proposed conservation actions from various conservation plans and suggestions (Morrison, *et al.* 2005; Jordan, 2011; Kemp & Bruford, 2018). Since the 1<sup>st</sup> Population and Habitat Viability Assessment (PHVA: an IUCN SSC Conservation Planning Specialist Group product), held in 2005, much research has been conducted and published on the SGH, including six PhD and seven MSc studies, including through the reintroduction and captive breeding programmes. All this contributed to an extended knowledge base, and it was considered prudent to incorporate these data into a revised PHVA model to assess if current conservation planning is still relevant and evidence-based, and to ensure that strategic conservation resources are applied sustainably to the persistence of the species.

Stochastic population modelling conducted during the 2<sup>nd</sup> PHVA showed clearly that the species' most important threats are anthropogenic, and that if poisoning is not addressed (both from agrochemicals and lead-based ammunition), the species will disappear from areas where such poisoning occurs. Under this scenario, protected areas, including large national parks and reserves, and non-protected areas where cultural protection remains vigorous, are expected to be the only SGH refugia that will persist with minimal conservation intervention. The PHVA shows the commitment of various stakeholders to various conservation actions that were deemed priorities by the group. Two chief priorities emerged:

- 1) That a BMP-S was required to ensure that the conservation of the species became a formal legislated priority for South Africa, rather than being efforts solely conceived and driven by NGOs and academics.
- 2) That collaborative and integrated management among and between stakeholders, as well as public support, is required for effective management of the population, and a more comprehensive forum was proposed as the vehicle for this.

A BMP-S is thus essential, given the Endangered Red-list status, the requirement for inter-agency cooperation towards shared objectives for the conservation of the species, standardised monitoring, collaborative research, increased participation by diverse landowners, and opportunities as a flagship species where, given the vast spatial requirements, conservation efforts will also improve the outlook for other threatened species. It is also BirdLife South Africa's designated Bird of the Year for 2020. This BMP-S, informed by the 2<sup>nd</sup> PHVA (Kemp & Bruford, 2018), was jointly developed by members of the South African Southern Ground-Hornbill Action Group and invited experts and representatives of many stakeholder organisations (see Acknowledgements). Also, to ensure the long-term survival of the species in the wild, NEMBA provides for monitoring and reporting on the progress with implementation of the plan.

## 1.2 VISION AND DESIRED STATE

During the 2<sup>nd</sup> PHVA held in 2017 (Kemp & Bruford, 2018), the following vision statement was defined for the species:



To stabilize and then reverse the decline of the Southern Ground-Hornbill (*Bucorvus leadbeateri*), with the aim to achieve its conservation down-listing within South Africa, and to support other range-state conservation efforts.

This vision was underpinned by four specific goals, which guided the development of the PHVA and the BMP-S.

- A stabilized and growing Southern Ground-Hornbill population.
- Mitigation of threats, especially those common to other species e.g., poisoning and lead toxicosis.
- Strong integration of cultural and ecological values of the species.
- Long-term monitoring of the Southern Ground-Hornbill through a national monitoring plan, using citizen science and a local and regional Custodianship Programme.

Thus, the **DESIRED STATE** developed during the BMP-S stakeholder-engagement workshop is the following:

Southern Ground-Hornbills co-exist harmoniously with the people of South Africa due to positive changes in attitudes and behaviour, resulting in increased pride in and custodianship of a stable Southern Ground-Hornbill population persisting in a risk-free landscape.

### 1.3 OBJECTIVES OF THE BMP-S

The prioritised strategic objectives of the Southern Ground-Hornbill BMP-S to meet the target of 5% growth in the number of pentads where groups are reported per year are as follows:

1. BMP-S uptake, adoption and implementation are driven by DFFE.
2. Combine and prioritise valid actions from the SGH Single Species Recovery Plan and the 2<sup>nd</sup> SGH PHVA, to produce a final state-of-the-art conservation plan for the species.
3. Ensure effective and consistent communication, collaboration and coordination between stakeholders and the public for Southern Ground-Hornbill conservation, within the Thunderbird Task Team (TTT) Collaborative Conservation branding.
4. Ensure implementation of and accountability for actions within the BMP-S.
5. Implement standardised monitoring and promote collaborative research to inform adaptive management.
6. Consistently and uniformly implement legislation, regulations, policies, guideline,s and protocols.

### 1.4. BENEFITS OF THE BMP-S

The envisaged benefits of implementing the BMP-S are:

- An ecologically healthy SGH population that remains stable and increasing, even in non-protected habitats.
- Scientifically-sound population management is implemented, both *in-* and *ex-situ*, representing the full extent of the local genetic diversity.
- Private and government sector support and investment in SGH conservation.
- SGH conservation must be institutionalised, to ensure institutional membership of the TTT is continuous.
- The support of owners, managers, and inhabitants of the land on which SGH are permanent residents is obtained.

### 1.5 ANTICIPATED OUTCOMES OF THE BMP-S

The SGH BMP-S aims to identify and allocate the required, identified actions to enable stakeholders to contribute to the overall desired outcome of ensuring the long-term survival of the species in the wild.

The outcomes that will ensure this:

- Clear management goals and timeframes for their achievement.
- Key role players and stakeholders identified.

- Acceptance and support of the BMP-S by stakeholders.
- Defined and accepted roles and responsibilities by stakeholders and role players;
- Institutionalise SGH with as a more formal grouping of SGH stakeholders Group to ensure swift action on PHVA/BMP-S recommendations;
- A plan that comprehensively and concisely covers all aspects related to the conservation of the SGH, with realistic set targets for each five-year iteration;
- Identified key performance indicators to assess progress towards defined goals;
- Threat mitigation, including for the benefit of non-target species;
- Guidance of *ex-situ* conservation efforts for the species;
- Opportunities for job creation, capacity building and education for all communities that share the landscape with SGH;
- Documentation and expansion of inherent cultural protection; and,
- Publication of scientific papers and popular articles emanating from research and conservation actions.

## 2. SPECIES BIOLOGY AND BACKGROUND INFORMATION

### 2.1 SPECIES ECOLOGY AND BIOLOGY

The information below is drawn largely from the most recent species review (Kemp 2017).

#### 2.1.1 Taxonomic description

**Order:** Bucerotiformes

**Family:** Bucorvidae

**Genus:** One of two species in the genus *Bucorvus* (Gonzalez *et al.*, 2013a).

**Taxon name:** *Bucorvus leadbeateri* Vigors, 1882

**Taxonomic level:** species

The Southern Ground-Hornbill (*Bucorvus leadbeateri*) exhibits many unique, primitive and vestigial characteristics at the base of the Bucerotiform clade. The female does not seal herself into a nest cavity (Kemp 1995), no functional carotid artery is present (Garrod, 1876), shoulder nerve structures are reduced (Howell, 1937), 15 instead of the 14 neck vertebrae present as in other hornbills (Kemp, 1995), and an extra tendon runs from the pelvis to the femur (Fisher, 1946). Their limb structure allows them to walk efficiently, whereas most other hornbills prefer to hop, except for small members of the subgenus *Tockus* within the genus *Tockus* (Garrod, 1876; Kemp & Kemp, 1980a; Gonzalez *et al.*, 2013a).

The genus *Bucorvus* follows a north-south biogeographical dichotomy, with Northern (or Abyssinian) Ground-Hornbill *B. abyssinicus* in savannas north of and *B. leadbeateri* south of the equator, likely caused by the separation of savannas through the expansion of equatorial rainforest (as suggested by Crowe & Kemp, 1988). The only area of overlap in their ranges is small (Kemp, 1995) and falls within a multi-species east African suture zone (Lorenzen *et al.*, 2012).

#### 2.1.2 Distribution

The SGH has been reported in sixteen range-states: South Africa, Namibia, Botswana, Zimbabwe, Swaziland, Mozambique, Malawi, Angola, Zambia, Democratic Republic of Congo (DRC), Rwanda, Burundi, Kenya, Uganda and Tanzania, with one record for Zanzibar (Kemp 1995) and one for Lesotho (Maphisa *in litt*). Coarse range-distribution maps, based on historical, mostly museum-specimen localities, including that for the other *Bucorvus* species that occur north of the equator, *B. abyssinicus* (Kemp 1995; Sanft *et al.* 1849; Snow 1978) show the species to be parapatric (Fig. 1). The area of range overlap in southern Kenya and Uganda is small (Musila, 2007; Odull & Byaruhanga, 2009), with each species essentially found on either side of the equator and overlap attributed to dispersal rather than breeding individuals (Kemp 1995), with *B. abyssinicus* restricted to dry grasslands in northwest and *B. leadbeateri* to moister rangelands in the southwest Kenya (Musila, 2007). No reports of hybridization to date.

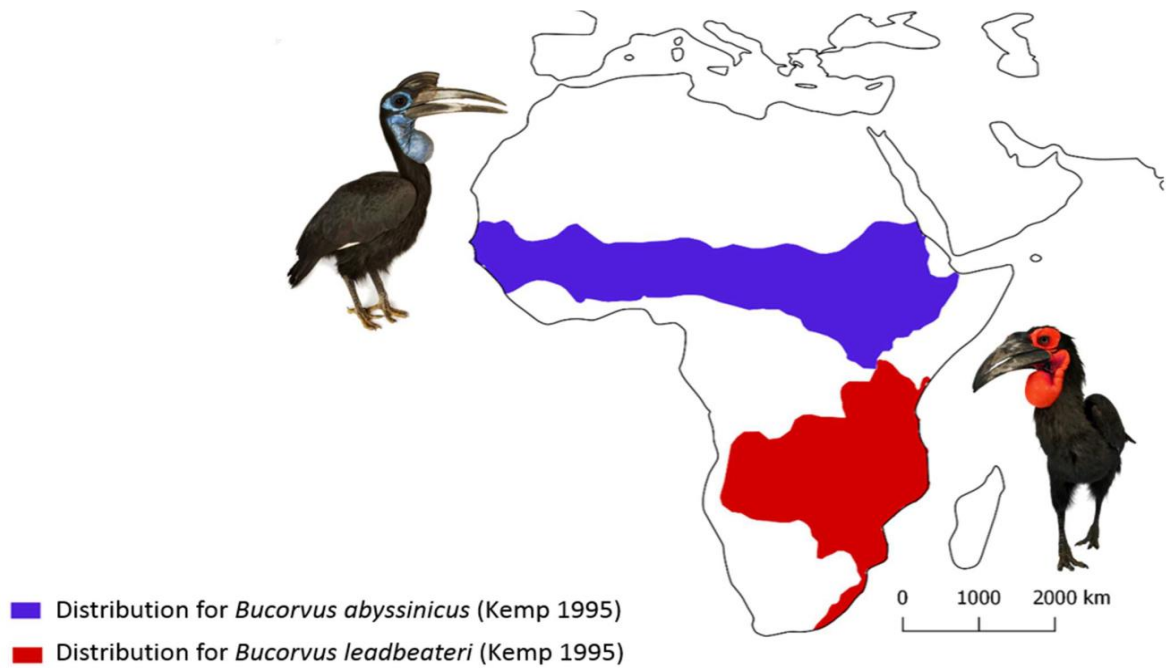


Figure 1. Map of range distribution for both ground-hornbill species after Kemp (1995).

### 2.1.3 Conservation status

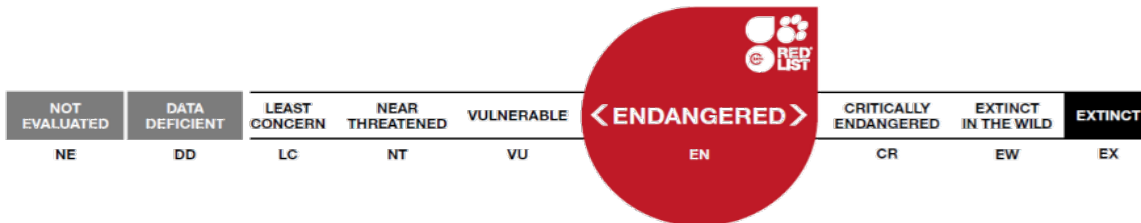
**Full range:** The IUCN Red List status of SGH is Vulnerable (BirdLife International, 2019) with population declines for Kenya (BirdLife International, 2014), Malawi (Kalimira, 2007), Mozambique (Parker, 1999, 2005), Zambia (BirdLife International, 2014), Zimbabwe (Chiweshe, 2007; Maasdorp, 2007; Witteveen *et al.*, 2013), Botswana, and Swaziland (Parker, 1994), with declines best enumerated and most dire for South Africa (Kemp & Webster, 2008; Underhill, 2014; Taylor & Kemp, 2015) and Namibia (Simmons, Brown & Kemper, 2015).





Figure 2. Proposed range-state conservation status using IUCN Red List criteria for each range state where Southern Ground-Hornbill occupancy has been recorded (Kemp 2017).

**South Africa:** In South Africa, the species is regionally listed as **Endangered** (Taylor *et al.*, 2015).



#### 2.1.4 Genetic status

The phylogeography of the SGH was assessed across their entire range by assessing patterns of variation in mitochondrial DNA (mtDNA: CO1, Cytb and ND2), nuclear DNA (GAPDH) gene sequences, and at 16 microsatellite loci. Phylogeographic reconstruction of these sequences refutes the previous distinction of two possible subpopulations based solely on mtDNA (Cytb) (Kemp 2017). The microsatellite loci assessed for SGH individuals from across the range showed some variation, with an average of 3.188 alleles per locus and a mean observed heterozygosity of 0.545. Population difference, using STRUCTURE and Principal Component Analysis (PCoA), revealed poor differentiation between samples from the southern and northern extremes of the range, with South African individuals being more distinctive. Results suggest that SGH are homogeneous, close to panmictic, with low levels of restriction to gene flow and some isolation by distance. These findings may make conservation management of the species less complicated as individuals from directly neighbouring countries would not need to be managed separately. However, as a precautionary measure, an analysis including additional markers to determine adaptive variation is being conducted (MGHP/SANBI), to ensure that the same pattern holds and elucidate any risks of mixing individuals from extremes of the range for captive-breeding purposes, such as pairing breeding stock from South Africa with birds from Tanzania.

#### 2.1.5 Life history and reproduction

The SGH has several significant life history characteristics, each independently increasing its vulnerability to extinction: it is diurnal, long-lived, large, conspicuous and a top-order avian predator, with large spatial needs that result in low densities, and small populations per unit area (Kemp, 1995). These features, together with cooperative breeding, living in territorial groups and other complex social structures, combine to result in naturally slow rates of breeding and recruitment (Purvis *et al.*, 2000). Added to this, the species faces several anthropogenic threats (BirdLife International, 2019), each growing in scale and intensity as human development expands across sub-equatorial Africa. Populations are consistently shown to be less vulnerable in larger protected areas (Chiweshe, 2007; Broms, Johnson & Altwegg, 2014), where known anthropogenic threats are absent or minimal. If habitat can be restored, or improved, by the provision of nest cavities and maintenance of wide-open foraging areas, it may be possible to raise populations to higher densities, allowing for enhanced population resilience in areas beyond the borders of formal protection. This would also assist conservation managers in deciding how densely reintroduced groups might be released into viable habitat where the population has become locally extinct.

#### 2.1.6 Habitat requirements and resource assessment

##### 2.1.6.1 Critical habitat

Ground-hornbills are resident on strictly defended territories in savanna, grassland, and open woodland, foraging in open habitats within these biomes, from sea-level (Nupen *in litt*; pers. obs.) to altitudes as high as 3000 m a.s.l. (Kemp 1995). This generalised habitat description, however, does not describe the critical habitat factors that allow for the long-term survival of breeding groups at the highest density, for which data on factors that drive high/low productivity/density or create sources or sinks are needed.

A fine-scale focus on the needs of family groups at several research sites in South Africa found seasonal variation in the use of territories with a reduction in home range sizes during the summer wet season (Wyness, 2011; Zoghby *et al.* 2015). This is the time when ground-hornbills are breeding, anchored to the nest as central place foragers as they regularly provision the female, and later the offspring (Dickens 2010; Wyness 2011; Theron *et al.* 2013). Daily travel distances averaged seven kilometres per day but were greater during the summer, despite being constrained to their nest, and lowest in early winter when ground-hornbills ranged across their full territory. One group failed late into a nesting attempt and resumed foraging again over a wider area, but with the lowest mean seasonal daily distances travelled, suggesting resources are indeed more abundant in summer (Zoghby, 2015).

Group size appears to not correlate with habitat type, but large groups (> 3 birds) reared more chicks successfully than groups comprising only 2-3 individuals (Wilson 2010). Even if group size changes with time, territory size did not, suggesting that food is not a limiting factor. While group size does not appear to be an indicator of habitat quality (Kemp *et al.* 1989), group persistence might (Hulley & Craig, 2007). It has been suggested that at the southern extreme of the range in the Eastern Cape of South Africa, the available habitat was only visited during periods of overflow following high productivity in neighbouring areas and thus should not be considered as key or core habitat. This may hold around all margins of the range as similar patterns are reported for the arid Madikwe, in north-western South Africa.

#### 2.1.6.2 Habitat requirements

Ground-Hornbills do not drink water, so proximity to water bodies is not vital (Kemp & Kemp, 1980b). However, distributions are often associated with drainage lines and water holes, where vegetation is usually taller and more established with large trees (Zoghby *et al.* 2015; Zoghby *et al.* 2016) and prey numbers higher. It is suggested that some populations are linked via corridors along large drainage lines in Zimbabwe (Chiweshe, 2007), congruent with patterns found in the northern Limpopo Province of South Africa, where groups are only encountered along the Mogalakwena and Limpopo Rivers, and historically the Crocodile and Olifants Rivers (Engelbrecht *et al.*, 2007). This can be attributed to the higher biodiversity and herbivore and prey biomass expected in and around water bodies/courses, and the presence of the larger riparian trees needed for roosting and nesting. Broms (2014) however, found no significant correlation with any habitat variables when analysing atlas data.

Ground-Hornbill groups show a marked preference for riparian zones to rest in during the heat of the day, attracted to the denser shade provided here, particularly during the hot summer season (Zoghby *et al.*, 2015). The shade is vital for a large black bird that forages on the ground and exhibit signs of heat stress over 25°C. Their deeply black feathers may not reflect light (Mullen & Pohland, 2007) and, at temperatures below 8°C, they prefer to be in the open and exposed to the sun. When temperatures rise to 25°C they initiate heat-loss behaviours: raising feathers, moving into the dense shade, specifically the riparian zone, and at extremes flying up to perch to avoid ground-radiation and allow heat loss via the bare underwings (Kemp, 1995b; Dickens, 2010). Mortality due to combinations of heat and drought is suspected to reduce populations to levels that take decades to recover (Paolilo, 1993; Newton, 2003; Chiweshe, 2007), and may have contributed to virtual but temporary extirpation of ground-hornbills in the arid Limpopo River Valley of South Africa (Theron *et al.*, 2013). Ground-hornbills need to offload heat through their bill and facial skin from just 26°C (Van Vuuren. *et al.* 2020).

Ground-Hornbills are faunivorous and scavenge, particularly on smaller prey items. They need to find and catch enough food throughout the day and the year within the boundaries of their territory, including during inter-annual

extremes of high and low rainfall and temperature, and therefore habitat must be able to provide for this. SGHs are opportunistic generalist feeders, eating whatever prey species they can catch, predominantly invertebrates, but also includes snakes, scorpions, small mammals and birds, crustaceans. This wide-ranging diet may conceal more selective feeding by season, age or habitat than has been so far reported, but it is a favourable life-history trait that removes the need for territorial habitat to include specific food sources and negates the need to choose reintroduction sites with specific food species. They forage as a group, wandering through their territory, catching or excavating any items they encounter. There are likely areas that are preferred at specific times of the year, correlated to known patterns of invertebrate emergences and other spatiotemporal variations, something that satellite tracking with simultaneous ground-truthing will be able to determine. For example, in the Kruger National Park (KNP) in winter, groups dig for prey around waterholes where increased dunging leads to increased dung beetle larvae concentrations (Kemp and Kemp 1980), especially in rhino and elephant middens and dung piles.

Safety is an issue for a species with high immature mortality rates (70%; Kemp, 1995a), with juveniles being highly dependent on group support. Predation by large cats is the most likely risk (including leopard *Panthera pardus*; lion *P. leo* (Kemp, 1996); cheetah (*Acinonyx jubatus*; pers. obs); caracal *Caracal caraca*); serval (*Leptailurus serval*, and African wild cats *Felis silvestris* (Scott, 1999), and even domestic dogs (Ezemvelo pers. comm.). Attacks and kills by large avian predators, such as Martial (*Polemaetus bellicosus*) and Crowned (*Stephanoaetus coronatus*) eagles, have also been noted (Kemp A, pers comm.). Perceived predation risk plays an important role in microhabitat selection for several savanna species (Valeix *et al.*, 2011) and although ground-hornbills are capable of rapid take-off, they still prefer to remain in open areas where visibility is better and quick escape is possible.

Nest sites are important, not just for breeding but also social interactions within the group, and are used for multiple decades if available and persistent (Ranger, 1928). Nests are natural cavities in a tree (in forest edge or fragments, or lone large trees), a rocky cliff or an earth wall (with self-excavation into earth banks reported for a pair in captivity using their bills and feet to dig (Fairfield, 1973) and in the wild (A. Mngomezulu pers. comm.). Nests above 6 m high, with a wall 6 cm thick or greater are preferred (Carstens *et al.*, 2019a), although Combrink *et al.* (2017) found no unknown or finer details of nest structure or microclimate that may affect success. Nests were more successful when the proportion of open woodland surrounding the nest site was higher, which may implicate foraging success, although this was less important if nests were artificial (Wilson & Hockey, 2013; Carstens *et al.*, 2019b).

Kemp and Begg (1996) found that most nests were located in trees in open areas with bare ground, or with grass of short to medium height, and that the nest was placed among only a few other prominent, large or dead trees, with the more successful nests surrounded by the most open habitat (Wilson & Hockey, 2013). In combination, these results suggest that the placement of artificial nests within territories could be optimised by placing them close to areas of short, open ground cover and/or open woodland. Besides, they should be constructed with walls > 6 cm and be placed at a height of 6 m or greater (Carstens *et al.*, 2019b).

Apart from the need for large trees for the provision of nesting cavities, SGH is also reliant on large trees or cliffs in the landscape for roosting (Zoghby *et al.* 2016). This dual importance of large trees is a strong motivator for management of the savanna for the persistence of mature trees, even if they are stands of exotic trees e.g. *Eucalyptus*.

### 2.1.6.3 Vegetation structure

Analysis of habitat use using satellite telemetry found that disturbed bare areas, with an associated higher mean grass biomass, were favoured (Wilson, 2010). It was suggested that these areas may provide the best foraging opportunities as (i) grass biomass was assumed to be a surrogate for food availability, (ii) detectability of prey is less constrained, and (iii) low stem density allows the ground-hornbills to move around with greater ease (Wilson, 2010), implying safety and/or energetic concerns. Wyness (2011) was unable to provide a mechanistic link between vegetation structure and habitat preference but suggested that marked seasonal patterns of habitat preference indicated that physical vegetation characteristics must have an influence. Thus, it appears vegetation structure may be of more significance than composition, as it is for many bird species (Lack, 1933; Macarthur, 1965).

Repeatedly in the literature, in papers ranging from sighting records (Mundy 2003) to nest productivity (Wilson & Hockey, 2013), the overriding commonality is the presence of expansive areas of open habitat. Specifically, short grass less than 50 cm in height (Knight, 1990), with a noted preference for *Cynodon* species (Maasdorp, 2007), a grass that dominates grazing lawns. SGH habitat is even described as rangeland (Musila, 2007), implying the importance of grazed ground cover, be it maintained by grazing game species or domestic livestock. Subjectively, Kemp and Kemp (1980) found that groups appeared to occupy and spend much time on well-grazed areas. Further support for this hypothesis comes from further north in the range, where the species is reported to thrive in areas where grass levels are kept short by cattle grazing (Wilfred, 2007). This need for well-grazed areas has also been reported for Wattled Cranes (*Bugeranus carunculatus*), where conservation management promotes the use of cattle grazing where this can be well managed (Short & Rushworth, 2004).

It has been hypothesised that, in Zululand, an increase in grass cover after removal and/or reduction of bulk grazers, such as cattle or buffalo, decreased the viability of habitats and led to localised population reductions (Kemp, A, unpublished report). Initially, it was proposed that to promote species persistence and growth a reduction in grazing was necessary (Seddon, 2011) but, given the new insights from communal grazing areas, this may not hold, at least for SGH. In some tribal trust areas of Zimbabwe, where the main habitat use is grazing and subsistence cropping, i.e. low and open habitat (Witteveen *et al.*, 2013), the species is at a higher density than in protected savannas. Although in Botswana the species was shown to be more prevalent on wildlife reserves than in cattle farming areas, this analysis was based on atlas data with only a quarter-degree resolution that may not adequately reflect habitat structure, which is measured at a finer scale (Herremans, 1998). Even when trapping the species, more success was had in wide-open areas where the ground-hornbills were more at ease and prepared to be more inquisitive than in thicker vegetation (Kemp L. pers. obs.).

High rainfall in the South African Lowveld (> 500 mm over a six-month breeding season) resulted in a decrease in reproductive success, with groups being most successful in years when rainfall ranged from 300 - 500 mm (Wilson, 2010). This was for a population heavily dependent on artificial nests where higher breeding success was attributed to artificial nests being less prone to flooding than natural nests, but it may be that summers of better rainfall lead to a denser ground cover vegetation, which increases the risk of ambush predation and reduces terrestrial foraging ability. Elsewhere within the range, where rainfall is consistently over 500 mm within a breeding season, viable populations occur at higher densities, and so this rainfall threshold may be a correlation rather than a proximate factor.

Ground-Hornbills are often reported to move into freshly burnt areas to forage opportunistically on any maimed or burnt prey items (Runo, 2001), sometimes before the embers have even cooled (Kemp, L. pers. obs.). A study in the KNP found that savannas have a short fire-return time, with post-fire habitats recovering rapidly, and even severe fires not disturbing bird communities significantly (Mills, 2004). Insect communities as a whole, rather than individual species, remain robust enough to support bird communities, possibly because most savanna insectivores are generalists that feed on a wide range of insect species (Mills, 2004). Woody vegetation on savannas is also not always as fire-affected as a ground cover. However, this does not hold for extreme fire policies, such as complete suppression or high frequency 'hot' fires, which alter habitat structure. It has been found that the dual and combined disturbances of fire and herbivory are necessary to limit woody tree and shrub cover, and so facilitate coexistence of a matrix of large roost trees and large open groundcover areas in the savannas (Staver *et al.*, 2013), vital for ground-hornbills. Recent range-contractions appear largely to correlate with areas of bush encroachment and/or densification (Loftie-Eaton, 2014).

At the other extreme, frequent large fires prevent areas of heavy grazing from persisting in the landscape, limiting the spread of grazing-adapted grasses, a favoured ground-hornbill habitat. In the long term, if fires were frequent, intense and widespread enough, then grazer-created lawn-grass patches should disappear, such as in Hluhluwe-iMfolozi Park (Archibald *et al.*, 2005). Frequent burning, an outdated management policy for many South African parks for the latter half of the 20th century, may have resulted in the legacy of bunch-grass dominated landscapes in these savannas (Bond & Archibald, 2003), with the loss of lawn grass species leading to cascade effects on associated biota. This holds for cattle rangelands where fires have long been used to manipulate animal movements and provide good forage (Hall 1984), and more recently patchy fires in rangelands have been advocated as a management tool to increase heterogeneity (Fuhlendorf & Engel, 2001).

An analysis of exploratory dispersals showed that, at the extreme southern fringes of the range, occasional influxes of ground-hornbills are reported, always during the breeding season (Hulley & Craig, 2007). This may represent dispersal movements by particular social classes within the population into the mediocre habitat, during either optimal condition within the habitat or exceptionally productive environmental conditions in neighbouring areas, or both, but these colonisations were not persistent. This may be the first indication of dispersal from regions of high productivity (sources) into regions of low productivity (sinks).

#### 2.1.7 Known diseases

Little is known of the baseline health parameters for the species. However, the *ex-situ* conservation community has provided insights into what infectious diseases are relevant to SGH (clostridial enteritis, presumptive osteoarthritis (Anderson *et al.*, 2013), Marek's Disease (Cho & Kenzy, 1975), *Aeromonas hydrophilia* (Ocholi & Kalejaiye, 1990), West Nile Virus (Komar, 2003). They also can supply data on which are successful treatments (Anderson *et al.*, 2013; Koepfel & Kemp, 2015) or treatments to be avoided that lead to fatality (Anderson *et al.*, 2013). The genus is susceptible to stress caused by capture and handling, leading from immunodeficiency to fatalities (Ocholi & Kalejaiye, 1990). Captive-reared individuals show no resistance to Newcastle Disease (pigeon paramyxovirus PPMV-1, n=2) (Abolnik *et al.*, 2008) but outbreaks are known to occur in areas where wild populations of ground-hornbills occur (Kemp, L. pers. obs.). A species-specific vaccine for Newcastle Disease has been developed to support the reintroduction programme (Koepfel & Kemp, 2020). When species-specific information is not available, it is also possible to look at disease from a cladistic perspective to identify potential

risks, as has been successfully done for the Coraciiformes (Smith, 2003). Reports of zoonotic *Salmonella*, affecting both ground-hornbills and humans, have been published for the species (Smith *et al.*, 2014).

#### 2.1.8 Ex-situ populations

Initially, much emphasis was placed on the development of a captive insurance population, to release offspring as part of the reintroduction programme. When it became apparent that the long-term holding of this species is not the most effective way to grow the reintroduction programme, that it comes with a risk of captive-selection influencing the survival chances of reintroduction candidates, and that there are insufficient facilities in South Africa to be able to hold genetically viable populations, it was decided by the stakeholder group during the 2<sup>nd</sup> PHVA to focus on the harvest of wild chicks that would naturally die, rather than try and continue to grow the scope of the captive holdings.

At present (2020) all captive birds, including future reintroduction stock is numbered at 87, housed at 15 facilities, and managed according to a Pan African Association of Zoos and Aquaria (PAAZA) Conservation Stud Book.

#### 2.1.9 Species' role in the ecosystem

- The SGH, given its extensive spatial requirements, is both an umbrella, and a flagship species.
- SGH's only ecosystem dependency, besides an adequate food supply, is on large tree species that naturally form large hollows for nesting (e.g. *Ficus*, *Adansonia* spp.) and for roosting.
- Several ectoparasites occur only on *Bucorvus* spp; including two host-specific Mallophaga genera of the amblyceran family, Menoponidae described thus far: *Bucerophagus africanus* (Bedford) 1929 (Bedford, 1929; Balter, 1968) with eggs laid on the neck and upper breast and cemented to the feather shaft (Balter, 1968) and *B. productus* (Bedford, 1929) and *Chapinia africana* (Bedford, 1929, Clay & Rothschild, 1938) and *C. unilaterii* (Canaris & Gardner, 2003). *Bucorvellus docophorus* (Ischnocera: Philopterae) has also been described only for the *Bucorvus* genus (Clay & Rothschild, 1938; Elbel, 1964).
- Mutualism: Some avian species such as bee-eaters, drongos and flycatchers follow groups of SGH to catch flushed insects.
- SGH is known to steal prey from some raptor species, and vice-versa, besides being versatile and not fastidious in their prey selection and thus diet.
- They are culturally revered for their ability to kill and eat venomous snakes.

### 2.1.10 Utilisation of the species

#### National utilisation

##### Live specimens

Within South Africa, live trade appears to be restricted to exchange between aviculture institutions and zoos, managed by the PAAZA studbook. It is unknown whether there is the illegal trade in wild-caught specimens locally, but some inconsistencies have emerged, in that SGH are sold as other species, or vice-versa.

##### Body parts

Trade for the traditional use of body parts is considered a significant threat to SGH (Williams *et al.*, 2013), especially in the context of the myriad other threats that SGH face. In South Africa, body parts are reported from all major traditional medicine markets (Johannesburg's Faraday Market, Durban's Warwick Junction Market, Zululand's Mona Market; (Mander, Diederichs, *et al.*, 2007; Mander, Ntuli, *et al.*, 2007; Whiting, Williams & Hibbitts, 2011)). In one market, three carcasses were present (Whiting, Williams & Hibbitts, 2011), a significant number given that the loss of just four individuals per year drives decline (Morrison *et al.*, 2005). No data exist for the extent of the traditional use of parts locally (i.e. that does not go through a market), but evidence of this use is common (Trail, 2007), and the rural use of the species is well and widely documented (Nevill, 1984; Chiweshe, 1998; Maasdorp, 2007; Williams *et al.*, 2013; Coetzee, Nell & van Rensburg, 2014; Coetzee, Nell & Rensburg, 2014). To date, the only Range State where SGH is known to be routinely eaten as bushmeat is Mozambique (L. Kemp & M. Stalmans in prep.). Methods of the capture of wild-caught individuals are snaring, catapults, removal of females from nests, hunting with dogs and poison (Bruyns, Williams & Cunningham, 2013), and pursuit on horseback until exhausted (L. Kemp pers. comm.). It is proposed that, for ground-hornbills, use as traditional medicine outside of high-density population areas is influenced by cultural value, not by economic value as found in larger traditional medicine markets in major cities (Williams *et al.*, 2013). No stockpiles are known to exist and nor are any expected given the low density of the species.

#### International trade

##### Live specimens

International trade is primarily in the form of live trade for zoos and private collections, and parts, most commonly as taxidermy specimens or skulls. Data are difficult to find elsewhere as neither *Bucorvus* species is yet to be CITES-listed and thus no data are available on CITES, TRAFFIC or FAO databases. Data from the US Fish and Wildlife Services show 48 individuals imported over the period 1999 to 2006, of which only seven were declared as captive-bred (Trail, 2007). An internet search revealed that the species is readily available for sale, with two traders suggesting that any quantity can be met. Method of the harvest of wild-caught birds, as reported in interviews with traders, is by the capture of whole groups, removal of brooding females from nests with juveniles, or use of snares and poisons. Reports suggest increasingly more sophisticated methods of capture are being used: one example is a puppy in a noosed cage as bait, essentially a *bal chatri* trap. All methods have a high risk of injury and it must be assumed that a percentage of caught specimens die before being traded. Data for other hornbill species show that capture, transport and quarantine mortality rates range from 10 - 43% (Nilsson, 1985; MAFF, 1990), though maybe as high as 60% (Leader-Williams & Tibanyenda, 1996). The trade in wild specimens is most often reported from Tanzania, though sometimes the catch-all 'Africa' is used. Of concern were three separate adverts (China, Russia and Germany) that offered an unlimited number of specimens for sale.



Prices range from USD 20 for live birds to USD 3500 for a taxidermy mount. By ageing the birds from the casque development, and bill size and colour, it is clear that the majority of specimens are adults. One juvenile skull, however, is so underdeveloped that the chick is likely to not have fledged (Kemp 2017). It has been reported that much live trade is conducted through the United Arab Emirates and Oman and that many birds will also be kept by Asian zoos, but also by private holders in Europe and the Middle East (K. Brouwer, in litt). In the two largest regulated zoo associations, the Association for Zoos and Aquariums (AZA) in the United States of America and the European Association of Zoos and Aquaria (EAZA), only 179 wild-caught founders are reported through their studbook reporting mechanisms. No sex skew was found. The regulated zoo community is likely to play a minimal part in the trade. The inclusion of the SGH in CITES Appendix II will allow for the undertaking of non-detriment findings, as well as the monitoring of trade and a better understanding of market forces, especially what is driving the annual quotas of more than 400 individuals in Tanzania. Once the quotas are provided, birds are reportedly caught regardless of whether there is a demand or not. An analysis of past trade in Tanzania for over three years (1998 – 2001) found that only 47% of *Bucorvus* caught were sold (Kiondo & Clamsen, 2002). The rest remain in trader holding grounds. Trade is supposedly restricted to Tanzania, the only Range State to offer annual quotas for export. However, exports of wild-caught birds from Zimbabwe and South Africa into the United States of America (US Fish and Wildlife data) have been reported (Trail, 2007), as well as from one other unspecified non-African country. Traders report that China and the Middle East are the major markets for live birds but will not assist with details. Structured zoo communities such as the AZA and EAZA organisations are moving towards developing sustainability in their institutions to remove the need for wild harvest, especially given the SGH's threatened conservation status, slow-breeding, complex social structure and numerous other threats.

#### Body parts

Body parts are also reported from markets in Zimbabwe, Kenya, Tanzania, Malawi, Zambia, Zimbabwe, and Mozambique (Bruyns, Williams & Cunningham, 2013; Coetzee, Nell & van Rensburg, 2014), while use in the Democratic Republic of the Congo, Angola, Namibia, and Botswana could not be confirmed (Coetzee, Nell & van Rensburg, 2014). Parts favoured are brain, head, heart, feathers, intestine and bones (Bruyns, Williams & Cunningham, 2013). Bodies are reported to be brought into the market either opportunistically or as a commission (Bruyns, Williams & Cunningham, 2013). Mounted (taxidermy) specimens are available for sale and in most cases, the origin is unknown, although some skulls for sale online are listed as Tanzanian.

#### Impact of trade

The removal of significant numbers of breeding-age adults from a population may have a larger overall impact than the removal of a similar number of juveniles. A loss of breeding-age adults, especially females, may result in an immediate decline in the reproductive capacity of the population. This problem may be especially acute for species with slow recruitment rates (Leader-Williams & Tibanyenda, 1996). In addition, the loss of experienced mentor birds from a group puts the younger, less experienced members of the group in danger of not acquiring required skills for survival and breeding.

## 2.2 POPULATION STATISTICS AND TRENDS

### 2.2.1 Habitat preference and projected historical range and trends

An analysis (conducted by Kemp 2017) used 7837 unique locality records for SGH, of which 233 were derived from the first bird atlas (SAPAB 1; 1987 – 1992 as Quarter-Degree Grid Cells: QDGC), and 133 QDGC derived from 349 pentads from the South Africa Bird Atlas Project 2 (SABAP 2). SABAP2 records for SGH only accounted for 61% (350 pentads) of total recorded occupancy. Additional sighting records solicited and collated by the MGHP database contributed a further 39% (571 pentads) of records, which enhanced coverage (Fig. 3). This yielded only 2.9% more QDGS than were used for the previous 2008 analysis (Kemp & Webster, 2008), despite the additional seven years' worth of atlas data available and increased solicitation of sighting records. There are now essentially two populations, the population south of Swaziland almost entirely separated from the northern Lowveld and Bushveld population and those of neighbouring countries (SABAP 2). All records for South Africa (covering 425 QDGC or 255 275 km<sup>2</sup>) from 1823 (near Port Elizabeth; Vernon, 1986) to 2015, were assessed by biome and bioregion and finer-scale vegetation units (Fig. 4).

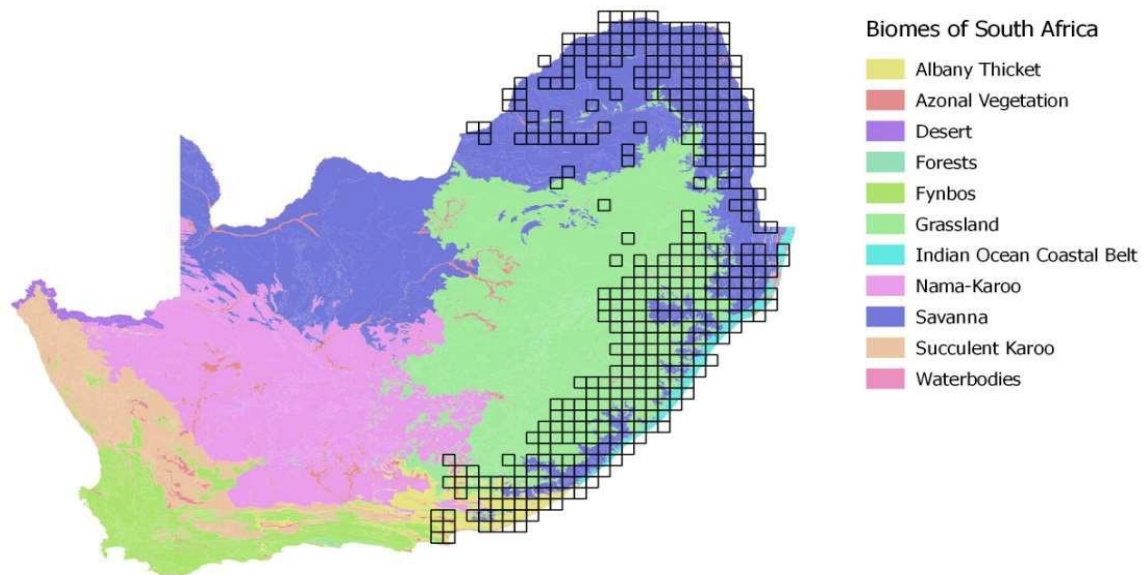


Figure 3. Map of all Southern Ground-Hornbill records (1823 – 2015) at a scale of quarter-degree grid cells) across the biomes of South Africa (National Vegetation Map 2012).

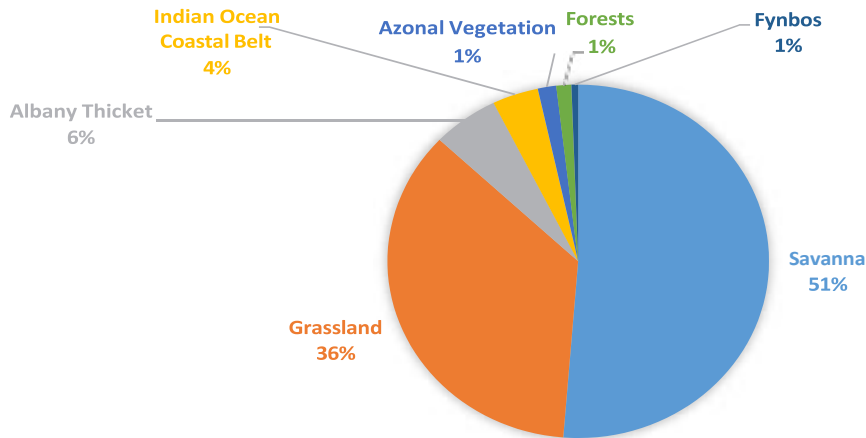


Figure 4. The proportion of biomes occupied by Southern Ground-Hornbills recorded for all sighting's records collated, the earliest being 1823 (National Vegetation Map 2012).

Within the predominantly savanna (51%) and grassland (36%) biomes, SGHs were found (95.8% of total habitat coverage) within nine finer-scaled bioregions (Fig. 5). The remaining 4.5% of occurrence records are minimally represented (each < 0.05% of the total coverage) and considered as marginal, or an artefact of the scale of analysis: Estuarine, Seashore, Eastern Strandveld, Azonal Forests, Waterbodies, Inland Saline Vegetation, Lower Karoo, Upper Karoo, Freshwater Wetlands and Dry Highveld Grassland. The sub-escarpment bioregions of mopane, Indian Ocean Coastal belt and sub-escarpment grassland bioregions were nearly fully occupied by SGHs.

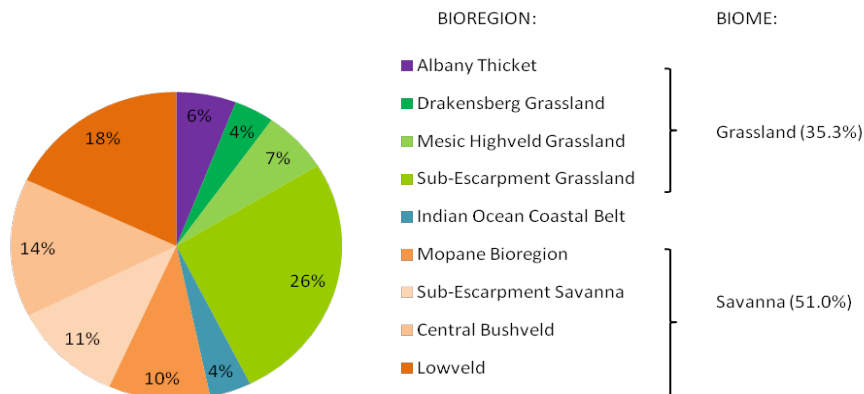


Figure 5. Representative proportions of bioregions important to Southern Ground-Hornbills per biome.

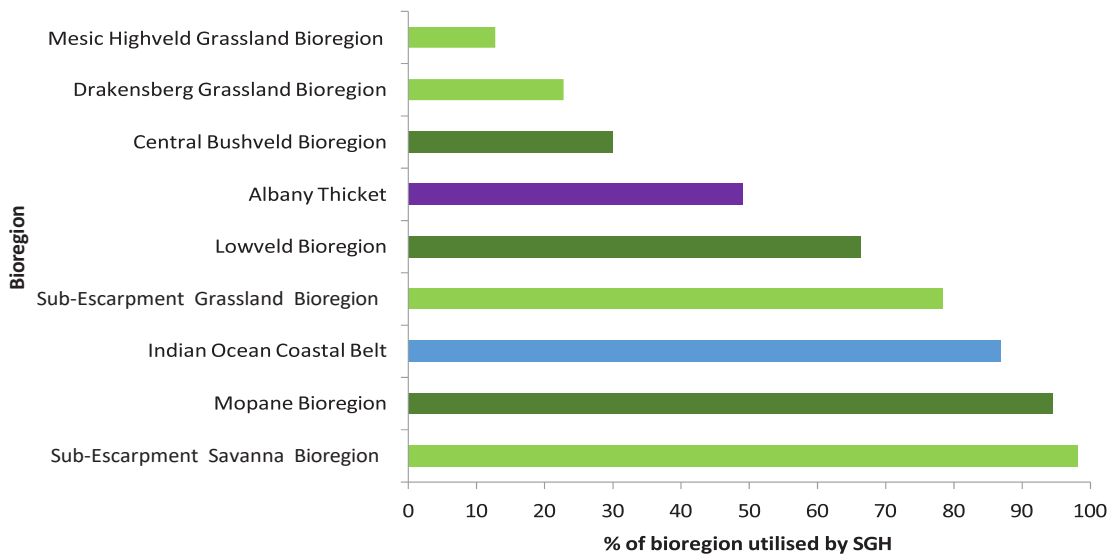


Figure 6. The proportion of Southern Ground-Hornbill records per vegetation bioregions of South Africa.

Assessing these regions at the provincial level (Fig. 6), to allow for the guidance of provincial monitoring programmes, showed the Lowveld to be important in Mpumalanga (much of which is within the borders of the Greater KNP). In KwaZulu-Natal and the Eastern Cape, however, the most important habitat was sub-escarpment grassland, a bioregion little protected and increasingly transformed.

At the finest scale of habitat analysis, 118 vegetation units accounted for 85% of the habitat extent, but with the greatest proportion only 5.5% (Granite Lowveld), which suggested little habitat preference at this scale of analysis as the top 10 most inhabited unit types combined only accounted for 28% (ranging from 1.5 – 5.5 %) of the total habitat inhabited. Analysis of range extent over time was thus conducted at bioregion.

**Range and population trends:** To assess population trends over time for the species, the QDGC scale was used to ensure comparative analyses with both current and historical records. Unlike for other range states, there is sufficient comparative data for three time periods as shown in Figure 7.

#### Using habitat extent to assess range change

Kemp and Webster (2008) used habitat extent, at biome scale, to determine the possible full historical range ( $T_{max}$ ) and found this to be 516 QDGC or approximately 410 000 km<sup>2</sup>. Using the finer scale analysis available with the National Vegetation Map, it was possible to refine this analysis to bioregions (based on the sum of the total areas for bioregions known to be, or have been, occupied by ground-hornbills: 454 235 km<sup>2</sup>), and exclude bioregions minimally utilised (those containing less than 0.5% of the entire recorded occurrence), giving a more conservative estimate of 221 187 km<sup>2</sup> as the likely historical occupancy).

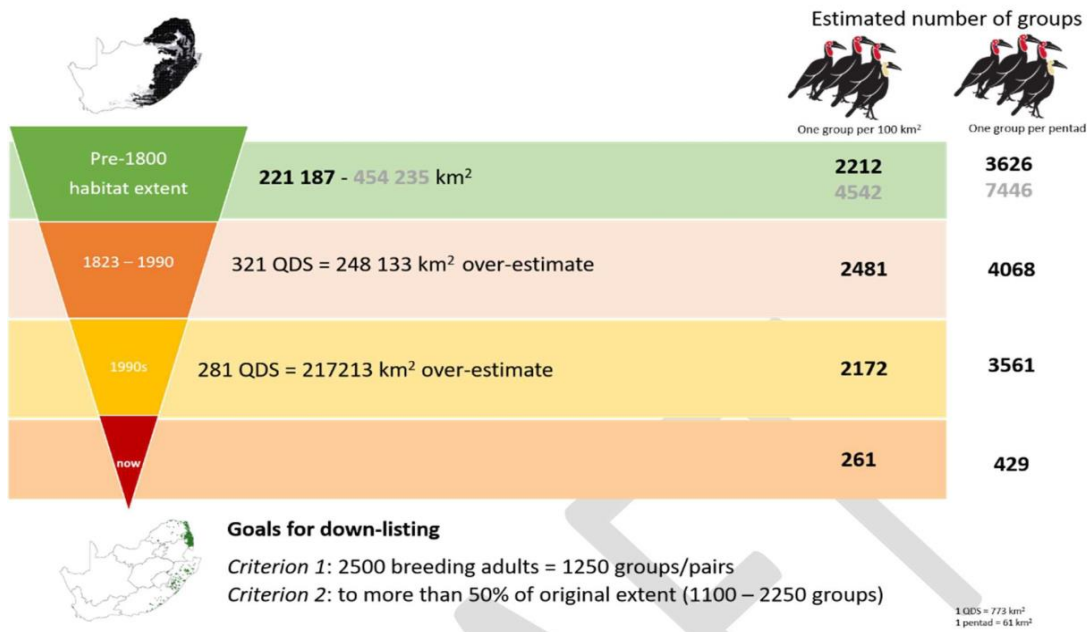


Figure 7. Estimated number of groups over four time periods, with the minimum number of groups needed to downlist the species from Endangered to Vulnerable.

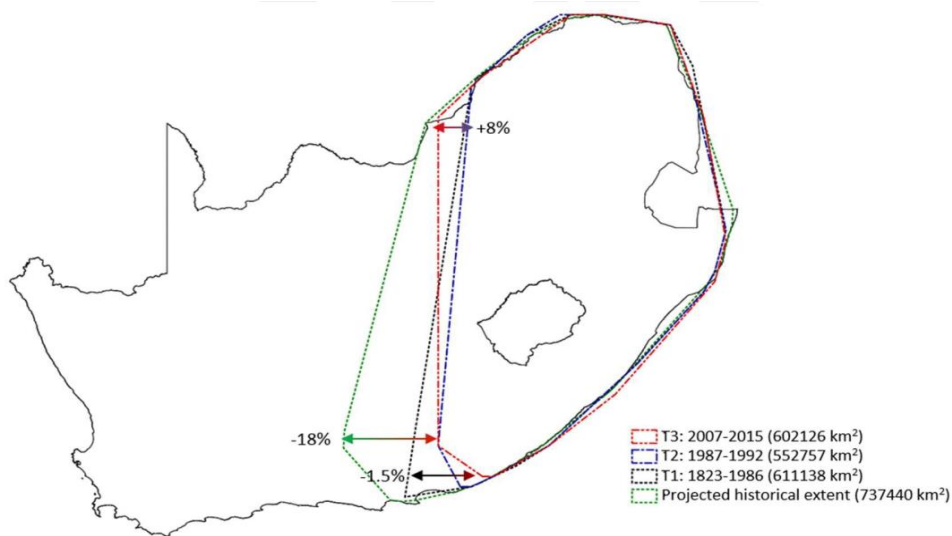


Figure 8. Minimum convex polygons (MCP) for Southern Ground-Hornbill occurrence records in South Africa over time (years).

Using a kernel density analysis (Fig. 9) to define the Area of Occupancy (AOO), declines were found for both the full extent of the range (23% at a 95% kernel isopleth) and for the core of the population (27% at a 50% kernel density isopleth). The core population has possibly been fragmented, into one in the Lowveld-KNP area and a second largely in KwaZulu-Natal Province.

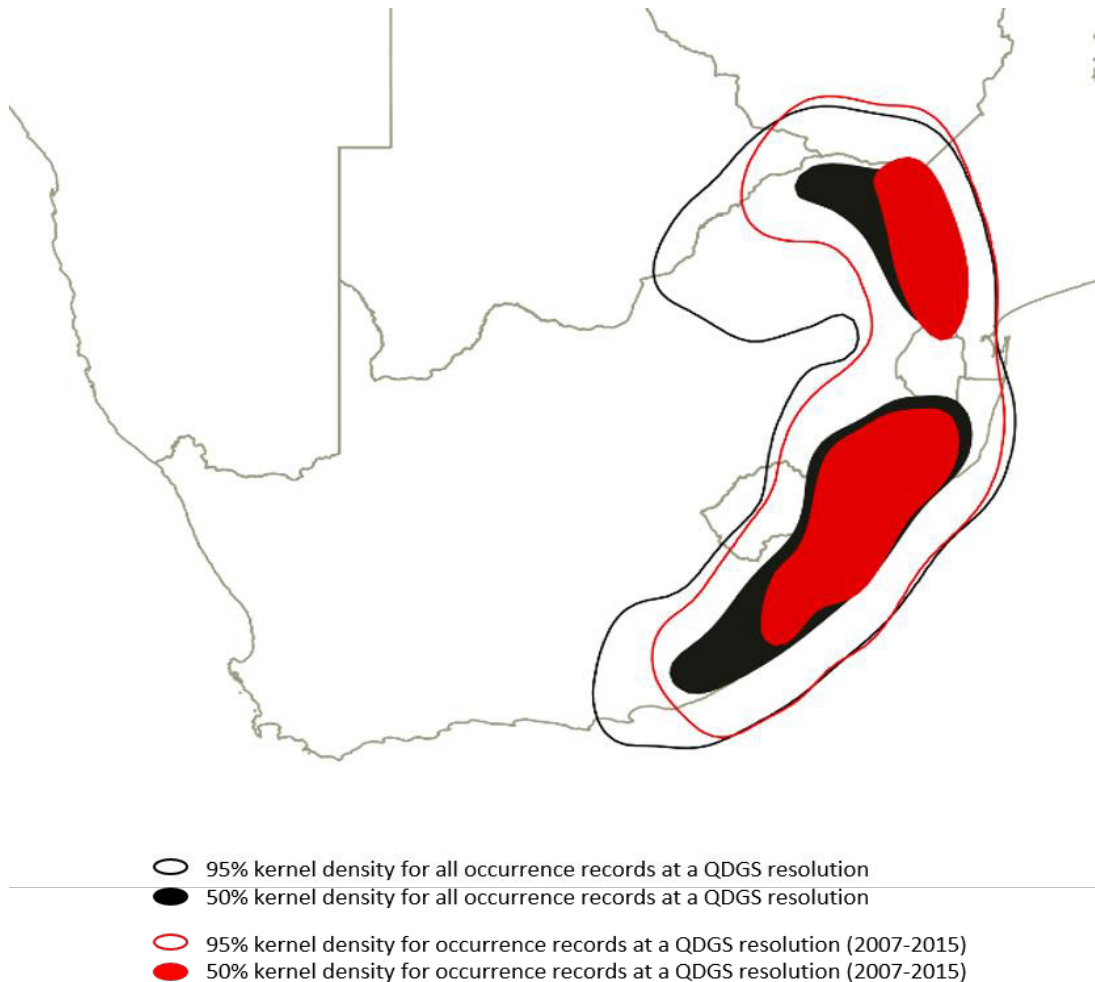


Figure 9. Density kernels of all occurrence records across time (years) compared with those for the current distribution (2007-2015) for records analysed at a QDGC scale.

The overall small loss (4%) of the 95% density kernel belies the extent of loss of core habitat in the Eastern Cape, and gains quantified for the first time for the Limpopo River population as it recolonises its historical range, possibly from Zimbabwe (for more in-depth analysis see Kemp 2017).

The current IUCN Red Data listing of Endangered (Taylor and Kemp, 2015) was based largely on the Kemp and

Webster (2008) analysis, whereby the following criteria were met:

- **A2bcd**: Reduction in population size based on an observed population size reduction of 50% over the last three generations, where the reduction or its causes may not be ceased or reversible based on:
  - (b) an index of abundance appropriate to the taxon;
  - (c) a decline in area of occupancy, the extent of occurrence and/or quality of habitat;
  - (d) actual or potential levels of exploitation.
  
- **4bcd**: An observed, estimated, inferred, projected or suspected population size reduction of  $\geq 50\%$  over any three-generation period up to a maximum of 100 years in the future, where the time must include both the past and the future, and where the reduction or its causes may not have ceased OR may not be understood OR may not be reversible, based on:
  - (b) an index of abundance appropriate to the taxon;
  - (c) a decline in area of occupancy, the extent of occurrence and/or quality of habitat;
  - (d) actual or potential levels of exploitation.
  
- **C1**: Population size estimated to number fewer than 2500 mature individuals and an estimated continuing decline of at least 20% within two generations, whichever is longer, (up to a maximum of 100 years in the future).

This analysis of range contraction (Kemp 2017) concurs with, and spans the required 50% contraction criterion (4bcd) for Endangered but suggests a borderline assessment. If taking fine-scale pentad data into account, range contraction is greater than 50% and, given the scale of decline (15-20%) in just the last half-generation, with no indications of conservation action yet affecting slowing the decline, a conservative approach would be to accept that the range contraction is greater than 50% and that the current listing of Endangered should remain.

### 2.2.2 Population estimations

Kemp (2000) estimated a population of 1500 - 2000 mature individuals based on an average group density of one group per 100 km<sup>2</sup> and an average group size of 3.6. The modelling conducted for the 1<sup>st</sup> PHVA (2005) used an estimate of 410 - 700 groups, or 1290 - 2380 individuals, of which 1500 individuals would meet the threshold requirements for the number of mature (hence breeding) individuals. Kemp and Webster (2008) used SABAP 1 reporting rates to estimate a population of 2516 adults in 1992, with a likely historical population of 3124 mature individuals or 1560 groups.

To estimate the current population, based on current (2009 - 2019) occurrence data, with the following assumptions maintained:

- 1) The average density per group in South Africa has a required area of 60 - 100 km<sup>2</sup> (note this is not based on individual group home ranges/ territory sizes but several regional estimates of population density);
- 2) An average group size of 3.6 individuals is still used, to allow comparison with previous estimates.

Regardless of the territory range used, the population estimates calculated from various assumptions about density

fall within the same range, and population contraction remains consistent at 64 - 82% if all bioregions were fully occupied or 44 - 73% for the minimum extent of the range. This concurs with the IUCN Red List Criterion C1 for listing as Endangered, with both range and population contractions showing the same trend. The pentad (estimated at 61 km<sup>2</sup>) also makes an excellent proxy for monitoring groups/territories as they cover roughly the same area.

### 2.3 RESEARCH

Different aspects of SGHs are increasingly being researched. This research has now yielded twenty-six papers, six PhD, six MSc, one M. Tech, and three BSc. Honours/ B. Tech projects. Research has included distribution, conservation status, genetics, fine- and broad-scale habitat use, nest utilisation, use of artificial nests, vocalisations, parasites, Newcastle Disease, reintroductions, captive-rearing, dispersal, population dynamics and so on. Mark-recapture studies have been undertaken since 1991 (tattoo) and 2005 (leg bands) in the Associated Private Nature Reserve (APNR), and in 2009 in the KNP. See reference list for all reports, theses, and publications.

Ongoing research is being conducted by various stakeholders on populations in the KNP, APNR, Sabi Sands Game Reserve, Limpopo River Valley and Zululand and former Transkei (South Africa), Gorongosa National Park (Mozambique), Matobo district (Zimbabwe) and northern Namibia. These efforts have yielded a greater knowledge base for the species, reaffirmed many earlier findings, and highlighted difficulties in rapid and meaningful data generation for such a low-density and long-lived species. This research, until 2017, was collated in an in-depth review of the species and its conservation biology (Kemp, 2017). These research findings and recommendations are incorporated into the relevant sections of this document, and additional ongoing projects added.

#### Long-term datasets of breeding productivity, territory size and group dynamics:

- Kruger National Park (1966 – 2015): Transvaal Museum, FitzPatrick Institute of African Ornithology UCT, Mabula Ground Hornbill Project, Endangered Wildlife Trust.
- Associated Private Nature Reserves: (2002 – ongoing), FitzPatrick Institute of African Ornithology, UCT;
- Limpopo River Valley (2006 – ongoing), Mabula Ground Hornbill Project.

#### Current research projects:

- Breeding productivity and density in an altered mixed mosaic landuse habitat: Melmoth and northern KwaZulu-Natal: (2010 – ongoing): MGHP.
- Breeding productivity and density in an altered/ enhanced savannah complex: Sabi Sands Wildtuin: (2014 – ongoing)- SSW/ MGHP.
- Using cultural value as a conservation tool: Southern KwaZulu-Natal: (2012 – ongoing), MGHP/ Women's Leadership and Training Programme
- Habitat use and cultural value: Southern KwaZulu-Natal: (2017 – ongoing), Univ. of KwaZulu-Natal.
- Impact of climate change of nestling survival/ vocalisations/ social structures within groups - Associated Private Nature Reserves: (2000 – ongoing), FitzPatrick Institute of African Ornithology, UCT.
- Lowveld range-expansion project feasibility study - MGHP/ SANParks/ WITS
- Understanding local extinction of SGH in eSwatini and feasibility of restoration – MGHP/ Univ of eSwatini



## 2.4 SOCIO-ECONOMIC CONTEXT

The species is occasionally reported in traditional medicine markets. Community benefits are the high cultural value of SGH. The most widespread and prevalent value of the species is the belief in their ability to predict, signal or bring the summer rains (Godfrey, 1941; Hockley & Archer, 1966; Vernon, 1974; Kioko et al. 2015; Kuckertz, 1983; Nevill, 1984; Vernon, 1986b; Chiweshe, 1998; Msimanga, 2000; Maasdorp, 2007; Muiruri & Maunda, 2010; Orlove *et al.*, 2010; Koopman, 2011; Simelane, 2011; Brunton & Badenhorst, 2013; Chisadza, Tumbare & Nhapi, 2013; Okonya & Kroschel, 2013; Coetzee, Nell & Rensburg, 2014; Rusinga *et al.*, 2014; Jiri, Mafongoya & Chivenge, 2015), so vital to a subsistence farmers' survival. Accordingly, whole birds, alive or dead, or just some part, such as a feather, are reported to be placed in a riverbed to avert drought and crops are planted 'when the birds call'. This power is believed to be so strong that the live bird, carcass or feather(s) must be removed later from the site, lest floods prevail. Their rain-related powers also extend to being able to avert lightning strikes (Derwent & Mander, 1997; Koopman, 2011; Coetzee, Nell & Rensburg, 2014). Already concern has been expressed, by the people who rely on them for climate prediction (Rusinga *et al.*, 2014), taking the declining population of SGH as a sign of climate change that enabled them to know when it is worth preparing fields.

There is trade in the species, both at a local level for traditional medicine and ritual practise (Anon, 1998; Msimanga, 2000; Kalimira, 2007; Maasdorp, 2007; Bruyns, Williams & Cunningham, 2013; Witteveen *et al.*, 2013; Coetzee, Nell & van Rensburg, 2014), and across international borders for the zoo and aviculture trade (Trail, 2007). Across the range of the species, it has been reported that where cultural practices are respected there is inherent protection for the species (Trail, 2007). However, in areas where cultural taboos are less rigid the species becomes prey to traders and their suppliers, either opportunistically or as directed trade. It is difficult to quantify the scale of trade across the whole range, as the species is not listed by the Convention on International Trade in Endangered Species (CITES) and thus no formal reporting structures exist. Use of body parts is reported at a local scale but trade is reported for formal traditional medicine markets, not for domestic use. A continent-wide analysis found the species to be sold in two countries, in South Africa (Ngwenya, 2001) and Zimbabwe (Maasdorp, 2007; Bruyns, Williams & Cunningham, 2013) but used in a further three (Kenya, Swaziland and Namibia) (Williams *et al.*, 2013). The scale of use reported from a market in western Zimbabwe was very low, but this is a region with strong cultural protection for the species (Bruyns, Williams & Cunningham, 2013). In South African markets carcasses are uncommon, with only 10% of traders stocking parts (Whiting, Williams & Hibbitts, 2011).

## 2.5 CONSERVATION MEASURES

BirdLife International (2014) suggested priority actions that have already been initiated in South Africa, and to some extent in Zimbabwe, to; (i) conduct population surveys and establish monitoring programmes, (ii) begin awareness campaigns to prevent persecution, (iii) identify key stronghold habitats and prevent degradation and research the effectiveness of artificial nest-sites. In South Africa, these actions are in line with priorities drawn from initial stakeholder engagement to ensure sufficient research and action were invested in the species, with a total of 71 research and conservation interventions identified (Morrison *et al.*, 2005). Several have been reiterated as priorities in the SGH Single Species Action Plan (Jordan 2011), with additional actions bringing the total list to 74 interventions. Only 13 have been completed, with 52 still in progress and a further nine still to be initiated.

In South Africa, conservation efforts started in earnest in the late 1990s, when it first became apparent that the species was in serious decline (Theron, Turner & de Waal, 2007). By this stage, basic population parameters and biology were unknown, except for a long-term study in a large protected area, the KNP (Kemp & Kemp, 1980; Kemp, 1988, 1995a; Kemp, Joubert & Kemp, 1989; Kemp & Begg, 1996, 2001). Several conservation strategies were and continue to be tested and implemented, with successful reintroduction (Kemp *et al.*, 2020) and artificial nest hollow (Carstens *et al.*, 2019a) protocols being developed.

Knowledge retention, however, is weak and more emphasis must be placed on scientific support for, and documentation of, decision-making processes, actions and outcomes. In South Africa, of the group that formed the initial stakeholder engagement a decade ago, only six of the original 35 participants are still involved, and insights have been lost due to having insufficient data collection, analysis and storage mechanisms in place. However, this group has been composed of people interested in supporting a future for this species, rather than formal representatives from government structures. The conservation of this species will require a long-term commitment and sustainable programmes supported with both finances and human resources. It will require the development of a 'community of practice' (Cundill, Roux & Parker, 2015) to ensure that the programme is truly able to benefit from the trans-disciplinary community of stakeholders and to be transparently cooperative. It is vital that data, even anecdotal, be accumulated and stored efficiently, and shared widely and transparently.

#### *2.5.1 Development of coordinated conservation for the species*

Conservation efforts for the SGH have until recently been guided by the Southern Ground-Hornbill (*Bucorvus leadbeateri*) Species Recovery Plan for South Africa (Jordan 2011) and largely implemented by the activities of the National SGH Action Group.

##### **National Southern Ground-Hornbill (SGH) Action Group (2001 – 2017)**

This group was formed in 2001 when the dilemma of multiple interests involved in SGH conservation was threatening to derail efforts to recover the species. This grouping was not a constituted group but aimed to coordinate and direct SGH conservation in South Africa, based initially on meetings conducted several times a year, which led to a national Species Recovery Plan compiled by all parties in 2011. Chairpersons are elected for two-year terms: Ann Turner (2001-2010), Kate Carstens (nee Meares) (2010), Andre Botha (2011 – 2012), Lucy Kemp (2012 - ongoing). During this period the 1<sup>st</sup> Population and Habitat Viability Assessment was conducted in 2005.

##### **2005 Population and Habitat Viability Assessment**

SGH conservation was defined by four themes: research into the biology of the species; research into the species' ecological needs; quantification, qualification and mitigation of their threats; and stakeholder education and awareness. A national management plan for SGHs and their savanna habitat in the context of South Africa's National Environmental Management: Biodiversity Act (2004) was a priority, with clear priorities identified for coordinated and focussed conservation. This led to the plan discussed below.

##### **2011 SGH Single Species Recovery Plan**

The main aim of this Recovery Plan is to halt the decline in population size and range contraction of the SGH in South Africa, ultimately to contribute to an increase in numbers and range expansion. Halting the decline in the SGH would result in the return of the species to favourable conservation status and the down-listing nationally from Endangered to Vulnerable or even of Least Concern. However, the SGH has an exceedingly long estimated

generation time (3 generations over 100 years), and so down-listing based upon a short-term halt in the decline would be inappropriate and inconsistent with estimates of decline, which should be based, or projected, over 100 years for Red-listing purposes for this species.

With a review of the Plan, two objectives were completed and four objectives are still relevant and included in this BMP-S:

1. Generate an increase in the SGH population by expanding their occurrence into parts of their historical range, from where it has become locally extinct.
2. Collect information on population threats and mortalities for SGH and determine their importance.
3. Investigate and implement *in-situ* and *ex-situ* management and conservation interventions to increase SGH populations in South Africa, and neighbouring countries that could potentially act as a sink or source for South African birds.
4. Increase awareness of the SGH and the threats acting upon the species, to increase tolerance towards the species and reduce persecution.

#### 2017 Population and Habitat Viability Assessment

In addition to preparing a BMP-S, and relevant to the timeframes of this BMP-S, the immediate priorities defined within the stakeholder process are:

1. Establish a more **formal grouping** of SGH stakeholders than the current Action Group, to ensure swift action on the 2<sup>nd</sup> PHVA recommendations.
2. Roll-out the **monitoring plan** already established for EKZNW across the country, to all relevant provincial and other conservation authorities.
3. Establish a **national poison forum** with other stakeholders, to address wildlife poisoning interventions beyond those focused on ground-hornbills.
4. Fully support the **national lead task team** to address lead toxicosis beyond efforts focused on SGH.
5. Characterise, encourage and expand **cultural protection** as it is currently manifested in South Africa.

#### 2.5.2 Working Group colloquially known as the Thunderbird Task Team (2018 – ongoing)

This group facilitates and coordinates the implementation of the outcomes and activities emanating from the 2<sup>nd</sup> PHVA and supporting actions for this BMP-S. This group will support the SGH BMP-S Steering Committee in coordinating the activities of the BMP-S, assisting implementation and facilitating accountability of the implementing agencies, by their annual reporting requirements.

Objectives and responsibilities:

- Establish a central repository for data and relevant information;
- Facilitate and implement data sharing between different parties;
- Perform a coordinating function to reduce the duplication and overlap of work/research;
- Perform a conflict management function between different stakeholders;
- Review and monitor the outcomes of the PHVA (or as defined within the BMP-S);
- Create a platform for prioritising research;

- Facilitate partnerships between stakeholders, and find relevant new stakeholders;
- Support and review funding initiatives; and
- Implement adaptive management (monitoring and evaluation) to ensure a positive feedback loop.

### 2.5.2 Current conservation tools

1. **Artificial nests:** these have been tested and found to be a viable conservation tool, with a marked increase in the number of chicks fledging into a study area if the density of nest provision is considered (Carstens, 2019).
2. **Harvest of redundant chicks from wild nests:** the harvest of second-hatched chicks that would naturally die in the wild, and are therefore redundant and their harvest has no negative impact on the remaining wild population (Carstens 2017; Combrink *et al.* in press). There is no reduction in fitness in these doomed chicks (Kemp, Kemp & Turner, 2007; Kemp, 2017). These chicks thus form the basis of the stock for captive breeding and reintroductions.
3. **Reintroductions:** This has been trialled as a conservation tool, and after a decade of experimental reintroductions, is a viable tool for growing sub-populations where the species has become extinct within its historical range, so long as full new groups are created, rather than augmentation of individuals into existing groups (Kemp *et al.*, 2020).
4. **Ex-situ management:** A small *ex-situ* population is managed as a PAAZA African Preservation Programme, with a studbook.
5. **Education campaign for behaviour change:** An education outreach campaign is conducted in areas where SGH persist beyond the borders of national parks, within protected areas, but also in areas where the SGH have become locally extinct and must be re-introduced to the communities as well as the landscape. The campaign is based on the Connect-Understand-Act model. (Squires, Lowry & Banks, 2016) and the community-based social marketing model (Asah & Blahna, 2013).
6. **Custodianship:** The MGHP works with individual landowners to mitigate threats and protect groups at a territory and nest-site level, in turn recognising and promoting their commitment to a future for SGH.

## 2.6 CONSERVATION STATUS AND LEGISLATIVE CONTEXT

### 2.6.1 International obligations

#### 2.6.1.1: African Convention for the Conservation of Nature and Natural Resources

In 1969, before any reports of declines, the Organisation of African Unity (OAU) signed the African Convention for the Conservation of Nature and Natural Resources, under which both *Bucorvus* ground-hornbill species are fully protected by national laws of signatory states (of which South Africa is one) from any hunting, killing, capture or collection as an Annex 1, Class A species (Burhenne, 1970).

#### 2.6.1.2 The Convention on Biological Diversity (CBD)

South Africa is a Party to the CBD. Parties to the CBD adopted the Strategic Plan for Biodiversity 2011-2020, in 2010 in Nagoya, Japan, to inspire broad-based action in support of biodiversity over the following decade by all countries and stakeholders. In recognition of the urgent need for action, the United Nations General Assembly also declared 2011 - 2020 as the United Nations Decade on Biodiversity. The Strategic Plan is comprised of a shared vision, a mission, strategic goals and 20 targets, and serves as a framework for the establishment of national and regional targets, promoting the three objectives of the CBD. The development and implementation of this BMP-S address **Strategic Goal C: Improve the status of biodiversity by safeguarding ecosystems, species and genetic diversity**. This BMP-S specifically aims to contribute to Target 12: By 2020 the extinction of known threatened species has been prevented and their conservation status, particularly to those in decline, has been improved and sustained. This target specifically related to IUCN-listed threatened species and has two components:

- Preventing extinction: those species that are currently threatened do not move into the extinct category; and,
- Improving the conservation status of threatened species: Improved conservation status would entail a species increasing in population to a point where it moves to a lower threat status. Progress towards this target would help reach other targets contained in the Strategic Plan, including Target 13. Further actions taken towards this target could also help to implement commitments related to the species-focused multilateral agreements such as CITES (CBD 2013).

#### 2.6.1.3 The World Heritage Convention

The World Heritage Convention is a Convention concerning the protection of the world's cultural and natural heritage. It provides for the identification, protection and preservation of cultural and natural heritage, including the habitats of threatened species around the world considered of outstanding value to humanity. Countries submit places for designation under the World Heritage List. SGH is known to now occur in two South African World Heritage Sites: the Mapungubwe Cultural Landscape and Maloti-Drakensberg Park, and were historically recorded for the iSimangaliso Wetland Park and Barberton Makhonja Mountains.

#### 2.6.1.4 IUCN Red List

The species is listed as globally Vulnerable but Endangered in South Africa, Lesotho, Swaziland, and Namibia; (BirdLife International, 2018).

#### 2.6.1.5 Lusaka Agreement

Although not one of the seven Parties that have formally ratified the Agreement, South Africa is one of three other countries that are signatories to the Lusaka Agreement (1996). The Lusaka Agreement is a treaty between many African nations that seeks to “reduce and ultimately eliminate illegal trade in wild fauna and flora and to establish a permanent Task Force for this purpose.”

### 2.6.2 National legislation

#### 2.6.2.1 National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004) – (NEMBA)

NEMBA gives effect to the constitutional commitment to take reasonable legislative measures that promote conservation by providing for the management and conservation of biological diversity and the sustainable use of indigenous biological resources. Chapter 3 provides for the planning and monitoring of biodiversity. Sections 43 (1)(b) and (c) provide for any person, organisation or organ of state, desiring to contribute to biodiversity management, to submit to the Minister for approval a draft BMP-S for an indigenous or migratory species warranting special conservation attention. Section 44 empowers the Minister to enter into an agreement with any person, organisation or organ of state for the implementation of a BMP-S.

Concerning the regulation of restricted activities involving SGH, NEMBA further empowers the Minister in terms of:

- Section 56, to publish, by notice in the Gazette, a list of critically endangered species, endangered species, vulnerable species or protected species;
- Section 57, to:
  - regulate the carrying out of restricted activities involving a listed threatened or protected species or a CITES-listed species using a permit,
  - prohibit the carrying out of a restricted activity involving a listed threatened or protected species, if such activity harms the survival of the species, or
  - exempt a person from the requirement of a permit concerning a listed threatened or protected species or a CITES-listed species.

NEMBA further enables the issuing authority in terms of section 88(2)(e) to defer a decision to issue a permit or, in terms of section 92(a) to refuse a permit, in terms of section 93 to cancel a permit, or in terms of section 93B to suspend a permit, in certain circumstances.

#### **2.6.2.2 National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004): Threatened or Protected Species (ToPS) Regulations, 2007**

The ToPS Regulations, 2007, promulgated in terms of NEMBA came into force in February 2008. The regulations provide for the protection of species that are threatened or in need of protection to ensure their survival in the wild and give effect to the Republic's obligations.

A permit is required for a person to carry out a restricted activity concerning SGH. These restricted activities include hunting, capturing, killing, importing or exporting into or from South Africa, having in possession or exercising physical control over any SGH; breeding, translocating, moving, selling, donating or accepting any SGH or any of its products or derivatives as a gift. It is compulsory in terms of the ToPS Regulations for the owner of a sanctuary, breeding facility, commercial exhibition facility, or for a wildlife trader to register his/her facility. However, the registration does not authorize the carrying out of any restricted activity; the afore-mentioned persons thus still need to obtain the relevant permit issued in terms of Chapter 7 of NEMBA.

#### **2.6.2.3 National Environmental Management: Protected Areas Act, 2003 (Act 57 of 2003) (NEMPAA)**

NEMPAA provides for the protection and conservation of ecologically viable areas representative of South Africa's biodiversity and natural landscapes and seascapes in protected areas. Protected areas in South Africa offer a viable tool for habitat protection and the protection and maintenance of ecologically viable numbers of SGH and their

associated species and habitats.

#### 2.6.2.4 Income Tax Act No. 58 of 1962

Section 37C(1) makes provision for a tax deduction of conservation and maintenance expenditure for qualifying taxpayers where a BMA has been concluded in terms of a BMP for a duration of at least five years. BMAs will have and Annexure specific to the species, detailing the key actions that can be conducted by the Implementer of the BMA, based on the BMP for the species or ecosystem. A BMA annual report is required to confirm that key actions detailed in the Annexure have been conducted.

#### 2.6.3 Other relevant South African legislation

Apart from the National Environmental Management Act No. 107 of 1998 (NEMA), its related Specific Environmental Management Acts and the nine provincial conservation acts/ordinances are the regulatory instruments for the regulation of animal species in South Africa, noting that nature conservation is a concurrent national and provincial mandate. Supporting decision-making instruments include National Norms and Standards and Provincial Conservation and Regulatory Policies.

Province	Provincial legislation
Gauteng (including KwaNdebele and Bophuthatswana)	Listed as Protected Game (Schedule 2) and Wild Animals to which the provisions of section 43 apply (Schedule 5), in terms of the Nature Conservation Ordinance, 12 of 1983  <i>Gauteng Nature Conservation Ordinance, 1983 (2005 amendment); Gauteng Nature Conservation Act, 2014.</i>
Limpopo (including Venda and Gazankulu) and Lebowa	Listed as a Specially Protected Wild Animal (Schedule 2) in terms of the Limpopo Environmental Management Act, 7 of 2003; Limpopo Environmental Management Act, 2003  <i>Limpopo Nature Conservation Ordinance, 1983 – Limpopo Environmental Management Act, 2003; Gazankulu Nature Conservation Act, 5 of 1975, Venda Nature Conservation Act, 10 of 1973.</i>
North West (including Bophuthatswana and Lebowa)	Listed as Protected Game (Schedule 2) and Wild Animals to which the provisions of section 43 apply (Schedule 5), in terms of the Nature Conservation Ordinance, 12 of 1983.  <i>Cape Nature Environmental Conservation Ordinance, 19 of 1974; North West Nature Conservation Ordinance, 1983; Bophuthatswana Nature Conservation Act, 1973; Lebowa Nature Conservation Act, 1973, and tribal rule.</i>
Mpumalanga (including Gazankulu and KaNgwane)	Listed as Protected Game (Schedule 2) in terms of the Mpumalanga Nature Conservation Act, 10 of 1998  <i>Mpumalanga Ordinance, 1983 - Mpumalanga Nature Conservation Act, 10 of 1998; Mpumalanga Nature Conservation Act Regulations 1999; Mpumalanga Nature Conservation Policy 2004.</i>

Free State (including Qua Qua)	Listed as Protected Game (Schedule 1) Section 2, in terms of the Nature Conservation Ordinance, 8 of 1969.  <i>Free State Nature Conservation Ordinance, 8 of 1969; Qua Qua Nature Conservation, 5 of 1976; Nature Conservation Regulations 1983</i>
KwaZulu-Natal (incl. Kwazulu)	Specially protected in terms of the Nature Conservation Ordinance, 15 of 1974  <i>KwaZulu Nature Conservation Act, 29 of 1992 - KwaZulu-Natal Nature Conservation Management Act, 9 of 1997; Natal Nature Conservation Ordinance, 15 of 1974, as amended; KwaZulu Nature Conservation Act, 8 of 1975; KwaZulu-Natal Environmental, Biodiversity and Protected Areas Management Bill, 2014.</i>
Northern Cape (including Bophuthatswana)	Listed as a Protected Wild Animal (Schedule 2) in terms of Nature and Environmental Conservation Ordinance, 19 of 1974  <i>Northern Cape Nature Conservation Ordinance, 19 of 1974</i>
<b>Eastern Cape</b> (incl. Ciskei and Transkei)	Listed as a Protected Wild Animal (Schedule 2) in terms of the Cape Nature and Environmental Conservation Ordinance, 19 of 1974.  <i>Eastern Cape Nature Conservation Ordinance, 19 of 1974; Nature Conservation Regulations 955 of 1975; Ciskei Nature Conservation Act, 10 of 1987; Transkei Decree 9 of 1992.</i>
Western Cape	Listed as a Protected Wild Animal (Schedule 2) in terms of the Western Cape Nature Conservation Laws Amendment Act, 3 of 2000  <i>Western Cape Nature Conservation Ordinance, 19 of 1974; Western Cape Nature Conservation Regulations 955 of 1975; Western Cape Nature Conservation Board Act, 15 of 1998; Western Cape Nature Conservation Laws Amendment Act, 3 of 2000; Western Cape Biodiversity Bill 2019.</i>



Other Acts, such as the Animals Protection Act, 71 of 1962 as amended, which regulates animal welfare in South Africa is also applicable to wildlife. The Animal Health Act, 7 of 2002, Animals Diseases Act, 35 of 1984, Medicines and Related Substances Control Act, 101 of 1965, and the Animal Matters Amendment Act, 42 of 1993, which all fall within the jurisdiction of the Department of Agriculture, Forestry and Fisheries, may also prove relevant to SGH conservation as they play a significant role in veterinary care of animals, as well as their translocation.

### 3. PLANNING FRAMEWORK

#### 3.1 THE PLANNING CONTEXT

The SGH BMP-S has a logical structure with a 5-year time horizon. The plan has a long-term vision and a shorter-term conservation goal covering the period of this plan. By achieving the short-term goal, progress will be made towards realising the longer-term vision. To achieve this a combination of the IUCN Guidelines for Species Conservation Planning and the Guidelines contained in the Norms and Standards for BMP-S were also used. Focus on addressing anthropogenic threats was used to guide workshop processes. Each of the steps required by the Norms and Standards for BMP-S was followed.

#### 3.2 KEY ROLE PLAYERS

Key role players and stakeholders in the conservation management of SGH are the following:

- Those government departments and agencies (at a national, provincial and local level) that have been mandated in terms of legislation, to protect this species, and to implement the actions identified in this plan to ensure the long-term survival of this species in the wild.
- Other government departments and agencies involved in regulating activities that may impact on achieving the conservation objective for the species.
- Private landowners (commercial farmers, wildlife ranchers);
- Communal land managers (Traditional authorities/ councils);
- Researchers and research institutions involved with research relevant to the species.
- Non-governmental organisations, at both a national and international level providing funding for management implementation, research, students and projects.
- Organisations that are involved in developing and implementing various aspects of the SGH BMP- S.

#### **National Government and Conservation Agencies**

Department of Forestry, Fisheries and the Environment (DFFE)  
South African National Biodiversity Institute (SANBI)  
South African National Parks (SANParks) Department of Energy (DE)  
National Development Agency (NDA), and  
Department of Rural Development and Land Reform (DRDLR)

#### **Provincial Government Departments and Conservation Agencies**

Eastern Cape Department of Economic Development, Environmental Affairs and Tourism (EC/D DEDEAT)  
Eastern Cape Parks and Tourism Agency (ECPTA)  
CapeNature (facilitation)  
Gauteng Department of Agriculture and Rural Development (GDARD)

	Limpopo Department of Economic Development, Environment and Tourism (LEDET) Mpumalanga Tourism and Parks Agency (MPTA) Ezemvelo KZN Wildlife (EKZNW), and State Veterinary Services
<b>Higher Education Institutions</b>	University of the Free State (UFS) University of Cape Town (UCT) University of KwaZulu-Natal (UKZN) University of Limpopo (UL) University of Pretoria (UP), and University of the Witwatersrand (WITS)
<b>Captive institutions</b>	Montecasino Bird Gardens Johannesburg Zoo Umgeni River Bird Park Hoedspruit Endangered Species Centre Zaagkuilsdrift Bird Sanctuary Ubhetyana-o-Africa Lory Park, and National Zoological Garden of South Africa (NZG)
<b>Non-Government</b>	BirdLife South Africa (Birdlife SA) Children and Nature Conservation Trust Zimbabwe Mabula Ground Hornbill Project (MGHP) Endangered Wildlife Trust (EWT) Wildlife Ranching South Africa (WRSA) South African Hunters and Game Conservation Association (SAHGCA) Women's Leadership and Training Programme (WLTP) Pan-African Association of Zoos and Aquaria (PAAZA) National Wildlife Poison Prevention Working Group (NWPPWG), and Lead Task Team (LTT)
<b>Other</b>	Sabi Sands Wildtuin (SSW) Associated Private Nature Reserves (APNR) Private game reserves ESKOM Municipalities

### 3.3 STAKEHOLDER ENGAGEMENT

Identified interested and affected parties were invited to participate in the initial SGH BMP-S workshop via e-mail in January 2018 (see Appendix A for the invitation). The list of participants and provisional agenda for the workshop is attached as Appendix B, and includes experts on SGH, representatives of conservation management agencies, representatives of wildlife ranching and hunting associations, private landowners and researchers (many of whom also participated in the 2<sup>nd</sup> PHVA workshop in 2017).

Invitees were requested to participate in the workshop to facilitate the drafting of a BMP-S for SGH and were also requested to recommend additional stakeholders who they thought could contribute to the proposed workshop.

The Stakeholder Workshop was held on 15 - 17 May 2018. The workshop included presentations on the current state of knowledge for SGH. The group as a collective developed the Desired State and identified the key threats to the long-term survival of SGH in nature. Break-away groups led by designated facilitators then compiled objectives and action plans for each threat. The proceedings of the workshop were used to compile the draft BMP-S for SGH. This draft was compiled by MGHP with an editing committee from PFIAO, Cape Nature, BirdLife SA, EWT and SANBI.

MGHP was tasked to further lead four workshops to ensure full inclusivity before the adoption of a strategy based on the outcomes of the BMP-S workshop and to contribute to developing mechanisms to enable the achievement of the objectives of the BMP-S (see appendix C for invitee list and attendance register). Once the draft was completed it was circulated to all participants for comment, before being submitted to the DFFE for gazetting for public participation (for a minimum of 30 days). Stakeholders involved in the initial workshop were provided with the draft SGH BMP-S, and encouraged to provide further inputs via the public participation process to be included in the final draft, to ensure transparency. The final draft of the plan, once approved by DFFE, will be compiled and submitted, within 90 days of receipt of comments, to the Minister for approval.

### 3.4 RELEVANT AGREEMENTS

Taking the implementation of this BMP-S forward, the key role players have all accepted their various roles and responsibilities and consider the plan to be a document binding them to these. As such, additional agreements are not required, although it will be necessary to monitor implementation very carefully and introduce relevant agreements where these are deemed necessary. The basis of future inter-agency cooperative agreements will be defined by the Terms of Reference of membership of Project Thunderbird and additional formal Memoranda of Understanding and/or protocols between agencies to tackle sub-objectives that may be required.

In addition to the literature cited in the references below, the following are also relevant:

- NEMBA (Act No.10 of 2004)
- Provincial Conservation Legislations
- Norms and Standards for BMP-S (March 2009)
- TOPS

### 3.5 IDENTIFICATION OF LEAD AND IMPLEMENTING AGENCIES

SANBI is proposed as the overall lead agency for the SGH BMP-S, and the workshop identified additional implementing agencies (government agencies e.g., SANParks), and collaborators (NGOs and other stakeholders) for the respective actions under each Objective Target. The workshop and all stakeholders present concluded and reached consensus on all identified actions under each objective target. It should be noted that although EC DEDEAT, KZN EKZNW and LEDET could not attend the original workshop MGHP took individual workshops to each of these provinces, and to SANParks, to ensure action plans were developed with their consensus, input and comments. This exercise informed further discussion and final agreement on who the respective lead and responsible agencies are, as well as the collaborators.

### 3.6 VERIFICATION FOR QUALITY OF CONTENT AND CONTEXT

The BMP-S has been compiled with input from other stakeholders including relevant specialists in the field. The process was overseen by DFFE. This document is also based on the recommended actions from the Single Species Recovery Plan and Population and Habitat Viability Assessment. To ensure this is done adequately, the expert review was sought and was reviewed by Dr Alan Kemp for verification of the quality of content and context.

Dr Alan Kemp started studying hornbills in the KNP as a postgraduate student in 1966, but from 1972 focused his attention entirely on the SGH. From then, until he retired from the Bird Department of the Transvaal (now Ditsong) Museum of Natural History in 2001, he continued long-term data collection and conducted several auxiliary projects on the SGH (35 years). During this time, he developed a wider interest in the conservation biology of hornbills, especially the SGH. By 1999, as he was closing his research projects, he initiated an effort to raise, release and breed redundant second-hatched chicks that could be harvested with no impact on the wild parent populations. This expanded into an NGO, the MGHP that now has a national footprint and primary leadership role in the conservation of this species, and which extends across the SGH's total range in subequatorial Africa. His original studies on the SGH identified several of the basic information, principles and approaches that are now being applied to conservation of the SGH, and he has relished keeping up with the numerous new studies, discoveries, techniques, ideas, conferences, theses and publications that have resulted or are underway. He is registered as a Natural Scientist with SACNASP, in the fields of Zoology and Ecology. Before he retired, he started an IUCN SSC Hornbill Specialist Group, which Dr L Kemp has revived and is now the African co-chair. He was the editor of the ornithological journal *Ostrich* (now *African Journal of Ornithology*) for three years and further developed his editorial and critical skills over the years by refereeing articles for various scientific journals, examining post-graduate theses (MSc., PhD.) and helping non-English speakers (Afrikaans, Thai) with drafting their research. He has also prepared and published several books on hornbills and birds of prey, including for Oxford University Press.

## 4. BIODIVERSITY MANAGEMENT PLAN

### 4.1 LEAD AND IMPLEMENTING AGENCIES

#### 4.1.1 Lead agency

SANBI is proposed as the lead agency, supported by DFFE and the Thunderbird Task Team.

#### 4.1.2 Steering Committee

The Thunderbird Task Team (TTT) should become formalised as the SGH BMP-S Working Group but remain known as the TTT; and a steering committee can be proposed from within this group to oversee administration, governance, and implementation.

#### 4.1.3 Implementing Agencies

DFFE	Regulation, monitoring, evaluation and annual reporting
SANParks	Population monitoring, reporting, legislative oversight, education and awareness, permits, research
ECPTA	Population monitoring, reporting, legislative oversight, education and awareness, permits, research
EC DEDEAT	Population monitoring, reporting, legislative oversight, education and awareness, permits, research
SANBI	Coordination of implementation, research, monitoring, reporting and research facilitation
MPTA	Population monitoring, reporting, legislative oversight, education and awareness, permits, research, rearing.
LEDET	Population monitoring, reporting, legislative oversight, education and awareness, permits, research
EKZNW	Population monitoring, reporting, legislative oversight, education and awareness, permits, research
GDARD	Permits
DE	Education and awareness
DALRRD	Reporting, education and awareness, permits, research
SAVC	Veterinary reporting and research

#### 4.1.4 Collaborating Agencies

MGHP	Population management, monitoring, research facilitation and reporting
BirdLife SA	Transformer box mitigation: BirdLife South Africa/ ESKOM/ Education materials
WLTP	Community liaison and training
SAHGCA	Awareness, custodianship
WRSA	Awareness, custodianship

PAAZA and all captive facilities	Captive-breeding for reintroduction and current captive stock for education.
NWPPWG	Policy change, awareness, outreach, advocacy
EWT	Research
HEIs	Research (committee to approach various HEIs with project proposals)
Private game reserves	Awareness, custodianship

**4.1.5 Relevant agreements**

There is formal inter-agency agreement as far as the conservation of SGH is concerned between the PFIAO and MGHP, and research agreements between MGHP and SANParks. Implementing agencies will formalise governance responsibilities as assigned with provinces. A Memorandum of Understanding is in place between MGHP and BirdLife SA, with MGHP being a BirdLife SA Species Guardian for the population management, monitoring, research facilitation and reporting of SGH in South Africa.

**4.2 IDENTIFIED THREATS AND CHALLENGES**

Threats were defined according to the Conservation Measures Partnership’s Open Standards for the Practice of Conservation. The threats are then listed in order of priority from the greatest perceived risk to the population to the lowest (which it must be noted is still considered a considerable threat to the population).

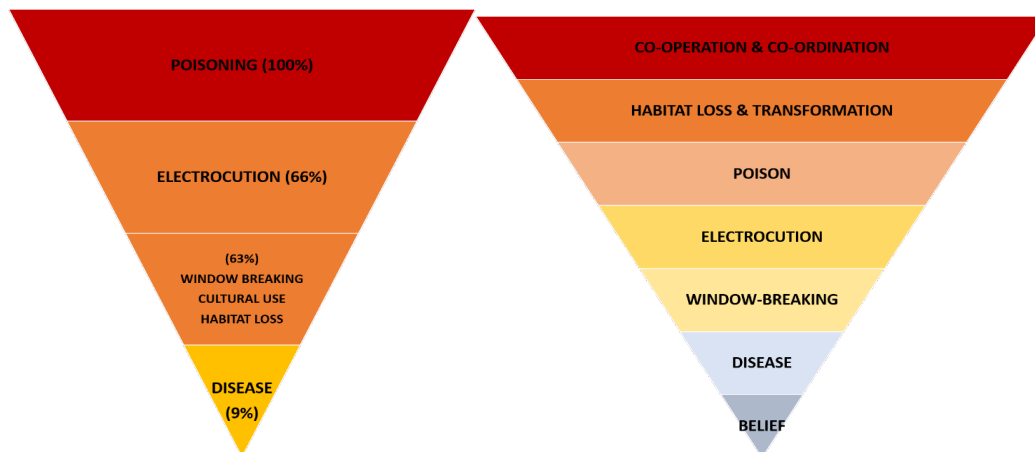


Figure 10.a) the prioritisation of threats by prevalence amongst participant concerns and b) prioritisation after discussion and analysis of scope, severity, irreversibility.

#### 4.2.1 THREAT: Poisoning

SGH are faunivorous and scavenge, particularly on smaller prey items, and therefore will ingest meat that may contain poisons, which can lead to severe illness or mortality of individuals or multiple members within the same group. A review, using all existing poisoning data, highlighted what land-use types pose a higher poisoning threat to SGH (Table 1) and, which chemicals are implicated (Table 2). Indirect methods of poisoning include:

- Incorrect/off-label/illegal use of agrochemicals/pesticides by livestock and game ranchers who deliberately lace carcasses with toxins to remove predators (i.e., jackal, hunting dogs), which leads to secondary poisoning of scavenging SGH.
- Domestic use of pesticides that are then ingested as secondary poisoning by SGH (i.e., rodenticide, Red-billed Quelea control). Use of veterinary drugs in livestock, which is then ingested by SGH through the consumption of meat or faeces.
- Ingestion of any offal or winged or injured prey after a hunt, where spent lead ammunition or its fragments may be present leading to lead toxicosis.

It is not just the risk of mortality, but the sub-lethal effects of poisons on the health and survival prospects of SGH after ingestion.

Table 1. Relative risks of poison to SGH according to habitat use and behaviour (from Kemp & Verdoorn, 2013).

HABITAT USED	RISK				POSSIBLE EVENTS
	Very high	High	Med.	Low	
Natural: minimal management	?			X	Deliberate: damage caused by SGHs
Natural: significant management	?	X			Secondary: predator poisoning, rodenticide
Agricultural: crop production			?	X	Accidental: spray drift with resultant poisoned prey and uncontrolled Red-Billed Quelea control
Agricultural: extensive livestock			X		Accidental: predator poisoning, disused dip tanks
Agricultural: mixed crop & livestock			X		Accidental: spray drift, predator poisoning, disused dip tanks
Agricultural: mixed livestock & game			X		Accidental: predator poisoning, disused dip tanks
Communal: pastoral livestock				X	Accidental: disused dip tanks
All areas			X		Toxic effluents in natural water bodies

Table 2 Chemical agents identified as a risk to SGH per poisoning type (from Kemp &amp; Verdoorn, 2013).

Event/Chemical agents	Al	Ca	NF	Me <sup>1</sup>	EG	Ox	Me <sup>2</sup>	Pa	CP	CF	Fe	CY	OT	Pb
Predator poisoning														
Deliberate SGH poisoning														
Crop production														
Red-billed Quelea control														
Disused dip tanks														
Water pollution														
Spent lead ammunition available to scavengers														

Key: Al = aldicarb, Ca = carbofuran, NF = 1080, Me<sup>1</sup> = methomyl, EG = ethylene glycol, Ox = oxamyl, Me<sup>2</sup> = methamidophos, Pa = parathion, CP = chlorpyrifos, CF = chlorfenvinphos, Fe = fenthion, CY = cyanophos, Pb = lead, OT = others (Clostridium, heavy metals, acids, organochlorines)

<b>Type of Poisoning</b>	Lead toxicosis	Off-label / illegal acquisition and use of agrochemicals	Secondary poisoning
<b>Scope</b>	All areas where shooting using lead ammunition occurs	National scale	National scale
<b>Severity</b>	High in affected areas	High – nationally available even in most rural areas	High
<b>Irreversibility</b>	High	High	High
<b>Summary Threat Rating</b>	<b>65</b>	<b>65</b>	<b>65</b>
<b>Comments</b>	<p>South Africa is a signatory to the AEWCA CMS requirement to reduce lead use.</p> <p>Lead Task Team of the WPPWG</p> <p>A large body of literature showing risks to both human and avian ingestion of lead.</p> <p>Provincial nature conservation removes lead ammunitions from culling and hunting operations.</p>	Enforcement and awareness required.	Awareness, legislation required and development of new and improved substances, greater engagement with the veterinary fraternity and the WPPWG.



#### 4.2.2 THREAT: Cultural use

SGH is culturally revered throughout their range, however, this cultural belief system relies on some offtake from the SGH population. Currently, due to legislation protecting the species, any offtake without a permit is considered illegal and with current population estimated no offtake can be considered sustainable, other than harvest of second-hatched chick.

<b>Threat</b>	Illegal offtake for medicinal use	Illegal offtake in times of drought
<b>Scope</b>	Low (<5%)	Low (<5%)
<b>Severity</b>	Low (<5%)	Low (<5%)
<b>Irreversibility</b>	100%	100%
<b>Comments</b>	All current literature suggests low numbers of carcasses being found in traditional markets, engagement with communities	Only occurs in times of drought, ritual only performed by specific members of the communities, impossible to generalise belief systems across areas (feathers, carcass, live staked bird, sweat), very powerful if not managed will cause floods. Differences in belief structure have different effects on SGH population dynamics and persistence.
	suggests offtake is opportunistic.	Without this importance, it is unlikely these birds would have persisted across KZN and the Eastern Cape. At what level is offtake sustainable or what segment of the population?

\* Surveillance for novel/ imported threats

#### 4.2.2 THREAT: Persecution for window-breaking

SGH are actively persecuted for breaking windows (Vernon 1986; Kemp 1995; Maasdorp 2007b; Forsberg 1994), and occasionally for predation on poultry. These birds will attack their reflections in windows (Oatley, 1967; Vernon, 1982; Forsberg, 1994) or shiny reflective surfaces (such as metallic coloured vehicles), which results in broken window panes, often in large quantities as they move from pane to pane. This puts the whole group at risk of injury from broken glass but also leads to intense conflict with humans. Persecution by irate land-owners or communities leads to direct mortality or reduced productivity, with confirmed reports of a community burning the resident SGH group's nest (Blouberg, Limpopo) due to window-breaking at a local school, or stoning a nest causing abandonment, again due to broken windows at the nearest school (Melmoth, KwaZulu-Natal). This behaviour is universal and reported from across their range. Mitigation to prevent them from seeing their reflections is the only way to reduce the human-wildlife conflict, with a temporary and cheap solution using a solution of wood ash or paint on the panes (Chiweshe, 2007) and a more permanent one using perforated one-way-vision vinyl film, though a high-end, attractive solution is yet to be sourced for lodges and the like (MGHP unpublished data). Experiments in the use of commercial acoustic bird-scarers failed (MGHP unpublished data).

<b>Threat</b>	Persecution for window-breaking
<b>Scope</b>	No scientific data are available other than that it is widespread.
<b>Severity</b>	Damage is high and actual persecution is moderate at most, probably 5% of the population in South Africa, however within this group severity is high.
<b>Irreversibility</b>	Low – if 5% of the population is killed every year it will take time to reverse the situation.
<b>Comments</b>	Variation in geographical area risk is relative to cultural beliefs and attitudes to use mortal response or not.

#### 4.2.3 THREAT: Disease

The species has shown susceptibility to Newcastle Disease and very likely also Avian Influenzas. These diseases may enter wild populations due to naturally occurring outbreaks or due to poor biosecurity by the poultry industry. However, as the species readily coexist in rural communities, subsistence farming also poses a risk, especially as dead stock is more likely to be disposed of improperly.

<b>Threat</b>	Disease
<b>Scope</b>	Low known threat; potentially high - two cases of individual birds (NW Province)
<b>Severity</b>	Individual to the group level

<b>Irreversibility</b>	It is 100% reversible, with identification of the prevalence and vaccination (orally), however, it is not treatable.
<b>Comments</b>	Two positive reports in NW Province, risk to reintroduced birds because they are captive-reared. Difficult to recover carcasses from NCD mortalities. It may be difficult to vaccinate wild birds, and it is not known how many repeat booster applications are needed. However, vaccines may be possible in the future.

#### 4.2.6 THREAT: Electrocution

The emerging threat posed by energy provision (e.g. transformer boxes) and energy generation (e.g. wind farms) infrastructure, through 1) electrocution and 2) potential collision.

Who: Utility companies (e.g. Eskom, municipalities) and Independent Power Producers (IPPs).

Why: The need to expand/increase energy infrastructure equals an increased risk to birds, which could lead to either death or injury.

Threat	Transformer boxes	Distribution poles	Powerlines	Wind turbines
<b>Scope</b>	Moderate	Low	Low	Unknown
<b>Severity</b>	Moderate	Low	Low	Unknown
<b>Irreversibility</b>	Very high	Very high	Low	Unknown
<b>Comments</b>	Changing infrastructure would benefit the species; further research required to quantify the threat (modelling of many transformer boxes over distribution range of species). Central incidents register (Eskom-EWT Partnership).	Personal observations; no reported records in Central incidents register (Eskom-EWT Partnership). Changing infrastructure would benefit the species.	Personal observations; young birds landing on powerlines; collision risk: one collision recorded on Central incidents register (Eskom-EWT Partnership).	Knowledge gap on potential collision or flying at risk height; Species-specific guidelines to be developed for SGH; turbine; Improve monitoring protocol to influence turbine placement; tracking to determine flight height (altitude) (GPS or satellite transmitters); test avoidance behaviour; territorial display could potentially be mitigated through shutting down on-demand of turbines; monitoring of the use of habitat under turbines through field observations; ; then model overlap between wind resource and species' distribution range to assess the potential threat of wind turbines to species in South Africa.

#### 4.2.7 THREAT: Habitat loss and fragmentation

SGH require vast expanses of suitable habitat to forage and to breed successfully (SGH in South Africa have displayed home ranges of up to 250 km<sup>2</sup>). They also have a specific set of habitat requirements/parameters to

persist (10 – 40 % bush cover etc.).

The total loss of critical core SGH habitat across southern Africa has been directly associated with range decreases in the species. Much of this is irreversible (urbanisation and industrialisation) and closely linked with the precipitous human population increases and expansion in Africa. Another major threat is the alteration and fragmentation of suitable habitat linked with land-use changes and management practices (livestock, fire etc.) Although some groups have been able to survive in some transformed/degraded landscapes, this habitat is largely unusable to the species.

Threat	Habitat loss	Habitat degradation/alteration and fragmentation	Loss of nesting and roosting sites
	Complete irreversible loss of habitat.	<ul style="list-style-type: none"> <li>• Monoculture</li> <li>• Land-use changes</li> <li>• Pollution</li> <li>• Bush encroachment/alien invasive plant species</li> <li>• Land management practices</li> <li>• Agricultural infrastructure (i.e. dip tanks)</li> </ul>	<ul style="list-style-type: none"> <li>• Elephants</li> <li>• Removal of large forestry trees</li> <li>• Collection of large dead hollow trees for firewood</li> </ul>
Scope	High (<75%)	Very High (<80%)	Low
Severity	High	High	Low - medium
Irreversibility	Very low/not possible (0-5%)	Medium	Low
Comments	Urbanization and development	May be potential to manage and improve land-use changes and management practices to restore suitable habitat for SGHs.	Artificial nests can be built and supplied. Further research required to understand the importance of roost sites.

#### 4.2.8 CHALLENGE: To implement nation-wide monitoring

Participants were concerned that it is difficult to census such a species occurring at a naturally low-density. This would lead to uncertainty about the value of conservation action or surveillance for localised declines. However, the proposed monitoring plan developed by MGHP and EKZNW, as accepted at the 2<sup>nd</sup> PHVA in 2017, was presented and again accepted as a valid, low-cost manner of nation-wide population monitoring. See Appendix F for the access to the monitoring plan.

#### 4.2.9 CHALLENGE: Insufficient communication between agencies involved in SGH research and conservation and various government agencies (both national and provincial)

This was raised as a challenge since the 1<sup>st</sup> PHVA (2005) and again at the 2<sup>nd</sup> PHVA (2017), that there was a need for greater communication, coordination of activities and the dissemination and sharing of information.

#### 4.2.10 CHALLENGE: Capacity constraints

Capacity constraints may be a challenge and agencies must indicate if this is so for in their response to DFFE when receiving their letters requesting implementation.

### 5. ACTION PLAN AND MONITORING FRAMEWORK

The SGH BMP-S incorporated the IUCN-SSC framework for conservation planning (see Fig. 11) and was used to guide stakeholder engagement and planning workshops to define the objectives, and the actions to achieve the collaboratively defined desired state. These actions, as identified for each objective, will need to be implemented by the identified lead and implementing agencies, to mitigate the identified threats (habitat loss, poisoning, electrocution, disease, and belief-based off-take) and challenges (effective communication and collaboration among stakeholders).

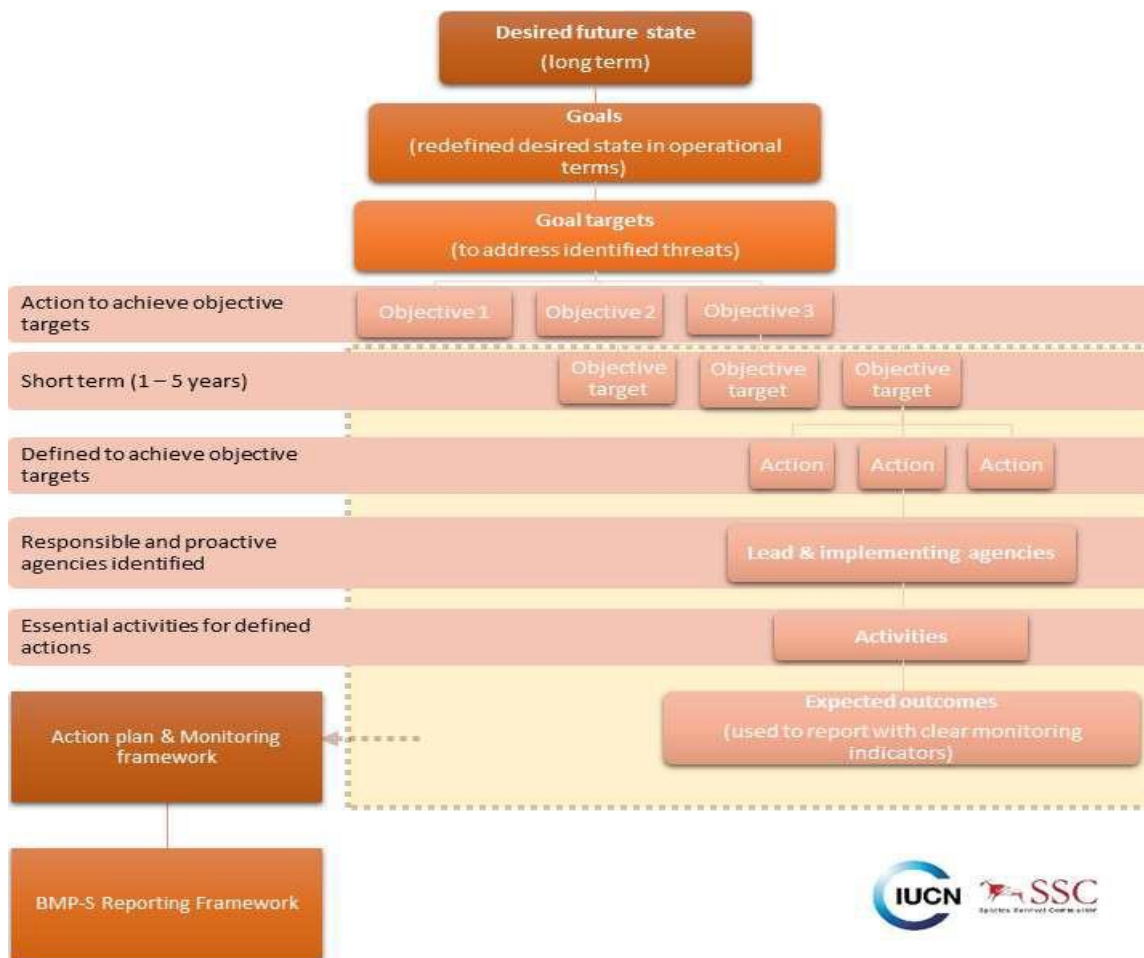


Figure 11. Action Plan and Monitoring Framework adapted from the IUCN SSC schematic for species conservation planning methodology.

**5.1 Objective 1: TO ESTABLISH AND MAINTAIN EFFECTIVE COMMUNICATION AND AWARENESS BETWEEN AND AMONG STAKEHOLDERS AND THE PUBLIC.**

*5.1.1 Objective Target: Establish and maintain productive partnerships for SGH conservation.*

<b>ACTION 5.1.1 FORMALISE INTER-AGENCY COLLABORATION TO COORDINATE AND REVIEW THE IMPLEMENTATION OF THE SGH BMP-S.</b>		
<b>Lead agencies:</b>	SANBI	
<b>Implementing agencies:</b>	ECPTA; EC DEDEAT; EKZMW; MPTA; LDEDET; GDARD; SANParks; DFFE	
<b>Collaborators:</b>	MGHP, Birdlife SA; HEIs	
<b>Essential activities:</b>	<ul style="list-style-type: none"> <li>• Establish a Steering Committee</li> <li>• Develop Terms of Reference (ToR) for SGH BMP-S Working Group</li> <li>• Inter-agency agreements identified, drafted and finalized.</li> </ul>	
<b>Expected Outcome in 5 yrs.:</b>	<ul style="list-style-type: none"> <li>• Operational Steering Committee with accountable reporting.</li> <li>• Effective inter-agency collaboration and coordination.</li> <li>• Accountability on BMP-S implementation and impact.</li> </ul>	
<b>Monitoring and Evaluation:</b>	<ul style="list-style-type: none"> <li>• Steering committee established.</li> <li>• Terms of reference for SGH WG</li> <li>• Annual M&amp;E reports.</li> <li>• Inter-agency agreements.</li> </ul>	
<b>Funding / Resources</b>	<b>Timeframe</b>	<b>Measurable Indicators / Outputs</b>
Each agency to commit budget for and fund their commitment.	Within year one.	<ol style="list-style-type: none"> <li>1. Steering Com meetings with minutes (frequency defined by SC once formed).</li> <li>2. SGH WG Terms of Reference.</li> <li>3. Annual M&amp;E Report.</li> </ol>
<b>Challenges:</b>		
Continuity and continued participation. Cost of participation, especially for smaller NGOs. Create an improved mechanism for virtual communication e.g., video conference (hybrid meetings).		

<b>ACTION 5.1.2 DEVELOP PRODUCTIVE PARTNERSHIPS WITH STAKEHOLDERS FOR SGH CONSERVATION</b>	
<b>Lead agencies:</b>	DFFE
<b>Implementing agencies:</b>	ECPTA; EC DEDEAT; EKZMW; MPTA; LDEDET; GDARD; SANParks; SANBI, DFFE
<b>Collaborators:</b>	MGHP, Birdlife SA, all captive facilities, HEI and all other members of TTT
<b>Essential activities:</b>	
<ul style="list-style-type: none"> <li>• Develop stakeholder matrix that reflects existing programmes and the necessary critical interventions.</li> <li>• Develop stakeholder engagement strategy with clear targets and responsibilities.</li> <li>• Develop, package, and distribute stakeholder-specific resource content and tools as approved by SC.</li> <li>• Investigate and guide the implementation of appropriate incentives for participation in SGH conservation.</li> <li>• Facilitate complete threat mitigation for SGH in core habitat.</li> <li>• Develop and implement management guidelines and SOPs for: <ul style="list-style-type: none"> <li>○ Elephant damage to nests and nesting trees.</li> <li>○ Bush encroachment and invasive species control</li> <li>○ Land use practices</li> </ul> </li> </ul>	

<ul style="list-style-type: none"> <li>○ Anthropogenic disturbance of nesting and roosting sites.</li> </ul>		
<p><b>Expected Outcome in 5 yrs.:</b></p> <ul style="list-style-type: none"> <li>• Multi-stakeholder involvement in SGH conservation.</li> <li>• Surveys will show that the public is more informed about the conservation status of SGH and how to protect them due to flagship environmental awareness programmes.</li> <li>• Effective management plans implemented, effective custodianship leads to mitigation of impacts of land use, SGH habitat conservation and community empowerment to support conservation activities.</li> </ul>		
<p><b>Monitoring and Evaluation:</b></p> <ul style="list-style-type: none"> <li>• The number of stakeholder engagements.</li> <li>• The number of awareness tools and brochures developed and disseminated.</li> <li>• The number of awareness interventions implemented.</li> </ul>		
<b>Funding / Resources</b>	<b>Timeframe</b>	<b>Measurable Indicators / Outputs</b>
Each agency and partner organisation to fund its commitment	Within one year of gazetting Then ongoing.	<ul style="list-style-type: none"> <li>• The number of awareness and educational campaigns run by each agency.</li> <li>• The number of awareness tools and brochure distributed by each agency.</li> <li>• The number of voluntary stewardship/custodianship sites identified and established</li> <li>• Best practice guidelines for land management in SGH habitat developed.</li> </ul>
<p><b>Challenges:</b> Funding is needed to (i) produce and distribute educational and awareness materials; (ii) cover travel, time, and expenses of staff involved in awareness campaigns and arranging custodianship; (iii) monitor the measurable indicators and outputs (M&amp;E).</p>		

## 5.2 Objective 2: TO SIGNIFICANTLY IMPROVE THE HEALTH AND BREEDING POTENTIAL OF THE WILD SGH POPULATION

*5.2.1 Objective Target: To reduce poisoning of SGH in South Africa by improved reporting and monitoring networks for all SGH poisoning events in South Africa with a measurable reduction in agrochemical poisoning events relating to SGH in South Africa.*

<b>ACTION 5.2.1.1 Improve reporting of all SGH mortalities to the national mortality database</b>		
<b>Lead agencies:</b>	DFFE	
<b>Implementing agencies:</b>	ECPTA; EC DEDEAT; EKZNW; MPTA; LDEDET; GDARD; SANParks; SANBI; DFFE; SAVC	
<b>Collaborators:</b>	MGHP, Birdlife SA	
<b>Essential activities:</b>	<ul style="list-style-type: none"> <li>Centralised population monitoring (MGHP) and mortality database.</li> <li>Data sharing agreements: MGHP custodians of a national database.</li> <li>Awareness campaign to ensure that a wide range of stakeholders report SGH poisoning events.</li> </ul>	
<b>Expected Outcome in 5 yrs.:</b>	<ul style="list-style-type: none"> <li>An effective model for assessing and mitigating impacts of agrochemicals on SGH.</li> </ul>	
<b>Monitoring and Evaluation:</b>	<ul style="list-style-type: none"> <li>Annual report to NWPPWG, and all WG, by MGHP.</li> </ul>	
<b>Funding / Resources</b>	<b>Timeframe</b>	<b>Measurable Indicators / Outputs</b>
Agency operational budget.	<ul style="list-style-type: none"> <li>Annually</li> </ul>	<ul style="list-style-type: none"> <li>National mortality database.</li> </ul>
<b>Challenges:</b> Standardised reporting.		

<b>ACTION 5.2.1.2 Collection of data on the prevalence of lead in SGH</b>		
<b>Lead agencies:</b>	DFFE	
<b>Implementing agencies:</b>	ECPTA; EC DEDEAT; EKZNW; MPTA; LDEDET; SANParks; SANBI, DFFE; SAVC	
<b>Collaborators:</b>	MGHP, Birdlife SA, EWT, SAHGCA, WRSA; HEIs	
<b>Essential activities:</b>	<ul style="list-style-type: none"> <li>Opportunistic sampling of blood (from living birds) or, liver, bone eggshells collected from nests whenever any authorized member of any partner agency handles SGHs or visits nests.</li> <li>SOP for sample/specimen collections developed (including chain-of-custody and post-mortems)</li> <li>Monitoring protocol and programme implemented.</li> <li>Develop and implement non-lead ammunition campaigns.</li> </ul>	
<b>Expected Outcome in 5 yrs.:</b>	<ul style="list-style-type: none"> <li>Lead prevalence database established and distributed to stakeholders annually.</li> <li>Surveys to show that stakeholder interest in non-lead ammunition has improved. An increase in the proportion of shooters that have switched from lead ammunition to non-toxic alternatives relative to baseline surveys.</li> </ul>	
<b>Monitoring and Evaluation:</b>	<ul style="list-style-type: none"> <li>Standardised reporting of samples collected.</li> <li>Annual report on lead-prevalence and additions to the lead database distributed to stakeholders.</li> </ul>	
<b>Funding / Resources</b>	<b>Timeframe</b>	<b>Measurable Indicators / Outputs</b>
Agency operational budget.	<ul style="list-style-type: none"> <li>Ongoing</li> </ul>	<ul style="list-style-type: none"> <li>The number of biobank samples added to National collections each year.</li> <li>Sample collection SOP developed.</li> <li>National lead prevalence database established.</li> </ul>



		Number of samples / events added to the National lead (Pb) database each year.
<b>Challenges:</b> Limited sampling opportunities and funding for post-mortems. Funding for sampling equipment to store samples and specimens.		

<b>ACTION 5.2.1.3</b>	<b>Report on SGH poisoning and collaborate with the National Wildlife Poison Prevention Working Group (NWPPWG), including the Lead Task Team (LTT) and Pesticide Task Team (PTT)</b>	
<b>Lead agencies:</b>	DFFE	
<b>Implementing agencies:</b>	ECPTA; EC DEDEAT; EKZMW; MPTA; LDEDET; GDARD; SANParks; SANBI, DFFE	
<b>Collaborators:</b>	MGHP, Birdlife SA, EWT, LTT	
<b>Essential activities:</b>	<ul style="list-style-type: none"> <li>An increased number of people arrested and convicted for intentional and unintentional poisoning of SGH</li> </ul>	
<b>Expected Outcome in 5 yrs.:</b>	<ul style="list-style-type: none"> <li>Improved conviction of offenders.</li> <li>Reduction in poisoning impacts on SHG.</li> </ul>	
<b>Monitoring and Evaluation:</b>	<ul style="list-style-type: none"> <li>Annual report on poisoning to stakeholders.</li> </ul>	
<b>Funding / Resources</b>	<b>Timeframe</b>	<b>Measurable Indicators / Outputs</b>
Agency operational budget.	<ul style="list-style-type: none"> <li>Annually and ongoing</li> </ul>	<ul style="list-style-type: none"> <li>Training modules developed.</li> <li>SOP for veterinary care and rehabilitation developed.</li> <li>The number of stakeholders trained.</li> <li>Annual poisoning report.</li> <li>Stakeholder engagements.</li> </ul>
<b>Challenges:</b> available capacity		

<b>ACTION 5.2.1.4</b>	<b>Raise awareness relating to the impacts of agrochemicals (illegal/off-label) and lead ammunition on SGH.</b>	
<b>Lead agencies:</b>	DFFE	
<b>Implementing agencies:</b>	ECPTA; EC DEDEAT; EKZMW; MPTA; LDEDET; SANParks; SANBI, DFFE	
<b>Collaborators:</b>	MGHP, Birdlife SA, LTT	
<b>Essential activities:</b>	<ul style="list-style-type: none"> <li>Develop and distribute awareness material relating to the impacts of agrochemicals (illegal/off-label) and lead ammunition on SGH.</li> <li>Engage and assign SGH Custodians.</li> <li>Update and review SGH Custodianship Programme material and training modules.</li> <li>Conduct research and publish articles on the prevalence and impacts of agrochemicals and lead ammunition.</li> </ul>	

<b>Expected Outcome in 5 yrs.:</b>		
<ul style="list-style-type: none"> <li>• Effective mitigation measures for the impacts of agrochemicals and lead ammunition on SGH implemented.</li> <li>• Reduction in SGH agrochemical and lead poisoning.</li> <li>• Survey data will show improved knowledge of the prevalence and impacts of agrochemicals and lead ammunition.</li> </ul>		
<b>Monitoring and Evaluation:</b>		
<ul style="list-style-type: none"> <li>• Survey relevant stakeholders to monitor knowledge and awareness of lead and poisoning impacts on birds and SGHs.</li> <li>• Analyse trends in SHG agrochemical and lead poisoning events reported in the National database curated by MGHP.</li> </ul>		
<b>Funding / Resources</b>	<b>Timeframe</b>	<b>Measurable Indicators / Outputs</b>
Agency operational budget.	<ul style="list-style-type: none"> <li>• Survey stakeholder/custodians annually.</li> <li>• Within 2 years of gazetting.</li> <li>• Custodianship training annually.</li> </ul>	<ol style="list-style-type: none"> <li>1. Awareness material and training modules developed and distributed to SGH Custodians</li> <li>2. The number of SGH Custodianship engagements and agreements in place</li> <li>3. The number of publications (popular and peer-reviewed) on the prevalence and impacts of agrochemicals and lead ammunition.</li> </ol>
<b>Challenges:</b> Sourcing funding to ensure Custodian Programme can be fully implemented and maintained.		

### 5.3 Objective 3: TO REDUCE SGH OFFTAKE FOR BELIEF-BASED USES

*5.3.1 Objective Target 1: SGH are culturally revered throughout their range, however, these cultural belief systems rely on some offtake from the SGH population and so we seek a measurable reduction in illegal off-take in SGH and co-management of off-takes by traditional leaders to reduce illegal offtake of SGH.*

<b>ACTION 5.3.1.1</b>	<b>Expand cultural protection in South Africa, through engagements with indigenous knowledge systems and traditional leaders</b>
<b>Lead agencies:</b>	DFFE
<b>Implementing agencies:</b>	ECPTA; EC DEDEAT; EKZNW; MPTA; LDEDET; SANParks; SANBI, DFFE
<b>Collaborators:</b>	MGHP, Birdlife SA, HEIs, Traditional Leadership Councils, WLTP, Traditional Healers Council, DoTA, All relevant language group community leaders.
<b>Essential activities:</b>	<ul style="list-style-type: none"> <li>• Conduct research and publish findings on cultural perceptions and values.</li> <li>• Stakeholder and community engagements.</li> <li>• Co-management conservation plans developed and implemented.</li> <li>• Community engagement strategy developed and implemented.</li> <li>• Capacity assessment of community leadership structures.</li> <li>• Capacity development of community leadership structures for sustainable management and off-takes of SGH.</li> <li>• SGH awareness and training</li> </ul>
<b>Expected Outcome in 5 yrs.:</b>	<ul style="list-style-type: none"> <li>• Effective implementation of cultural protection for SGH</li> <li>• Community involvement and co-management of SGH off-takes</li> <li>• Enhanced awareness and appreciation for SGH.</li> </ul>

<b>Monitoring and Evaluation:</b>		
<ul style="list-style-type: none"> <li>• pre-and post- intervention perception surveys.</li> <li>• Monitor trends in number of SGH taken as off-take for belief-based uses.</li> </ul>		
<b>Funding / Resources</b>	<b>Timeframe</b>	<b>Measurable Indicators / Outputs</b>
Agency operational budget.	<ul style="list-style-type: none"> <li>• Within 1 year of gazetting</li> <li>• Within 1 year of gazetting and ongoing</li> <li>• Within 3 years of gazetting and ongoing</li> <li>• Within 5 years of gazetting and ongoing</li> </ul>	<ul style="list-style-type: none"> <li>• Publications (popular and peer-reviewed) on cultural perceptions and values of SGH.</li> <li>• Off-take assessments.</li> <li>• The sustainable off-take simulator developed and implemented.</li> <li>• Community engagements and training.</li> <li>• Facilitated co-management agreements.</li> </ul>
<b>Challenges:</b> Sensitive approach required to prevent any perverse outcomes.		

#### 5.4 Objective 4: TO REDUCE SGH MORTALITIES DUE TO PERSECUTION IN RESPONSE TO WINDOW DAMAGE

*5.4.1 Objective Target: To enhance communities and landowner awareness concerning SGH window damage and change attitudes of affected parties away from lethal or injurious actions against SGH.*

<b>ACTION 5.4.1.1</b>	<b>Improve mitigation measures against the impacts of breaking windows by SGH and implement protocols on how to protect windows from being broken by the birds</b>	
<b>Lead agencies:</b>	DFFE	
<b>Implementing agencies:</b>	ECPTA; EC DEDEAT; EKZNW; MPTA; LDEDET; SANParks; SANBI, DFFE	
<b>Collaborators:</b>	MGHP, Birdlife SA, HEIs, Traditional Leadership Councils, WLTP, Traditional Healers Council, DoTA	
<b>Essential activities:</b>	<ul style="list-style-type: none"> <li>• Establish and maintain a SGH window-breaking register database.</li> <li>• Research and publish findings on cost-effective mitigation measures against the impacts of breaking windows by SGH.</li> <li>• Develop and distribute awareness material relating to breaking of windows by SGH in areas of risk, such as at schools, with affected communities, private landowners and SGH Custodians.</li> <li>• Develop and implement Immediate Response and Mitigation Protocols.</li> <li>• Foster relationships with industrial suppliers of mitigation materials and facilitate provisioning to high-risk areas.</li> </ul>	
<b>Expected Outcome in 5 yrs.:</b>	<ul style="list-style-type: none"> <li>• Reduced impacts of window-breaking by SGH</li> <li>• Reduced SGH mortalities due to persecution in response to window damage.</li> </ul>	
<b>Monitoring and Evaluation:</b>	<ul style="list-style-type: none"> <li>• The trend in SGH window-breaking incidents recorded in the database.</li> </ul>	
<b>Funding / Resources</b>	<b>Timeframe</b>	<b>Measurable Indicators / Outputs</b>

Agency operational budget.	<ul style="list-style-type: none"> <li>• Ongoing</li> <li>• Every two years after gazetting</li> <li>• Within one year of gazetting, ongoing.</li> <li>• Within one year of gazetting</li> </ul>	<ul style="list-style-type: none"> <li>• National SGH window-breaking register database established.</li> <li>• Revised education and awareness materials for the mitigation of responses to SGH window damage.</li> <li>• The number of business and industry partnerships established for providing alternate window protection materials.</li> </ul>
<b>Challenges:</b> Cost of implementing effective mitigation measures.		

**5.5 Objective 5: TO REDUCE AND ELIMINATE THE CONFLICT AND MORTALITY OF SGH AS A RESULT OF CURRENT AND FUTURE ENERGY INFRASTRUCTURE DEVELOPMENT.**

*5.5.1 Objective Target 1: To reduce and eliminate the mortalities of SGH through modification and mitigation of existing energy infrastructure, including distribution poles and power lines, within 5 years since gazetting, for zero SGH electrocutions due to unsafe distribution poles and minimise SGH collisions on power line spans.*

<b>ACTION 5.5.1.1 Modification and marking electrical-provision infrastructure to reduce SGH mortality</b>			
<b>Lead agencies:</b>	DFFE		
<b>Implementing agencies:</b>	DE; ECPTA; EC DEDEAT; EKZNW; MPTA; LEDET; SANParks; SANBI, DFFE		
<b>Collaborators:</b>	MGHP, Birdlife SA, HEIs, EWT; Eskom, IPPs, BARESG		
<b>Essential activities:</b>	<ul style="list-style-type: none"> <li>• Establish and maintain a SGH electrocutions and collision register database.</li> <li>• Develop high-incident-potential site identification model (within distribution range overlapping power distribution/ transmission lines).</li> <li>• Research and publish findings of incidents of electrocutions and collisions causing injury and mortality in SGHs and assess the effectiveness of mitigation measures implemented.</li> <li>• Develop guidelines for the effective insulation of transformer boxes, live components of all new transformer boxes and marking of provisioning infrastructure for implementation by ESKOM in partnership with BirdLife SA.</li> </ul>		
<b>Expected Outcome in 5 yrs.:</b>	<ul style="list-style-type: none"> <li>• Fewer reported incidents of S G H electrocutions and collisions in high-incidence-potential areas.</li> <li>• Reduction in mortalities from baseline.</li> </ul>		
<b>Monitoring and Evaluation:</b>	<ul style="list-style-type: none"> <li>• Reporting on the number of modified structures.</li> <li>• The trend in the number of SGH electrocutions/collisions reported.</li> </ul>		
<b>Funding / Resources</b>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th data-bbox="568 1420 957 1435">Timeframe</th> <th data-bbox="957 1420 1398 1435">Measurable Indicators / Outputs</th> </tr> </table>	Timeframe	Measurable Indicators / Outputs
Timeframe	Measurable Indicators / Outputs		

Agency operational budget.	<ul style="list-style-type: none"> <li>• Within one year of gazetting and then ongoing – annual feedback and report.</li> <li>• Within three years of gazetting and ongoing.</li> </ul>	<ul style="list-style-type: none"> <li>• Engagement between Eskom and EWT/BirdLife SA/Mabula Ground Hornbill Project.</li> <li>• Publications (popular and peer-reviewed) on the effectiveness of mitigation measures.</li> <li>• Adaptive management implementation of research findings.</li> </ul>
<p><b>Challenges:</b> Knowledge gaps. Cost of mitigation and modification of electricity provisioning infrastructure.</p>		

## 5.5.2 Objective Target 2: To assess the potential for wind farms as an emerging threat to SGH.

<b>ACTION 5.5.3.1</b>		<b>Develop appropriate mitigation and monitoring protocols for the potential impact of wind farms/turbines on SGH</b>
<b>Lead agencies:</b>	DFFE	
<b>Implementing agencies:</b>	ECPTA; EC DEDEAT; EKZNW; MPTA; LDEDET; SANParks; SANBI; DFFE ; DE	
<b>Collaborators:</b>	MGHP, Birdlife SA, HEIs, EWT, Eskom, IPPs, BARESG	
<b>Essential activities:</b>	<ul style="list-style-type: none"> <li>Report any incidents of SGH injury or mortality due to wind-turbines and associated infrastructure to ESKOM/ EWT database.</li> <li>Develop high-incident-potential site identification model (within distribution range overlapping distribution of wind turbines).</li> <li>Research and publish findings of incidents of SGH collisions with wind turbines.</li> <li>Develop and include guidelines for the effective pre-and post-construction monitoring of SGH in existing BirdLife SA/EWT Best Practice Guidelines.</li> <li>Engage with national and Provincial Environmental Authorisation authorities.</li> </ul>	
<b>Expected Outcome in 5 yrs.:</b>	<ul style="list-style-type: none"> <li>Environmental Authorisations for wind farms to include guidelines and recommendations that mitigate threats to SGH posed by green-energy infrastructure (wind turbines and the associated power storage and distribution networks).</li> <li>Species-specific guidelines for potential threat mitigation developed and implemented.</li> </ul>	
<b>Monitoring and Evaluation:</b>	<ul style="list-style-type: none"> <li>SGH mortalities trends in BirdLife SA occasional report on recorded bird fatalities at wind farms in South Africa.</li> </ul>	
<b>Funding / Resources</b>	<b>Timeframe</b>	<b>Measurable Indicators / Outputs</b>
Agency operational budget.	<ul style="list-style-type: none"> <li>Within one year of gazetting</li> <li>Within one year of gazetting and ongoing.</li> <li>Within one year of gazetting; information made available and best practice guidelines updated within three years of gazetting.</li> <li>Within 5 years of gazetting.</li> <li>Within one year of gazetting.</li> </ul>	<ul style="list-style-type: none"> <li>Updated BirdLife South Africa/EWT Best Practice guidelines for Wind Energy Facilities.</li> <li>Stakeholder engagements at BARESG (Birds and Renewable Energy Specialist Group) and BAREF (Birds and Renewable Energy Forum)</li> <li>Surveillance and monitoring results made available by avifaunal specialists and published by BirdLife South Africa, to update the Best Practice Guidelines accordingly.</li> <li>Publications (popular and peer-reviewed) on the impacts of wind farms on SGH.</li> <li>Species-specific guidelines for mitigation of impacts developed.</li> </ul>
<b>Challenges:</b> Environmental Authorisations to include specialist monitoring results.		

## 5.6 Objective 6: TO REDUCE HABITAT LOSS, DEGRADATION/ALTERATION AND FRAGMENTATION OF CORE SGH HABITAT.

### 5.6.1 Objective Target 1: To reduce, halt and reverse the loss of core SGH habitat

<b>ACTION 5.6.1.1 Inform land use planning policies to secure core areas for SGH</b>		
<b>Lead agencies:</b>	DFFE	
<b>Implementing agencies:</b>	ECPTA; EC DEDEAT; EKZNW; MPTA; LDEDET; SANParks; SANBI, DFFE; DAFF: DE; Municipalities	
<b>Collaborators:</b>	MGHP, BirdLife SA, HEIs, EWT	
<b>Essential activities:</b>	<ul style="list-style-type: none"> <li>• National SGH monitoring plan implemented across all provinces.</li> <li>• Maintain national SGH population monitoring database.</li> <li>• SGH data informs Bioregional Conservation Plans / Biodiversity Spatial Plans.</li> <li>• BCPs/BSPs inform land-use planning policies, protected area expansion strategies (including stewardship), IDPs and SDFs.</li> <li>• SGH included in BirdLife South Africa Best Practice Guidelines for EIA assessments.</li> <li>• Develop and mainstream best practice land-use guidelines.</li> <li>• Develop SGH conservation reintroduction guidelines.</li> <li>• Protected Area Management Plans include SGH population monitoring.</li> <li>• Integrate impacts of climate change on the mapping of climate change corridors in conservation planning products.</li> </ul>	
<b>Expected Outcome in 5 yrs.:</b>	<ul style="list-style-type: none"> <li>• SGH targets integrated into land-use planning tools and policies,</li> <li>• Reduction in SGH-unfriendly land management practices</li> </ul>	
<b>Monitoring and Evaluation:</b>	<ul style="list-style-type: none"> <li>• The trend in environmental authorisation conditions favouring SGH</li> <li>• Populations status and trends.</li> </ul>	
<b>Funding / Resources</b>	<b>Timeframe</b>	<b>Measurable Indicators / Outputs</b>
Agency operational budget.	<ul style="list-style-type: none"> <li>• Within 1 year of gazetting</li> <li>• Within 1 year of gazetting, revised annually.</li> <li>• Within 1 year of gazetting</li> </ul>	<ul style="list-style-type: none"> <li>• National SGH spatial distribution database</li> <li>• Provincial population monitoring databases</li> <li>• SANParks population monitoring databases.</li> <li>• National SGH population monitoring database.</li> <li>• Best Practice Guidelines for EIA assessments including SGH</li> <li>• SGH Conservation Translocation and Reintroduction Guidelines.</li> <li>• Best Practice Land Use guidelines for SGH (and stewardship).</li> <li>• Climate change corridors include SGH parameters.</li> </ul>
<b>Challenges:</b> Compliance with Environmental Authorisation conditions; Conservation Plans not mainstreamed into IDPs and SDFs.		

**5.7 Objective 7: TO MINIMISE THE RISK OF INFECTION OF NCD AND OTHER INFECTIOUS DISEASES IN *IN-SITU* SGH POPULATIONS**

*5.7.1 Objective Target: To maximize prevention by rapid response, containment and awareness of Newcastle Disease (NCD) and other infectious disease outbreaks in the distribution range of SGH.*

<b>ACTION 5.7.1.1</b>			<b>To mitigate against the impacts of Newcastle Disease (NCD) and other infectious disease outbreaks in the distribution range of SGH.</b>		
<b>Lead agencies:</b>		DFFE			
<b>Implementing agencies:</b>		ECPTA; EC DEDEAT; EKZNW; MPTA; LDEDET; GDARD; SANParks; SANBI, DFFE; NDA;			
<b>Collaborators:</b>		MGHP, Birdlife SA, HEIs, EWT; Poultry Industry			
<b>Essential activities:</b>		<ul style="list-style-type: none"> <li>Assess the frequency and severity of historical NCD and other infectious disease outbreaks in the distribution range of SGH.</li> <li>Develop SGH Disease Risk Assessment.</li> <li>Maintain national NCD outbreaks register database.</li> <li>Maintain/establish NCD outbreak reporting protocol.</li> <li>Facilitate disease outbreak notification to stakeholders.</li> <li>Develop and implement an NCD/Infectious Disease Outbreak Reaction Protocol (including post-mortem and sampling).</li> </ul>			
<b>Expected Outcome in 5 yrs.:</b>		<ul style="list-style-type: none"> <li>Maximised prevention of NCD outbreak impacts on SGH populations;</li> <li>Rapid response and containment of NCD and other infectious disease outbreaks in the SGH distribution range.</li> </ul>			
<b>Monitoring and Evaluation:</b>		<ul style="list-style-type: none"> <li>Disease outbreak trends.</li> </ul>			
<b>Funding / Resources</b>		<b>Timeframe</b>		<b>Measurable Indicators / Outputs</b>	
Agency operational budget.		<ul style="list-style-type: none"> <li>Within one year of gazetting.</li> </ul>		<ul style="list-style-type: none"> <li>NCD incident reporting database and protocols for conservation agencies, small scale, or subsistence- scale poultry farmers and stakeholders.</li> <li>NCD Reaction Protocol including a post-mortem of SGH carcasses, and sampling of live birds.</li> <li>NCD Disease risk assessment for SGH.</li> <li>Revised education and awareness materials for the response to NCD outbreaks.</li> </ul>	
<b>Challenges:</b> National NCD reporting skewed to poultry species; Low reporting/ submission of carcasses for testing.					

<b>ACTION 5.7.1.2</b>		<b>Assess the feasibility of using the NCD vaccination protocol for the protection of wild SGHs.</b>			
<b>Lead agencies:</b>		DFFE			
<b>Implementing agencies:</b>		State Veterinary Services			
<b>Collaborators:</b>		MGHP, Birdlife SA, HEIs, EWT; PAAZA; Poultry Industry			



<b>Essential activities:</b>		
<ul style="list-style-type: none"> <li>• Maintain a database of all vaccination administration, type, frequency and resulting blood titres;</li> <li>• Analysis of titres to assess the efficacy of various vaccine protocols.</li> <li>• Finalize and implement the vaccine protocol for the NCD.</li> </ul>		
<b>Expected Outcome in 5 yrs.:</b>		
<ul style="list-style-type: none"> <li>• Rapid response and containment of NCD outbreaks in the SGH distribution range.</li> </ul>		
<b>Monitoring and Evaluation:</b>		
<ul style="list-style-type: none"> <li>• NCD outbreak and vaccination trends.</li> </ul>		
<b>Funding / Resources</b>	<b>Timeframe</b>	<b>Measurable Indicators / Outputs</b>
Agency operational budget.	<ul style="list-style-type: none"> <li>• Within one year of gazetting</li> <li>• Within one year of gazetting</li> <li>• Within two years of gazetting</li> </ul>	<ul style="list-style-type: none"> <li>• National SGH mortality database includes reporting relevant to NCD.</li> <li>• Development of vaccination protocols for <i>in situ</i> SGHs and trials of implementation.</li> </ul>
<b>Challenges:</b> Risk associated with the handling of specimens.		

## 6. REFERENCES

- Abolnik, C., Gerdes, G.H., Kitching, J., Swanepoel, S. & Romito, M. 2008. Characterization of pigeon paramyxoviruses (Newcastle disease virus) isolated in South Africa from 2001 to 2006. *Onderstepoort Journal of Veterinary Research*. 152:147–152.
- Anderson, K., Garner, M.M., Reed, H.H., Cook, K., Aguilar, R., Horton, S., Case, A.L. & Wolf, K.N. 2013. Hemorrhagic diathesis in avian species following intramuscular administration of polysulfated glycosaminoglycan. *Journal of zoo and wildlife medicine*. 44(1):93–9. Available: <http://www.ncbi.nlm.nih.gov/pubmed/23505708>.
- Anon. 1998. The Ground Hornbill. *Honeyguide*. 44(4):88.
- Archibald, A.S., Bond, W.J., Stock, W.D. & Fairbanks, D.H.K. 2005. Shaping the landscape: fire-grazer interactions in an African savanna. *Ecological Applications*. 15(1):96–109.
- Asah, S.T. & Blahna, D.J. 2013. Practical implications of understanding the influence of motivations on the commitment to voluntary urban conservation stewardship. *Conservation Biology*. 27(4):866–875. DOI: 10.1111/cobi.12058.
- Balter, R.S. 1968. The microtopography of avian lice eggs. *Medical Biology*. 18:166–179.
- Bedford, G.A.H. 1929. *Anoplura (Siphunculata and Mallophaga) from South African hosts*. BirdLife International. 2018. *Bucorvus leadbeateri*.
- BirdLife International. 2019. *Southern Ground-hornbill (Bucorvus leadbeateri) - BirdLife species factsheet*. Available: <http://datazone.birdlife.org/species/factsheet/southern-ground-hornbill-bucorvus-leadbeateri> [2018, July 27].
- Bond, W.J. & Archibald, S. 2003. Confronting complexity: Fire policy choices in South African savanna parks. *International Journal of Wildland Fire*. 12(4):381–389. DOI: 10.1071/WF03024.
- Broms, K.M., Johnson, D.S. & Altwegg, R. 2014. Spatial occupancy models applied to atlas data show Southern Ground Hornbills strongly depend on protected areas. *Ecological Applications*. 24(2):363–374.
- Brunton, S. & Badenhorst, S. 2013. Ritual fauna from Ratho Kroonkop: a second millennium AD rain control site in the Shashe- Limpopo Confluence area of South Africa. *Azania: Archaeological Research in Africa*. 48(1):111–132. DOI: 10.1080/0067270X.2012.759691.
- Bruyns, R.K., Williams, V.L. & Cunningham, A.B. 2013. Finely Ground-Hornbill: The sale of *Bucorvus cafer* in a traditional medicine market in Bulawayo, Zimbabwe. In *Animals in Traditional Folk Medicine*. R.R.N. Alves & I.L. Rosa, Eds. Berlin: Springer- Verlag Berlin Heidelberg, Germany. 475–486. DOI: 10.1007/978-3-642-29026-8.
- Canaris, A.G. & Gardner, S.L. 2003. *Bibliography of Helminth Species Described from African Vertebrates 1800-1967*. Lincoln.
- Carstens, K.F., Kassanje, R., Little, R.M., Ryan, P.G. & Hockey, P.A.R. 2019a. Breeding success and population growth of Southern Ground Hornbills *Bucorvus leadbeateri* in an area supplemented with nest-boxes. *Bird Conservation International*. (April, 10):1–17. DOI: 10.1017/S0959270919000108.
- Carstens, K.F., Kassanje, R., Little, R.M., Ryan, P.G. & Hockey, P.A.R. 2019b. The effects of weather, group size and type of nest on the timing of egg-laying in the Southern Ground-hornbill *Bucorvus leadbeateri*. *Journal of Ornithology*. (March, 25):1–8. DOI: 10.1007/s10336-019-01654-x.
- Chisadza, B., Tumbare, M.J. & Nhapi, I. 2013. Useful traditional knowledge indicators for drought forecasting in the

- Mzingwane Catchment area of Zimbabwe. *Disaster Prevention and Management*. 22(4):312–325.
- Chiweshe, N. 1998. Birds and n'angas in the Matobo Hills. *Honeyguide*. 44:111–112.
- Chiweshe, N. 2007. The current conservation status of the Southern Ground Hornbill *Bucorvus leadbeateri* in Zimbabwe. In *Proceedings of the 4th International Hornbill Conference: The Active Management of Hornbills and Habitats for Conservation*. A.C. Kemp & M.I. Kemp, Eds. Pretoria: Nomads & Naturalists. 252–266.
- Cho, B.R. & Kenzy, S.G. 1975. Virologic and Serologic Studies of Zoo Birds for Marek 's Disease Virus Infection'. *Infection and Immunity*. 11(4):809–814.
- Clay, T. & Rothschild, M. 1938. Ectoparasites from captive birds. *Novitates Zoologicae*.
- Coetzee, H.C. & Wilkinson, M. 2007. The cultural value of Africa's two endemic ground- hornbills, genus *Bucorvus*. *Proceedings of the 4th International Hornbill Conference: The Active Management of Hornbills and their Habitats for Conservation*. 395.
- Coetzee, H., Nell, W. & van Rensburg, L. 2014. An exploration of cultural beliefs and practices across the Southern Ground- Hornbill's range in Africa. *Journal of Ethnobiology and Ethnomedicine*. 10(1):1–7. DOI: 10.1186/1746-4269-10-28.
- Coetzee, H., Nell, W. & Rensburg, L. Van. 2014. An intervention program based on plant surrogates as alternatives to the use of Southern Ground-Hornbills in cultural practices. *Ethnobotany Research and Applications*. 12:155–164.
- Crutzen, P.J. 2006. The anthropocene. In *Earth System Science in the Anthropocene*. Berlin/Heidelberg: Springer-Verlag. 13–18. DOI: 10.1007/3-540-26590-2\_3.
- Cundill, G., Roux, D.J. & Parker, J.N. 2015. Nurturing communities of practice for transdisciplinary research. *Ecology and society*. 20(2):22.
- Derwent, S. & Mander, M. 1997. Twitchers bewitched: The use of birds in traditional healing. *Africa - Birds and Birding*. 2(1):22– 25.
- Dickens, J. 2010. How much is enough? Calibrating satellite telemetry for Southern Ground-Hornbills. The University of Cape Town.
- Elbel, R.E. 1964. THE AMBLYCERAN MALLOPHAGA (BITING LICE) FOUND ON THE BUCEROTIDAE (HORN BILLS). The University of Oklahoma.
- Engelbrecht, D., Theron, N., Turner, A., van Wyk, J. & Pienaar, K. 2007. The status and conservation of Southern Ground Hornbills *Bucorvus leadbeateri* in the Limpopo Province, South Africa. In *Proceedings of the 4th International Hornbill Conference: The Active Management of Hornbills and their Habitats for Conservation*. M.I. Kemp, A. C. & Kemp, Ed. Pretoria, South Africa: Naturalists and Nomads. 231–239.
- Fairfield, J.R. 1973. Observations on hatching north African ground hornbills at the San Diego Wild Animal Park. *Avicultural Magazine*. 27–29.
- Forsberg, O. 1994. More Ground Hornbills. *Tiptol*. 32:7.

Fuhlendorf, S.D. & Engel, D.M. 2001. Restoring heterogeneity on rangelands: ecosystem management based on evolutionary grazing patterns. *BioScience*. 51(8):625–632.

Godfrey, R. 1941. *Bird-Lore of the Eastern Cape Province*. Monograph ed. Johannesburg.

Herremans, M. 1998. Conservation status of birds in Botswana in relation to land use. *Biological Conservation*. 86(2):139–160. DOI: 10.1016/S0006-3207(98)00016-0.

Hockley, M. & Archer, W.H. 1966. *The Southern Ground Hornbill or "Bromvogel"*.

Hulley, P. & Craig, A.J. 2007. The status of the Southern Ground-Hornbill in the Grahamstown region, Eastern Cape, South Africa. *Ostrich*. 78(February):89–92. DOI: 10.2989/OSTRICH.2007.78.1.13.57.

Jiri, O., Mafongoya, P.L. & Chivenge, P. 2015. Indigenous knowledge systems, seasonal 'quality' and climate change adaptation in Zimbabwe'. *Climate Research*. 66:103–111. DOI: 10.3354/cr01334.

Jordan, M. 2011a. *Southern Ground Hornbill (Bucorvus leadbeateri) Species Recovery Plan for South Africa*.

Johannesburg. Jordan, M. (Ed). 2011b. *Southern Ground Hornbill (Bucorvus leadbeateri) Species Recovery Plan for South Africa*.

Kalimira, N. 2007. The status of the Southern Ground Hornbill *Bucorvus leadbeateri* in some protected areas of Malawi. In *Proceedings of the 4th International Hornbill Conference: The Active Management of Hornbills and their Habitats for Conservation*. A.C. Kemp & M.I. Kemp, Eds. Pretoria, South Africa: Naturalists and Nomads. 245–251.

Kioko, John, Delaney Smith, and C. Kffiner. 2015. Uses of birds for ethno-medicine among the Maasai people in Monduli district, northern Tanzania. *Ethnobiol. Ethnomed* 1 1-13.

Kemp, A. 1995a. Southern Ground Hornbill *Bucorvus leadbeateri*. In *Bird Families of the World: The Hornbills Bucerotiformes*. 1st ed. Oxford, UK: Oxford University Press. 94–99.

Kemp, A.C. 1988. The behavioural ecology of the Southern Ground Hornbill: are competitive offspring at a premium? In *Proceedings of International 100th Deutscheornitologen-Gessellschaft Meeting*. Bonn: Current topics in avian

biology. 267–269. Kemp, A.C. 1995b. The Hornbills Bucerotiformes. In *Bird Families of the World*. 94–99.

Kemp, A.C. 1996. Hammer of the Savannah. *BBC Wildlife*. (May):31–36.

Kemp, L.V. 2017. Conservation biology and molecular ecology of the Southern Ground-Hornbill (*Bucorvus leadbeateri*). University of the Free State.

Kemp, A. & Webster, R. 2008. *Latest analysis of Southern Ground Hornbill (SGH) distribution and population in South Africa*. Bela Bela.

Kemp, A.C. & Begg, K.S. 1996. Nest sites of the Southern Ground Hornbill *Bucorvus leadbeateri* in the Kruger National Park, South Africa, and conservation implications. *Ostrich*. 67:9–14.

Kemp, A.C. & Begg, K.S. 2001. Comparison of time-activity budgets and population structure for 18 large-bird species in the Kruger National Park, South Africa. *Ostrich*. 72(3):179–184.

Kemp, A.C. & Kemp, M.I. 1980a. The biology of the Southern Ground Hornbill *Bucorvus leadbeateri* (Vigors) (Aves: Bucerotidae). *Annals of the Transvaal Museum*. 32(4):65–100.

- Kemp, A.C. & Kemp, M.I. 1980b. The Biology of the Southern Ground Hornbill *Bucorvus leadbeateri* (Vigors) (Aves: Bucerotidae). *Annals of the Transvaal Museum*. 32(4):65–100.
- Kemp, A.C. & Kemp, M.I. 2007. What proportion of Southern Ground Hornbill nesting attempts fledge more than one chick? Data from the Kruger National Park. In *Proceedings of the 4th International Hornbill Conference: The Active Management of Hornbills and their Habitats for Conservation*. A.C. Kemp & M.I. Kemp, Eds. Pretoria, South Africa: Naturalists and Nomads. 267–286.
- Kemp, L. V. & Bruford, M.W. 2018. *Southern Ground-Hornbill Habitat Viability Assessment Workshop Final Report*.
- Kemp, A.C., Joubert, S.G.J. & Kemp, M. 1989. Distribution of southern ground hornbills in the Kruger National Park in relation to some environmental features. *South African Journal of Wildlife Research*. 19(3):93–98.
- Kemp, A.C., Kemp, M.I. & Turner, A. 2007. What has become of eggs and chicks of Southern Ground Hornbills harvested from the Kruger National Park? In *Proceedings of the 4th International Hornbill Conference: The Active Management of Hornbills and their Habitats for Conservation*. A.C. Kemp & M.I. Kemp, Eds. Pretoria, South Africa: Naturalists and Nomads. 288–297.
- Kemp, L.V., Kotze, A., Jansen, R., Dalton, D.L., Grobler, P.J. & Little, R.G. n.d. Review of trial reintroductions of the long-lived, cooperative breeding Southern Ground-Hornbill *Bucorvus leadbeateri*. *Bird Conservation International*.
- Kiondo, M.R. & Clamsen, T. 2002. *Initial assessment on sustainability of the live bird trade in Tanzania: Vulnerable species*.
- Knight, G.M. 1990. A preliminary investigation into the status, distribution and some aspects of the foraging ecology of the Southern Ground-Hornbill (*Bucorvus cafer*) in Natal. University of Natal.
- Koepfel, K.N. & Kemp, L. V. 2015. Lead toxicosis in Southern Ground-Hornbills *Bucorvus leadbeateri*: a case from South Africa. *Journal of Avian Medicine and Surgery*.
- Komar, N. 2003. *West Nile Virus: Epidemiology and Ecology in North America*. DOI: 10.1016/S0065-3527(03)61005-5.
- Koopman, A. 2011. Lightning birds and thunder trees. *Natalia*. 41:40–60.
- Kuckertz, H. 1983. Symbol and authority in Mpondo ancestor religion. *African Studies*. 42(2):113–133. DOI: 10.1080/00020188308707599.
- Lack, D. 1933. Habitat selection in birds - with special reference to the effects of afforestation on the Breckland avifauna. *Journal of Animal Ecology*. 2(2):239–262.
- Leader-Williams, N. & Tibanyenda, R.K. 1996. The Live Bird Trade in Tanzania. In *The Live Bird Trade in Tanzania*. N. Leader-Williams & R.K. Tibanyenda, Eds. Dar es Salaam. 31.
- Loftie-Eaton, M. 2014. *Geographic Range Dynamics of South Africa's Bird Species*. University of Cape Town.
- Maasdorp, L. 2007. A campaign to highlight the plight of the Southern Ground Hornbill in Zimbabwe. In *Proceedings of the 4th International Hornbill Conference: The Active Management of Hornbills and their Habitats for Conservation*. A.C. Kemp & M.I. Kemp, Eds. Pretoria, South Africa: Naturalists and Nomads. 225–230.
- Macarthur, R.H. 1965. Patterns of species diversity. *Biological Review*. 40:510–533.

- MAFF. 1990. *Importation of birds, mortality statistics from quarantine returns*. Surbiton, UK.
- Mander, M., Ntuli, L., Diederichs, N. & Mavundla, K. 2007. Economics of the Traditional Medicine Trade in South Africa. In *South African Health Review*. 2007th ed. Durban: Health Systems Trust. 189–200.
- Mander, M., Diederichs, N., Ntuli, L., Mavundla, K., Williams, V. & Mckean, S. 2007. *Survey of the trade in vultures for the traditional health industry in South Africa*. Everton, South Africa.
- Mills, M.S.L. 2004. Bird community responses to savanna fires: should managers be concerned? *South African Journal of Wildlife Research*. 34(December 2003):1–11.
- Morrison, K., Daly, B., Burden, D., Engelbrecht, D., Jordan, M., Kemp, A. & Potgieter, C. 2005. *Southern Ground Hornbill (Bucorvus leadbeateri) PHVA*.
- Morrison, K., Daly, B., Burden, D., Engelbrecht, D., Jordan, M., Kemp, A., Kemp, M., Potgieter, C., et al. 2005. *PHVA Southern Ground Hornbill (Bucorvus leadbeateri) Population and Habitat Viability Assessment workshop report*. Johannesburg, South Africa. DOI: 10.1080/10807030500278610.
- Msimanga, A. 2000. The role of birds in the culture of the Ndebele people of Zimbabwe. *Ostrich*. 71(1–2):22–24. DOI: 10.1080/00306525.2000.9639858.
- Muiruri, M.N. & Maunda, P. 2010. Birds, People and Conservation in Kenya. In *Ethno-Ornithology: Birds and Indigenous Peoples, Culture and Society*. S. Tidemann & A. Gosler, Eds. London, England: Earthscan.
- Mullen, P. & Pohland, G. 2007. Studies on UV reflection in feathers of some 1000 bird species: are UV peaks in feathers correlated with violet-sensitive and ultraviolet-sensitive cones? *Ibis*. 150(1):59–68. DOI: 10.1111/j.1474-919X.2007.00736.x.
- Mundy, P.J. 2003. Bird Strikes on Aeroplanes in Zimbabwe and Remedial Action. 326–331.
- Musila, S.N. 2007. The conservation status of hornbill species in Kenya. In *Proceedings of the 4th International Hornbill Conference: The Active Management of Hornbills and their Habitats for Conservation*. A.C. Kemp & M.I. Kemp, Eds. Pretoria, South Africa: Naturalists and Nomads. 135–142.
- Nevill, H. 1984. Some birds in Xhosa folklore. *Bokmakierie*. 36(2):29–31.
- Newton, I. 2003. *Population limitation in birds*. San Diego, California: Academic Press.
- Ngwenya, M.P. 2001. *Implications of the medicinal animal trade for nature conservation in KwaZulu-Natal*. Unpublished EKZN Report No. NA/125/04.
- Nilsson, G. 1985. *Importation of birds into the United States 1980 - 1984*.
- Washington. Oatley, T. 1967. Ground Hornbill's seige of Ixopo. *Albatross*.
- Ocholi, R.A. & Kalejaiye, J.O. 1990. Pet Bird Medicine: Case Report *Aeromonas hydrophila* as Cause of Hemorrhagic Septicemia in a Ground-Hornbill (*Bucorvus abyssinicus*). *Avian Diseases*. 34(2):495–496.
- Odull, M.O. & Byaruhanga, A. 2009. *Ecological baseline surveys of: Lake Bisina-Opeta wetland system, Lake Mburo-Nakivali wetlands system*. Kampala.
- Okonya, J.S. & Kroschel, J. 2013. Indigenous knowledge of seasonal weather forecasting: A case study in six regions of Uganda. *Agricultural Sciences*. 04(12):641–648. DOI: 10.4236/as.2013.412086.

- Orlove, B., Roncoli, C., Kabugo, M. & Majugu, A. 2010. Indigenous climate knowledge in southern Uganda: the multiple components of a dynamic regional system. *Climatic Change*. 100(2):243–265. DOI: 10.1007/s10584-009-9586-2.
- Paolilo, K. 1993. Birds on the Turgwe River, Humani Ranch. *Honeyguide*. (January 1988):1988.
- Purvis, A., Gittleman, J.L., Cowlshaw, G. & Mace, G.M. 2000. Predicting extinction risk in declining species. *Proceedings. Biological sciences / The Royal Society*. 267(1456):1947–52. DOI: 10.1098/rspb.2000.1234.
- Ranger, G. 1928. The Birds of Blythswood. *The Blythswood Review*. 11:39–40.
- Runo, M. 2001. Ground hornbills feeding on burnt leopard tortoise. *Honeyguide*. 47(2):184.
- Rusinga, O., Chapungu, L., Moyo, P. & Stigter, K. 2014. Perceptions of climate change and adaptation to microclimate change and variability among smallholder farmers in Mhakwe communal area, Manicaland Province, Zimbabwe. *Ethiopian Journal of Environmental Studies and Management*. 7(3):310–318.
- Sanft, K., Wermuth, H., Mertens, R., Hennig, W. 1849. No Title.
- Scott, M. 1999. Interesting bird observations at Londoloz. *Ecological Journal*.
- Seddon, P.J. 2011. Habitat restoration and management in avian reintroductions. *Reintroduction*. 1:5–14.
- Short, A. & Rushworth, I. 2004. Using cattle to achieve conservation objectives. *Newsletter of the Grassland Society of Southern Africa*. 4(1):15–16.
- Simelane, T.S. 2011. Are traditionally used resources within conservation areas a function of their sizes? *Natural Resources*. 02:130–139. DOI: 10.4236/nr.2011.22018.
- Simmons, R.E., Brown, C.J. & Kemper, J. 2015. Southern Ground Hornbill. In *Birds to watch in Namibia: red, rare and endemic species*. Windhoek, Namibia: Ministry of Environment and Tourism, Namibia Nature Foundation. 38–39.
- Smith, D.A. 2003. Part IV Avian Group. In *Fowler's Zoo and Wild Animal Medicine*. 93–276. DOI: 10.1201/9781420027952.pt4.
- Smith, A.M., Ismail, H., Henton, M.M., Keddy, K.H. & Surveillance, G. 2014. Similarities between Salmonella Enteritidis isolated from humans and captive wild animals in South Africa. *Journal of Infections in Developing Countries*. 8(12):1615–1619. DOI: 10.3855/jidc.5393.
- Snow, D.S. 1978. Bucerotidae. In *An Atlas of speciation in African non-passerine birds*. D.S. Snow, Ed. London: British Museum of Natural History. 323.
- Squires, B., Lowry, R. & Banks, C. 2016. Utilizing Zoos Victoria's Connect-Understand-Act model to enable social and biological gains in northern Kenya. *International Zoo Yearbook*. 50(1):96–111. DOI: 10.1111/izy.12128.
- Staver, A.C., Bond, W.J., Stock, W.D., Van Rensburg, S.J., Waldram, M.S. & Carla, A. 2013. Browsing and fire interact to suppress tree density in an African savanna. *Ecological Applications*. 19(7):1909–1919.
- Taylor, M.R. & Kemp, L. V. 2015. Southern Ground-Hornbill. In *The Eskom Red Data Book of Birds of South Africa, Lesotho and Swaziland*. M.R. (ed). Taylor, Ed. Johannesburg, South Africa: BirdLife South Africa.
- Taylor, M.R., Peacock, D.S. & Wanless, R.M. 2015. *The Eskom Red Data Book of Birds of South Africa, Lesotho and Swaziland*. BirdLife South Africa.

- Theron, N., Jansen, R., Grobler, P. & Kotze, A. 2013. The home range of a recently established group of Southern ground-hornbill (*Bucorvus leadbeateri*) in the Limpopo Valley, South Africa. *Koedoe*. 55(1):1–8. DOI: 10.4102/koedoe.v55i1.1135.
- Theron, N., Dalton, D., Grobler, J.P., Jansen, R. & Kotze, A. 2013. Molecular insights on the re-colonization of the Limpopo Valley, South Africa, by Southern Ground-Hornbills. *Journal of Ornithology*. 154(3):727–737. DOI: 10.1007/s10336-013-0937-4.
- Trail, P.W. 2007. African hornbills: keystone species threatened by habitat loss, hunting and international trade. *Ostrich*. 78(3):37–41. DOI: 10.2989/OSTRICH.2007.78.3.7.318.
- Underhill, L.G. 2014. Why are some species doing badly? *African BirdLife*. 38.
- Valeix, M., Fritz, H., Sabatier, R., Murindagomo, F., Cumming, D. & Duncan, P. 2011. Elephant-induced structural changes in the vegetation and habitat selection by large herbivores in an African savanna. *Biological Conservation*. 144(2):902–912. DOI: 10.1016/j.biocon.2010.10.029.
- Janse van Vuuren, Andries; Kemp, Lucy; McKechnie, A. The beak and unfeathered skin as heat radiators in the Southern Ground-hornbill. *J. Avian Biol.* 51, (2020).
- Vernon, C. 1974. Ground-Hornbills and the drought. *The Bee-eater*. 35(3):32. Vernon, C.J. 1982. *Notes from the border* 9.
- Vernon, C.J. 1986a. The ground-hornbill at the southern extremity of its range. *Ostrich*. 57:16–24.
- Vernon, C.J. 1986b. THE GROUND HORNBILL AT THE SOUTHERN EXTREMITY OF ITS RANGE. *Ostrich*. 57:16–24.
- Whiting, M.J., Williams, V.L. & Hibbitts, T.J. 2011. Animals traded for traditional medicine at the Faraday market in South Africa: species diversity and conservation implications. *Journal of Zoology*. 284(2):84–96. DOI: 10.1111/j.1469-7998.2010.00784.x.
- Wilfred, P. 2007. Habitat viability for the Southern Ground Hornbill in Tanzania: the case for the Malagarasi – Moyovozi Ramsar Site. In *Proceedings of the 4th International Hornbill Conference: The Active Management of Hornbills and their Habitats for Conservation*. A.C. Kemp & M.I. Kemp, Eds. Pretoria, South Africa: Naturalists and Nomads. 240–244.
- Williams, V.L., Cunningham, A.B., Bruyns, R.K. & Kemp, A.C. 2013. Birds of a Feather: Quantitative Assessments of the Diversity and Levels of Threat to Birds Used in African Traditional Medicine. In *Animals in Traditional Folk Medicine*. R. Alves & I. Rosa, Eds. Berlin, Heidelberg, Germany: Springer-Verlag. 383–420. DOI: 10.1007/978-3-642-29026-8.
- Wilson, G. 2010. What causes variation in the reproductive performance of groups of Southern Ground-Hornbills *Bucorvus leadbeateri*? University of Cape Town.
- Wilson, G. & Hockey, P.A.R. 2013. Causes of variable reproductive performance by Southern Ground-hornbill *Bucorvus leadbeateri* and implications for management. *Ibis*. 155:476–484.
- Witteveen, M., Parry, E., Norris-Rogers, M. & Brown, M. 2013. Breeding density of the Southern Ground Hornbill, *Bucorvus leadbeateri*, in the communal areas surrounding the Matobo National Park, Zimbabwe. *African Zoology*. 48(2):274–278.
- Wyness, W. 2011. Home range use by Southern Ground-Hornbills (*Bucorvus leadbeateri*) - quantifying seasonal habitat selection and vegetation characteristics. University of Cape Town.




Zoghby, B. 2015. Fine-scale movements and habitat use of the Southern Ground-hornbill *Bucorvus leadbeateri*. University of Cape Town.

Zoghby, B. A., Little, R. M., Ryan, P. G. & Hockey, P. A. R. Patterns of roost site selection and use by Southern Ground-Hornbills in north-eastern South Africa. *Ostrich* 1–6 (2016). doi:10.2989/00306525.2016.1156180

Zoghby, B. A., Ryan, P. G., Little, R. M., Reid, T. & Hockey, P. A. R. Seasonal changes in movement and habitat use by Southern Ground-Hornbills in the South African Lowveld. *Ostrich* **86**, 1–9 (2015).

## 7. APPENDICES

### Appendix A: Invitation to workshop participants



## INVITATION TO PARTICIPATE

### SOUTHERN GROUND-HORNBILL BIODIVERSITY MANAGEMENT PLAN

One of the major outcomes of the IUCN SSC Population and Habitat Viability Assessment held in August 2017 was that a vital next step was to garner national government support for the species, and have the conservation plans gazetted, in the form of a Biodiversity Management Plan for Species (BMP-S: Biodiversity Act, Act 10 of 2004). This has been supported by DEA and we have been given the go-ahead to proceed.

Although extensive stakeholder engagement was conducted with the 2017 PHVA and previous Single Species Management Plans, we feel that further stakeholder engagement will be fruitful. Thus we would like to invite you to attend and participate in the BMP workshop to ensure that the plan we put together is the best for the species going into the future.

**Venue:** National Zoological Gardens of South Africa

**Date:** 15<sup>th</sup> (full day), 16<sup>th</sup> (full day) and 17<sup>th</sup> (half day) May 2018

Please email [project@ground-hornbill.org.za](mailto:project@ground-hornbill.org.za) with regards your participation.

\*Image from one of six tapestries depicting the cultural value of the species to the Xhosa people by these Keiskamma Arts Trust, a collaborative artwork led by Cebo Mvubu.

**Appendix B: Contributors to compiling the first draft**

**PRIMARY WORKSHOP: 15<sup>TH</sup> – 17<sup>TH</sup> MAY 2018**

**7.1. Attendance register**

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## 7.2. List of participants and contact details.

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## Appendix C: Attendance register and invitee list for the actions and relevant agreements workshop for implementation.

### 1) LEDET (Modimolle)



#### Purpose of Workshop

The aim of this workshop is to ensure all relevant stakeholders are engaged in the drafting of the biodiversity management plan for the Southern Ground-Hornbill in South Africa.

Name	Designation	Signature
JA Heymans	Environmental Officer	
K Steenkamp	Deputy director	

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### 2) MTPA (Loskop Nature Reserve)

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3) EKZN (Howick)

**Purpose of Workshop**

The aim of this workshop is to ensure all relevant stakeholders are engaged in the drafting of the biodiversity management plan for the Southern Ground-Hornbill in South Africa.

Name	Designation	Signature
Catharine Hanekom	District Ecologist - uMhlabuyazi	<i>[Signature]</i>
Sonja Kruger	Park Ecologist - Ezemvelo	<i>[Signature]</i>
Ian Rushworth	Manager Ecological Advice West	<i>[Signature]</i>
Brent Coverdale	Animal Scientist - mammals/Birds	<i>[Signature]</i>

Participants			
Cathy	Hanekom	District ecologist	
Sonja	Kruger	Park Ecologist	
Ian	Rushworth	Manager: Ecological Advice West	
Brent	Coverdale	Animal Scientists (Mammals and birds)	
Apologies			
Craig	Mulqueeny	Manager: Ecological Advice East	



4) South African National Parks (Skukuza)



**Purpose of Workshop**

The aim of this workshop is to ensure all relevant stakeholders are engaged in the drafting of the biodiversity management plan for the Southern Ground-Hornbill in South Africa.

Name	Designation	Signature
Duney Kemp	Facilitator	<i>Duney Kemp</i>
Sophie Neller	MGHP / note taker	<i>Sophie Neller</i>
Cathy Greaver	Regional Ecologist: Kruger	<i>Cathy Greaver</i>
Chenay Simms	GIS & RS Analyst	<i>Chenay Simms</i>
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## Appendix D: Research needs.

As a BMP-S is not a research strategy and focusses on adaptive management implementation research requirements are not fixed and changes with implementation but research strategies should support the BMP-S implementation. The following list of research was identified as important at the BMP-S workshop and includes the research requirements identified during the PHVA that are yet to be completed. It was emphasised that research needs to speak to desired outcomes and achievable outcomes. This is in addition to ensuring all existing data is analysed and published, and that no data lies dormant with agencies, but is used to continue to grow the evidence-base for conservation planning and action.

### Veterinary Health

- Investigate the suitability, dosages and pathways of veterinary drugs.
- Initiate toxicology studies.
- Compile risk assessments of NCD in captive and wild populations.

### Agri-Science

- Identification and dissemination of information of the agrochemicals (herbicides, pesticides) that will impact SGH health and survival.
- Model current potential impacts of agrochemicals on SGH.
- Investigate drugs used in agriculture (herbicides, pesticides) that can impact on the health and survival of SGH.
- Identify areas of different uses and availability including rural areas.

### Social Sciences

- Study to investigate shared anthropogenic threats of culturally important species that include SGH and species e.g. Secretary birds.
- Continue to investigate activities and monitor use in traditional medicine markets.
- Investigate current local illegal use of SGH by communities.

### Indigenous Knowledge Systems

- Investigate and quantify levels and trends in knowledge, attitudes, perceptions, beliefs and behaviour of all stakeholder groups that share their land with SGH (MGHP/ UKZN underway)

### Breeding / Biology

- Investigate and monitor the survivability of 2<sup>nd</sup> egg hatchlings during the entire growth period. Develop a technique to accurately confirm the sexes of birds.
- Investigate group dynamics in different areas.
- Investigate skewed mortality in females.

- Develop more effective techniques for an accurate census to include citizen science reporting and new methods (apps) for monitoring.

#### **Modelling energy developments**

- Model high-risk areas (identified for renewable energy and provision) concerning occupied SGH distribution.
- Determine the overlap of wind farms or wind resource (potential wind farms) and SGH distribution.
- Model impact of wind turbines – the effect of potential collisions. Look at Transkei area with new developments of proposed wind farms. Only vulture information available thus far.
- Identify emerging threats posed by energy providers.
- Conduct post-construction monitoring at existing wind farms aimed to better understand avoidance behaviour and how birds interact with infrastructure.

#### **Transformer boxes – further research required to qualify the threat.**

- Model overlap of transformer boxes with species distribution range.
- Determine the number of transformer boxes over distribution range.
- Assess how many cases to qualify scope.
- Investigate more suitable infrastructure.
- Conduct behavioural studies as to why birds use the infrastructure.
- Conduct a study to investigate alternative mitigation measures eg detaching the birds from using transformers (noise, height).
- Investigate and develop alternative monitoring and evaluation technologies.

#### **Habitat**

- Scale the risk of a potentially emerging threat: invasive alien plant species, including indigenous plant species e.g. *Pteridium aquilinum*.
- Conduct risk assessments for climate change.
- Monitor and manage the impacts of surrounding land.
- Understand what burning regime would best support both SGH and optimal grassland species richness. To support the development of habitat management guidelines and thus address burning and grazing intensity to take quantify difference between short/well-grazed grass and overgrazing.
- Investigate the feasibility by applying bioregional plans for data deficient areas within the distribution range.
- Secure and safeguard stronghold/core areas for SGH breeding and foraging sites both within and outside protected areas - monitoring and research required.
- Investigate the impact of human infrastructure on mortalities.
- Use of telemetry (GPS or satellite transmitters) in areas of potential conflict to track birds (core and home range) and do fine-scale innovative modelling.
- Track birds to determine flight height.

- Identify possible corridors to allow for gene flow in populations/groups in Zululand, southern KNP.
- Investigate the distribution and home-range use within mixed landscapes.
- Identify areas suitable for release through bioregional plans.
- Describe forage areas in more detail with regards to bush encroachment, under grazing, loss of nests, disturbances.
- Investigate the degree of increasing habitat fragmentation on the genetic health of SGH populations.
- Investigate the effectiveness of disposal of biological waste, chicken litter and carcasses by farms, including facilities feeding animals.

## Appendix E: Detailed national monitoring plan

Contact [project@ground-hornbill.org.za](mailto:project@ground-hornbill.org.za) for a full copy of the National Monitoring Plan.

### Appendix F: SGH BMP-S Monitoring and Reporting Framework

SECTION BMP-S ACTIONS & ACTIVITIES	TIMEFRAME	FUNDING / RESOURCES	IMPLEMENTING AGENCIES / COLLABORATORS	RESPONSIBLE AGENCY (REPORTING)	MEASURABLE OUTCOMES	PROGRESS	CHALLENGES / CORRECTIVE MEASURES	IMPLEMENTATION IMPLICATIONS
<b>OBJECTIVE 1</b>	<b>TO ESTABLISH AND MAINTAIN EFFECTIVE COMMUNICATION AND AWARENESS BETWEEN AND AMONG STAKEHOLDERS AND THE PUBLIC</b>							
<b>OBJECTIVE TARGET 1.1</b>	<b>Objective Target: Establish and maintain productive partnerships for SGH conservation</b>							
<b>ACTION 1.1.1</b>	<b>Formalise inter-agency collaboration to coordinate and review the implementation of the SGH BMP-S</b>							
Establish a Steering Committee	Within year one	Each agency to commit budget for and fund their commitment	ECPTA, EC DEDEAT, EKZNW, MPTA, LDEDET, GDARD, SANParks, SANBI, DFFE; MGHP, BirdLife SA	DFFE  SANBI	Steering Committee meetings with minutes (frequency to be defined by the SC once in place)		Continuity and continued participation	
Develop Terms of Reference (ToR) for SGH BMP-S Working Group	Within year one			MGHP	SGH WG Terms of Reference		Cost of participation/create an improved mechanism for virtual communication e.g. video conferencing	
Inter-agency agreements identified and initiated	Within year one			SANBI	Annual M&E report Copies of inter-agency agreements submitted to the steering committee			
<b>ACTION 1.1.2</b>	<b>Develop productive partnerships with stakeholders for SGH conservation</b>							
				DFFE				

SECTION BMP-S ACTIONS & ACTIVITIES	TIMEFRAME	FUNDING / RESOURCES	IMPLEMENTING AGENCIES / COLLABORATORS	RESPONSIBLE AGENCY (REPORTING)	MEASURABLE OUTCOMES	PROGRESS	CHALLENGES / CORRECTIVE MEASURES	IMPLEMENTATION IMPLICATIONS
Stakeholder matrix with existing programmes and required critical interventions developed	Within year one, ongoing (updated) annually hereafter.				Stakeholder matrix to be submitted to steering committee and updated each year after input from stakeholders.			
Stakeholder engagement strategy with clear targets and responsibilities developed	Within one year of gazetting	Each agency to fund its commitment	ECPTA, ED DEDEAT, EKZNW, MPTA, LDEDET, GDARD, SANParks, SANBI, DFFE; MGHP, BirdLife SA		Awareness and educational campaigns		Funding	
Develop and package stakeholder-specific resource content and tools as approved by SC	Then ongoing				Distribution of awareness tools/brochures		Funding for printing, and distribution.	
Investigate and guide the development of appropriate incentives for participation in SGH conservation	Within one year of gazetting				Voluntary stewardship/custodianship sites identified and established			
Maximum custodianship for SGH in core habitat	Within one year of gazetting				Best practice guidelines for land management in SGH habitat developed			
Develop and implement	Within one year of gazetting							

SECTION BMP-S ACTIONS & ACTIVITIES	TIMEFRAME	FUNDING / RESOURCES	IMPLEMENTING AGENCIES / COLLABORATORS	RESPONSIBLE AGENCY (REPORTING)	MEASURABLE OUTCOMES	PROGRESS	CHALLENGES / CORRECTIVE MEASURES	IMPLEMENTATION IMPLICATIONS
management guidelines for elephant damage to nests, bush encroachment and invasive species control, land-use practices and disturbance of nesting and roosting sites								
<b>OBJECTIVE 2</b>								
<b>TO SIGNIFICANTLY IMPROVE THE HEALTH AND BREEDING POTENTIAL OF THE WILD SGH POPULATION</b>								
<b>OBJECTIVE TARGET 2.1</b>								
<b>To reduce poisoning of SGH in South Africa by improved reporting and monitoring network for all SGH poisoning events in South Africa with a measurable reduction in agrochemical poisoning events relating to SGH in South Africa.</b>								
<b>ACTION 2.1.1</b>	<b>Improve reporting of all SGH mortalities to the national mortality database</b>							
Centralise population monitoring and mortality database established	Annually	Agency optional budget	ECPTA, EC DEDEAT, EKZNW, MPTA, LDEDET, GDARD, SANParks, SANBI, DFFE; MGHP, BirdLife SA	DFFE	National mortality database established		Standardised reporting	
Data sharing agreements: MGHP custodians of the national database	Within one year of gazetting		MGHP				Funding and human capacity	
<b>ACTION 2.1.2</b>	<b>Collection of data on the prevalence of lead in SGH</b>							
				DFFE				



SECTION BMP-5 ACTIONS & ACTIVITIES	TIMEFRAME	FUNDING / RESOURCES	IMPLEMENTING AGENCIES / COLLABORATORS	RESPONSIBLE AGENCY (REPORTING)	MEASURABLE OUTCOMES	PROGRESS	CHALLENGES / CORRECTIVE MEASURES	IMPLEMENTATION IMPLICATIONS
An opportunistic sampling of blood (from living birds) or, liver, bone, eggshells collected from nests	Ongoing	Agency optional budget	ECPTA, EC DEDEAT, EKZNW, MPTA, LDEDET, GDARD, SANParks, SANBI, DFFE; MGHP, BirdLife SA, EWT, SAHGCA, WRSA		Biobank samples		Training and permissions to take and transport biological samples.	
SOP for sample/specimen collections developed (including chain-of-custody and post mortems)	Within one year of gazetting		MGHP		Sample collection SOP developed			
Monitoring protocol and programme implemented	Within one year of gazetting		LTT		National lead prevalence database established			
Develop and implement non-lead ammunition campaigns	Within one year of gazetting		LTT					
<b>ACTION 2.1.3</b>	<b>Report on SGH poisoning and collaborate with the National Wildlife Poison Prevention Working Group (NWPPWG)</b>			<b>DFFE</b>				
Develop and implement training modules for dealing	Annually and ongoing	Agency optional budget	ECPTA, EC DEDEAT, EKZNW, MPTA, LDEDET,		Training modules developed		Available capacity	

SECTION BMP-S ACTIONS & ACTIVITIES	TIMEFRAME	FUNDING / RESOURCES	IMPLEMENTING AGENCIES / COLLABORATORS	RESPONSIBLE AGENCY (REPORTING)	MEASURABLE OUTCOMES	PROGRESS	CHALLENGES / CORRECTIVE MEASURES	IMPLEMENTATION IMPLICATIONS
with poisoned/injured SGH			GDARD, SANParks, SANBI, DFFE; MGHP, BirdLife SA, EWT					
Report SGH poisoning to NWPPWG					SOP for veterinary care and rehabilitation developed			
Conduct poison response and site training (all birds-of- prey), including management of carcass retrieval and disposal					Number of stakeholders trained			
SOP for veterinary care and rehabilitation of affected individuals developed					Annual poisoning report			
<b>ACTION 2.1.4</b>				<b>DFFE</b>				
<b>Raise awareness relating to impacts of agrochemicals (illegal/off-label) and lead ammunition on SGH</b>								
Develop and distribute awareness material relating to the impacts of agrochemicals (illegal/off-label) and	Within two years of gazetting	Agency optional budget	ECPTA, EC DEDEAT, EKZNW, MPTA, LDEDET, GDARD, SANParks,		Awareness material and training modules developed and distributed to SGH Custodian		Sourcing funding to ensure Custodian Programme can be fully implemented and maintained	

SECTION BMP-S ACTIONS & ACTIVITIES	TIMEFRAME	FUNDING / RESOURCES	IMPLEMENTING AGENCIES / COLLABORATORS	RESPONSIBLE AGENCY (REPORTING)	MEASURABLE OUTCOMES	PROGRESS	CHALLENGES / CORRECTIVE MEASURES	IMPLEMENTATION IMPLICATIONS
lead ammunition on SGH			SANBI, DFFE; MGHP, BirdLife SA					
Engage and assign SGH Custodians	Custodianship training annually				SGH Custodianship engagements and agreements in place			
Update and review SGH Custodianship Programme material and training modules					Publications (popular and peer-reviewed) on the prevalence and impacts of agrochemicals and lead ammunition			
Research and publish articles on the prevalence and impacts of agrochemicals and lead ammunition								
<b>OBJECTIVE 3</b>								
<b>TO REDUCE SGH OFFTAKE FOR BELIEF-BASED USES</b>								
<b>OBJECTIVE TARGET 3.1</b>								
SGH is culturally revered throughout their range, however, these cultural belief systems rely on some offtake from the SGH population and so we seek a measurable reduction in illegal off-take in SGH and co-management of off-takes by traditional leaders to reduce illegal offtake of SGH.								
<b>ACTION 3.1.1</b>								
Expand cultural protection in South Africa, through engagements with indigenous knowledge systems and traditional leaders								
Research and publish findings on cultural perceptions and values	Within one year of gazetting	Agency optional budget	ECPTA, EC DEDEAT, EKZNW, MPTA, LDEDET, GDARD, SANParks,	DFFE	Publications (popular and peer-reviewed) on cultural		The sensitive approach required to	

SECTION BMP-S ACTIONS & ACTIVITIES	TIMEFRAME	FUNDING / RESOURCES	IMPLEMENTING AGENCIES / COLLABORATORS	RESPONSIBLE AGENCY (REPORTING)	MEASURABLE OUTCOMES	PROGRESS	CHALLENGES / CORRECTIVE MEASURES	IMPLEMENTATION IMPLICATIONS
			SANBI, DFFE; MGHP, BirdLife SA, HEIs, Traditional Leadership Councils, WLTP, Traditional Healers Council, DoTA, All relevant language group community leaders.		perceptions and values of SGH		prevent any perverse outcome	
Stakeholder and community engagement					Off-take assessments			
Co-management conservation plans developed and implemented	Within one year of gazetting and ongoing				Sustainable off-take simulators			
Community engagement strategy developed and implemented					Community engagement			
Capacity assessment of community leadership structures	Within three years of gazetting and ongoing							

SECTION BMP-S ACTIONS & ACTIVITIES	TIMEFRAME	FUNDING / RESOURCES	IMPLEMENTING AGENCIES / COLLABORATORS	RESPONSIBLE AGENCY (REPORTING)	MEASURABLE OUTCOMES	PROGRESS	CHALLENGES / CORRECTIVE MEASURES	IMPLEMENTATION IMPLICATIONS
Capacity development of community leadership structures for sustainable management and off-takes of SGH	Within five years of gazetting and ongoing				Facilitate co-management agreements			
<b>OBJECTIVE 4</b>	<b>TO REDUCE SGH MORTALITIES DUE TO PERSECUTION IN RESPONSE TO WINDOW DAMAGE</b>							
<b>OBJECTIVE TARGET 4.1</b>	<b>To enhance communities and landowner awareness concerning SGH window damage, and change attitudes of affected parties away from lethal or injurious actions against SGH.</b>							
<b>ACTION 4.1.1</b>	<b>Improve mitigation measures against impacts of breaking windows by SGH and implemented protocols on how to protect windows from being broken by the birds</b>							
Establish and maintain an SGH window-breaking register database	Ongoing		ECPTA, EC DEDEAT, EKZNW, MPTA, LDEDET, GDARD, SANParks, SANBI, DFFE; MGHP, BirdLife SA, HEIs, Traditional Leadership Councils, WLTP, Traditional Healers Council, DoTA		National SGH window-breaking register database established			
Research and publish findings on cost-effective mitigation	Every two years after gazetting	Agency optional budget			Revised education and awareness materials for the mitigation of			

SECTION BMP-5 ACTIONS & ACTIVITIES	TIMEFRAME	FUNDING / RESOURCES	IMPLEMENTING AGENCIES / COLLABORATORS	RESPONSIBLE AGENCY (REPORTING)	MEASURABLE OUTCOMES	PROGRESS	CHALLENGES / CORRECTIVE MEASURES	IMPLEMENTATION IMPLICATIONS
measures against the impacts of breaking windows by SGH					responses to SGH window damage			
Develop and distribute awareness material relating to breaking of windows by SGH in areas of risk, such as schools, with affected communities, private landowners and Custodians	Within one year of gazetting, ongoing				Number of business and industry partnerships established for providing alternate window protection material			
Develop and implement Immediate Response and Mitigation Protocols	Within one year of gazetting							
Foster relationships with industrial suppliers of mitigation materials and facilitate provisioning to high-risk areas								
<b>OBJECTIVE 5 TO REDUCE AND ELIMINATE THE CONFLICT AND MORTALITY OF SGH AS A RESULT OF CURRENT AND FUTURE ENERGY INFRASTRUCTURE DEVELOPMENT</b>								
<b>OBJECTIVE TARGET 5.1</b>	To reduce and eliminate the mortalities of existing energy infrastructure, including distribution poles and power lines, within 5 years since gazetting, for zero SGH electrocutions due to unsafe distribution poles and minimise SGH collisions on power line spans.							

SECTION BMP-5 ACTIONS & ACTIVITIES	TIMEFRAME	FUNDING / RESOURCES	IMPLEMENTING AGENCIES / COLLABORATORS	RESPONSIBLE AGENCY (REPORTING)	MEASURABLE OUTCOMES	PROGRESS	CHALLENGES / CORRECTIVE MEASURES	IMPLEMENTATION IMPLICATIONS
<b>ACTION 5.1.1</b>	<b>Modification and marking infrastructure to reduce SGH mortality</b>		<b>electrical-provision</b>	<b>DFFE</b>				
Establish and maintain an SGH electrocution/collision register database	Within one year of gazetting and then ongoing - annual feedback reports	Agency optional budget	DE, ECPTA, EC DEDEAT, EKZNW, MPTA, LDEDET, GDARD, SANParks, SANBI, DFFE; MGHP, BirdLife SA, HEIs, EWT, ESKOM		Engagement between ESKOM and EWT/BirdLife SA/MGHP		Knowledge gaps	
Develop high-incident-potential site identification model (within distribution range overlapping power distribution lines)					Publications (popular and peer-reviewed) on the effectiveness of mitigation measures		Cost of mitigation and modification of electricity provisioning infrastructure	
Research and publish findings of incidents of electrocution/collisions and effectiveness of mitigation measures implemented	Within three years of gazetting and ongoing				Adaptive management implementation of research findings			
Develop guidelines for the effective insulation of transformer boxes, live components of all new transformer boxes and marking of								

SECTION BMP-5 ACTIONS & ACTIVITIES	TIMEFRAME	FUNDING / RESOURCES	IMPLEMENTING AGENCIES / COLLABORATORS	RESPONSIBLE AGENCY (REPORTING)	MEASURABLE OUTCOMES	PROGRESS	CHALLENGES / CORRECTIVE MEASURES	IMPLEMENTATION IMPLICATIONS
provisioning infrastructure for implementation by ESKOM in partnership with BirdLife SA								
<b>OBJECTIVE TARGET 5.2</b>	<b>To assess the potential for wind farms as an emerging threat to SGH.</b>							
<b>ACTION 5.2.1</b>	<b>Develop appropriate mitigation and monitoring protocols for potential impacts of wind farms/turbines on SGH</b>							
Establish and maintain SGH wind turbine collisions register	Within one year of gazetting	Agency optional budget	ECPTA, EC DEDEAT, EKZMW, MPTA, LDEDET, GDARD, SANParks, SANBI, DFFE, DE; MGHP, BirdLife SA, HEIs, EWT	DFFE	Update BirdLife SA/EWT Best Practice Guidelines for Wind Energy Facilities		Environmental Authorisations to include specialist monitoring results	
Develop high-incident-protocol site identification model (within distribution range overlapping distribution of wind turbines)	Within one year of gazetting and ongoing				Stakeholder engagements and BARESG (Birds and Renewable Energy Specialist Group) and BAREF (Birds and Renewable Energy Forum)			
Research and publish findings of incidents of collisions with wind turbines	Within one year of gazetting; information made available				Surveillance and monitoring results made available by avifaunal specialists and published			



SECTION BMP-S ACTIONS & ACTIVITIES	TIMEFRAME	FUNDING / RESOURCES	IMPLEMENTING AGENCIES / COLLABORATORS	RESPONSIBLE AGENCY (REPORTING)	MEASURABLE OUTCOMES	PROGRESS	CHALLENGES / CORRECTIVE MEASURES	IMPLEMENTATION IMPLICATIONS
	and best practice guidelines updated within three years of gazetting				by BirdLife SA, to update the Best Practice Guidelines accordingly			
Develop and include guidelines for effective pre-and post-construction monitoring of SGH in existing BirdLife SA/EWT Best Practice Guidelines	Within five years of gazetting				Publications (popular and peer-reviewed) on the impacts of wind farms on SGH			
Engage national and Provincial Environmental Authorisation authorities	Within one year of gazetting				Species-specific guidelines for mitigation on impacts developed			
<b>OBJECTIVE 6 TO REDUCE HABITAT LOSS, DEGRADATION/ALTERATION AND FRAGMENTATION OF CORE SGH HABITAT</b>								
<b>OBJECTIVE TARGET 6.1 To reduce, halt and reverse the loss of core SGH habitat</b>								
<b>ACTION 6.1.1 Inform land-use planning policies to secure core areas for SGH</b>								
Maintain national SGH spatial distribution database	Within one year of gazetting	Agency optional budget	ECPTA, EC DEDEAT, EKZNW, MPTA, LDEDET, GDARD, SANParks, SANBI, DFFE, DE,	DFFE	National SGH spatial distribution database		Compliance with Environmental Authorisation conditions; Conservation Plans	

SECTION BMP-S ACTIONS & ACTIVITIES	TIMEFRAME	FUNDING / RESOURCES	IMPLEMENTING AGENCIES / COLLABORATORS	RESPONSIBLE AGENCY (REPORTING)	MEASURABLE OUTCOMES	PROGRESS	CHALLENGES / CORRECTIVE MEASURES	IMPLEMENTATION IMPLICATIONS
			Municipalities; MGHO, BirdLife SA, HEIs, EWT				not mainstreamed into IDPs and SDFs	
Maintain national SGH population monitoring database					Provincial population monitoring database			
SGH data informs Bioregional Conservation Plans/Biodiversity Spatial Plans	Within one year of gazetting, revised annually				SANParks population monitoring database			
BCPs/BSPs inform land-use planning policies, protected area expansion strategies (including stewardship), IDPs and SDFs					National SGH population monitoring database			
SGH included in BirdLife SA Best Practice Guidelines for EIA assessments	Within one year of gazetting				Best Practice Guidelines for EIA assessments including SGH			
Develop mainstream best practice land-use guidelines					SGH Conservation Translocation and Reintroduction Guidelines			

SECTION BMP-S ACTIONS & ACTIVITIES	TIMEFRAME	FUNDING / RESOURCES	IMPLEMENTING AGENCIES / COLLABORATORS	RESPONSIBLE AGENCY (REPORTING)	MEASURABLE OUTCOMES	PROGRESS	CHALLENGES / CORRECTIVE MEASURES	IMPLEMENTATION IMPLICATIONS
Develop SGH conservation translocation and reintroduction guidelines					Best Practice Land-use Guidelines for SGH (and stewardships)			
Protected Area Management Plans included SGH population monitoring					Climate change corridors include SGH parameters			
Integrate impacts of climate change on the mapping of climate change corridors in conservation planning products								
<b>OBJECTIVE 7</b>								
<b>TO MINIMISE THE RISK OF INFECTION OF NEWCASTLE DISEASE AND OTHER INFECTIOUS DISEASES IN IN-SITU SGH POPULATIONS</b>								
<b>OBJECTIVE TARGET 7.1</b>								
<b>To maximize prevention by rapid response, containment and awareness of NCD and other infectious disease outbreaks in the distribution range of SGH.</b>								
<b>ACTION 7.1.1</b>	<b>To mitigate against impacts of NCD and other infectious disease outbreaks in the distribution range of SGH</b>		<b>DFFE</b>					
Assess historical NCD and other infectious disease outbreaks in the distribution range of SGH	Within one year of gazetting	Agency optional budget	ECPTA, EC DEDEAT, EKZNW, MPTA, LDEDET, GDARD, SANParks, SANBI, DFFE, NDA; MGHP, BirdLife SA,		NCD incident reporting database and protocols for conservation agencies, small-scale or subsistence-scale poultry farmers and stakeholders		National NCD reporting skewed to poultry species	

SECTION BMP-5 ACTIONS & ACTIVITIES	TIMEFRAME	FUNDING / RESOURCES	IMPLEMENTING AGENCIES / COLLABORATORS	RESPONSIBLE AGENCY (REPORTING)	MEASURABLE OUTCOMES	PROGRESS	CHALLENGES / CORRECTIVE MEASURES	IMPLEMENTATION IMPLICATIONS
			HEIs, EWT, Poultry Industry					
Develop SGH Disease Risk Assessment					NCD Reaction Protocol including a post-mortem of SGH carcasses, and sampling of live birds		Low reporting/submission of carcasses for testing	
Maintain National NCD outbreaks register database					NCD Disease risk assessment for SGH			
Maintain/establish NCD outbreak reporting protocol					Revised education and awareness materials for a response to NCD outbreaks			
Facilitate disease outbreak notification to stakeholders								
Develop and implement NCD/infectious Disease Outbreak Reaction Protocol (including post- mortem and sampling)								
<b>ACTION 7.1.2</b>	<b>Assess the feasibility of using the NCD vaccination protocol for the protection of wild SGH</b>			<b>DFFE</b>				

SECTION BMP-S ACTIONS & ACTIVITIES	TIMEFRAME	FUNDING / RESOURCES	IMPLEMENTING AGENCIES / COLLABORATORS	RESPONSIBLE AGENCY (REPORTING)	MEASURABLE OUTCOMES	PROGRESS	CHALLENGES / CORRECTIVE MEASURES	IMPLEMENTATION IMPLICATIONS
Maintain a database of all vaccination administration, type, frequency and resulting blood titres	Within one year of gazetting	Agency optional budget	ECPTA, EC DEDEAT, EKZNW, MPTA, LDEDET, GDARD, SANParks, SANBI, DFFE, NDA, State Veterinary Services; MGHF, BirdLife SA, HEIs, EWT, PAAZA, Poultry Industry		National SGH mortality database includes reporting relevant to NCD		The risk associated with handling specimens	
Analysis of titres to assess the efficacy of various vaccine protocols	Within one year of gazetting				Development of vaccination protocols for <i>in situ</i> SGH and trials of implementation			
Finalise and implement the vaccine protocol for the NCD	Within two years of gazetting							

SECTION BMP-S ACTIONS & ACTIVITIES	TIMEFRAME	FUNDING / RESOURCES	IMPLEMENTING AGENCIES / COLLABORATORS	RESPONSIBLE AGENCY (REPORTING)	MEASURABLE OUTCOMES	PROGRESS	CHALLENGES / CORRECTIVE MEASURES	IMPLEMENTATION IMPLICATIONS
Stakeholder matrix with existing programmes and required critical interventions developed								
Stakeholder engagement strategy with clear targets and responsibilities developed	Within one year of gazetting	Each agency to fund its commitment	ECPTA, ED DEDEAT, EKZNW, MPTA, LDEDET, GDARD, SANParks, SANBI, DFFE; MGHP, BirdLife SA		Awareness and educational campaigns		Funding	
Develop and package stakeholder-specific resource content and tools as approved by SC	Then ongoing				Distribution of awareness tools/brochures			
Investigate and guide the development of appropriate incentives for participation in SGH conservation					Voluntary stewardship/custodianship sites identified and established			
Facilitate safe spaces for SGH in core habitat					Best practice guidelines for land management in SGH habitat developed			
Develop and implement								

SECTION BMP-S ACTIONS & ACTIVITIES	TIMEFRAME	FUNDING / RESOURCES	IMPLEMENTING AGENCIES / COLLABORATORS	RESPONSIBLE AGENCY (REPORTING)	MEASURABLE OUTCOMES	PROGRESS	CHALLENGES / CORRECTIVE MEASURES	IMPLEMENTATION IMPLICATIONS
management guidelines for elephant damage to nests, bush encroachment and invasive species control, land-use practices and disturbance of nesting and roosting sites								
<b>OBJECTIVE 2</b>								
<b>TO SIGNIFICANTLY IMPROVE THE HEALTH AND BREEDING POTENTIAL OF THE WILD SGH POPULATION</b>								
<b>OBJECTIVE TARGET 2.1</b>								
<b>To reduce poisoning of SGH in South Africa by improved reporting and monitoring network for all SGH poisoning events in South Africa with a measurable reduction in agrochemical poisoning events relating to SGH in South Africa.</b>								
<b>ACTION 2.1.1</b>	<b>Improve reporting of all SGH mortalities to the national mortality database</b>							
Centralise population monitoring and mortality database established	Annually	Agency optional budget	ECPTA, EC DEDEAT, EKZNW, MPTA, LDEDET, GDARD, SANParks, SANBI, DFFE; MGHP, BirdLife SA	DFFE	National mortality database established		Standardised reporting	
Data sharing agreements: MGHP custodians of the national database								
<b>ACTION 2.1.2</b>	<b>Collection of data on the prevalence of lead in SGH</b>							
				DFFE				

CONTINUES ON PAGE 130 OF BOOK 2

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**AIDS HELPLINE: 0800-0123-22 Prevention is the cure**

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An opportunistic sampling of blood (from living birds) or, liver, bone, eggshells collected from nests	Ongoing	Agency optional budget	ECPTA, EC DEDEAT, EKZNW, MPTA, LDEDET, GDARD, SANIParks, SANBI, DFFE; MGHP, BirdLife SA, EWT, SAHGCA, WRSA		Biobank samples			
SOP for sample/specimen collections developed (including chain-of-custody and post mortems)					Sample collection SOP developed			
Monitoring protocol and programme implemented					National lead prevalence database established			
Develop and implement non-lead ammunition campaigns								
<b>ACTION 2.1.3</b>	<b>Report on SGH poisoning and collaborate with the National Wildlife Poison Prevention Working Group (NWPPPWG)</b>			<b>DFFE</b>				
Develop and implement training modules for dealing	Annually and ongoing	Agency optional budget	ECPTA, EC DEDEAT, EKZNW, MPTA, LDEDET,		Training modules developed		Available capacity	

SECTION BMP-S ACTIONS & ACTIVITIES	TIMEFRAME	FUNDING / RESOURCES	IMPLEMENTING AGENCIES / COLLABORATORS	RESPONSIBLE AGENCY (REPORTING)	MEASURABLE OUTCOMES	PROGRESS	CHALLENGES / CORRECTIVE MEASURES	IMPLEMENTATION IMPLICATIONS
with poisoned/injured SGH			GDARD, SANParks, SANBI, DFFE; MGHP, BirdLife SA, EWT					
Report SGH poisoning to NWPPWG					SOP for veterinary care and rehabilitation developed			
Conduct poison response and site training (all birds-of- prey), including management of carcass retrieval and disposal					Number of stakeholders trained			
SOP for veterinary care and rehabilitation of affected individuals developed					Annual poisoning report			
<b>ACTION 2.1.4</b>				<b>DFFE</b>				
<b>Raise awareness relating to impacts of agrochemicals (illegal/off-label) and lead ammunition on SGH</b>								
Develop and distribute awareness material relating to the impacts of agrochemicals (illegal/off-label) and	Within two years of gazetting	Agency optional budget	ECPTA, EC DEDEAT, EKZMW, MPTA, LDEDET, GDARD, SANParks,		Awareness material and training modules developed and distributed to SGH Custodian		Sourcing funding to ensure Custodian Programme can be fully implemented and maintained	

SECTION BMP-5 ACTIONS & ACTIVITIES	TIMEFRAME	FUNDING / RESOURCES	IMPLEMENTING AGENCIES / COLLABORATORS	RESPONSIBLE AGENCY (REPORTING)	MEASURABLE OUTCOMES	PROGRESS	CHALLENGES / CORRECTIVE MEASURES	IMPLEMENTATION IMPLICATIONS
lead ammunition on SGH			SANBI, DFFE; MGHP, BirdLife SA					
Engage and assign SGH Custodians	Custodianship training annually				SGH Custodianship engagements and agreements in place			
Update and review SGH Custodianship Programme material and training modules					Publications (popular and peer-reviewed) on the prevalence and impacts of agrochemicals and lead ammunition			
Research and publish articles on the prevalence and impacts of agrochemicals and lead ammunition								
<b>OBJECTIVE 3</b>								
<b>TO REDUCE SGH OFFTAKE FOR BELIEF-BASED USES</b>								
<b>OBJECTIVE TARGET 3.1</b>								
SGH is culturally revered throughout their range, however, these cultural belief systems rely on some offtake from the SGH population and so we seek a measurable reduction in illegal off-take in SGH and co-management of off-takes by traditional leaders to reduce illegal offtake of SGH.								
<b>ACTION 3.1.1</b>								
Expand cultural protection in South Africa, through engagements with indigenous knowledge systems and traditional leaders								
Research and publish findings on cultural perceptions and values	Within one year of gazetting	Agency optional budget	ECPTA, EC DEDEAT, EKZNW, MPTA, LDEDET, GDARD, SANParks,	DFFE	Publications (popular and peer-reviewed) on cultural		The sensitive approach required to	

SECTION BMP-S ACTIONS & ACTIVITIES	TIMEFRAME	FUNDING / RESOURCES	IMPLEMENTING AGENCIES / COLLABORATORS	RESPONSIBLE AGENCY (REPORTING)	MEASURABLE OUTCOMES	PROGRESS	CHALLENGES / CORRECTIVE MEASURES	IMPLEMENTATION IMPLICATIONS
			SANBI, DFFE; MGHP, BirdLife SA, HEIs, Traditional Leadership Councils, WLTP, Traditional Healers Council, DoTA, All relevant language group community leaders.		perceptions and values of SGH		prevent any perverse outcome	
Stakeholder and community engagement					Off-take assessments			
Co-management conservation plans developed and implemented	Within one year of gazetting and ongoing				Sustainable off-take simulators			
Community engagement strategy developed and implemented					Community engagement			
Capacity assessment of community leadership structures	Within three years of gazetting and ongoing							

SECTION BMP-S ACTIONS & ACTIVITIES	TIMEFRAME	FUNDING / RESOURCES	IMPLEMENTING AGENCIES / COLLABORATORS	RESPONSIBLE AGENCY (REPORTING)	MEASURABLE OUTCOMES	PROGRESS	CHALLENGES / CORRECTIVE MEASURES	IMPLEMENTATION IMPLICATIONS
Capacity development of community leadership structures for sustainable management and off-takes of SGH	Within five years of gazetting and ongoing				Facilitate co-management agreements			
<b>OBJECTIVE 4</b>	<b>TO REDUCE SGH MORTALITIES DUE TO PERSECUTION IN RESPONSE TO WINDOW DAMAGE</b>							
<b>OBJECTIVE TARGET 4.1</b>	<b>To enhance communities and landowner awareness concerning SGH window damage, and change attitudes of affected parties away from lethal or injurious actions against SGH.</b>							
<b>ACTION 4.1.1</b>	<b>Improve mitigation measures against impacts of breaking windows by SGH and implemented protocols on how to protect windows from being broken by the birds</b>							
Establish and maintain an SGH window-breaking register database	Ongoing		ECPTA, EC DEDEAT, EKZNW, MPTA, LDEDET, GDARD, SANParks, SANBI, DFFE; MGHP, BirdLife SA, HEIs, Traditional Leadership Councils, WLTP, Traditional Healers Council, DoTA		National SGH window-breaking register database established			
Research and publish findings on cost-effective mitigation	Every two years after gazetting	Agency optional budget			Revised education and awareness materials for the mitigation of			

SECTION BMP-5 ACTIONS & ACTIVITIES	TIMEFRAME	FUNDING / RESOURCES	IMPLEMENTING AGENCIES / COLLABORATORS	RESPONSIBLE AGENCY (REPORTING)	MEASURABLE OUTCOMES	PROGRESS	CHALLENGES / CORRECTIVE MEASURES	IMPLEMENTATION IMPLICATIONS
measures against the impacts of breaking windows by SGH					responses to SGH window damage			
Develop and distribute awareness material relating to breaking of windows by SGH in areas of risk, such as schools, with affected communities, private landowners and Custodians	Within one year of gazetting, ongoing				Number of business and industry partnerships established for providing alternate window protection material			
Develop and implement Immediate Response and Mitigation Protocols	Within one year of gazetting							
Foster relationships with industrial suppliers of mitigation materials and facilitate provisioning to high-risk areas								
<b>OBJECTIVE 5 TO REDUCE AND ELIMINATE THE CONFLICT AND MORTALITY OF SGH AS A RESULT OF CURRENT AND FUTURE ENERGY INFRASTRUCTURE DEVELOPMENT</b>								
<b>OBJECTIVE TARGET 5.1</b>	To reduce and eliminate the mortalities of SGH through modification and mitigation of existing energy infrastructure, including distribution poles and power lines, within 5 years since gazetting, for zero SGH electrocutions due to unsafe distribution poles and minimise SGH collisions on power line spans.							

SECTION BMP-5 ACTIONS & ACTIVITIES	TIMEFRAME	FUNDING / RESOURCES	IMPLEMENTING AGENCIES / COLLABORATORS	RESPONSIBLE AGENCY (REPORTING)	MEASURABLE OUTCOMES	PROGRESS	CHALLENGES / CORRECTIVE MEASURES	IMPLEMENTATION IMPLICATIONS
<b>ACTION 5.1.1</b>	<b>Modification and marking infrastructure to reduce SGH mortality</b>		<b>electrical-provision</b>	<b>DFFE</b>				
Establish and maintain an SGH electrocution/collision register database	Within one year of gazetting and then ongoing - annual feedback reports	Agency optional budget	DE, ECPTA, EC DEDEAT, EKZNNW, MPTA, LDEDET, GDARD, SANParks, SANBI, DFFE; MGHP, BirdLife SA, HEIs, EWT, Eskom		Engagement between Eskom and EWT/BirdLife SA/MGHP		Knowledge gaps	
Develop high-incident-potential site identification model (within distribution range overlapping power distribution lines)					Publications (popular and peer-reviewed) on the effectiveness of mitigation measures		Cost of mitigation and modification of electricity provisioning infrastructure	
Research and publish findings of incidents of electrocution/collisions and effectiveness of mitigation measures implemented	Within three years of gazetting and ongoing				Adaptive management implementation of research findings			
Develop guidelines for the effective insulation of transformer boxes, live components of all new transformer boxes and marking of								



SECTION BMP-S ACTIONS & ACTIVITIES	TIMEFRAME	FUNDING / RESOURCES	IMPLEMENTING AGENCIES / COLLABORATORS	RESPONSIBLE AGENCY (REPORTING)	MEASURABLE OUTCOMES	PROGRESS	CHALLENGES / CORRECTIVE MEASURES	IMPLEMENTATION IMPLICATIONS
provisioning infrastructure for implementation by ESKOM in partnership with BirdLife SA								
<b>OBJECTIVE TARGET 5.2</b> To assess the potential for wind farms as an emerging threat to SGH.								
<b>ACTION 5.2.1</b> Develop appropriate mitigation and monitoring protocols for potential impacts of wind farms/turbines on SGH								
Establish and maintain SGH wind turbine collisions register	Within one year of gazetting	Agency optional budget	ECPTA, EC DEDEAT, EKZNW, MPTA, LDEDET, GDARD, SANParks, SANBI, DFFE, DE; MGHP, BirdLife SA, HEIs, EWT	DFFE	Update BirdLife SA/EWT Best Practice Guidelines for Wind Energy Facilities		Environmental Authorisations to include specialist monitoring results	
Develop high-incident-protocol site identification model (within distribution range overlapping distribution of wind turbines)	Within one year of gazetting and ongoing				Stakeholder engagements and BARESG (Birds and Renewable Energy Specialist Group) and BAREF (Birds and Renewable Energy Forum)			
Research and publish findings of incidents of collisions with wind turbines	Within one year of gazetting; information made available				Surveillance and monitoring results made available by avifaunal specialists and published			

SECTION BMP-S ACTIONS & ACTIVITIES	TIMEFRAME	FUNDING / RESOURCES	IMPLEMENTING AGENCIES / COLLABORATORS	RESPONSIBLE AGENCY (REPORTING)	MEASURABLE OUTCOMES	PROGRESS	CHALLENGES / CORRECTIVE MEASURES	IMPLEMENTATION IMPLICATIONS
	and best practice guidelines updated within three years of gazetting				by BirdLife SA, to update the Best Practice Guidelines accordingly			
Develop and include guidelines for effective pre-and post-construction monitoring of SGH in existing BirdLife SA/EWT Best Practice Guidelines	Within five years of gazetting				Publications (popular and peer-reviewed) on the impacts of wind farms on SGH			
Engage national and Provincial Environmental Authorisation authorities	Within one year of gazetting				Species-specific guidelines for mitigation on impacts developed			
<b>OBJECTIVE 6 TO REDUCE HABITAT LOSS, DEGRADATION/ALTERATION AND FRAGMENTATION OF CORE SGH HABITAT</b>								
<b>OBJECTIVE TARGET 6.1 To reduce, halt and reverse the loss of core SGH habitat</b>								
<b>ACTION 6.1.1 Inform land-use planning policies to secure core areas for SGH</b>								
Maintain national SGH spatial distribution database	Within one year of gazetting	Agency optional budget	ECPTA, EC DEDEAT, EKZNW, MPTA, LDEDET, GDARD, SANParks, SANBI, DFFE, DE,	DFFE	National SGH spatial distribution database		Compliance with Environmental Authorisation conditions; Conservation Plans	

SECTION BMP-S ACTIONS & ACTIVITIES	TIMEFRAME	FUNDING / RESOURCES	IMPLEMENTING AGENCIES / COLLABORATORS	RESPONSIBLE AGENCY (REPORTING)	MEASURABLE OUTCOMES	PROGRESS	CHALLENGES / CORRECTIVE MEASURES	IMPLEMENTATION IMPLICATIONS
			Municipalities; MGHO, BirdLife SA, HEIs, EWT				not mainstreamed into IDPs and SDFs	
Maintain national SGH population monitoring database					Provincial population monitoring database			
SGH data informs Bioregional Conservation Plans/Biodiversity Spatial Plans	Within one year of gazetting, revised annually				SANParks population monitoring database			
BCPs/BSPs inform land-use planning policies, protected area expansion strategies (including stewardship), IDPs and SDFs					National SGH population monitoring database			
SGH included in BirdLife SA Best Practice Guidelines for EIA assessments	Within one year of gazetting				Best Practice Guidelines for EIA assessments including SGH			
Develop mainstream best practice land-use guidelines					SGH Conservation Translocation and Reintroduction Guidelines			

SECTION BMP-S ACTIONS & ACTIVITIES	TIMEFRAME	FUNDING / RESOURCES	IMPLEMENTING AGENCIES / COLLABORATORS	RESPONSIBLE AGENCY (REPORTING)	MEASURABLE OUTCOMES	PROGRESS	CHALLENGES / CORRECTIVE MEASURES	IMPLEMENTATION IMPLICATIONS
Develop SGH conservation translocation and reintroduction guidelines					Best Practice Land-use Guidelines for SGH (and stewardships)			
Protected Area Management Plans included SGH population monitoring					Climate change corridors include SGH parameters			
Integrate impacts of climate change on the mapping of climate change corridors in conservation planning products								
<b>OBJECTIVE 7</b>								
<b>TO MINIMISE THE RISK OF INFECTION OF NCD AND OTHER INFECTIOUS DISEASE IN IN-SITU SGH POPULATIONS</b>								
<b>OBJECTIVE TARGET 7.1</b>								
<b>To maximize prevention by rapid response, containment and awareness of NCD and other infectious disease outbreaks in the distribution range of SGH.</b>								
<b>ACTION 7.1.1</b>	<b>To mitigate against impacts of NCD and other infectious disease outbreaks in the distribution range of SGH</b>		<b>DFFE</b>					
Assess historical NCD and other infectious disease outbreaks in the distribution range of SGH	Within one year of gazetting	Agency optional budget	ECPTA, EC DEDEAT, EKZNW, MPTA, LDEDET, GDARD, SANParks, SANBI, DFFE, NDA; MGHP, BirdLife SA,		NCD incident reporting database and protocols for conservation agencies, small-scale or subsistence-scale poultry farmers and stakeholders		National NCD reporting skewed to poultry species	

SECTION BMP-S ACTIONS & ACTIVITIES	TIMEFRAME	FUNDING / RESOURCES	IMPLEMENTING AGENCIES / COLLABORATORS	RESPONSIBLE AGENCY (REPORTING)	MEASURABLE OUTCOMES	PROGRESS	CHALLENGES / CORRECTIVE MEASURES	IMPLEMENTATION IMPLICATIONS
			HEIs, EWT, Poultry Industry					
Develop SGH Disease Risk Assessment					NCD Reaction Protocol including a post-mortem of SGH carcasses, and sampling of live birds		Low reporting/submission of carcasses for testing	
Maintain National NCD outbreaks register database					NCD Disease risk assessment for SGH			
Maintain/establish NCD outbreak reporting protocol					Revised education and awareness materials for a response to NCD outbreaks			
Facilitate disease outbreak notification to stakeholders								
Develop and implement NCD/infectious Disease Outbreak Reaction Protocol (including post- mortem and sampling)								
<b>ACTION 7.1.2</b>	<b>Assess the feasibility of using the NCD vaccination protocol for the protection of wild SGH</b>			<b>DFFE</b>				

SECTION BMP-S ACTIONS & ACTIVITIES	TIMEFRAME	FUNDING / RESOURCES	IMPLEMENTING AGENCIES / COLLABORATORS	RESPONSIBLE AGENCY (REPORTING)	MEASURABLE OUTCOMES	PROGRESS	CHALLENGES / CORRECTIVE MEASURES	IMPLEMENTATION IMPLICATIONS
Maintain a database of all vaccination administration, type, frequency and resulting blood titres	Within one year of gazetting	Agency optional budget	ECPTA, EC DEDEAT, EKZNW, MPTA, LDEDET, GDARD, SANIParks, SANBI, DFFE, NDA, State Veterinary Services; MGHP, BirdLife SA, HEIs, EWT, PAAZA, Poultry Industry		National SGH mortality database includes reporting relevant to NCD		The risk associated with handling specimens	
Analysis of titres to assess the efficacy of various vaccine protocols	Within one year of gazetting				Development of vaccination protocols for <i>in situ</i> SGH and trials of implementation			
Finalise and implement the vaccine protocol for the NCD	Within two years of gazetting							

## NATIONAL TREASURY

NO. 3922

29 September 2023

**FINANCIAL INTELLIGENCE CENTRE ACT, 2001:  
INVITATION OF SUBMISSIONS ON DRAFT AMENDMENTS TO MONEY LAUNDERING  
AND TERRORIST FINANCING CONTROL REGULATIONS**

The Minister of Finance, in terms of section 77(5)(a) of the Financial Intelligence Centre Act, 2001 (Act No. 38 of 2001), hereby gives notice inviting written submissions from the public on the draft amendments to the Money Laundering and Terrorist Financing Control Regulations (“the draft Regulations”). The draft Regulations set out requirements for the sharing of information between accountable institutions.

A copy of the draft Regulations and the Explanatory memorandum are available on the National Treasury website: [www.treasury.gov.za](http://www.treasury.gov.za).

Written submissions may be submitted to [Commentdraftlegislation@treasury.gov.za](mailto:Commentdraftlegislation@treasury.gov.za) within **30 days** from the date of publication of this notice.

By making a submission, the commentator agrees that—

- (a) the name of the commentator and the submission may be made public by the National Treasury; and
- (b) the submission may be disclosed if requested in terms of the Promotion of Access to Information Act, 2000.

## NATIONAL TREASURY

NO. 3923

29 September 2023



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12 September 2023

**NOTICE IN TERMS OF SECTION 37(1) OF THE PROTECTION OF PERSONAL  
INFORMATION ACT NO 4 OF 2013 (POPIA) EXEMPTION: BIDVEST PROTEA COIN  
(PTY)(LTD)**

1. In terms of the provisions of section 37(1) of POPIA, the Information Regulator (Regulator) gives notice that the Regulator grants exemptions to Bidvest Protea Coin (Pty)(Ltd) (responsible party), from compliance with section 11(3)(a) of POPIA. The exemption authorises the responsible party to process personal information in breach only of the relevant provision in one (1) of the eight conditions for lawful processing of personal information and under the circumstances outlined hereunder.
2. The responsible party is a private body whose business is to render private security services in South Africa. The responsible party provides security services of its clients on their properties and in accordance with individual contracts. This may entail guarding services, providing security services at mines, essential infrastructure, such as mobile phone service providers, banks, security estate, shopping malls and many other private entities. The responsible party conducts official investigations to assist the South African Police Services (SAPS), and National Prosecuting Authorities (NPA).
3. The Regulator found that the processing of personal information of data subjects by the responsible party is in breach of -
  - 3.1. Section 11(3)(a) to the extent that the responsible party may not allow data subjects to object to the processing that is necessary for pursuing the legitimate interests of the responsible party or of a third party to whom the information is supplied (the latter being SAPS and NPA).
  - 3.2. The exemption from compliance applies in terms of this section only.
4. Grounds for granting of exemption by the Regulator-

Adv. FDP Tlakula (Chairperson), Adv. LC Stroom Nzama (Full-time Member), Adv. JC Weapond (Full-time Member), Ms AR Tilley (Part-time Member), Mr M Gwala (Part-time Member)



- 4.1. The grounds for exemption from compliance in terms of section 37(1)(a) and section 37(2)(b) apply.
- 4.2. The Regulator is satisfied that, in the circumstances of the case, the public interest in the processing, which includes 'the prevention, detection and prosecution of offences'; outweighs, to a substantial degree, any interference with the privacy of the data subject that could result from such processing.
5. The effect of the exemption is:
  - 5.1. To exempt the responsible party from compliance with section 11(3)(a) of POPIA (objection to processing) during the prevention, detection, investigation, and prosecution of offences when processing personal information in terms of POPIA.
6. Where appropriate, agreements ensuring that personal information is processed in compliance with POPIA which cover the terms of sections 20 and 21 of POPIA may need to be concluded between the responsible party and the relevant law enforcement agencies.
7. The Regulator grants the exemption to the responsible party on the following conditions imposed in terms of section 37(3):
  - 7.1. The responsible party must secure and protect the personal information of data subjects in compliance with section 19 of POPIA and
  - 7.2. The responsible party remains bound by any other conditions for the lawful processing on personal information that may apply in terms of a Guidance Note to be issued by the Information Regulator on surveillance by CCTV camera.
8. A copy of this exemption notice will be made available on the Regulator's website, alternatively, a request for a copy can be made by addressing correspondence to email address: [POPIACompliance@inforegulator.org.za](mailto:POPIACompliance@inforegulator.org.za).



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**12 September 2023**

**NOTICE IN TERMS OF SECTION 37(1) OF THE PROTECTION OF PERSONAL  
INFORMATION ACT NO 4 OF 2013 (POPIA) EXEMPTION: IRS FORENSIC AND  
INVESTIGATIONS (PTY) LTD**

1. In terms of the provisions of section 37(1) of POPIA, the Information Regulator (Regulator) gives notice that the Regulator grants an exemption to IRS Forensic and Investigations (Pty) Ltd (responsible party) from compliance with section 11(3)(a) and section 24 of POPIA to process personal information in breach only of the relevant provisions in two (2) of the eight conditions for lawful processing of personal information and under the circumstances outlined hereunder.
2. The responsible party is a private body whose main business is to render investigation services in respect of criminal offences. The responsible party conducts official investigations as per the request of South African Police Services (SAPS), Directorate for Priority Crime Investigations (DPCI), National Council of Society for the Prevention of Cruelty to Animals (NSPCA), Society for the Prevention of Cruelty to Animals (SPCAs), and National Prosecuting Authorities (NPA).
3. The Regulator found that the processing of personal information of data subjects by the responsible party is in breach of -
  - 3.1. Section 11(3)(a) of POPIA to the extent that the responsible party may not allow data subjects to object to the processing that is necessary for pursuing the legitimate interests of the responsible party or of a third party to whom the information is supplied (the latter being SAPS, DPCI, SPCAs, NSPCA and NPA).
  - 3.2. Section 24 of POPIA to the extent that the responsible party may not accede to the request to destroy or delete the information that is under investigation of crime and prosecution of offences that would jeopardise the attainment of justice.
  - 3.3. The exemption from compliance applies in terms of these sections only.

Adv. FDP Tlakula (Chairperson), Adv. LC Stroom Nzama (Full-time Member), Adv. JC Weapond (Full-time Member), Ms AR Tilley (Part-time Member), Mr M Gwala (Part-time Member)

4. Grounds for granting of exemption by the Regulator-
  - 4.1. The grounds for exemption from compliance in terms of section 37(1)(a) and section 37(2)(b) apply.
  - 4.2. The Regulator is satisfied that, in the circumstances of the case, the public interest in the processing, which includes 'the prevention, detection and prosecution of offences'; outweighs, to a substantial degree, any interference with the privacy of the data subject that could result from such processing.
5. The effect of the exemption is:
  - 5.1. To exempt the responsible party from compliance with section 11(3)(a) (objection to processing) and section 24 (correction of personal information) of POPIA during the prevention, detection, investigation, and prosecution of offences when processing personal information in terms of POPIA.
6. Where appropriate, agreements ensuring that personal information is processed in compliance with POPIA which cover the terms of sections 20 and 21 of POPIA may need to be concluded between the responsible party and the relevant law enforcement agencies.
7. The Regulator grants the exemption to the responsible party on the following conditions imposed in terms of section 37(3):
  - 7.1. The responsible party must secure and protect the personal information of data subjects in compliance with section 19 of POPIA and
  - 7.2. The responsible party remains bound by any other conditions for the lawful processing on personal information that may apply in terms of a Guidance Note to be issued by the Information Regulator on surveillance by CCTV camera.
8. A copy of this exemption notice will be made available on the Regulator's website, alternatively, a request for a copy can be made by addressing correspondence to email address: [POPIACompliance@info regulator.org.za](mailto:POPIACompliance@info regulator.org.za).



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**12 September 2023**

**NOTICE IN TERMS OF SECTION 37(1) OF THE PROTECTION OF PERSONAL  
INFORMATION ACT NO 4 OF 2013 (POPIA) EXEMPTION: ROAD TRAFFIC  
INFRINGEMENT AGENCY**

1. In terms of the provisions of section 37(1) of POPIA, the Information Regulator (Regulator) gives notice that the Regulator grants exemptions to Road Traffic Infringement Agency (responsible party), from compliance with section 11(3)(a) and section 24 of POPIA. The exemption authorises the responsible party to process personal information in breach only of the relevant provisions in two (2) of the eight conditions for lawful processing of personal information, under the circumstances outlined hereunder.
2. The responsible party is a public body whose main business is to administer the procedure to discourage the contravention of road traffic and road transport laws, manages the National Contravention Register (NCR) on which all road traffic violations namely: infringements and offences for issuing authorities are recorded. The responsible party assists to combat, prevent, detect, investigate, and prosecute crimes in South Africa. The responsible party also enforces penalties imposed against persons contravening road traffic laws and provide specialised prosecution support services to National Prosecuting Authority (NPA).
3. The Regulator found that the processing of personal information of data subjects by the responsible party is in breach of -
  - 3.1. Section 11(3)(a) to the extent that the responsible party may not allow data subjects to object to the processing that is necessary for the proper performance of a public law duty by a public body (law enforcement agencies) and
  - 3.2. Section 24 of POPIA to the extent that the responsible party may not accede to the request to destroy or delete the information that is under criminal proceedings and the infringement information that is in the National Contravention Register that would jeopardise the attainment of justice.

Adv. FDP Tlakula (Chairperson), Adv. LC Stroom Nzama (Full-time Member), Adv. JC Weapond (Full-time Member), Ms AR Tilley (Part-time Member), Mr M Gwala (Part-time Member)

- 3.3. The exemption from compliance is granted and applies in terms of these sections only.
4. Grounds for granting of exemption by the Regulator-
  - 4.1. The grounds for exemption from compliance in terms of section 37(1)(a); section 37(2)(b) and section 37(2)(c) apply.
  - 4.2. The Regulator is satisfied that, in the circumstances of the case, the public interest in the processing, which includes ‘the prevention, detection and prosecution of offences; and the important economic and financial interest of a public body’; outweighs, to a substantial degree, any interference with the privacy of the data subject that could result from such processing.
5. The effects of the exemption are:
  - 5.1. To exempt the responsible party from compliance with section 11(3)(a) (objection to processing) and section 24 (correction of personal information) of POPIA during the prevention, detection, investigation, and prosecution of offences; and the important economic and financial interest of a public body when processing personal information in terms of POPIA.
6. Where appropriate, agreements ensuring that personal information is processed in compliance with POPIA which cover the terms of sections 20 and 21 of POPIA may need to be concluded between the responsible party and the relevant law enforcement agencies.
7. The Regulator grants the exemption to the responsible party on the following conditions imposed in terms of section 37(3):
  - 7.1. The responsible party must secure and protect the personal information of data subjects in compliance with section 19 of POPIA and
  - 7.2. The responsible party remains bound by any other conditions for the lawful processing on personal information that may apply in terms of a Guidance Note to be issued by the Information Regulator on surveillance by CCTV camera.
8. A copy of this exemption notice will be made available on the Regulator’s website, alternatively, a request for a copy can be made by addressing correspondence to email address: [POPIACompliance@inforegulator.org.za](mailto:POPIACompliance@inforegulator.org.za).



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**12 September 2023**

**NOTICE IN TERMS OF SECTION 37(1) OF THE PROTECTION OF PERSONAL  
INFORMATION ACT NO 4 OF 2013 (POPIA) EXEMPTION: SSG SECURITY SOLUTIONS  
(PTY) LTD**

1. In terms of the provisions of section 37(1) of POPIA, the Information Regulator (Regulator) gives notice that the Regulator grants exemptions to SSG Security Solutions (Pty) Ltd (responsible party), from compliance with section 11(3)(a) and section 24 of POPIA. The exemption authorises the responsible party to process personal information in breach only of the relevant provisions in two (2) of the eight conditions for lawful processing of personal information, under the circumstances outlined hereunder.
2. The responsible party is a private body whose main business is to render private security services in the Republic of South Africa. This may entail guarding services, investigation and security services, administrative and support services, waste management and remediation services. The responsible party conducts official investigations as per the request of South African Police Services (SAPS) and Directorate for Priority Crime Investigation (DPCI).
3. The Regulator found that the processing of personal information of data subjects by the responsible party is in breach of -
  - 3.1. Section 11(3)(a) to the extent that the responsible party may not allow data subjects to object to the processing that is necessary for pursuing the legitimate interests of the responsible party or of a third party to whom the information is supplied (the latter being SAPS and DPCI). and
  - 3.2. Section 24 of POPIA to the extent that the responsible party may not accede to the request to destroy or delete the information that is under investigation of crime and prosecution of offences that would jeopardise the attainment of justice.
  - 3.3. The exemption from compliance is granted and applies in terms of these sections only.

Adv. FDP Tlakula (Chairperson), Adv. LC Stroom Nzama (Full-time Member), Adv. JC Weapond (Full-time Member), Ms AR Tilley (Part-time Member), Mr M Gwala (Part-time Member)

4. Grounds for granting of exemption by the Regulator-
  - 4.1. The grounds for exemption from compliance in terms of section 37(1)(a) and section 37(2)(b) apply.
  - 4.2. The Regulator is satisfied that, in the circumstances of the case, the public interest in the processing, which includes 'the prevention, detection and prosecution of offences'; outweighs, to a substantial degree, any interference with the privacy of the data subject that could result from such processing.
5. The effects of the exemption are:
  - 5.1. To exempt the responsible party from compliance with section 11(3)(a) (objection to processing) and section 24 (correction of personal information) of POPIA during the prevention, detection, investigation, and prosecution of offences when processing personal information in terms of POPIA.
6. Where appropriate, agreements ensuring that personal information is processed in compliance with POPIA which cover the terms of sections 20 and 21 of POPIA may need to be concluded between the responsible party and the relevant law enforcement agencies.
7. The Regulator grants the exemption to the responsible party on the following conditions imposed in terms of section 37(3):
  - 7.1. The responsible party must secure and protect the personal information of data subjects in compliance with section 19 of POPIA and
  - 7.2. The responsible party remains bound by any other conditions for the lawful processing on personal information that may apply in terms of a Guidance Note to be issued by the Information Regulator on surveillance by CCTV camera.
8. A copy of this exemption notice will be made available on the Regulator's website, alternatively, a request for a copy can be made by addressing correspondence to email address: [POPIACompliance@info regulator.org.za](mailto:POPIACompliance@info regulator.org.za).

## GENERAL NOTICES • ALGEMENE KENNISGEWINGS

## DEPARTMENT OF TRADE, INDUSTRY AND COMPETITION

## NOTICE 2043 OF 2023

STANDARDS ACT, 2008  
STANDARDS MATTERS

In terms of the Standards Act, 2008 (Act No. 8 of 2008), the Board of the South African Bureau of Standards has acted in regard to standards in the manner set out in the Schedules to this notice.

## SECTION A: DRAFTS FOR COMMENTS

The following draft standards are hereby issued for public comments in compliance with the norm for the development of the South Africa National standards in terms of section 23(2)(a) (ii) of the Standards Act.

Draft Standard No. and Edition	Title, scope and purport	Closing Date
SANS 20184-1 Ed 1	<i>Molecular in vitro diagnostic examinations – Specifications for pre-examination processes for frozen tissue – Part 1: Isolated RNA.</i> Gives guidelines on the handling, documentation, storage and processing of frozen tissue specimens intended for RNA examination during the pre-examination phase before a molecular assay is performed.	2023-11-06
SANS 20184-2 Ed 1	<i>Molecular in vitro diagnostic examinations – Specifications for pre-examination processes for frozen tissue – Part 2: Isolated proteins.</i> Gives guidelines on the handling, documentation, storage and processing of frozen tissue specimens intended for the examination of isolated proteins during the pre-examination phase before a molecular assay is performed.	2023-11-06
SANS 23162 Ed 1	<i>Basic semen examination – Specification and test results.</i> Specifies the minimum requirements for equipment and critical aspects of the test methods for best practice in laboratories performing basic examination of human semen collected by ejaculation.	2023-11-06
SATS 20914 Ed 1	<i>Medical laboratories – Practical guide for the estimation of measurement uncertainty.</i> Provides practical guidance for the estimation and expression of the measurement uncertainty (MU) of quantitative measurand values produced by medical laboratories.	2023-11-06
SATS 22583 Ed 1	<i>Guidance for supervisors and operators of point-of-care testing equipment.</i> Gives guidance for supervisors and operators of point-of-care testing (POCT) services where POCT is performed without medical laboratory training, supervision or support.	2023-11-06
SANS 20166-3 Ed 1	<i>Molecular in vitro diagnostic examinations – Specifications for pre-examination processes for formalin-fixed and paraffin-embedded (FFPEJ) tissue – Part 3: Isolated DNA.</i> Gives guidelines on the handling, documentation, storage and processing of formalin-fixed and paraffin-embedded (FFPE) tissue specimens intended for DNA examination during the pre-examination phase before a molecular assay is performed.	2023-11-06
SANS 20166-1 Ed 1	<i>Molecular in vitro diagnostic examinations – Specifications for pre-examination processes for formalin fixed and paraffin-embedded (FFPE) tissue – Part 1: Isolated RNA.</i> Gives guidelines on the handling, documentation, storage and processing of formalin fixed and paraffin-embedded (FFPE) tissue specimens intended for RNA examination during the pre-examination phase before a molecular assay is prepared.	2023-11-06
SANS 10191 Ed 3	<i>Acoustics – Determination of sound power levels of noise sources – Guidelines for the use of basic standards.</i> Provides guidance for the use of a series of nine standards describing various methods for determining the sound power levels from all types of machinery and equipment.	2023-11-06
SANS 10196 Ed 3	<i>Acoustics – Determination of sound power levels of noise sources using sound pressure – Precision methods for anechoic and hemi-anechoic rooms.</i> Specifies methods for measuring the sound pressure levels on a measurement surface enveloping a noise source in anechoic and hemi-anechoic rooms, in order to determine the sound power level or sound energy level produced by the noise source.	2023-11-06
SANS 60335-2-90 Ed 4	<i>Household and similar electrical appliances – Safety – Part 2-90: Particular requirements for commercial microwave ovens.</i> Deals with: the safety of microwave ovens with a cavity door intended for commercial use, their rated voltage being not more than 250 V for single-phase appliances connected between one phase and neutral and 480 V for other appliances; the safety of combination microwave ovens with a cavity door, the requirements for which	2023-11-11



	are contained in Annex AA; the safety of microwave ovens without a cavity door and with transportation means that are intended for commercial use only, for the heating of food and beverages, the requirements for which are contained in Annex BB.	
SANS 60793-1-40 Ed 2	<i>Optical fibres – Part 1-40: Measurement methods and test procedures – Attenuation.</i> Outlines uniform requirements for measuring the attenuation of optical fibre, thereby assisting in the inspection of fibres and cables for commercial purpose.	2023-11-11
SANS 60793-1-32 Ed 3	<i>Optical fibres – Part 1-32: Measurement methods and test procedures – Coating strippability.</i> Intended primarily for testing either fibres as produced by a fibre manufacturer or subsequently overcoated (tight buffered) using various polymers.	2023-11-11
SANS 60793-1-34 Ed 3	<i>Optical fibres – Part 1-34: Measurement methods and test procedures – Fibre curl.</i> Provides uniform requirements for the mechanical characteristic: fibre curl or latent curvature in uncoated optical fibres, i.e. a specified length of the fibre has been stripped from coating.	2023-11-11
SANS 60793-2 Ed 5	<i>Optical fibres – Part 2: Product specifications – General.</i> Contains the general specifications for both multimode and single mode optical fibres.	2023-11-11
SATS 62196-4 Ed 1	<i>Plugs, socket-outlets, vehicle connectors and vehicle inlets – Conductive charging of electric vehicles – Part 4: Dimensional compatibility and interchangeability requirements for DC pin and contact-tube accessories for Class II or Class III applications.</i> Applies to plugs, socket-outlets, vehicle connectors and vehicle inlets, herein referred to as accessories, of standardized configuration for DC power supply of electric road vehicles, where the protection against electric shocks relies on double or reinforced insulation between all AC and DC inputs and outputs of the EV supply equipment, intended for use in conductive power supply systems which can incorporate control means, with a maximum operating voltage up to 120 V DC, not exceeding 60 A.	2023-11-11
SANS 15118-20 Ed 1	<i>Road vehicles – Vehicle to grid communication interface – Part 20: Network and application protocol requirement.</i> Specifies the communication between the electric vehicle (EV), including battery electric vehicle (BEV) and plug-in hybrid electric vehicle (PHEV), and the electric vehicle supply equipment (EVSE).	2023-11-11

**SCHEDULE A.1: AMENDMENT OF EXISTING STANDARDS**

The following draft amendments are hereby issued for public comments in compliance with the norm for the development of the South African National Standards in terms of section 23(2)(a) (ii) of the Standards Act.

SANS 10222-5-2 Ed 1.3	<i>Electrical security installations – Part 5-2: CCTV installations – Application guidelines.</i>	Amended to update referenced standards.	2023-11-09
SANS 10222-5-1-2 Ed 1.2	<i>Electrical security installations – Part 5-1-2: CCTV installations – CCTV surveillance systems for use in security applications – System design requirements.</i>	Amended to update the clauses on equipment overview and on power supply considerations, and to delete the clause on enquiry documentation.	2023-11-09
SANS 1213 Ed 3.1	<i>Mechanical cable glands.</i>	Amended to delete the annex on notes to purchasers, to update the reference standards, and to delete the definition of acceptable.	2023-11-09
SANS 1713 Ed 1.5	<i>Electric cables – Medium-voltage aerial bundled conductors for voltages from 3,8/6,6 kV to 19/33 kV.</i>	Amended to update referenced standards, definitions, and to delete the annex on notes to purchasers.	2023-11-09
SANS 62620 Ed 1.1	<i>Secondary cells and batteries containing alkaline or other non-acid electrolytes – Secondary lithium cells and batteries for use in industrial application.</i>	Amended to correct the cell and battery designations, and to change the rate discharge type limits.	2023-11-11
SANS 238 Ed 3.1	<i>Liquid toilet soap.</i>	Amended to delete the annex on notes to purchasers.	2023-11-11
SANS 1828 Ed 2.3	<i>Cleaning chemicals for use in the food industry.</i>	Amended to update the requirements on suitability for purpose and pH value, referenced standards, the requirements on method of test for effect on corrosion-resistant steel, and on marking and labelling.	2023-11-14
SANS 1423-2 Ed 1.4	<i>Performance requirements for textile fabrics of low flammability – Part 2: Curtain and drape fabrics.</i>	Amended to delete the annex on notes to purchasers.	2023-11-14
SANS 1437 Ed 2.2	<i>Footwear soling material and footwear sole and heel component.</i>	Amended to delete the annex on notes to purchasers.	2023-11-13
SANS 822 Ed 2.1	<i>Paper sizes and specific end-uses.</i>	Amended to correct the title of the standard, and to delete the footnote on the A series, to update the footnote record cards and economic and management services (accountancy) stationery, and to delete referenced standards.	2023-11-14
SANS 943 Ed 2.4	<i>Man-made fibre ropes.</i>	Amended to delete the appendix on notes to purchasers.	2023-11-14
SANS 1860 Ed 1.1	<i>Wool packs for unprocessed wool.</i>	Amended to delete a trade name, and the annex on notes to purchasers.	2023-11-14
SANS 633 Ed 1.1	<i>Soil profiling and rotary percussion borehole logging on dolomite land in Southern Africa for engineering purposes.</i>	Amended to remove a trademark.	2023-11-16

**SCHEDULE A.2: WITHDRAWAL OF THE SOUTH AFRICAN NATIONAL STANDARDS**

In terms of section 24(1)(C) of the Standards Act, the following published standards are issued for comments with regard to the intention by the South African Bureau of Standards to withdraw them.

Draft Standard No. and Edition	Title	Reason for withdrawal	Closing Date

**SCHEDULE A.3: WITHDRAWAL OF INFORMATIVE AND NORMATIVE DOCUMENTS**

In terms of section 24(5) of the Standards Act, the following documents are being considered for withdrawal.

Draft Standard No. and Edition	Title	Reason for withdrawal	Closing Date

**SECTION B: ISSUING OF THE SOUTH AFRICAN NATIONAL STANDARDS****SCHEDULE B.1: NEW STANDARDS**

Standard No. and year	Title, scope and purport
SANS 60534-7:2023 Ed 1	<i>Industrial-process control valves – Part 7: Control valve data sheet.</i> Provides a list of requirements that are normally necessary for the procurement of the majority of control valves for process systems.

**SCHEDULE B.2: AMENDED STANDARDS**

The following standards have been amended in terms of section 24(1)(a) of the Standards Act

Standard No. and year	Title, scope and purport
SANS 60601-2-63:2023 Ed 1.2	<i>Medical electrical equipment – Part 2-63: Particular requirements for the basic safety and essential performance of dental extra-oral X-ray equipment. Consolidated edition incorporating amendment No. 2.</i> Applies to the basic safety and essential performance of dental extra-oral x-ray equipment, hereafter also called ME equipment.
SANS 62606:2023 Ed 1.2	<i>General requirements for arc fault detection and protection devices (AFDDs). Consolidated edition incorporating amendment No. 2.</i> Applies to arc fault detection devices (AFDDs) for household and similar uses, intended to be used in a.c. circuits, for rated voltages not exceeding 440 V a.c, with rated frequencies of 50 Hz, 60 Hz or 50/60 Hz and rated currents not exceeding 63 A.
SANS 265:2023 Ed 3.2	<i>Gummed paper tape (Metric units). Consolidated edition incorporating amendment No. 2.</i> Covers gummed tape with a paper base and supplied in rolls.

**SCHEDULE B.3: WITHDRAWN STANDARDS**

In terms of section 24(1)(C) of the Standards Act, the following standards have been withdrawn.

Standard No. and year	Title
SANS 60598-2-9:1987 Ed 1	<i>Luminaires – Part 2: Particular requirements Section 9: Photo and film luminaires (non-professional).</i>
SANS 62053-31:2015 Ed 1	<i>Electricity metering equipment (a.c.) – Particular requirements – Part 31: Pulse output devices for electromechanical and electronic meters (two wires only).</i>
SANS 1925:2008 Ed 1.1	<i>Uniform provisions concerning the approval for the production of retreaded pneumatic tyres for commercial vehicles and their trailers.</i>
SANS 1926:2008 Ed 1.1	<i>Uniform provisions concerning the approval for the production of retreaded pneumatic tyres for motor vehicles and their trailers.</i>
SANS 7202:2012 Ed 1	<i>Fire protection – Fire extinguishing media – Powder.</i>

**SCHEDULE B4: ESTABLISHMENT OF TECHNICAL COMMITTEES**

In terms of the South African Norm for the development of South African National Standards, the following technical committee has been established:

Committee No.	Title	Scope

If your organization is interested in participating in these committees, please send an e-mail to [Dsscomments@sabs.co.za](mailto:Dsscomments@sabs.co.za) for more information.

**SCHEDULE B5: RETRACTION OF PREVIOUSLY GAZETTED ITEMS**

Notice is hereby given that the following standards gazetted for public enquiry have been retracted.

Standard No.	Title	Scope	Date gazetted

**SCHEDULE B6: GENERAL**

Notice is hereby given that the following standards/draft standard have been renumbered.

Standard/draft No.	Title	Scope	New number/designation

**SCHEDULE B7: ADDRESS OF THE SOUTH AFRICAN BUREAU OF STANDARDS HEAD OFFICE**

Copies of the standards mentioned in this notice can be obtained from the Head Office of the South African Bureau of Standards at 1 Dr Lategan Road, Groenkloof, Private Bag X191, Pretoria 0001.

**DEPARTMENT OF TRADE, INDUSTRY AND COMPETITION****NOTICE 2044 OF 2023****INTERNATIONAL TRADE ADMINISTRATION COMMISSION OF SOUTH AFRICA (ITAC)****INTRODUCTION OF AN IMPORT PERMIT CONDITION IN TERMS OF SEC 27(2)(g) OF THE INTERNATIONAL TRADE ADMINISTRATION ACT, 71 OF 2002, ON THE IMPORTATION OF WHEELS OF TARIFF SUBHEADINGS 8708.70.21, 8708.70.23, 8708.70.29 AND 8716.90.20****IMPORT CONTROL****IMPORTATION OF ROAD WHEELS FITTED WITH TYRES; WHEEL RIMS FITTED WITH TYRES CLASSIFIABLE UNDER TARIFF SUBHEADINGS 8708.70.21, 8708.70.23, 8708.70.29 AND 8716.90.20****1. Background**

The importation of road wheels fitted with tyres and wheel rims fitted with tyres classifiable under tariff subheadings 8708.70.21, 8708.70.23, 8708.70.29 and 8716.90.20 (wheels) are subject to ITAC import control measures in terms of Section 6(1)(b) of the International Trade Administration Act, 71 of 2002, ("ITA Act"), as published in Government Gazette 39567, Notice No. R. 1290 dated 31 December 2015.

The importation of new pneumatic tyres, of rubber (excluding new pneumatic tyres of a kind used on aircraft, motorcycles and bicycles of subheading numbers 4011.30, 4011.40 and 4011.50) of tariff subheadings 4011.10, 4011.20, 4011.70, 4011.80 and 4011.90 are subject to ITAC import control measures in terms of Section 6(1)(b) of the ITA Act, as published in Government Gazette 40520, Notice No. R. 1601 dated 22 December 2016.

The 8-digit tariff subheadings 8708.70.21, 8708.70.23, 8708.70.29 and 8716.90.20 for wheels were created with effect from 01 January 2016, following an application to the South African Revenue Service (SARS) by the South African Tyre Manufacturers Conference (Pty) Ltd (SATMC) together with the Tyre Association of South Africa (TIASA) and the Tyre Dealers and Fitment Centre Association of South Africa (TDFAFA).

The motivation for the creation of the tariff headings for wheels was to address the risk that tyres imported as parts of vehicles or trailers under the existing tariff subheadings of tariff Chapters 84 and 87 may be imported for the purpose of evading ITAC's import permit control and the National Regulator for Compulsory Specifications' (NRCS) homologation compliance control as well as avoiding the customs duty applicable to the above-mentioned tyres classifiable under Chapter 40 as new pneumatic tyres of rubber.

Regarding the issue of customs duties, since November 2022 there has been a significant increase in the volume of wheels imported into South Africa, which has raised concerns about the potential misuse of tariff subheadings 8708.70.2 and 8716.90.20 for tariff circumvention purposes. Certain industry members are of the view that at the time of the application for the 8-digit tariff subheadings for wheels, tyres imported as parts under the existing headings were removed from the rims and sold separately. If correct, this practice would have no ostensible commercial purpose other than allowing importers to benefit from the lower rate of customs duty payable for tyres imported on wheel rims, compared to loose tyres imported under Chapter 40.

From a compliance perspective it is important that wheels that are imported under tariff subheadings 8708.70.21, 8708.70.23, 8708.70.29 and 8716.90.20 are used as the tyre and rim combinations as imported and Customs cleared, in the spirit that the recipients of the permits are *bona fide* importers and dealers/users of wheels. Removing tyres from rims and selling it separately, erodes the *bona fide* tyre import sector and the tyre manufacturing industry and the employment opportunities created in this industry. Such tyre removal and selling result in the circumvention of customs duties, leading to harm being caused to the South African economy.

Furthermore, at issue is not only the circumvention of ordinary customs duties. Following an application that was submitted to the Commission by the SATMC to address the alleged dumping of new pneumatic tyres classified under Chapter 40, exported from or originating in the People's Republic of China ("**China**"), the Commission initiated an Anti-Dumping investigation on 31 January 2021.

The Commission's Preliminary Determination Report recommended the imposition of a provisional payment from 09 September 2022 until 08 March 2023, on tyres imported from China under tariff subheadings 4011.10.01, 4011.10.03, 4011.10.05, 4011.10.07, 4011.10.09, 4011.20.16, 4011.20.18 and 4011.20.26.

The Final Determination Report of the Commission, dated 30 May 2023, was published and definitive anti-dumping duties were imposed on imported tyres from China, classifiable under tariff subheadings 4011.10.01, 4011.10.03, 4011.10.05, 4011.10.07, 4011.10.09, 4011.20.16, 4011.20.18 and 4011.20.26 with effect from 28 July 2023, for a period of five years.

In light of the foregoing, it is ITAC's view that imported tyres without rims are classifiable under tariff Chapter 40 and tyres intended for resale without rims must therefore be imported and declared as such.

It should also be noted that all imported tyres and wheels for use on passenger and commercial vehicles are subject to a NRCS homologation certificate.

## 2. Implementation of ITAC Import Permit Condition

In order to ensure that *bona-fide* importers of wheels under tariff subheadings 8708.70.21, 8708.70.23, 8708.70.29 and 8716.90.20 are not circumventing import duties and/or anti-dumping duties, it is proposed that the following permit condition in terms of Section 27(2)(g) of the ITA Act be introduced on all import permits issued for the importation of wheels:

**“No tyres imported as wheels against this permit may be separated from wheel rims for resale purposes and all wheels (tyre and wheel rim combinations) must be sold/used as a tyre and wheel rim combination in the same state as imported”.**

It is also proposed that an applicant must submit a sworn affidavit/declaration, when applying for an import permit, declaring under oath that the importation of wheels is done on a *bona fide* commercial basis and that the tyres will not be removed from rims after importation for resale or any other purpose.

## 3. Public Comments

Members of the public and interested/affected parties are requested to submit their written representations and comments within a period of 14 (fourteen) calendar days from the date of publication of this notice to the Senior Manager: Import and Export Control, International Trade Administration Commission of South Africa, marked for the attention of Mr Sanjay Devnath, either by e-mail: [sdevnath@itac.org.za](mailto:sdevnath@itac.org.za) or hand delivered at: 77 Meintjies Street, Block D, 2<sup>nd</sup> Floor, Sunnyside, Pretoria, 0132.

**DEPARTMENT OF TRANSPORT****NOTICE 2045 OF 2023****AIR SERVICE LICENSING ACT, 1990 (ACT NO.115 OF 1990)  
APPLICATION FOR THE GRANT OR AMENDMENT OF DOMESTIC AIR  
SERVICE LICENCE**

Pursuant to the provisions of section 15 (1) (b) of Act No. 115 of 1990 and Regulation 8 of the Domestic Air Regulations, 1991, it is hereby notified for general information that the application detail of which appear in the appendix, will be considered by the Air Service Licensing Council. Representation in accordance with section 15 (3) of the Act No.115 of 1990 in support of, or in position, an application, should reach the Air Service Licensing Council. Private Box X 193, Pretoria, 0001 or by email at: [domesticcouncil@dot.gov.za](mailto:domesticcouncil@dot.gov.za) within 21 days of date of the publication thereof.

**APPENDIX I (New Applications)**

(A) **Full name and trade name of the applicant.** (B) Full business or residential address of the applicant. (C) Class of license applied for. (D) Type of air service to which application applies. (E) Category of aircraft to which application applies.

(A) **Aviatte Air (Pty) Ltd.** (B) Hangar 49, Wonderboom Airport. (C) Class II. (D) Type N1 & N2. (E) Category A3 & A4.

**APPENDIX II (Amendment Applications)**

(A) **Full Name and trade name of the applicant.** (B) Full business or residential address the applicant. (C) The Class and number of license in respect of which the amendment is sought (D) Type of air service and the amendment thereto which is being applied for (E) Category of aircraft and the amendment thereto which is being applied for. (F) Amendment referred to in section 14(2) (b) to.

(A) **OFSC (Pty) Ltd trading as Oribi Flying Services Charter.** (B) Hangar 2, Pharazyn Way, Pietermaritzburg Airport, Pietermaritzburg, 3201. (C) Class II (N2301D) (D) Type N1 & N2. (E) Category A3 & A4. (F) Changes to Management Plan: M.A Mnisi will be replacing B. C Adams as Air Safety Officer.



**INTERNATIONAL AIR SERVICE ACT, (ACT NO.60 OF 1993)  
GRANT /AMENDMENT OF INTERNATIONAL AIR SERVICE LICENSE**

Pursuant to the provisions of section 24 (1(a) and (b) and 25 (5) of Act No.60 of 1993 and Regulation 16 (1) and 17 (1) of the International Air Regulations, 1994, it is hereby notified for general information that the applications, detail of which appear in the Schedules hereto, will be considered by the International Air Services Council (Council) representation in accordance with section 24(3) of the Act No. 60 of 1993 and regulation 25(2) of International Air Services Regulation, 1994, against or in favour of an application, should reach the Chairman of the International Air Services Council at Department of Transport, Private Bag X 193, Pretoria, 0001 or by email at: [internationalcouncil@dot.gov.za](mailto:internationalcouncil@dot.gov.za) within 21 days of the publication hereof. It must be stated whether the party or parties making such representation is / are prepared to be represent or represented at the possible hearing of the application.

**APPENDIX II (Amendment)**

**(A) CONDOR FLUGDIENST GMBH.** (B) Condor Flugdienst GmbH, An der Gehespitz 50, 63263 Neu-Isenburg, Germany. (C) Class I. (D) Type S1. (E) A1 – A330-941 – Reg: D-ANRB, D-ANRK and D-ANRL. (F) and (G) Frankfurt – Cape Town – Frankfurt / Frankfurt – O R Tambo International Airport (ORTIA) – Frankfurt (No 5<sup>th</sup> freedom rights to be exercised). (H) Seven (07) return flights per week.

**(A) FLYNAMIBIA AVIATION (PTY) LTD.** (B) Eros Airport, Aviation Road, Windhoek, Republic of Namibia. (C) Class I. (D) Type S1. (E) Category A1: Embraer 145 – Reg: V5-WIN, V5-WEJ, V5-WEN, V5-WEL and V5-WWA. (F) and (G) (WDH) Hosea Kutako International Airport, Windhoek – (CPT) Cape Town International Airport – Windhoek (14 return flights per week). / (OMD) Oranjemund, Namibia – (CPT) Cape Town International Airport – Oranjemund (14 return flights per week). / (WDH) Hosea Kutako International Airport, Windhoek – (JNB) O R Tambo International Airport, Johannesburg – Windhoek (14 return flights per week). / (WVB) Walvis Bay International Airport – (CPT) Cape Town International Airport – Walvis Bay International Airport. (14 return flight per week). (H) Only fifty-six (56) return flights per week.

**(A) COMPAGNIE AERIENNE ASKY** (B) P.O. Box 2988, Lome-Togo. (C) Class I. (D) Type S1. (E) A1 - **B727-8 MAX – Reg: ET-BAR, ET-BAQ** (F) and (G) S1: (LFW) Lome/Togo – (FIH) Kinshasa/DR Congo - (JNB) O R Tambo International Airport, Johannesburg – (FIH) Kinshasa/DR Congo – (LFW) Lome/Togo. / (LFW) Lome/Togo – (LBV) Libreville/Gabon – (JNB) O R Tambo International Airport, Johannesburg – (LBV) Libreville/Gabon – (LFW) Lome/ Togo. (H) 07 flights per week.

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**BOARD NOTICES • RAADSKENNISGEWINGS**

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**BOARD NOTICE 479 OF 2023****SOUTH AFRICAN PHARMACY COUNCIL****RULES RELATING TO GOOD PHARMACY PRACTICE**

The South African Pharmacy Council herewith publishes amendments for implementation to the minimum standards as contained in Annexure A of the *Rules relating to good pharmacy practice* which was published on 17 December 2004, Government Gazette No: 27112, in Board Notice 129 of 2004 (as amended), in terms of Section 35A(b)(ii) of the Pharmacy Act, 53 of 1974.

**SCHEDULE****Rules relating to what constitutes good pharmacy practice.**

1. In these rules “the Act” shall mean the Pharmacy Act, 53 of 1974, as amended, and any expression to which a meaning has been assigned in the Act shall bear such meaning.
2. The following rule to Annexure A of the *Rules relating to good pharmacy practice* is hereby added –
  - (a) Minimum standards for sexual and reproductive health services provided by pharmacists



VM TLALA  
**REGISTRAR/CEO**

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Private Bag X40040, Arcadia, 0007. Telephone: 0861 7272 00

## MINIMUM STANDARD FOR SEXUAL AND REPRODUCTIVE HEALTH SERVICES PROVIDED BY PHARMACISTS

### BACKGROUND

Sexual and reproductive health is fundamental for the overall health and well-being of individuals, couples and families, and for the social and economic development of communities and countries.

This standard will regulate the following services as provided by pharmacists: HIV testing, Pharmacist-Initiated Management of Antiretroviral Therapy (PIMART), emergency postcoital contraception (EPC), and family planning including hormonal contraception.

South Africa has the highest prevalence of HIV in the world. Sexual and reproductive healthcare constitutes a significant portion of pharmacists' daily practice, especially in the primary healthcare setting. Pharmacists have a professional and social responsibility to educate the public on sexual and reproductive health matters. They should also contribute to efforts aimed at the prevention and treatment of sexually transmitted infections (STIs), including HIV/AIDS, and the prevention of unplanned pregnancies. Pharmacists are well placed to provide therapeutic guidance to women of all ages, able to advise on contraception, fertility, pregnancy and menopause. Individuals seeking access to abortion services, and those who fall victim to sexual and gender-based violence can seek confidential and professional assistance from the pharmacist.

Pharmacists are ideally suited to assist in addressing these needs since they are readily available and easily accessible. Given the broad extent of pharmaceutical services provided in pharmacy, the setting can also be considered to be non-stigmatising.

It is recommended that the following package of services be available to all individuals requesting access to sexual health and related services:

- (a) ART initiation for those diagnosed with HIV
- (b) Condoms and lubricants
- (c) Counselling
- (d) Emergency post-coital contraception (EPC)
- (e) Fertility screening and referral
- (f) HIV Testing services
- (g) Hormonal and non-hormonal contraception
- (h) Menopause/end of reproductive years (transition phase from contraception to possible Post-Menopausal Hormone Replacement Therapy (PMHRT))
- (i) Post-exposure prophylaxis (PEP)
- (j) Pre-exposure prophylaxis (PrEP)
- (k) Pregnancy screening
- (l) Syndromic STI diagnosis and treatment

## 1. PURPOSE

The purpose of this standard is to provide the minimum standard in the provision of sexual health services by pharmacists who are appropriately trained and authorised to provide such services and includes HIV testing, PIMART, EPC and family planning and hormonal contraception services.

## 2. DEFINITIONS/ACRONYMS

“**AIDS**” Acquired Immunodeficiency Syndrome

“**ART**” Antiretroviral Therapy is the use of antiretroviral (ARV) medicines to achieve viral suppression and which are prescribed for life

“**CHC**” Community Health Centre

“**EPC**” Emergency Post-coital Contraception refers to a method of hormonal contraception that may be used after sexual intercourse to prevent pregnancy

“**Face to face/in person**” means where the patient and the pharmacist are physically in the same place at the same time

“**HIV**” Human Immunodeficiency Virus

“**Informed consent**” means permission granted to the pharmacist who provides the requested service by a person requiring such a service in full knowledge of the procedures, possible consequences, risks, benefits and costs of such service

“**PEP**” Post-Exposure Prophylaxis; means ARV medication taken to prevent HIV after a possible exposure and which is initiated within 72 hours after a possible exposure to HIV

“**PHC**” Primary Health Care Clinics defined in the *Regulations relating to the practice of pharmacy*

“**PIMART**” Pharmacist-Initiated Management Antiretroviral Therapy and, for purposes of this standard, includes PEP, PrEP and ART

“**PMHRT**” Post-Menopausal Hormone Replacement Therapy

“**PrEP**” Pre-Exposure Prophylaxis; is medicine which is taken by individuals at risk for acquiring HIV infection, to prevent becoming infected with HIV from sex or injection drug use

“**Pre-test counselling**” means counselling given to an individual before a diagnostic test to ensure that a person requiring the service has sufficient information in order to make an informed decision regarding the performance of such a test

“**Post-test counselling**” means the counselling provided to the tested person upon making the test result known to them

“**RHC**” Reproductive Health Clinic

“**SOP**” Standard Operating Procedure

“**STI**” Sexually Transmitted Infection

“**Telepharmacy**” means a pharmacist – patient real-time interaction (delivering pharmaceutical care) via audio-visual means of communication

“**WHO**” World Health Organisation

### **3. GENERAL PRINCIPLES**

#### **3.1 Training**

Pharmacists who provide any of the services identified in this standard should:

- (a) ensure that they have adequate training, knowledge and skills to provide the services which they offer;
- (b) ensure that they are knowledgeable with respect to the latest developments in sexual and reproductive healthcare services through self-training, training by accredited providers and/or continuing professional development courses; and
- (c) ascertain themselves of the instructions and requirements of all the products that are used in the provision of the respective services they offer.

#### **3.2 Physical facilities and equipment**

- (a) All services contained in this standard shall be provided in a private consultation area in the pharmacy which complies with the minimum requirements as stipulated in Rule 1.2.13 - *Areas for counselling and the furnishing of advice*. The following additional equipment and fittings must be available in the consultation area, where applicable:
  - (i) A separate fridge for the storage of test materials, blood samples and other biohazardous materials that may be collected during the rendering of any of the services.

#### **3.3 Counselling and confidentiality**

- (a) It is critical to establish a trust relationship with a person requiring the services detailed in this standard. Such a person deserves the full attention of the pharmacist they are consulting with, including comprehensive examination and counselling with adequate record keeping. Therefore, complete and uninterrupted privacy must be maintained during the provision of these services.
- (b) Patient information must only be disclosed to another duly authorised pharmacist or to a person authorised by law to request it with the consent of the patient.
- (c) Based on the service provided, a person requiring the service must be supplied with the relevant patient information leaflets that conform to Regulation 12 of the *General Regulations (2017)*, published in terms of the Medicines and Related Substances Act, 101 of 1965. A person to

whom such services were rendered, should be encouraged to contact the pharmacist if he/she has any further questions.

- (d) During testing and counselling, the pharmacist must act in an ethical and professional manner that takes into consideration the fundamental personal constitutional rights of clients.
- (e) If the pharmacist becomes aware that a child has been physically harmed, sexually abused, assaulted or exploited by another person, the pharmacist must report these circumstances to the appropriate local authority.

### **3.4 Informed consent**

- (a) A person requiring any of these services, must provide informed consent which clearly stipulates the nature of the service(s) to be rendered.
- (b) In terms of Section 129 of the Children's Act, 38 of 2005, a child over the age of 12 years may provide consent to the services identified herein, provided such child is of sufficient maturity and decisional capacity to understand the various implications of the treatment including the risks and benefits thereof.

### **3.5 Documentation and record keeping**

- (a) All services must be provided with the required consultation, written consent and written and/or electronic completion of the patient medical history file.
- (b) Patient information may only be disclosed to another duly authorised pharmacist or healthcare professional, or to a person authorised by law to request it with the consent of the patient.
- (c) Where applicable, test results must be provided to the person who required the service/s, in writing.
- (d) All referral documents must be signed by the pharmacist who rendered the service.
- (e) The name of the pharmacy, as well as the name of the pharmacist who performed the test, must appear on all applicable records and documentation.
- (f) Consultations, discussions and any relevant test results must be conducted with, and communicated to, the patient.
- (g) The following information pertaining to a person who required the service must be kept in either hard copy or electronic format for a period of not less than five (5) years:
  - (i) Name, address and ID number of the patient;
  - (ii) Date of birth;
  - (iii) Applicable medical and medicine history; and
  - (iv) Any further applicable and required records pertaining to the respective services as regulated by this minimum standard.

### 3.6 Professional and ethical responsibility

- (a) A pharmacist who provides any of the services as regulated by these minimum standards shall:
- (i) remain objective and refrain from personal judgment or indicating disapproval towards the patient or any person accompanying the patient; and
  - (ii) at all times show respect in terms of population diversity and personal beliefs, and promote effective patient-pharmacist communication during and following consultations.
- (b) A pharmacist who provides any of the services as regulated by these minimum standards shall bear in mind that patients seeking access to one or more of these services may do so for various reasons, which may include *inter alia*:
- (i) fear of becoming pregnant;
  - (ii) embarrassment at failing to use contraceptives effectively;
  - (iii) lack of knowledge about EPC;
  - (iv) worry about missing the narrow window of opportunity for EPC;
  - (v) general embarrassment about sexual health matters;
  - (vi) rape and/or sexual abuse trauma; and
  - (vii) concern about HIV/AIDS and/or sexually transmitted infections (STIs).
- (c) Notwithstanding appropriate training and being duly authorised, pharmacists who do not wish to provide any of the services due to personal reasons should always remain objective, professional and non-judgmental when addressing and communicating with a patient. In such cases, the person requiring the relevant service/s should be referred to an alternative health care worker or facility where they can gain access to the service they may require. Such referrals may include:
- (i) another duly authorised pharmacist in the same pharmacy;
  - (ii) another pharmacy in the vicinity;
  - (iii) a medical practitioner; and/or
  - (iv) a nearby hospital, Community Health Clinic, Primary Health Clinic or Rural Health Clinic.
- (d) If questioned regarding the reason for not providing the requested service, the pharmacist should answer in a manner that is not stigmatising, opinionated or biased and that will not engender a sense of unease in a person requiring the service.
- (e) In the provision of any of these services, the pharmacist must act to the best of their ability and in the best interest of the patient.
- (f) Professional cooperation between local pathology laboratories and other healthcare professionals and facilities should as far as possible be fostered and maintained.

- (g) All pharmacy personnel should be informed of the services which are available at the pharmacy. Personnel must be appropriately trained to approach and interact with patients or persons requiring any of the services in an appropriate manner.

### **3.7 Standard operating procedures (SOPs)**

- (a) A pharmacist providing any of these services must ensure that written policies and standard operating procedures are in place for each of the respective services that are provided.

### **3.8 Advertising of the services**

- (a) Any of these services may be advertised in a manner that is consistent with the *Rules relating to acts or omissions for which the Council may take disciplinary action* and the *Rules relating to the code of conduct of pharmacists and other registered persons*. All advertisements must be factually correct, must not be misleading and must not harm the dignity of the profession.

## **4. PERFORMING HIV TESTING**

### **4.1 Introduction**

There are three types of tests available: nucleic acid tests (NAT), antigen/antibody tests, and antibody tests. A NAT looks for the actual virus in the blood and involves drawing blood from a vein. Tests to detect HIV1 and/or HIV2 antibodies are now widely used to diagnose HIV infection. These rapid HIV screening tests are based on immunochromatography or immunofiltration which identify HIV infection based on their selective interaction with and recognition of HIV-targeting antibodies. Due to its low cost, robust efficacy, and ease of use, rapid HIV screening tests are useful for the first-line and early detection of HIV infection across a broad range of settings, including pharmacies. The following minimum standard should be observed when pharmacists provide this service.

### **4.2 Training**

In addition to the requirements stated in Rule 3.1 -*Training* above, pharmacists providing an HIV testing service must:

- (a) undergo training that equips them with the knowledge and skills to perform HIV antibody tests, interpret the results and counsel a person requiring this service.
- (b) pharmacists who provide this service should demonstrate knowledge of:
- (i) the immune system and the biology of the virus;
  - (ii) signs and symptoms of HIV and AIDS;
  - (iii) opportunistic infections that are often comorbid with HIV and AIDS;
  - (iv) other diseases that are often associated with AIDS;
  - (v) the therapeutic principles of HIV medicine therapy;
  - (vi) modes of HIV transmission;
  - (vii) the practical, ethical, and legal aspects of HIV counselling; and
  - (viii) the role of the pharmacist in the prevention of HIV and AIDS.



### 4.3 Pre-HIV test counselling

- (a) HIV testing should always be provided with due consideration to the personal and emotional factors that may be involved in the decision to test and the way the test result is communicated. Therefore, a person requiring this service must always be counselled before being tested for HIV in order to prepare them for the outcome.
- (b) Including the requirements stated in Rule 3.3 - *Counselling and confidentiality*, pre-HIV-test counselling must include:
  - (i) the definition of HIV and AIDS;
  - (ii) what an HIV test is and what the purpose of the test is;
  - (iii) the nature of the specific test and procedure to be followed and when a result can be expected;
  - (iv) the concept of the window period;
  - (v) test accuracy and the need for follow-up
  - (vi) factors relating to the transmission of HIV infection;
  - (vii) the meaning and implications of a negative HIV test result;
  - (viii) the meaning of a positive result, including the practical implications that such a result may have, regarding future medical treatment and care, sexual relations, psycho-social implications and occupational routine;
  - (ix) assessment of personal risk of HIV infection;
  - (x) safer sex and strategies to reduce the risk of transmission;
  - (xi) potential perspectives on negative and positive test results;
  - (xii) strategies to cope with a positive test result, including discussions on who to inform and how to address personal needs and identify support services;
  - (xiii) available social support structures; and
  - (xiv) providing a person requiring the service a final opportunity for decision-making about taking the HIV test.

### 4.4 Informed consent

Including the requirements stated in Rule 3.4 – *Informed consent* above, informed consent with respect to HIV testing, should include:

- (a) HIV testing is not covered by the standard contractual informed consent agreement.
- (b) With respect to HIV testing, informed consent implies that, following the pre-test counselling process, which must be done in a clear and understandable manner, a person requiring the service, understands the following:
  - (i) the reason or purpose for which the test is being performed;
  - (ii) the advantages and disadvantages of having their HIV status determined;
  - (iii) the personal, emotional and practical influence that the result of the HIV test may have on their perspectives and approaches to future treatment;
  - (iv) the testing procedure;
  - (v) that they may still decline to be tested;

- (vi) that post-test counselling will be done immediately once the test result is available dependent on the nature of the testing procedure followed; and
- (vii) that post-test counselling is an ongoing process.

#### **4.5 Testing procedure**

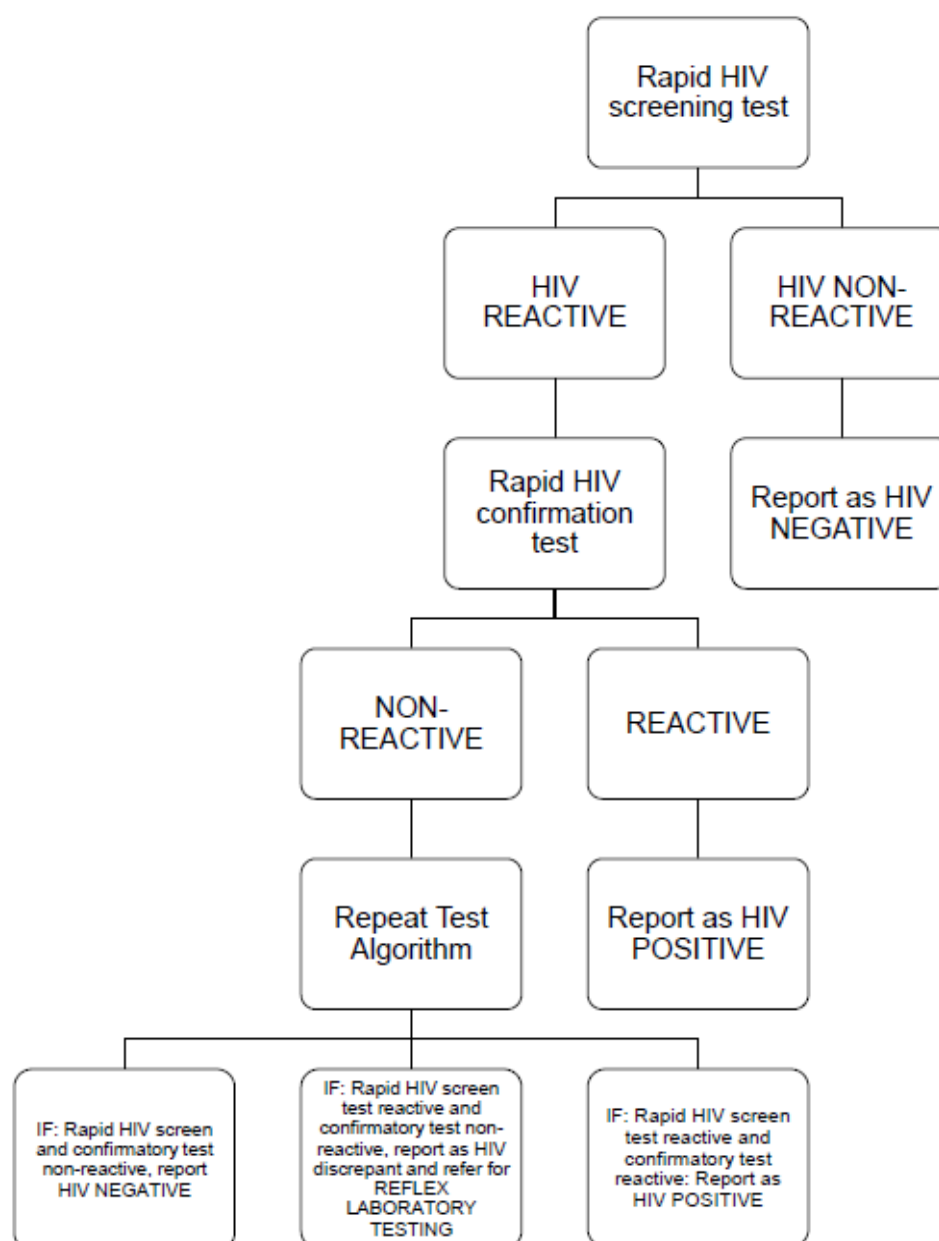
HIV testing should be performed as outlined in the National HIV Testing Services Policy document as published by the National Department of Health (NDoH).

- (a) It is recommended that universal precautions be taken with all persons requiring the service, i.e. performing testing as if a person is infected.
- (b) The pharmacist must be familiar with the WHO guidelines for the prevention of HIV and hepatitis.
- (c) Where applicable, the pharmacist providing the service must follow the manufacturer's instructions for the respective HIV tests, carefully and not act in a manner that may adversely affect the test result in any way.

#### **4.6 Interpreting test results**

HIV test results may be influenced by a number of factors, including the window period, level of risk, degree of exposure and the number of exposure events, therefore the following should be considered when interpreting test results:

- (a) It can take up to 12 weeks for the human body to generate enough HIV antibodies to deliver a positive result. This means that an HIV antibody test may be negative in the early stages after infection may have occurred. This is called the 'window period' and HIV antibody tests may be negative during this time.
- (b) If the test result is negative and it is suspected that this may be due to the test being performed during the window period, the tested person should be advised to be retested after 12 weeks after being exposed to HIV.



**Fig 1: National HIV testing algorithm**

#### 4.7 Post-test counselling

- (a) Counselling must be provided to the tested person after the result is known.
- (b) In the case of a negative test result, both during and following a suspected window period, counselling must be provided to the person to ensure that they retest if needed, and that future test results remain negative.
- (c) Post-test counselling in the case of a negative test result should include:
  - (i) strategies for reducing the risk of becoming infected with HIV;
  - (ii) possibility of infection in the 'window' period; and

- (iii) suggest retesting in three months' time.
- (d) Post-test counselling in the case of a positive test result should include:
  - (i) understanding the immediate emotional reaction and concerns of the tested person;
  - (ii) the need for confirmatory testing;
  - (iii) possible routes of transmission that could have resulted in the test outcome;
  - (iv) the difference between being infected and being infectious;
  - (v) the importance of notifying sexual partners;
  - (vi) the likely progression of infection;
  - (vii) implications for the personal, familial and social well-being of the tested person;
  - (viii) potential difficulties the tested person may foresee and possible coping strategies to address these;
  - (ix) with whom a person may want to share the results with;
  - (x) the need for later follow-up supportive counselling and medical care;
  - (xi) immediate needs and social support identification; and
  - (xii) the availability of care programmes.
- (e) Where applicable, i.e. if continuous counselling, support and care cannot be provided at the testing pharmacy, a person who tested HIV positive must be directed to an appropriate facility, e.g. CHC or PHC, where such services can be provided. If possible, sexual partners and/or families should be encouraged to also undergo counselling.
- (f) It is recommended to establish and foster adequate counselling referral systems in the area of the testing facility, such as liaising with social workers, clinical psychologists and other caregivers in the community.

#### **4.8 Documentation and record keeping**

- (a) Including the requirements stated in Rule 3.5 - *Documentation and record keeping* above, the following documentation and record keeping is required:
  - (i) patient files should be updated with test results and a summary of the consultation discussed during the pre- and post-testing counselling sessions; and
  - (ii) statistics of all pre- and post-test (immediate and ongoing) counselling sessions, as well as the number of HIV tests performed on different persons requiring the service.

### **5. PHARMACIST-INITIATED MANAGEMENT OF ANTIRETROVIRAL THERAPY (PIMART)**

#### **5.1 Introduction**

PIMART services are regarded as a necessary and vital mechanism that can be provided to bolster efforts to prevent and treat HIV/AIDS.

In cases where *in vitro* diagnostic tests are not required, consultations may be offered in person or via telepharmacy.

## 5.2 Training

Including the requirements stated in Rule 3.1 - *Training* above, pharmacists providing PIMART services are required to undergo supplementary training with an accredited provider registered with Council and obtain a permit issued in terms of Section 22A(15) of the Medicines and Related Substances Act, 101 of 1965.

## 5.3 Informed consent

Including the requirements stated in Rule 3.4 - *Informed consent* above, informed consent with respect to PIMART services should include:

- (a) a thorough understanding of the service and its expected outcome; and
- (b) a counselling process, which is clear and understandable so that a person requiring the service understands the following:
  - (i) the reason or purpose for which the service is being provided;
  - (ii) the advantages and potential risks of taking antiretroviral medicines for any of the PIMART-related indications;
  - (iii) that they may decline the requested service following the counselling process; and
  - (iv) the importance of medication adherence and follow-up consultations.

## 5.4 Specific considerations

For all PIMART services, the following must be observed:

- (a) An adequate referral system should be in place to ensure that patients who need clinical oversight will be able to access such services;
- (b) A patient monitoring system that must be used to:
  - (i) record the pregnancy and/or HIV status of the person at the time of the person requesting PIMART services;
  - (ii) record other required laboratory test results which may be a prerequisite for any of the PIMART services provided;
  - (iii) track medication adherence;
  - (iv) facilitate the scheduling of follow-up visits; and
  - (v) record and track referrals.

## 6. EMERGENCY POST-COITAL CONTRACEPTION (EPC)

### 6.1 Introduction

Emergency post-coital contraception (EPC) may be taken by women within a maximum period after having unprotected sex. This period is specific to the method prescribed. In the event that pharmacist-initiated EPC is not indicated, the person should be referred to an appropriate health care provider or facility. Although EPC is not effective if a person requiring the service is already pregnant, EPC is not considered to be harmful to the foetus. EPC is intended

for emergency contraceptive purposes only and is not considered to be a suitable contraceptive for repeated use.

## 6.2 Training

- (a) Since EPC consists of hormonal medicine intervention, all pharmacists are deemed to have a broad understanding of the available pharmacist-initiated therapy EPC regimens. Including the requirements stated in Rule 3.1 above, pharmacists providing an EPC service must also demonstrate knowledge of:
- (i) the menstrual cycle in terms of hormonal and anatomical change over time;
  - (ii) the pharmacology of EPC and its effects on menstrual biology;
  - (iii) ovulation, conception and pregnancy; and
  - (iv) the different mechanisms of EPC that prevent conception and/or implantation.

## 6.3 Counselling

- (a) Prior to the dispensing of EPC and in addition to the requirements stipulated in Rule 2.7 - *Minimum standards for the dispensing of medicine or scheduled substances on the prescription of an authorised prescriber of the Rules relating to Good Pharmacy Practice* - with respect to the dispensing of medicine, the following information must be obtained and signed personally by the person requiring EPC:
- (i) certainty that the patient does not wish to become pregnant;
  - (ii) date of the last menstrual cycle of the person to rule out potential current pregnancy;
  - (iii) the time that has elapsed since unprotected intercourse occurred; and
  - (iv) whether the patient has been a victim of sexual assault.
- (b) Prior to the dispensing of EPC, the person requiring EPC should be counselled with respect to:
- (i) the purpose and intention of EPC;
  - (ii) the potential effects that EPC may have on her menstrual cycle and bleeding pattern;
  - (iii) current contraceptive use, where applicable;
  - (iv) potential risks, other than unwanted pregnancy, involved in having unprotected sex, i.e. STIs;
  - (v) the likelihood that EPC may not be effective;
  - (vi) pregnancy testing;
  - (vii) what to do in the case of vomiting within two (2) hours after EPC administration; and
  - (viii) the benefits of continued, daily oral contraceptives and other methods of contraception.
- (c) In cases where the pharmacist that is providing the service suspects any complication, whether based on the answers obtained on the aspects stipulated in 6.3(a) above or otherwise, a person requiring EPC should be referred to a medical practitioner.

- (d) If the pharmacist becomes aware that a child has been physically harmed, sexually abused, assaulted or exploited by another person, the pharmacist must report these circumstances to the appropriate local authority.

#### **6.4 Informed consent**

- (a) A verbal request for access to EPC is regarded as consent.
- (b) Under no circumstances may consent for EPC be provided by a person other than the person for whom the EPC is intended.
- (c) EPC may only be dispensed to a person for whom such intervention is intended.

### **7. FAMILY PLANNING (INCLUDING HORMONAL CONTRACEPTION)**

#### **7.1 Introduction**

Family planning addresses the ability of individuals and couples to anticipate and attain their desired number of children and the spacing and timing of their births. This can be achieved through various means, including natural pregnancy planning, and the use of hormonal and non-hormonal contraceptive and contragestive methods. Hormonal contraceptives may be supplied in accordance with the provisions of the Medicines and Related Substances Act, 101 of 1965. Further, pharmacists can administer injectable contraceptives if the pharmacist is competent in injection techniques.

#### **7.2 Specific considerations**

Including the general principles outlined in Rule 3 - *General principles* above, the following additional requirements pertaining to the provision of family planning services should also be observed:

- (a) Pharmacists who wish to provide family planning services must undergo supplementary training from an accredited provider registered with Council and obtain a permit issued in terms of Section 22A(15) of the Medicines and Related Substances Act, 101 of 1965.
- (b) Cooperation must be maintained with local doctors and reproductive health clinics.
- (c) Patients on pharmacist-initiated oral or injectable contraceptives must be referred to a medical practitioner or an authorised RHC at least once a year for a full physical evaluation.

**BOARD NOTICE 480 OF 2023**  
**SOUTH AFRICAN PHARMACY COUNCIL**  
**RULES RELATING TO GOOD PHARMACY PRACTICE**

The South African Pharmacy Council intends to publish amendments to Annexure A of the *Rules relating to good pharmacy practice* which was published on 17 December 2004, Government Gazette No: 27112, Board Notice 129 of 2004, in terms of Section 35A(b)(ii) of the Pharmacy Act, 53 of 1974.

Interested parties are invited to submit, within **60 days** of publication of this notice, substantiated comments on or representation regarding the additional minimum standards. Comments must be addressed to The Registrar, South African Pharmacy Council, by email [BN@sapc.za.org](mailto:BN@sapc.za.org) (for the attention of the Company Secretary and Legal Services).

**SCHEDULE**

**Rules relating to what constitutes good pharmacy practice**

1. In these rules "the Act" shall mean the Pharmacy Act, 53 of 1974, as amended, and any expression to which a meaning has been assigned in the Act shall bear such meaning.
2. The following rule to Annexure A of the *Rules relating to good pharmacy practice* is hereby included –
  - (a) Minimum standards relating to pharmacies that only provide oncology services



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## MINIMUM STANDARDS RELATING TO PHARMACIES THAT ONLY PROVIDE ONCOLOGY SERVICES

### 1. PURPOSE

The purpose of these minimum standards is to regulate pharmacies that only provide oncology services.

### 2. GENERAL CONSIDERATIONS

Pharmacies that only offer oncology services must apply to the Director-General: National Department of Health (DG) for a pharmacy licence with the condition to only offer oncology services. Nothing in these minimum standards precludes a community or institutional pharmacy from offering oncology services over and above the pharmaceutical services as prescribed in the *Regulations relating to the practice of pharmacy (GNR. 1158, published on 20 November 2000)*. Therefore, Rule 2.17.3: *Cytotoxic preparation and reconstitution service*, still applies to all pharmacies that offer oncology services.

### 3. TRAINING

Pharmacists who provide any of the services identified in these minimum standards should:

- (a) ensure that they have adequate training, knowledge and skills to provide the services which they offer; and
- (b) ascertain themselves of the instructions and requirements of all the products that are used in the provision of the respective services they offer.

### 4. PHYSICAL FACILITIES AND EQUIPMENT

Notwithstanding the provisions of the *Minimum standards for pharmacy premises, facilities and equipment* as contained in the *Rules relating to Good Pharmacy Practice*, the pharmacy may share the waiting area and the private area with the healthcare facility where the oncology service is being provided. In the case where the waiting area is shared with the healthcare facility, the following will apply:

- (a) proof that patients have access to a waiting area and/or private area (compliant with GPP) if the service is offered within a healthcare practice; and
- (b) documentary evidence that the waiting area and/or private area may be used for this purpose.

### 5. COUNSELLING AND CONFIDENTIALITY

- (a) Complete and uninterrupted privacy must be maintained during the provision of these services.
- (b) Patient information must only be disclosed to another duly authorised pharmacist, healthcare professional or to a person authorised by law to request it with the consent of the patient or the caregiver, when applicable.

- (c) During counselling, the pharmacist must act in an ethical and professional manner that takes into consideration the fundamental personal constitutional rights of patients.
- (d) In terms of counselling areas, the following will apply:
  - (i) proof that patients have access to a counselling room (compliant with GPP) if the service is offered within a healthcare practice; and
  - (ii) that the private area for counselling may be used for this purpose.

## **6. REFERENCE SOURCES**

- (a) the pharmacy providing oncology services must ensure that, in addition to the requirements in terms of Rule 1.2.11.5, reference sources that are relevant to oncology services, are in place.

## **7. STANDARD OPERATING PROCEDURES (SOPs)**

- (a) The Responsible Pharmacist of the pharmacy providing oncology services must ensure that, in addition to the requirements in terms of Rule 4.2.3.3, written policies and SOPs relevant to oncology services, are in place.

## **8. SPECIFIC CONSIDERATIONS WHERE THE SERVICE IS DELIVERED FROM A PHARMACY IN ANOTHER HEALTHCARE FACILITY**

### **8.1 Designation and condition of the pharmacy**

- (a) A pharmacist must be present when medicines are prepared and dispensed;
- (b) There must be a suitable room designated as a dispensary with adequate equipment to offer such service; and
- (c) The pharmacy must comply with the minimum standards relevant to dispensaries.

### **8.2 Control of access to the pharmacy**

- (a) The pharmacist must ensure that every key, key card or other device, or the combination of any device, which allows access to the dispensary when it is locked, is kept only on his/her person.
- (b) A procedure must be in place to ensure access to the pharmacy in an emergency situation.

## BOARD NOTICE 481 OF 2023

## THE SOUTH AFRICAN PHARMACY COUNCIL

## COMPETENCY STANDARDS FOR SPECIALIST PHARMACISTS IN SOUTH AFRICA

The South African Pharmacy Council intends to publish the **Competency Standards for Industrial Pharmacists, Clinical Pharmacists and Radiopharmacists** in terms of Section 33(o) of the Pharmacy Act, 53 of 1974.

Interested parties are invited to submit, within **60 days** of publication of this notice, substantiated comments on or representation regarding the proposed Competency Standards for Industrial Pharmacists, Clinical Pharmacists and Radiopharmacists. Comments must be addressed to the Registrar, the South African Pharmacy Council by way of email at [BN@sapc.za.org](mailto:BN@sapc.za.org) (for the attention of the Company Secretary and Legal Services)

**SCHEDULE**

1. Competency Standards for Industrial Pharmacists
2. Competency Standards for Clinical Pharmacists
3. Competency Standards for Radiopharmacist



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To obtain the full content of this Board Notice, please visit the 'Proposed Legislation' section on the South African Pharmacy Council's website: [https://www.sapc.za.org/Legislation\\_Proposed](https://www.sapc.za.org/Legislation_Proposed)

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