Cape Vulture (*Gyps coprotheres)* breeding colony conservation & monitoring protocol

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Prepared by Vulpro – October 2025

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Summary

Contents

1. Introduction

The Cape Vulture (*Gyps coprotheres)* is southern Africa's only endemic vulture (Mundy, Butchart, Ledger and Piper 1992) and is of special conservation concern as it has been rated as *Vulnerable* (Anderson 2000) in South Africa, Lesotho and Swaziland and also as *Vulnerable*, globally (BirdLife International 2010). Notwithstanding it being the most studied vulture in southern Africa and being the central focus of vulture conservation in southern Africa (Mundy *et al.* 1992), it has shown a consistent and continued decline over the last 30 years (le Roux 2002).

From the earliest times when records were kept of birds in southern Africa, the status of the Cape Vulture has been the subject of much comment (e.g. De Jager Jackson n.d; Layard 1867; Godfrey 1934; Haagner 1908). However, most of these records were anecdotal. With the formation of the Vulture Study Group in 1973 (Mundy *et al.* 1992) an attempt was made to collate everything that had been recorded for all the breeding colonies and roosts in southern Africa and this has lead to the accumulation of many published and unpublished references (Piper, Mundy and Vernon in prep) for the species entire range. There are many examples of where individual researchers, or groups of interested persons have monitored individual breeding colonies or regions (e.g. Borello and Borello 2002; Brown and Piper 1988; Benson, Tarboton, Allan and Dobbs 1990 etc.). However, the monitoring of Cape Vulture colonies has become such a massive task that the Cape Vulture Task Force (CVTF) was formed at a meeting held at Sterkfontein Dam in the Free State, South Africa on Tuesday 14th March 2006. It was decided to initiate conservation action as well as to monitor the largest and most important breeding colonies across southern Africa, starting with the 2006 breeding season. It was also decided that some of the smaller and more peripheral sites should also be the object of conservation action monitoring.

Although the Cape Vulture has been the recipient of much conservation action it is still declining and the CVTF resolved to put in place a conservation programme around each of the breeding colonies to try and halt this decline. The central aim of this programme is to halt the decline in the population and to prevent the species' range from contracting.

This document sets out in a simple and step-by-step programme to a) put in place a conservation programme at a colony and b) initiate and maintain a breeding monitoring programme for that colony.

2. Overview of protocol

There are two parallel streams: conservation and monitoring and these are to be pursued simultaneously.

To conserve the vultures at a breeding colony it is necessary to ascertain the threats faced by the vultures at that colony and within their foraging range and then to assemble the most important stakeholders for a meeting to canvas their support and to understand their attitudes to the vultures, in particular,

and their conservation in general and then to take appropriate conservation actions.

To monitor Cape Vultures it is important to locate at least one viewpoint from which one can see most, if not all of the nests. Sometimes more than one viewpoint is required. From each view point a set of photographs needs to be taken and all the nests need to be marked on the photograph and numbered. Thereafter each nest can be referred to by its unique number (for photograph). A breeding colony needs to be visited three times per breeding season to be able to count:

- the number of pairs in May,
- the numbers of chicks in July/August,
- the number of fledgling in September/October,

With this data, one can estimate the number of pairs that attempt to breed and then to estimate their breeding success.

3. Background information

To understand the dynamics of conservation and monitoring at a Cape Vulture breeding colony it is useful to have as much background information as possible for that colony.

Before proceeding, it is important to note that this ‘background information collecting phase’ can continue after or before the more important aspects of colony conservation and monitoring are taking place in the field.

The important questions to ask of any breeding colony are:

1. Has this colony ever been visited or monitored before, and if so, how many birds, pairs, nests and fledglings were counted on each visit?
2. Has anything ever been published on the colony?
3. Have the number of breeding pairs at this colony shown any long-term trends, e.g. increase or decline?
4. Have the vultures ever abandoned this colony only to return at some later date? (This is called ‘colony switching’.)
5. Have dying or dead birds ever been found at this colony, or in the near vicinity?
6. In the vicinity of the breeding site is there any evidence of poisoning, drowning, persecution, electrocution or collision with power-lines or other structures?
7. Is the colony within a conservation area? If so, is it part of a conservation or management plan?
8. Has the colony ever been part of an environmental impact assessment?

It is probable that in the vicinity of the colony there will be people who have taken an interest in the vultures over the years, these are likely to include landowners, farmers, employees of Nature Conservation agencies, teachers etc. These people need to be located and interviewed.

4. Monitoring

There are three important elements to monitoring a Cape Vulture breeding colony: documenting its physical characteristics, estimating the number of breeding pairs and estimating a number of demographic parameters, the most important of which is breeding success.

4.1 Documenting the breeding site – physical characteristics

There are five aspects of a breeding colony which need to be documented: Site Description, Land tenure, Physical features, Bioclimatic characteristics and Land-use patterns. Once you have the data, check that the supplied information is reasonably correct. The data required is listed in Table A1, note that the essential items have been highlighted.

Table A1
The physical characteristics of a Cape Vulture breeding colony or roost site.

Notes: 1. Get all existing data from the *Site register* (available at EWT) as soon as possible as this may save you time and effort. 2. Fill in the essential items on your first visit and then get the rest on subsequent visits.

Entry	Essential?	Description
Site description		
Name	Yes	Please use the name supplied from the *Site Register* unless one does not already exist.
Region	Yes	Please use Country or Provincial codes
Co-ordinates	Yes	Record the co-ordinates as south and then east in the format: Dd.dddddd i.e. -30.654865°S 26.968427°E
Locality	Yes	Say in your own words where the site is and how to get there. Mention any particular permits needed, dangerous dogs (or farmers) etc.
Photographic record		List the names of persons who have photographed the cliff faces and give file names etc, if known. Old photographs may be particularly important as a source of historical information.
Land tenure	Yes	Who owns or controls the land, e.g. private farmer, communal land etc.
Physical features		
Altitude		Height of the top of the cliffs, metres above sea level
Geology		E.g. Sandstone
Geomorphology		E.g. Sheer cliff above river gorge.
Faces		E.g. a series of separate faces

Aspect		The general direction in which the site faces.
Face height		From the top of the face to the scree slope below.
Dispersion		Describe how the nests are dispersed about the face, e.g. scattered in clumps of 2 or 3.
Bioclimatic		
Vegetation		
Bio-climatic region		(Only defined in KwaZulu-Natal)
Climatic regime		E.g. winter rainfall
Rainfall		About 650 mm p.a.
Wind regime		E.g. south-east in summer
Frost and snow		E.g. occasionally during the winter
Land-use patterns		
Immediate	Yes	Within 5 km, e.g. commercial farms, all pastoralist
Intermediate	Yes	Between 5 and 25 km, e.g. about 50% commercial farms, as above and about 50% communal lands, some cultivation, low live stock density
Distant		Beyond 25 km: e.g. 30% commercial farms, 55% communal lands (both as above) and 15% urban.

4.2 Photographing the breeding colony

For each colony, every nest at a breeding colony needs to have a unique identifier so that it can be tracked through time. There are several step procedures to do this:

1. Go to the best view point for each named section of the breeding cliff and take one or more photographs of the ledge, if this is possible. Each photograph should be at a sufficiently large scale so that individual nests can be clearly seen.

2. It is best to take the photographs at the start of the breeding season when the birds have finished, or nearly finished nest building. At this time it is usual for one bird of the pair to be standing on the nest and this makes the nest more visible.

3. The best photographs are taken at the time of day and in the weather conditions similar to what you will be monitoring in so that the photograph will resemble what you are likely to see when you are monitoring. Avoid taking documentary photographs in late winter or spring when the citizens of southern Africa, all of whom have arsonist tendencies, are burning the grasslands as this creates an impenetrable haze (Prof Piper pers. Comms).

4. When photographing a site first take one or more overview pictures showing all, or most, of the colony. Then take a series of OVERLAPPING photographs of each cliff. This is important because the first time you scan a cliff it is likely that you will miss some sections which might later be utilized.

5. Once you have selected the photographs you are to use in the field have them printed as large as possible to fit on an A4 sheet.

6. Carry your photographs in the field in a small concertina file so that all the photographs pertaining to a single face are kept together and staple the data sheets to each photograph!

4.3 Colony census

The primary purpose of the colony census is to record the contents of each and every nest and so deduce what breeding activity is taking place. It is essential that each and every nest be numbered and that the activities are recorded for each nest accordingly so that comparisons can be made between successive visits. The following step-by-step procedure is recommended.

1. Take your nest-recorded photographs, telescope, telescope tripod, sun-tan lotion, etc. and get to the first view site as soon as possible in the morning. Set up and scan the breeding cliff and take out the appropriate photographs and data recording forms. Scan the cliff to ensure that there are no nests on the cliff which are not on your photographs. If there are sections of the cliffs newly in use, then make a note to photograph them later or if the light allows, photograph straight away and add them onto your database.

2. Use your telescope to record the nest contents as best you can, it is often easiest to write in the activity codes as shown in Table C1 below. Each of these codes is clearly defined in this table.

Table C1
List of nest contents codes

Code	Meaning
W	Working - code often used early in season to indicate that a new nest is being constructed or an old nest being refurbished. Making a nest, usually adults flying in with sticks, grass or other nest material and actively re-arranging the materials
K	Copulation, usually at or on the nest
I	Incubating/brooding = a bird sitting tight on a egg/chick in the nest.
H	Nest is hidden, i.e. you can see or infer that a nest is there but the contents are not visible.
T	Tenanted nest, one or more adults standing on or close to the nest as if to demonstrate that they are holding the site

C	Nestling in the nest (we no longer use the term ‘chick’ as it is too imprecise)
F	Fledging at nest (i.e a bird that has flown at least once)
R	Ringed or marked adult at the nest
?	Code, or observation uncertain
-	Nest present but no other activity

3. Once you have finished the census of each section of the cliff fill in the totals at the bottom of the data form. Then scan that section of the cliff again and perform a visual check to make sure that you have not missed anything.

A blank census form is attached (Annexe 1) and is also available as a MS Excel file (datasheet CV monitoring southern Africa).

Once you have completed the census for a face you need to add up the totals for that visit. There are five totals to be captured: active nests, tenanted, incubating, nestlings and fledglings. The following definitions are used:

- **Tenanted**: Number of nests with a single adult, or a pair at the site.
- **Incubating**: Number of nests with an adult sitting tight on the nest.
- **Nestlings** : Number of chicks definitely seen.
- **Fledging** : Number of birds fledgings definitely seen
- **Active nests**: Total of Tenanted + Incubating + Nestlings + Fledgings

For each cliff face or sector (photo) a separate form must be completed, such as that shown in annexe 1.

On completing the annual census of all the faces that make up a breeding colony you need to complete the annual report and submit it to the CVTF co-ordinator (kerri.wolter@gmail.com). See attached format and guidelines.

4.4 The number of visits each year

You will have to undertake a visit at the start of each breeding season to take photographs of the cliffs. During the first visit you will also determine the best viewpoints and you will familiarise yourself with all the breeding faces. The same viewpoints must be used each year.

Thereafter, a minimum of THREE visits are required:

- one to determine the number of breeding pairs in May,
- one to count the number of chicks in July/August,
- one to count of the number of fledging in September/October.

A minimum of 2 people is required for each count. This practice is important to reduce errors of counting. Each nest should be seen by both people as this is used to cross-check all observers.

4.5 Monitoring reports

At the end of each monitoring session ensure that all the spreadsheets have been filled in and that the totals have been captured. Check that no faces have been left out. If there is a colony guardian on site, make a copy of each census form and leave the copy with him or her for safekeeping. On returning home enter the data into the computer using MS Excel and e-mail all the spreadsheets to the Vulture Programme, Kerri Wolter (kerri.wolter@gmail.com). Print out the sheets for the next census and file the originals in your office and NEVER EVER take them out into the field again.

After the last count please complete the annual report and use the reporting format (Annexe 2).

5. Colony conservation

Colony conservation is a six-step process in which you document the threats to the vultures at the colony, locate the stakeholders, assess the conservation issues, form the local colony liaison committee, institute conservation action and produce an annual report.

5.1 Document the threats to the vultures at the colony

From the background information you have collected and from at least one visit to the colony you should be able to get a rough idea of what threats face the vultures at their breeding site. There are likely to be 2 classes of threats namely; proximate and distant.

Proximal threats are those that affect the vultures in the immediate vicinity of their colony. Distant threats are those that occur throughout their foraging ranges.

The proximal threats may be classified into three categories:

Encroachment: The building of roads too close to the breeding colony, either below the face or above it and the building of homesteads, especially housing developments.

Disturbance: people coming too close to the colony for recreational purposes (e.g. mountain climbing, hiking, mountain biking etc.), people rolling stones down on the vultures, vehicles travelling too close to the vultures (e.g. motor vehicles, fixed-wing motorised aircrafts and helicopters), agriculture too close to the vultures and direct persecution (e.g. shooting, harvesting for food, pets or traditional beliefs).

Collisions: fixed structure built near breeding colonies, e.g. micro-wave towers, power-line structures, communication masts with stay-wires, buildings etc. can cause mortalities, mainly when birds fly into them in misty conditions.

Distant threats are those which may afflict vultures anywhere:

Poison: There are three classes of poisoning: direct poisoning = the vultures are deliberately targeted, this may be because they are seen as predators or because they are to be harvested. They can be ‘collateral damage’ in campaigns aimed at problem animal control and this is termed ‘secondary poisoning’ More recently, it has been discovered that there are a range of veterinary drugs, administered to livestock, which has a huge detrimental impact on vultures. A list of these drugs can be obtained from the Vulture Programme at kerri.wolter@gmail.com.

Drowning: vultures drown in farm reservoirs.

Electrocution and collisions: vultures are electrocuted on power-lines of many different sizes and also collide with power-lines and their supporting structures.

5.2 Setting up the breeding colony conservation breeding forum

Firstly, you need to locate the most important stakeholders in the immediate vicinity of a breeding colony and throughout its foraging range. Then you need to choose a small group of people who can adequately represent this community and arrange a time and place where you can meet. At this meeting you will need to tell them why you are concerned about the plight of the vultures and then listen to them while they tell you of their most important concerns. You need to identify a) the points of conflict between the stakeholders and the vultures, b) the important decision makers and influential persons in the local community and c) those common areas where you can work together with the community to ensure the conservation of the vultures.

5.3 Monitoring conservation action

In putting in place a conservation plan it is important to be able to record its success and failures. This can be done by recording the following:

1. The number of enquiries received from the general community concerning vultures, raptors and wildlife, in general. The better informed the community, the more they are likely to identify the ‘vulture champion’ as the person to ask about conservation issues.
2. The number of talks given to schools, farmers associations, community groups etc. All of these help raise awareness in the wider community.
3. The more people that ask, the more they learn.

7. Regional contacts

Botswana. Wendy Borello, Gaborone, E-mail: borello@sharps.co.bw

Eastern Cape. Kate Webster, Stormberg Raptor Project, Rookwood, PO Box 2429, Komani 5322. Tel nos:045 8394716 (landline, 0827025942 (cell), Email: katew@lantic.net

Free State. Mr Brian Colahan. Free State Department of Environmental Affairs and Tourism, Private Bag X01, Glen 9360, Free State, South Africa.

Gauteng Province. Ms Kerri Wolter, Vulture Programme, PO Box 285 Skeerpoort 0232. Mobile: +27-82-808-5113. E-mail: kerri.wolter@gmail.com

KwaZulu-Natal. Ms. Sonja Krüger KwaZulu-Natal Wildlife, P.O. Box 13053 Cascades, 3202. Tel: +27(0)332391516. Fax: +27(0)332391515. Mobile: +27(0)828774122. E-mail skruger@kznwildlife.com

Lesotho. Mr David Hlosi Maphisa. C/o Prof. D.P. Ambrose, National University of Lesotho. P.O. Box 195, Roma 180, Lesotho. Mobile: +(266)-884-2898. E-Mail: dmaphisa@morijafest.com

Limpopo Province. Mr Johan van Wyk, Limpopo Dept. of Economic Development, Environment and Tourism. P.O. Box 69, Vivo, 0924.Tel: (015) 593-0702, Fax: (015) 593-0156, Cell: (083) 251-7071, e-mail: vanwykjs@ledet.gov.za

Mpumalanga Province. Mr Scott Ronaldson, Endangered Wildlife Trust, PO Box 107 Skukuza 1350, Cell 082-781-8783, E-mail scottr@ewt.org.za

Namibia. Ms Maria Diekmann. Rare & Endangered Species Trust, P.O. Box 178, Otjiwarongo, 9000, Namibia. Tel.: +264+(0)67-306226. E-mail: rest@iway.na

Northern Cape. Mark D. Anderson, Executive Director: BirdLife South Africa. P. O. Box 515, Randburg 2125, Tel: +27(0)11-7891122 (work), Tel: +27(0)53-8420883 (home); Mobile: +27(0)82-7880961. E-mail: director@birdlife.org.za

North-West Province. Ms Kerri Wolter. Vulture Programme of R&L Wildlife Conservation. PO Box 285 Skeerpoort 0232. Mobile: +27-82-808-5113. E-mail: kerri.wolter@gmail.com

Swaziland. Dr Ara Monadjem**.** Department of Biological Sciences, University of Swaziland, Private bag 4, Kwaluseni, Swaziland. Tel: +(268)+518-4011, facsimile: +(268)+518-5276, mobile: +(268)+604-9248. E-mail: ara@science.uniswa.sz

Western Cape. Mr Kevin Shaw. Western Cape Nature Conservation Services. Private Bag X5014 Stellenbosch 7599. Tel: 27+(0)21-889-1560, facsimile: 27+(0)210-889-1523. E-mail: Shawka@cncjnk.wcape.gov.za

Zimbabwe. Dr Peter Mundy. P.O. Box FM 424, Famona, Bulawayo, Zimbabwe. Tel.: +(263)-9-74-000. E-mail: mundy@gatorzw.com

8. References

Anderson, M. D. (2000). Cape Vulture. *The Eskom Red Data Book of Birds of South Africa, Lesotho and Swaziland*. K. N. Barnes (eds). Johannesburg, BirdLife South Africa**:** 73-75.

Benson, P. C., W. R. Tarboton, D. G. Allan and J. C. Dobbs (1990). The breeding status of the Cape Vulture in the Transvaal during 1980-1985. *Ostrich* **61**(3&4): 134-142.

BirdLife International (2004). *Threatened birds of the world, 2004. CD-ROM.* Cambridge, BirdLife International.

Borello, W. D. and R. M. Borello (2002). The breeding status and colony dynamics of Cape Vulture *Gyps coprotheres* in Botswana. *Bird Conservation International* **12**: 79-97.

Brown, C. J. and S. E. Piper (1988). Status of the Cape Vulture in the Natal Drakensberg and their cliff site selection. *Ostrich* **59**: 126-136.

De Jager Jackson, A. (n.d). *Manna in the desert. A revelation of the Great Karroo*. Johannesburg, Christian Literature Depot.

Godfrey, R. B. (1934). Present status of the Griffon in Eastern Cape Colony. *Blythswood Review* **11**: 46-47.

Haagner, A. K. (1908). The South African birds of prey: their economic relations to man. *(Supplement) Journal of the South African Ornithologists' Union* **3**(1): 76 - 116.

Layard, E. L. (1867). *The birds of South Africa*. Cape Town, Juta.

le Roux, J. (2002). *The Biodiversity of southern Africa 2002: Indicators, Trends and Human Impacts.* Cape Town, Struik.

Mundy, P. J., D. Butchart, J. A. Ledger and S. E. Piper (1992). *The Vultures of Africa*. Randburg and Halfway House, Acorn Books & Russel Friedman Books.

Piper, S. E., P. J. Mundy and C. J. Vernon (in prep). Site register of the Cape Vulture *Gyps coprotheres*: Ancient and Modern. Johannesburg, Vulture Study Group.

Annexe 1 : Cape vulture monitoring

Cape Griffon Colony - Census Form 2025
Colony: Mountain Shadow
Cliff face: A3

P. 1/1 Nest #	Visit 1 Date: Surveyors:	Visit 2 Date: Surveyors:
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
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25		
26		
27		
28		
29		
30		
31		
32		
33		
34		
35		
36		
37		
38		
39		
40		
Hidden		
Tenanted		
Working		
Copulating		
Incubating		
Brooding		
Chick		
Fledgling		
Active nests		

Property name: Mountain Shadow
Property manager:
Contact details:
Land use:
Gate – coordinates:
Telescope site – coordinates:

Additional notes:	

A
B
C
D
E
F
G
H
I
K
L
M
P
T
U
V
W
nes
X
Z

V1 - Please fill in, even if site consists of only 1 page

	Pg. 1	Pg. 2	Pg. 3	Pg. 4	Pg. 5	Total
H						
T						
W						
K						
I						
B						
C						
F						
To						

V2 - Please fill in, even if site consists of only 1 page

	Pg. 1	Pg. 2	Pg. 3	Pg. 4	Pg. 5	Total
H						
T						
W						
K						
I						
B						
C						
F						
To t						

Figure 6: Example of Vulpro data recording template fro vulture monitoring.

Annexe 2

CAPE VULTURE MONITORING AND CONSERVATION REPORT

Funding dependant on the completion of this report allocated by the Sasol Vulture Monitoring Project

Heading i.e. name of colony and breeding year

Field staff involved

Relevant organisations of field staff

Background
xxxx

Summary of results
xxxx

Identified threats
Xxxx

Conservation actions implemented

Vulture fatalities or rescue
xxxx

Media/Publicity/Educational campaigns or events
Xxxx

Tabled monitoring results
(Provide monitoring photos and original data sheets)

Table 1. Number of Cape Vulture *Gyps coprotheres* breeding pairs recorded for each colony/division/section 2011:

Colony/Division/Section	Number of breeding pairs
XXXXXXXXXX	xxxxxx (include tenanted and hidden)

	xxxxxxx (include tenanted and hidden)
Total	xxxxxx

Table 2. Number of Cape Vulture *Gyps coprotheres* breeding pairs recorded for each colony/division/section, (previous years for comparison purposes)

Colony/Division/Section	**Number of breeding pairs**
xxxxxxxxxxx	xxxxxx (include tenanted and hidden)
xxxxxxxxxxx	xxxxxxx (include tenanted and hidden)
Total	xxxxxx

Table 3. Number of Cape Vulture nestlings recorded for each colony/division/section during 20…
**Inferred nestlings include incubated or tenanted nests which were too far to observe actual nestlings.*

Colony/Section	**Observed nestlings**	**Inferred nestlings**	**Total nestling production**
xxxxx	xxx	xxx	xxx
xxxxx	xxx	xxx	xxx
xxxxx	xxx	xxx	xxx
Total	xxx	xxx	xxx

Table 4. Number of Cape Vulture nestlings recorded for each colony/division/section (previous year's for comparison purposes)
**Inferred nestlings include incubated or tenanted nests which were too far to observe actual nestlings.*

Colony/Section	**Observed nestlings**	**Inferred nestlings**	**Total nestling production**
xxxxx	xxx	xxx	xxx
xxxxx	xxx	xxx	xxx

xxxxx	xxx	xxx	xxx
Total	xxx	xxx	xxx

Table 5. Number of Cape Vulture fledglings recorded for each colony/division/section in 20---

Colony/Division/Section	**Number of fledglings**
xxxxxxxxxxx	xxxxxx
xxxxxxxxxxx	xxxxxxx
Total	xxxxxx

Table 6. Number of Cape Vulture fledglings recorded for each colony/division/section (Previous year's for comparison purposes)

Colony/Division/Section	**Number of fledglings**
xxxxxxxxxxx	xxxxxx
xxxxxxxxxxx	xxxxxxx
Total	xxxxxx