Vulture Restaurant Monitoring Protocol

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Table of Contents

1. Introduction

South Africa is a country rich in diversity, especially its wildlife. One of the more remarkable yet, mostly ignored groups of species in the country are our vultures. Vultures decrease the spread of diseases such as anthrax and keeping rabies in check by minimising contact of the virus with mammalian predators (Sharp, 2001 and Mudur, 2001; Hugh-Jones and de Vos, 2002) as well as reducing the fly population (more specifically, blow-flies). Although vultures are an integral part of the environment, very few people find them appealing and this may be because they are commonly viewed as creatures of the afterlife, a misconception still perpetuated by the popular press, television and Hollywood cinematography.

The IUCN Red Data List classifies the Cape Vulture as vulnerable, with well documented threats, such as accidental and deliberate poisonings, habitat loss, agriculture practice, electrical pylon collisions and electrocutions contributing to this status, (Van Wyk et al., 2006; A Markus, 1972) continue to contribute to population declines. New threats to vultures have recently emerged such as the misguided use of vulture parts in an attempt to predict the lotto numbers in South Africa and the catastrophic crash in the populations of the previously common Indian white-back vulture *(Gyps bengalensis*) and other vulture species on the Indian sub-continent (Status classification changed from common to critically endangered in just 12 years). These declines serve as a serious wake-up call to society as to the emerging threat posed by veterinary chemicals/drug residues and lead in carcasses to the survival of vultures. The Asian Vulture Crisis also highlighted the consequences of the removal of a species from the environment, such as the increase in the amount of rotting meat in the environment with the resultant increase in feral dog and rat populations, with associated disease outbreaks.

South Africa has a well established veterinary service to the livestock industry and this, in addition to the well established hunting industry places southern Africa’s vultures in a potentially precarious position with regards to their scavenging habits. We have a responsibility to be pro-active in researching these new threats, not only for us in southern Africa, but the African continent as a whole. Without human intervention now, we stand the chance of similar catastrophes impacting our wildlife heritage sometime in the near future.

To promote the survival of these high-flying scavengers, the practice of supplemental feeding of vultures in so called vulture restaurants, was initiated and today there are 236 documented vulture restaurants scattered throughout South Africa. In this system of supplementary feeding, carcasses donated by stock farmers and hunters in the surrounding area are routinely placed out at selected sites. This practice not only serves to assist in the continued survival of the vultures, but also increases the awareness of the vultures' plight by involving communities throughout a large part of the vultures' home range as well.

Although the system of vulture restaurants did appear to improve the wellbeing of vulture colonies throughout South Africa, the recent crash in India's vulture population has raised major safety concerns on the practice of allowing vultures' access to livestock carcasses contaminated by chemical residues and/or lead. Although not confirmed, vultures feeding at restaurants or on livestock carcasses left in the veld (by farmers) are most likely exposed to animals treated with a veterinary drug, for a particular illness, which raises an important question: If diclofenac, a rather innocuous veterinary non-steroidal anti-inflammatory agent could lead to a 98% species devastation, what damage could other toxic compounds such as the organophosphors cause? (Swan et al., 2006)

At this stage the influence of a simple lead bullet is also not known. With the cost associated with euthanasia, many farmers and veterinarians routinely put down animals with a lead bullet to the head. In the case of wildlife brought down from hunting this could also include numerous shots, of which one is usually to the heart. With lead toxicity known to be a problem in other raptor and vulture species exposed to lead shot in carrion, the possible effects of lead exposure also requires clarification in our birds (Garcia-Fernandez et al., 1920; Adaudi et al., 1990; Mateo et al., 1997; Platt et al., 1999; Clark and Scheuhammer, 2003).

Because vultures congregate at carcasses and vulture restaurants, they become exposed to whatever residues there may be in carcasses. As this is an emerging hi-tech man-created situation, it is our responsibility to be pro-active in minimising this potentially devastating threat to the free-ranging vulture populations in southern Africa.

Vulture restaurants are important for various reasons namely:

- they supplement the ever-decreasing food supply of vultures
- they provide bone fragments, an important source of essential calcium
- they provide safe food i.e. free of poisons and harmful drugs
- they can be used to attract vultures back to historical breeding sites
- they provide researchers with an opportunity to study the biology and ecology of vultures. Such as through the re-sighting of patagial (wing) tags on marked vultures

2. Objectives

There are various research questions which could be answered by following these monitoring guidelines:

- Determine the ratio between adult and immature vultures feeding at the feeding site (provides insights into the age structure of the local population).

- Determine the ratio of tagged to unmarked vultures at the feeding site (allows population estimates to be generated).

- Record the total number of vultures visiting the feeding site (helps to understand the importance and effects of supplementary feeding). You can include all species for additional comments and information.

3. Method and materials

3.1 Protocol and census

Each monitoring session should last for 1-2 hours. camera trap can also be used to record information and take photos if one is unable to personally do the monitoring on the scheduled date. During every vulture restaurant monitoring session, it is important to record the following information:

(Addendum 1): Vulture restaurant

- Date
- Name of vulture restaurant
- Name of area
- Name and contact details of observer
- Date and time of observation
- Weather conditions i.e. sunny, grey, misty, rain, time lapsed from previous rainfall etc
- How much food is present at the feeding site
- The number of vultures coming down to feed
- Vulture species observed
- Age groups and numbers in each age group i.e. adult, sub-adult, immature and first year
- Number of tagged birds arrived (include tag numbers)
- Any additional behaviour observed can be included in the 'remark' section eg. lots of available food, vultures flying overhead but don't land
- Was the carcass finished and if so, what time frame
- Personal comments
- Name and signature of observer

(Addendum 2): Carcass information

- Date
- Name of vulture restaurant
- Name and contact details of restaurant's owner/manager
- Date and time of carcass/es donation
- The type and the size of carcass/es
- Date and reason of death
- Was the animal treated and if yes, with what
- How was the animal euthanaised
- If the animal was shot, what type of bullet used and was the area around the bullet wound removed

- Name and signature of person accepting the carcass/es
- Further information, if the donated carcass was fed the same day:
    - Time of observation
    - How soon did vultures come in to feed
    - How many vultures came down to feed
    - How many tagged birds arrived (include tag numbers)
    - Was the carcass finished and if so, what time frame
    - Name and signature of person observing

Information regarding carcasses is relevant in that it can be used to analysis vulture behaviour.

These two forms must be kept together and the dates must correspond.

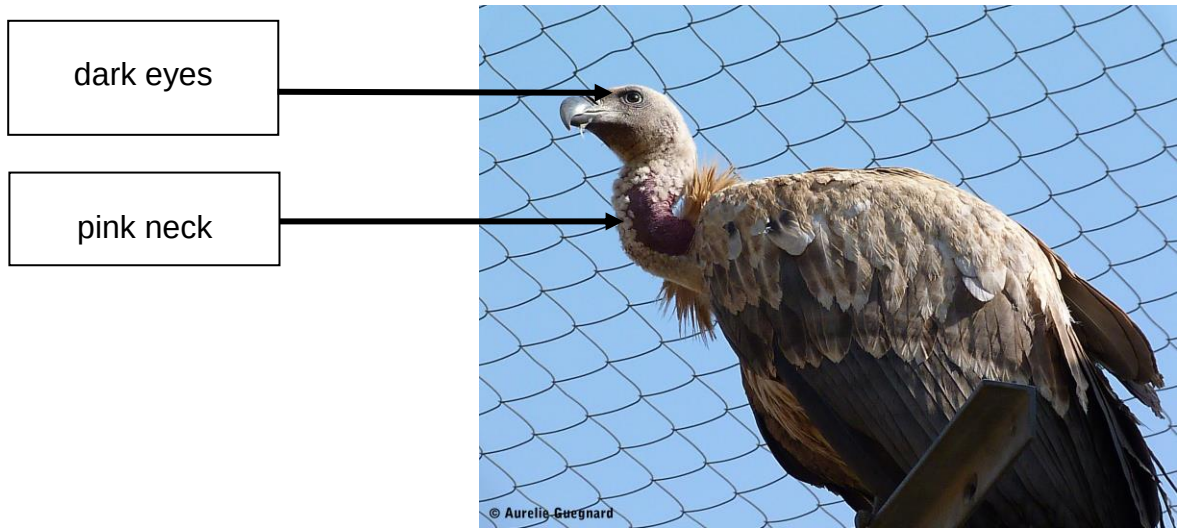
3.2 Immature and adult comparisons and identification of Cape Vulture

How to determine age groups?

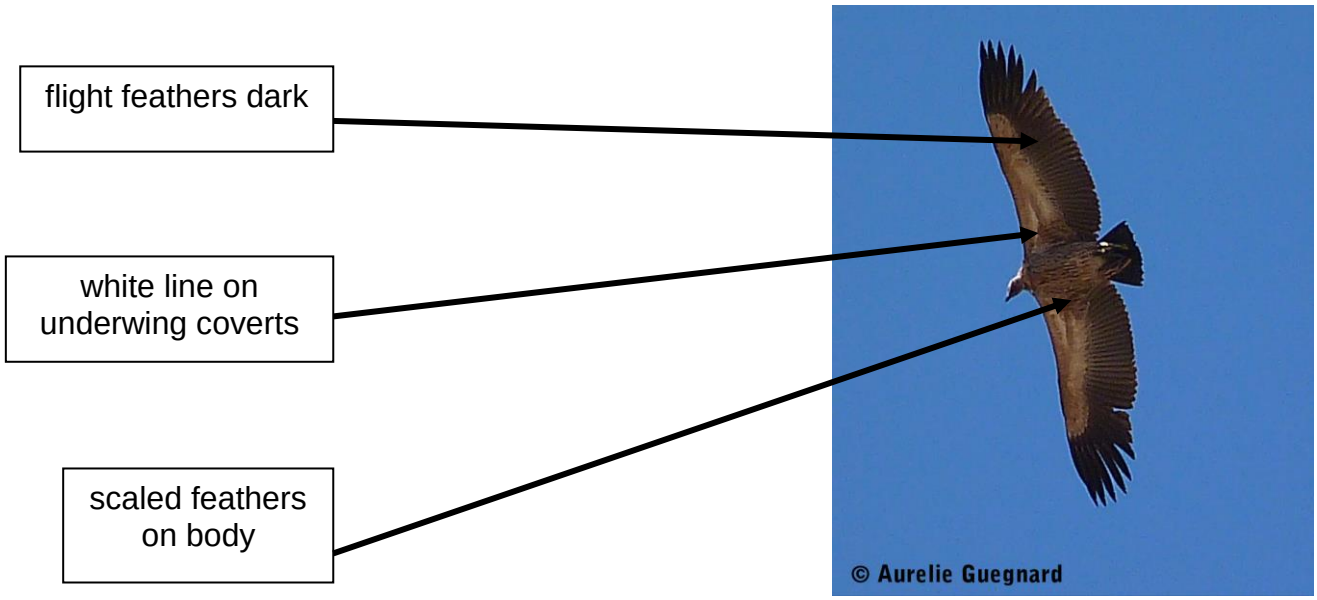
Globally, the juveniles and sub-adults are darker than adults but one cannot use this on its own for correct identification.

Identification of juveniles:

- darker brown in appearance
- pink neck
- dark eyes

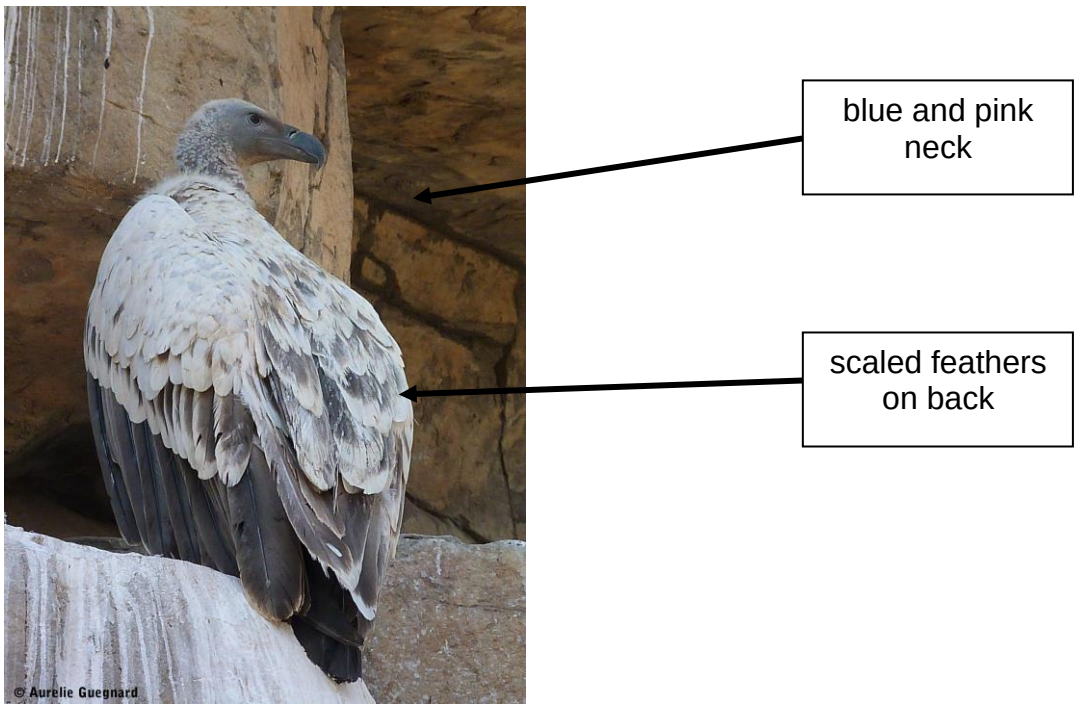


In flight:



Identification of sub-adults:

- darker than adults
- pink and bluish neck
- eyes are dark yellow i.e turning yellow



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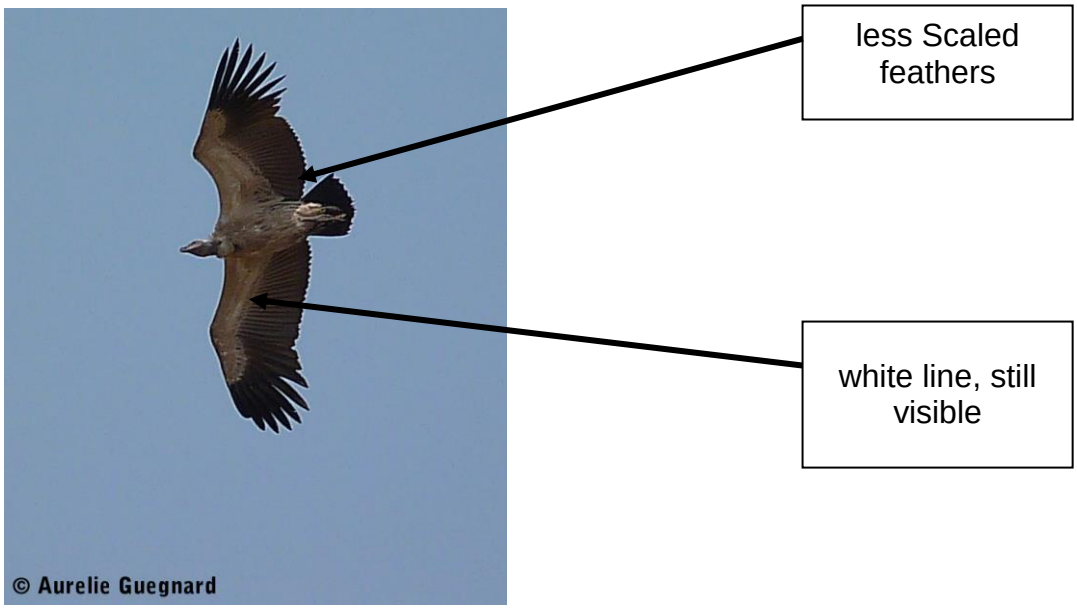
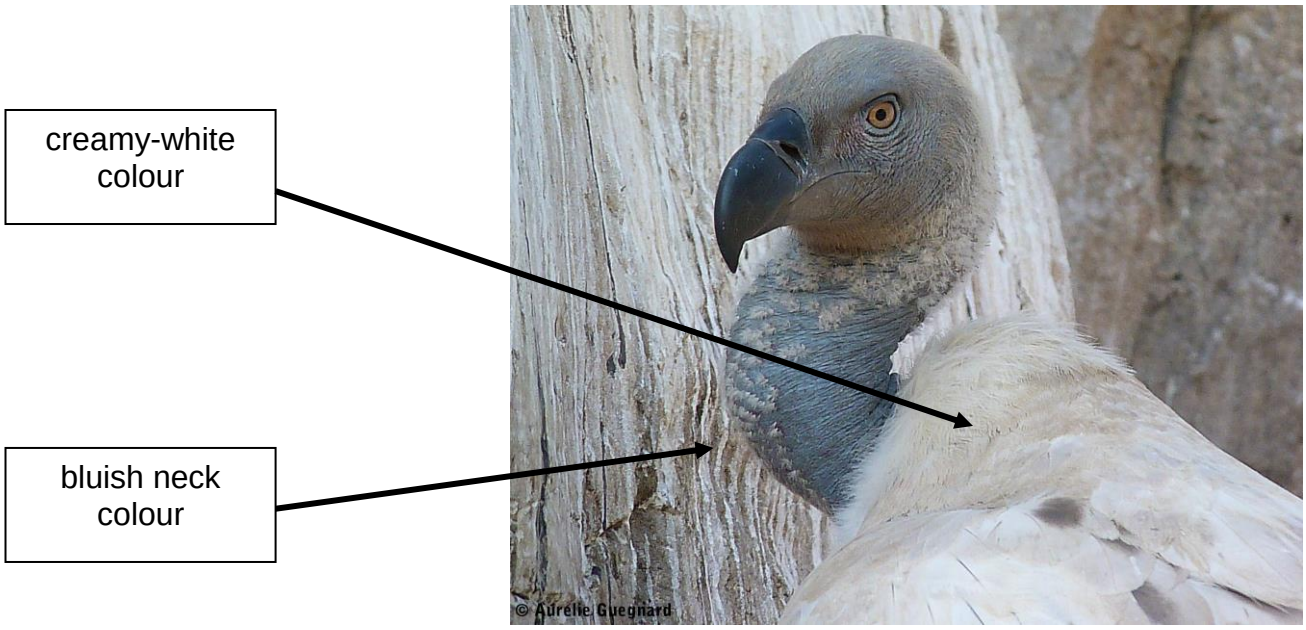


Identification of adults:

- feathers are creamy-white
- bluish neck,
- eyes are yellow



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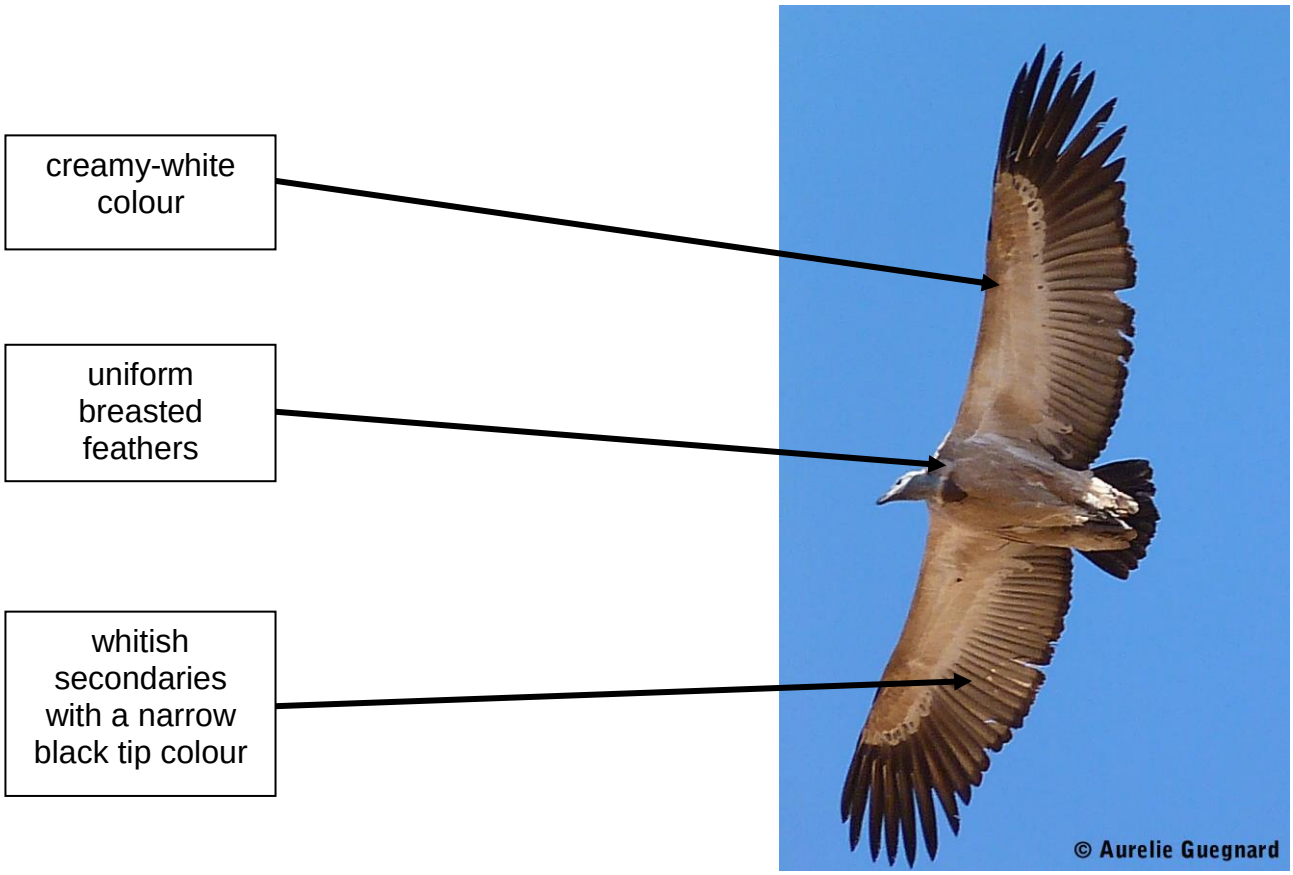
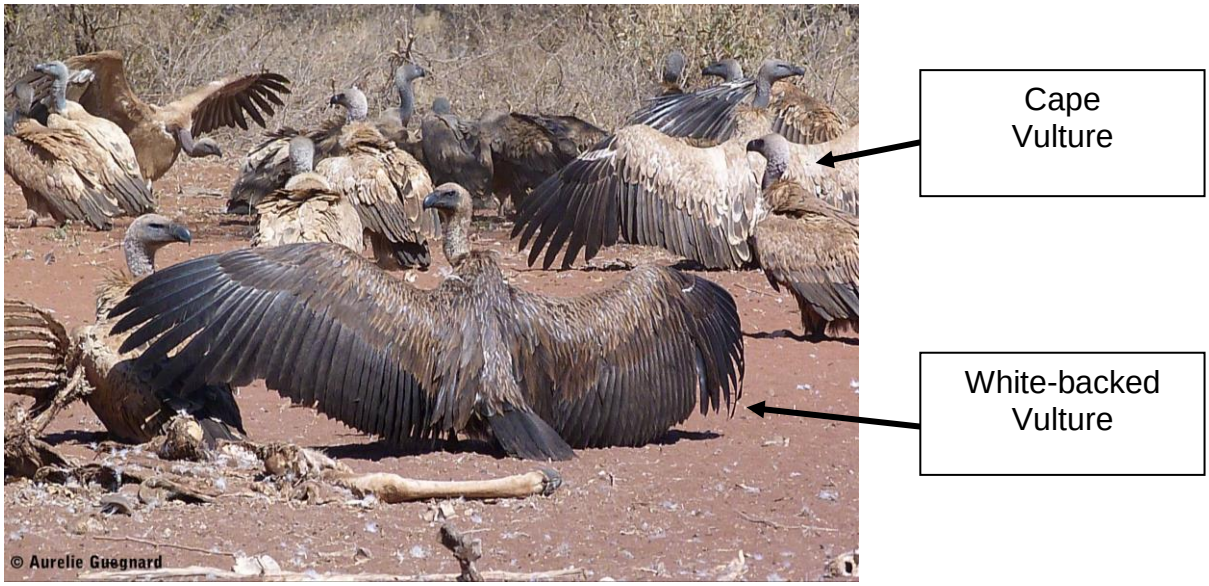


3.3 Determination of others species

White-backed Vulture

White-backed Vulture look very similar to that of the Cape Vulture, but it is:

- smaller than the Cape Vulture
- long, bare neck with black skin and small head covered in sparse, white down
- white-backed
- black flight and tail feathers contrast with cream or brown body and wing coverts



Juvenile White-backed Vulture

Lappet-faced Vulture

The Lappet-faced Vulture is the largest vulture in Southern Africa.

Adults are characterized by their:

- naked head
- dull red skin of the head,
- massive beak
- black underwing
- white down on the patagium
- white trousers

The juvenile is altogether browner and plainer.

Lappet-faced Vulture

Hooded Vulture

It is a little vulture that has:

- close-cropped woolly down on its head and nape
- balding crown (often)
- scrawny neck and face
- dark brown underwing coverts
- long thin bill

The flight feathers are blackish brown, but on the underside vanes are silvered, so that from below in flight, the adult appears to have a “long window” in its wing. Adults are also distinguished by their abdomen and tibias being rather sparsely feathered so that much white down shows through (Mundy &al., 1992).

The juvenile is altogether darker and plainer.

4. Patagial tagging program

Patagial tagging refers to the fitting of a plastic tag to the patagium, which is the elastic membrane along the leading edge of a birds' wing (Piper, 2007).
Each tag is composed of a colour (yellow) and a number.

This program started in 1948 at the Kransberg colony and the aim was to study the biology of Cape vultures. Our study will expand further on this and look at:

- local movements and dispersal patterns
- migratory patterns and seasonality
- survival rates and longevity
- causes of mortalities and potential threats

5. References

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Addendum 1: Vulture restaurant

Name of Vulture Restaurant	
Name of restaurant's owner/manager	
Contact details	
Vulture restaurant observation:	
Date, time and duration of observation	
Weather (sun, clouds, wind, etc.)	
How much food present at the feeding site	
Number of vultures coming down to feed	
What species of vultures present	
What age groups and numbers in each age group i.e. adult, sub-adult, immature and first year	
How many tagged birds arrived (include tag numbers)	
Any special behaviour observed	
Was the carcass finished and if so, what time frame	
Personal comments	
Name and signature of person observing	

Addendum 2: Carcass information

Name of Vulture Restaurant	
Name of restaurant's owner/manager	
Contact details	
Carcass Information:	
Date and time of carcass/es donated	
Name and contact details of person/orgaisation donating carcass/es	
Typs of carcass/es donated and approximate weight	
Date of death	
Reason for death	
Was the animal treated If yes, with what	
How was the animal euthanaised	
If the animal was shot, what type of bullet used Was the area around the bullet wound removed	
Name and signature of person accepting the carcass/es	
Vulture observation	
Time of observation	
How soon did vultures come in to feed	
How many vultures came down to feed	
How many tagged birds arrived (include tag numbers)	
Was the carcass finished and if so, what time frame	
Name and signature of person observing	