POPULATION SIZES, NESTING ECOLOGY, MOVEMENT PATTERNS, CAUSES OF DEATH, AND SPACE USE PATTERNS of KALAHARI LAPPET-FACED AND WHITE HEADED VULTURES.

PREDATOR PREY RESEARCH

Partners: CKGR research, Denver Zoological Foundation and Birdlife Botswana

A Kalahari Lappet – Faced vulture (foreground). Vulture numbers are in serious decline across Africa, especially the lappet-faced. We aim to work out why and then work towards preventing this decline.

Introduction

This study aims to increase our knowledge and understanding of threatened raptor bird species that live in the Kalahari region of Botswana. Specifically researching lappet-faced (*Torgos trachelioto)* and white-headed (*trigonoceps occipitalis)* vultures, as well as increasing our baseline knowledge on population numbers, distributions, breeding behaviours and threats to white-backed (Gyps africanus), cape vultures (*Gyps* coprotheres), Bateleur (*Terathopius ecaudatus*) and Martial Eagles (*Polemaetus bellicosus*). All these raptor species occur in the Kalahari environment and in the last ten years all at varying levels are suffering unquantified population declines. At present all of the above raptor species are classed as threatened or vulnerable (IUCN 2009).

Background and Objectives

Lappet-faced with a body length of 78-115 cm are the largest raptors in sub-Saharan Africa, sporting impressive three-meter wingspans and weighing up to 9.5 kilograms. They primarily inhabit semi-arid savannas or deserts and build nests in trees, often Acacia but also Balanites and Terminalia, where they usually lay a single egg. Only about 8,500 adult Lappet-faced Vultures survive and the IUCN (2011) designates the species as Vulnerable. Across Africa, widespread birds of prey are declining at an alarming rate, and emblematic species such as Bateleur and Martial Eagle have been placed in a higher category of threat as a result. Like many vulture species in the Old World, researchers have linked Lappet-faced Vulture and other African raptor declines to accidental poisoning that targets large predators or agricultural pests and deliberate poisoning by livestock producers who mistakenly believe they kill livestock. Other threats include direct persecution (shooting and trapping), nest predation and disturbance by people, poisoning by Diclofenac, drowning in sheer-walled reservoirs, electrocution on power poles, and habitat alteration and degradation, and reduced food availability. Botswana supports an unknown but relatively large breeding population of Lappet-faced and White-headed Vultures and Batleurs and Martial Eagles.

Topics to be investigated

Our field project aims to better understand the factors influencing raptor nesting success, sources of mortality, habitat use, and movement patterns in southern Africa. We propose to use our finding do make recommendations for conservation initiatives. The project will work with a M.sc student based at the University of Botswana and is in collaboration with Birdlife Botswana. Our questions are:

1) What are the number of pairs of lappet-faced vultures nesting across our study area?

2) What are the survival rates of the chicks and what factors influence these?

3) What are the survival rates of marked raptor adults and their fledglings and if possible determine sources of mortality?

4) From the collection of biological samples (blood, feathers and parasites) and morphological measurements what is the “health” of the population?

5) What are the foraging patterns, dispersal routes and key habitat uses for satellite tagged vultures and re-sightings of marked individuals?

6) What of the above questions can we answer for the other named proposed birds species with little extra effort?

A baited cage trap for vultures-we experimented with it in October last year with mixed results. Based on these lessons we believe the trap and a net gun capture system will enable us to trap and put tracking devices onto lappet-faced and white-headed vultures.

Vultures in thermals - an important part of any wild ecosystem but increasingly across Africa these sorts of sightings are becoming rarer. Vultures need environments to be in sync and any disturbance has a negative nock on effect to their numbers.

In order to achieve the above we will deploy 10 satellite tracking devices onto lappet-faced and white headed vultures the ratio depending on which species we trap but ideally roughly 6 lappets and 4 for white headed.

Time line and Budget

The first phase of the project us to run for two years from April 2012. Below is the budget for the equipment still required in order to go forwards with the project and the running costs. Equipment not listed has already been purchased, e.g 5 sat collars and so on.

Equipment	***Number***	***When ordered***	***Cost for one ($)***	***Total cost($)***
Satellite collars	5	Between April and December 2012	4 400	22 000
Remote net for Capture	1	Between April to June 2012	5000	5000
Satellite phone plus air time	1	Between April to August 2012	1800	1800
GPS Garmin Aera 500	1	Between April to June 2012	600	600
Camping equipment, tents, chairs, Flop up tent, pots, etc		April 2012	2000	2000
TOTAL				**31 400**

Regular/running costs

Area of expense	**$ Per Month**	**Total months**	**$Total cost**
Vehicle land rover (fuel 250L per month)	300	24	7200
Vehicle Maintenance	350	24	8 400
Research personal x 2	800	24	19 200
Food, drinks while in the field 3 weeks a months	175	24	4 200
Flying to locate nests and monitor 20 hours a year	120 an hour x 40	24	4 800
TOTAL			**$43 800**

If any further information is required about this study please contact Glyn Maude on brownhyaena@info.bw