



CAPE VULTURE TASK FORCE
REPORT



Compiled by:
Kerri Wolter

Vulture Programme (VULPRO)
Kerri.wolter@gmail.com
And
Andre Botha
Birds of Prey Programme of the Endangered Wildlife Trust
andreb@ewt.org.za

“To stabilize the (global) Cape Vulture population”

Background

The Cape Vulture (*Gyps coprotheres*), southern Africa's only endemic vulture species has been studied extensively for over 3 decades but despite this, the species continues to decline throughout its range. Numerous threats have been identified to be major factors contributing to the species decline namely; primary and secondary poisoning, power-line electrocutions and collisions, harvesting for the muthi trade, food shortages, drowning in farm reservoirs, loss of habitat and disturbance at roosting sites. However with the catastrophic crash in the previously common Oriental White-backed Vulture (*Gyps bengalensis*) population and other vulture species on the Indian sub-continent (Status classification changed from common to critically endangered in just 12 years), society has been given a serious wake-up call as to the emerging threats that vulture populations now face, namely veterinary chemicals/drug residues and lead in carcasses that are or that may be detrimental to the survival of vultures and more specifically the Cape Vulture.

During a workshop held in Harrismith in 2006 (Boshoff & Anderson, 2006), participants felt that the failure to halt the ongoing decline in the Cape Vulture population was due to a lack of an overall sub-continental conservation and management plan for the species; resulting in attempts to conserve the species being fragmented, uncoordinated and not priority driven. For this reason, the Cape Vulture Task Force was established and priority colonies identified with selected 'champions' to assist with conservation plans and breeding monitoring programmes.

Before this Task Force can be implemented successfully, there are some challenges which need to be faced and dealt with. For example, funding will always be a concern; however a significant amount of work has already taken place (with limited resources) through collaboration amongst NGOs and conservation organisations. The real threat this Task Force faces is in fact, the reluctance of some of the colony champions to share their much needed data with this Group and because of territoriality, we are struggling to find alternative enthusiastic and passionate individuals to assist and take over these specific areas where gaps have been identified.

Monitoring and Evaluation

A standardised monitoring protocol was put together with the idea being all colony champions would follow this tool, gathering the same information for each colony and allowing us to analyse the results effectively, however this has not always been possible. Our 2009 breeding counts are unfortunately not complete and do not always follow the protocol. We have included 2008's counts for comparison purposes but we suspect future counts should reflect a more accurate picture. As we have managed to obtain some financial support, we will be on the road, traveling to some of the colonies and/or providing training to new and existing colony champions regarding the accepted and approved standardised monitoring protocol and offer assistance where needed during the 2010 and 2011 breeding seasons.

As one will see from the below table, there are many gaps in our monitoring data and we hope to rectify this in the coming year, however there is some good news already. Discussions with land-owners and stakeholders for two of the key colonies in the Lowveld and western Bushveld will from 2010 enable us to either implement monitoring or to access monitoring reports for these. With the passing of the late Prof Steven Piper, the colonies which he monitored for years were unfortunately not monitored with the exception of the Oribi site but we are hoping to rectify this during the 2010 breeding season.

2009 Breeding records:

| | Breeding attempts | Fledglings |
|-----------------|-------------------|------------|
| Potberg | 63 | 39 |
| Manoutsa | 247 | |
| Blouberg | 433 | 312 |
| Magaliesberg | | |
| * Skeerpoort | 223 | 175 |
| * Nooitgedacht | 106 | 91 |
| * Robert's Farm | 7 | 7 |
| Mzimkulu/Oribi | 8 | |
| Total | 1079 | 624 |

2009 KZN & Lesotho Breeding survey (summary):

| Area | Site Name | No. of Active Nests | Total birds seen | Adults | Juveniles |
|----------------|--------------------------|---------------------|------------------|-----------|-----------|
| Garden Castle | Bamboo Mountain | | ? | | |
| Garden Castle | Stone Pass | | ? | | |
| Cathedral Peak | Vultures Retreat | 3 | 40 | | |
| Cathedral Peak | Ganabu | 5 | 50 | | |
| Cathedral Peak | Ngwavu | 16 | 50 | | |
| Cathedral Peak | Ndedema Dome | | | | |
| Cathedral Peak | Easter Cave | | | | |
| Cathedral Peak | Mlambonya Buttress | | | | |
| Highmoor | Mount Erskine | | 2 | | |
| Highmoor | Cleopatra | 2 | 21 | | |
| Highmoor | Mount Lebanon | 1 | 20 | 20 | |
| Hillside | nTabamhlope | 5 | 44 | | 9 |
| Injisuthi | Trojan Wall | 3 | 11 | 10 | 1 |
| Kamberg | Gladstone's nose | | 4 | 4 | |
| Lesotho | Thaba - Phatsoa | | 7 | | |
| Lesotho | Motsitseng | | 21 | | |
| Mweni | Saddle | 4 | 19 | | |
| Mweni | Icidi Stream | 1 | 6 | 4 | |
| Mweni | Ncedamabutho / Mpungwane | 3 | 9 | 9 | |
| Mweni | Mweni Pinnacles | | 2 | | |
| Mweni | Mweni Needle | | 6 | 5 | |
| Mweni | Rockeries B | 8 | 20 | | |
| Rugged Glen | Babangibona | | | | |
| Umkhomazi | Kumulangana | | 15 | 15 | |
| Umkhomazi | Kwatabamnyama | | 0 | | |
| | Isiwa Samanqe | 2 | 36 | 25 | 1 |
| Total | | 53 | 383 | 92 | 11 |

2008 Breeding records:

| | Breeding attempts | Fledglings |
|--------------|-------------------|------------|
| Potberg | 75 | 25 |
| Manoutsa | 322 | |
| Blouberg | 483 | 376 |
| Magaliesberg | | |

| | | |
|-----------------|-------------|------------|
| * Skeerpoort | 277 | 199 |
| * Nooitgedacht | 118 | 89 |
| * Robert's Farm | 6 | 6 |
| Mzimkulu/Oribi | 22 | 15 |
| Total | 1278 | 723 |

Conservation Initiatives:

Although monitoring of the breeding colonies is a priority, it must be noted that in order to stabilise this species, other conservation initiatives and activities need to be implemented and driven as a matter of urgency. It is up to each colony champion to put in place sound conservation strategies and plans and make the conservation of Cape Vultures their number 1 priority. Unfortunately only a handful of conservation plans have been received to-date and are herewith attached separately i.e. Magaliesberg, Potberg, Blouberg and Ezemvelo KZN.

Previously identified mortality factors and results of relevant conservation activities:

| | |
|---|---|
| <p>Loss of foraging habitat.</p> | <p>In order to understand this threat and put in place sound conservation measures, one needs to understand the Cape Vulture's foraging and distribution paths. Unfortunately, in the past, the colour-ring banding method did not contribute significantly to this. For this reason, patagial (wing) tags are now fitted to the species and a total of 481 Cape Vultures have been tagged with 733 re-sightings recorded. We are now starting to get a clearer picture of the movements of the species.</p> <p>To further understand the bird's movements, a significant number have been fitted with GSM/GPS tracking devices in the North West and Gauteng Provinces. We hope that these results will cause a chain reaction and each colony champion will make use of this technology. We should look at least 12 vultures per colony to gain a better insight into the bird's movements. Only then, will we be well informed to affectively put sound conservation measures in place.</p> <p>A total of 11 adult Cape Vultures from the Magaliesberg region were monitored with tracking devices during 2007-2009. These results will be published shortly and are in the process of being analysed using GIS mapping. A further 8 were fitted with devices on the Mankwe Wildlife Reserve, a Reserve adjacent to Pilanesberg Nature Reserve at the end of 2009. Preliminary results will be written up for Eskom in August and a final report later on when the battery lifespan has reached its limit.</p> |
| <p>Food quantity: Decrease in the amount of carrion</p> | <p>The vulture restaurant survey study has now been completed and where it was thought that 200 active vulture restaurants existed in southern Africa, it has turned out that only 63 were confirmed. An up-to-date vulture restaurant database with GPS co-ordinates for the 63 confirmed sites has been completed (see figure below - red circles indicate active vulture restaurants; blue circles indicate vulture restaurants of unknown status.) Ongoing updating of the database is necessary, and additional information across all regions is required.</p> |



Food quality:
Variation in
carcass
composition

Chemical Poisoning Studies

- January 2009 saw completion of the choline-esterase inhibition study. This study was aimed at determining the normal choline-esterase levels in vultures so that veterinarians can diagnose poisonings from organophosphors or carbamates more accurately. The second aim of the study was to determine if any of the veterinary chemicals are potent inhibitors of the enzyme. The assay has been validated. Already thirty-five birds have been sampled and we can now establish the species normal range. Twenty commercial veterinary pesticides have also been screened in vitro. This data is being analysed to ascertain if any inhibitory activity is present and more importantly, the potential for veterinary ecto-parasiticides to be toxic. *Still to be written up for publication.*
- With lead toxicity known to be a problem in other raptor and vulture species exposed to lead shot in carrion, for example, the Condor, the possible effects of lead exposure also requires clarification in Southern African birds of prey. Blood samples have been collected from 25 vultures at 6 wild locations namely; Mankwe Nature Reserve, Rhino & Lion Nature Reserve, Moholoholo, Kwa-Zulu Natal and Otjiwarongo together with the Etosha National Park in Namibia. In addition, 25 vultures from 4 captive facilities have also been sampled for comparison purposes namely De Wildt Cheetah & Wildlife Trust, Johannesburg Zoo, Pretoria Zoo and the VULPRO^{RLWC} Rehabilitation Centre. *The results will be written up for publication shortly.*
- As part of the ongoing safety study on non-steroidal anti-inflammatory drugs and their effects to vultures, ketapofen was tested, being thought to be a safe alternative to diclofenac, alongside meloxicam. However, a 3-phase study revealed that the drug, is in fact, highly toxic to *Gyps* species. Whilst undergoing the trial study, we also conducted a pharmacokinetics study on ketapofen and have since published the results as a toxicokinetic study. Only non-releasable Cape Vultures were used for this study. (V. Naidoo, K Wolter. et. al 2009)

Water Pollution

No work in this regard has been done.

| | |
|---|--|
| <p>Food quality: shortage of calcium</p> | <p>Through the newly formed “Vulcha Helpers’ group, bones are crushed (by hand) during the breeding season and dropped off at the Rhino & Lion Nature Reserve and the Skeerpoort vulture restaurants. This is done as often as possible due to time and availability constraints. The Mogale’s Gate vulture restaurant has the highest recorded population of brown hyenas in the Gauteng Province and due to their presence; carcasses are naturally crushed by these predators, making bone fragments available for the birds. These three vulture restaurants are the main food source for the Magaliesberg Cape Vultures.</p> <p>A handful of grounded Cape Vulture fledglings during the 2009 season, undergoing rehabilitation, were examined for calcium deficiency based on their injuries. Two of these birds were x-rayed and PMs done with the results confirming our suspicions.</p> |
| <p>Contaminated food: Inadvertent poisoning</p> | <p>This list is by no means accurate regarding the number of Cape Vultures poisoned to-date and this threat remains a high priority. The Wildlife Conflict Mitigation Programme of the EWT has been requested to improve the rate of reporting and colony champions will also be engaged to report ALL known or suspected incidents of poisonings to this group for investigation.</p> <p><u>List issued by the WCMP of the EWT</u> 24/08/2009 – 1 Cape Vulture, Underberg. Unknown 31/08/2009 – 3 Cape Vultures, Limpopo Province. Unknown 20/11/2009 – 6 Cape Vultures, Gauteng/North West Province. Organophosphate. 2 released successfully and the remainder died</p> <p>Preliminary results from farm visits and questionnaires in the Pilanesberg region from 2008-2009 suggest that poisoning could still be a serious, but localised threat to vultures. One farmer in Northam (Limpopo Province) reported finding more than 40 dead <i>Gyps</i> vultures in the 5 years preceding 2008. He reported his neighbour to the relevant authorities for illegal poisoning, but no prosecution was made.</p> |
| <p>Powerlines (overall summary)</p> | <p><i>Statistics</i> Between January 2006 and April 2010, 194 vulture electrocutions were reported to the Wildlife & Energy Programme (WEP), 168 of these were Cape Vulture electrocutions. The number of collision related mortalities for the same period was significantly smaller, with only 36 collisions reported, 33 of which were Cape Vultures. Cape Vulture collisions appear to occur predominantly where vultures regularly congregate, such as vulture restaurants.</p> <p>WEP recommended that mitigation in the form of insulation, anti perching devices and bird flight diverters be installed at 170 incident locations (involving all vulture species). To date mitigation has been implemented by Eskom at 136 (80%) of these locations, which is great.</p> <p><i>Special cases</i> The EWT was contacted by Mr. Brian Whitehorn, owner of the Paardeplaats Nature Retreat, regarding the lack of mitigation for both avifauna and aircraft on the Lydenburg-Sabie 132kV power line traversing across his and neighbouring properties. WEP conducted a special investigation in January 2008 in order to ascertain the magnitude of the problem in relation to the number and diversity of species occurring on the property and the possibility of negative interactions occurring between the resident avifauna and the power line. The property is home to a rich diversity of bird species, many of which being power line sensitive species (cranes, bustards, storks and Secretarybird). Of particular importance is the proximity of the 132kV power line to the Masjienkloof Cape Vulture colony. The cliff sides of the Masjienkloof Valley support over 60 Cape Vultures, Bald Ibis and Black Stork. Mr. Whitehorn has recently established a vulture restaurant within 200m of the power line raising obvious concerns regarding the potential</p> |

electrocution and collision interactions as well as the potential for the birds to cause a breakdown in the quality of the electrical supply through streamer and pollution related interactions. WEP recommended that the entire length of the Lydenburg-Sabie 132kV power line be fitted with bird flight diverters (to prevent possible collisions) and bird guards to ensure that the vultures do not perch or roost within the critical areas on the electrical towers thereby minimising the electrocution and streamer/pollution interactions. Although the bird guards have been successfully installed on the electrical towers, the bird flight diverters remain a problem (due to the wrong size being ordered) and will have to be re-installed within the coming months.

2. Policy:

Technical bulletin

WEP have drafted an updated version of the 'Technical Bulletin on Distribution pole structures and bird electrocution' for Eskom Distribution. This document provides guidance on which structures should be used in future to avoid vulture electrocutions in particular. A map of likely distribution of Cape Vulture, Lappet-faced Vulture and African White-backed Vulture is included, and within the likely distribution, strict conditions are placed on which structures may be used. This document will hopefully be officially adopted by Eskom during 2010.

Eskom Biodiversity Management Policy

WEP have provided significant input into Eskom's new Biodiversity Management Policy (currently in draft phase) with respect to vulture electrocutions, and mechanisms for ensuring that infrastructure is safe.

3. Applied research:

Rhino & Lion Nature Reserve

Significant numbers of Cape Vultures roost regularly on two 400kV power lines close to the Rhino & Lion Nature Reserve's vulture restaurant near Krugersdorp. A number of collisions of these birds have been reported over the last 10-15 years, mostly resulting in death of the bird, but some resulting in injuries. Various technical challenges exist in the mitigation of this collision problem, including: proximity of the two lines to each other providing safety risk for helicopter installation of line markers; optic fibres on one earth wire prevent the installation of line markers; hilly terrain prevent the use of a 'cherry picker' to install line markers.

In order to investigate the situation further, Eskom Research funded the purchase and use of 6 motion sensor digital cameras. These cameras were installed on three of the relevant towers closest to the restaurant. The first and second downloads of data have been done and the main findings are as follows:

- Birds are occasionally flying at night, possibly due to disturbance off the roost.
- Birds are flying late afternoon to the roost, since meat is put out late afternoon at the nearby restaurant.
- Near misses with the earth wire have been recorded.
- We suspect that traditional line marking devices may not mitigate this problem since it appears to be a 'close quarters' problem, whereby the birds collide with cables whilst making short circling flights on and off the tower.
- Data collection will be ongoing through the coming winter months.

Eastern Cape

Andre Boshoff and team at Nelson Mandela Metropole University have conducted excellent research on Cape Vultures in the Eastern Cape, mostly concluded in late 2009 (funded by Eskom Research). Briefly, this research has identified areas most frequently used by Cape Vultures, and overlaid these with the power line network to identify priority

areas for proactive mitigation of power lines. Population modelling was also conducted to assess the impact that power lines are having on the EC population, and various other findings were also made. More detail should be obtained directly from Andre Boshoff. WEP are drafting a summary of this important work, with a 'business case' motivation to Eskom to carry out the recommendations as soon as possible.

Greater Magaliesberg

During 2009 WEP contracted a student to conduct a home range modelling study for the greater Magaliesberg area. This resulted in the identification of 3 'core use areas' for the species in this area. These are the areas that most birds spend most of their time. Eskom has been engaged to consider retrofitting unsafe structures in the core use areas. The process of motivating for this is ongoing.

Pilanesberg Region

At the end of 2009, 8 Cape vultures were fitted with GPS tracking devices funded by Eskom at Mankwe Wildlife Reserve, adjacent to Pilanesberg NP. All adult birds roost/breed at the Kransberg colony, and the data generated so far has already identified key foraging areas in the region. Preliminary analysis suggests that there are certain sections of the power-line network that are regularly used as Cape vulture roost sites. It is hoped that the results from this study will lead to effective mitigation measures at those sites. In addition, roost counts have been carried out regularly on Mankwe Wildlife Reserve's 400 kV power-line in order to relate the level of vulture roosting activity to seasonal mortality of game species on the reserve.

4. Implementation of mitigation

Reactive

Reactive mitigation is defined as mitigation at sites where birds have already died. As reported in '1' above a large number of sites have been mitigated reactively during this report period, to Eskom's credit. However reactive mitigation alone is not adequate for the conservation of Cape Vultures, in the WEP's opinion.

Proactive

Proactive mitigation is defined as mitigation of structures where birds have not yet necessarily died, but have been identified as high risk for the future. In other words this is preventative mitigation. If applied over relatively wide areas, this can have a significant conservation impact for vultures. Little proactive mitigation has taken place during the report period. This is of concern to WEP, and various attempts to improve on this are underway. In particular the identification of priority areas by studies such as those by Andre Boshoff is critically important to these efforts.

5. Other

Vulture restaurants

Vulture restaurants are of increasing concern to WEP. It appears that there is often inadequate consideration given to the proximity of power line networks when creating new restaurants. This is in spite of some of the sites being developed under the advice of vulture experts who interact with WEP regularly and should know better.

Developing a vulture restaurant too close to power lines invariably results in increased vulture mortality, and other conflicts. The time and money that then needs to be allocated to fixing the situation could have rather been allocated to more deserving conflict situations, which have not been created. Educational material on the siting of new restaurants needs to contain more detailed information on the effects of power lines close to vulture restaurants, and site assessments need to include WEP representation. WEP is available to assist in this regard.

| | |
|---|---|
| | <p><i>Training</i> During 2009 WEP attended various meetings with EKZNW staff on the KZN vulture conservation strategy, and conducted training at various EKZNW forums.</p> <p><i>Development of the power-line network:</i> The expansion of the power-line network in the Limpopo, North-West and Gauteng Provinces over the coming years is a concern due to the likely increase in collisions and/or electrocutions. The planned Delta-Epsilon (600 kV) and Marang-Matimba (400 kV) projects will lead to the construction of multiple lines through the key foraging areas for Cape vultures in south west Limpopo Province and the Pilanesberg region of North-West Province. Preliminary results from GPS tracking data suggest that the proposed lines will pass directly through the core foraging areas of Cape vultures from the Kransberg colony. Landowner questionnaires conducted in the area suggest that power-lines are already causing (probably unreported) deaths and injuries to vultures in the region, and it is therefore a concern that multiple additional lines will be constructed in the near future.</p> |
| <p>Electrocution on electricity transmission structures</p> | <p>This is an ongoing mortality factor, the prevalence and trend of which is difficult to quantify. South Africa's accelerated rural electrification programme of the past 30 years, and particularly since 1994, is considered to have significantly increased this threat.</p> <p>Eskom has implemented some mitigation actions - new Eskom lines have vulture-safe pylon structures, and pylon modification, in response to mortality incidents, has been carried out in places. However, 1000s of kilometres of unsafe structures still exist and they provide a continuing cause of mortality.</p> <p>Although practical mitigating solutions exist, and only require widespread implementation, the huge scope of the problem, and the high cost of mitigation, requires research to identify priority areas, and also to place this factor into a broader perspective. Research is being conducted in the Eastern Cape.</p> |
| <p>Collision with electricity cables (conductors) and tower guy wires</p> | <p>Eskom has implemented some mitigation actions – attaching conductor markers in some high collision risk areas. Collisions are less of a mortality factor than electrocutions. However, 1000s of unmarked conductors exist and they provide a continuing cause of mortality.</p> |
| <p>Drowning in farm reservoirs</p> | <p>No data with regard to Cape Vultures have been received in the review period</p> |
| <p>Unsustainable harvesting of birds for traditional uses.</p> | <p>An in-depth study with regard to the impact of illegal harvesting of vultures for the muti trade was completed under the auspices of Futureworks and KZN Wildlife (Mander, <i>et al</i>, 2007) which highlighted the considerable impact that this activity has in the eastern parts of South Africa that includes a significant part of the Cape Vulture's range. Should the current rate of harvest continue, Cape Vulture and other populations in the region could be severely affected. In response to this, KZN Wildlife, EWT-BoPP and other stakeholders have initiated a Traditional Medicine Task Force that has drafted, and is in the process of implementing, a strategy to attempt to address this threat. Further research on this aspect is required and accurate information on the potential impact of this activity is continuously being highlighted among the public, particularly the real threat to human health that exists with the use of vulture parts acquired through poisoning the target birds.</p> <p>The Blouberg Nature Reserve, situated in the Limpopo Province, is surrounded by small disadvantaged communities. These communities make use of traditional healers with vulture parts a highly sought after commodity. As Blouberg is home to the second largest colony, many fledglings which become grounded are harvested for this 'muti' trade. The</p> |

| | |
|---------------------------------------|---|
| | EWT together with Limpopo Nature Conservation and Sasol have therefore implemented a 'reward' system. The members of the community are 'rewarded' for their assistance in the collection of vultures which they have handed over to the relevant officials instead of to the traditional healers. For their efforts, they are paid R120 per bird. Concerns have been raised that this 'reward' programme is in fact contributing to the collection of vultures, however, either way the birds will be paid for either by this reward system or by the traditional healers and 50 odd Cape Vultures is a substantial number to lose. |
| Lack of awareness/conservation ethic. | <p>Education is an essential conservation tool to highlight the importance of the species and their threatened status. The total number of individuals reached in the Gauteng Province since 2008 to 2009 is approximately 2500 (excluding the National Vulture Day event). These events take the form of school presentations with a live vulture, bird club talks and open days at the rehabilitation centre and awareness campaigns.</p> <p>The Vulture Count Day was initiated in 2003 by Ezemvelo KwaZulu-Natal Wildlife (EKZNW) with the purpose of; 1) obtaining a minimum total count of each species, 2) recording marked individuals, as well as 3) raising awareness about the plight of vultures. (<i>Please refer to 2009 KZN report, attached separately</i>). This day now coincides with the International Vulture Awareness Day.</p> |

Publications

1. A. Boshoff, S. Piper & M. Michael 2009. On the distribution and breeding status of the Cape Griffon *Gyps coprotheres* in the Eastern Cape province, South Africa. *Ostrich* 80(2): 85-92.
2. V Naidoo, L Venter, K Wolter, M Taggart, R Cuthbert. The toxicokinetics of ketoprofen in *Gyps coprotheres*: Toxicity due to zero order metabolism. In Press.
3. Vinny Naidoo, Kerri Wolter, Duncan Cromarty, Jorg Diekman, Maria Diekman, Neil Duncan, Andrew A. Meharg, Mark A. Taggart, L. Venter and Richard Cuthbert. Toxicity of the NSAID ketoprofen to *Gyps* vultures: a new threat for vultures. *Biology Letters*, 2009.
4. K Wolter, V Naidoo, C Whittington-Jones, & P Bartels . Does the presence of vulture restaurants influence the movement of Cape Vultures (*Gyps coprotheres*) in the Magaliesberg? SAWMA 2007, Didima, South Africa
5. Wolter K., Von't Foort W., & Bartels P. 2006a. Monitoring released vultures. Proceedings, Birds of Prey WG (EWT) Annual General Meeting, South Africa.
6. Wolter, K., Botha, A., Von't Foort, W., Bartels, P. 2006. Monitoring the success of released rehabilitated vultures. South African Wildlife Management Association Symposium. Poster.
7. Wolter, K., Whittington-Jones, C., & West, S. 2006. Annual censuses of the Cape Vulture (*Gyps coprotheres*) at three colonies in the Magaliesberg, *Vulture News* 57, September 2007
8. Wolter, K., Von't Foort, W & Bartels, P. 2007. Monitoring released rehabilitated Vultures. *Vulture News* 57, September 2007
9. Swan, G.E., Cuthbert, R., Quevedo, M., Green, R.E., Pain, D.J., Bartels, P., Cunningham, A.A., Duncan, N., Meharg, A., Oaks, J.L., Parry-Jones, J., Schultz, S., Taggart, M.A., Verdoorn, G.H., and Wolter, K., 2006. Toxicity of diclofenac in *Gyps* vultures. *Biology Letters* 2, 1-4.
10. Naidoo, V., Swan, G.E., Wolter, K., Cuthbert, R. & Bartels P. 2006. Could Meloxicam be the saviour of the Asian White-backed Vulture? PAAZAB Annual General Meeting, East London, South Africa.
11. Pain, D.J, [and alphabetically Bowden C.G.R, Cunningham A.A, Cuthbert R, Naidoo V, Oaks J.L, Parry-Jones Swan G, Wolter K] and Green R.E. 2007. The Race to prevent extinction of southern Asian vultures
12. Turnbull P.C.B., Diekmann M., Spitze I., Kilian W., Versfeld W., De Vos V., Arntzen L., Kotze A., Rehset T., Bartels P. and Wolter K. 2007, Naturally acquired antibodies to *Bacillus anthracis* protective antigen in vultures of southern Africa. *Onderstepoort Journal of Vet Res*

Acknowledgements

The work reflected in this report is only made possible by the generous support from our sponsors. Sasol, once again needs special mention for their long standing support and commitment towards the Cape Vulture monitoring project for the last 20 years. The Mazda Wildlife Fund gives generously in the form our project

vehicles and special mention also needs to be given to VULPRO's sponsors namely; Rand Merchant Bank, Computer Facilities, Lomas Wildlife Protection Trust, Eskom, The Tusk Trust, Natural Encounters Inc., Cheyenne Mountain Zoo and WWF-AFGRI. The Leverhulme Trust is thanked for their generous support towards the work undertaken at the Mankwe Reserve.