

Status of the Cheetah in Zimbabwe

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The cheetah *Acinonyx jubatus* once occurred throughout Zimbabwe, but is now largely absent from the north and east of the country. Estimates of the cheetah population over the last 30 years range from 400 to 1,500, but many of these figures are not based on reliable data, and no current estimates are available. The cheetah population is thought to have been stable or decreasing in protected areas, and increasing on private land. The fast track land resettlement programme (FTLRP) initiated in 2000 may have affected the present status and distribution of the cheetah, but this has not yet been investigated. Cheetahs are legally hunted as problem animals and as trophies, but insufficient data are available to assess the impact of hunting on the population. Illegal removals may also have an important impact on the population. It is suggested that research is conducted to determine the current status and distribution of the cheetah population, and how this may have been affected by recent land use changes. In addition, it is recommended that trophy quality should be monitored, and information on non-lethal predator management techniques should be provided to farmers.

History of cheetahs in Zimbabwe

Historically the cheetah (Fig. 1) was thought to have been distributed throughout Zimbabwe (Kingdon 1997, Stuart & Wilson 1988). In the 1960s cheetahs had a patchy but wide distribution in Zimbabwe, and resident cheetah populations were recorded in each province (Child & Savory 1964, Smithers 1966). By the end of the 1970s cheetahs were virtually absent from much of the north east of the country where crop farming is the dominant land use, but cheetahs were more abundant in the south, west and centre of the county, where commercial wildlife and livestock production is common (du Toit 2004, Myers 1975, Smithers & Wilson 1979, White 1996). Subsequent studies reported a similar distribution (Fig. 2; Marker 1998, Stuart & Wilson 1988, White 1996, Wilson 1984, 1988).

There have been few surveys of cheetah abundance in Zimbabwe. Most population estimates were generated using questionnaire & interview surveys in which respondents were asked to estimate the number of cheetahs on their property. Estimates were then summed to give total population size. However, as home ranges of cheetahs are large and frequently include several properties, this method may lead to overestimation of total population size (Bashir *et al.* 2004, Wilson 1988).

Interview and questionnaire surveys were used to estimate the total cheetah population at 400 in 1973 (Myers 1975) and 470 in 1987 (Wilson 1988). Wilson (1988) accounted for overestimation by using educated guesswork to reduce his totals. White (1996) estimated that 728 cheetahs were present on commercial farmland alone in 1996 based on a postal questionnaire survey, but he did not reduce the sum of the respondents' estimates, so his findings are not directly comparable with those of Wilson (1988). In 1991 a national total of 1,391 cheetahs was calculated using a computer model by the Zimbabwe Department of Parks and Wildlife Management (DPWLM, the former name of Zimbabwe Parks and Wildlife Management Authority, PWMA), although the accuracy of this has been questioned (DPWLM 1991, cited in Davison 1999a, Zank 1995, cited in Marker 1998). Davison (1999a) used the figures given by White (1996) and DPWLM (1991, cited in Davison 1999a) to calculate the annual growth rate of the cheetah population during this period, which he used to extrapolate to a total of 1,500 cheetahs in 1999.

Several reports have suggested that before 2000 the cheetah population in protected areas was stable or decreasing (total 292 in 1999), but was increasing

on commercial farmland (total 728 in 1996) (Heath 1997, White 1996, Wilson 1988).

Current distribution and status

As the 1996 and 1999 population estimates (Davison 1999a, White 1996) are based on questionable data, and there have been no subsequent studies of status or distribution, the current distribution, status and trends of the cheetah population in Zimbabwe remain unclear.

Habitat

In Zimbabwe cheetahs occur in plains or open scrub or woodland, but avoid dense forest (Smithers 1966, Smithers & Wilson 1979). Purchase & du Toit (2000) found that in Matusadona National Park, cheetahs displayed a preference for the boundary between the foreshore of Lake Kariba (which was a grassland dominated by *Panicum repens*) and woodland (comprised mainly of *Colophospermum mopane* with a mixture of *Combretum* and *Terminalia* tree species and a thin herbaceous layer). The foreshore was characterised by a high density of prey species, while the woodland provided cover for hunting and from other predators, which may explain the cheetahs' habitat selection. In Hwange National Park cheetahs oc-

cur in open grassland, closed mopane woodland, and *Baikiea* woodland (Wilson 1975).

It has been estimated that 80% of the cheetahs in Zimbabwe occur on privately owned farmland (Stuart & Wilson 1988). Since independence in 1980 many large-scale farms were converted from cattle to wildlife ranches in Zimbabwe (du Toit 1998, cited in du Toit 2004). In 2000, at least 20% of the country's commercial farmland (5% of the total land area of Zimbabwe), in addition to the 12% managed by PWMA, was managed for wildlife production and tourism (du Toit 2004). This probably facilitated the expansion of the cheetah population on private land between 1986 and 1996 reported by White (1996). However, in 2000 the FTLRP was initiated in Zimbabwe, which resulted in the conversion of many large-scale commercial farms to small-scale subsistence farms (du Toit 2004, Wolmer 2005). This had a detrimental impact on several wildlife populations including cheetah prey species such as impala *Aepyceros melampus* (du Toit 2004). Although the impact of the FTLRP on cheetahs has not yet been thoroughly investigated, preliminary data collected by Marwell Zimbabwe Trust (MZT) suggest that cheetahs may occur in lower numbers in resettlement areas than commercial farms, and it seems likely that the population may have declined since the initiation of the FTLRP, as cheetahs depend on a sufficient prey base (Laurenson 1995).

Prey

Cheetahs in Zimbabwe have been reported to hunt a range of mammals, including warthog *Phacochoerus aethiopicus*, grey duiker *Sylvicapra grimmia*, steenbok *Raphicerus campestris*, impala, waterbuck *Kobus ellipsiprymnus*, bushbuck *Tragelaphus scriptus*, reedbuck *Redunca arundinum*, zebra *Equus burchelli*, tsessebe *Damaliscus lunatus*, kudu *Tragelaphus strepsiceros*, sable *Hippotragus niger*, and buffalo *Syncerus caffer* (Purchase & du Toit 2000, Smithers 1966, Smithers & Wilson 1979, Wilson 1975). In Hwange and Matusadona National Parks impala make up the majority of the cheetah kills (41% and 87% respectively; Purchase & du Toit 2000, Wilson 1975). Ground



Fig. 1. Cheetahs in Matusadona National Park (Photo Zambezi Society).

living birds such as guinea fowl *Numida meleagris*, francolin *Francolinus* spp, bustards *Otis* spp, and ostrich *Struthio camelus* are also hunted (Purchase & du Toit 2000, Smithers & Wilson 1979, Wilson 1975). Domestic stock, including sheep, goats, and calves may also be taken (MZT, unpubl. data, Smithers 1966).

Health and Genetics

The Wildlife Unit of the Zimbabwe Department of Veterinary Services has investigated the deaths of 22 cheetahs over the past 20 years. Of the five wild cheetah deaths investigated, one died during translocation as a result of multiple causes related to its poor condition, one was killed for hunting livestock, one was euthanased after a road traffic accident, and the causes of the remaining two deaths were unknown. Of the 17 investigated deaths that occurred in captive animals, six were killed by ingestion of anthrax infected meat, two by pneumonia, one by nephritis, one by asphyxiation, one by exsanguination as a result of flea infestation, one by accidental poisoning, one was euthanased due to fracture of the vertebral column, and four were due to unknown causes (Foggin, unpubl. data). No data are available on genetics.

Human Population

Data collected from the Zimbabwe Census Office indicates that between 1992 and 2002 the human population increased by an average of 1.1% per year to over 11.6 million. The four provinces in which cheetahs are thought to occur in greatest numbers (Matabeleland North and South, Midlands and Masvingo) are among the provinces with the lowest human population densities in Zimbabwe (9-30 people/km²). The number of people living in resettlement areas has grown by 87%, the largest increase of any land use type, while the population on large-scale commercial farmland has fallen by 16%.

Threats and Problems

Competition with large carnivores may limit the cheetah population size within protected areas (Durant 2000, Laurenson 1995). This may be why 80% of cheetahs in Zimbabwe are thought to occur on private farmland where lions *Panthera leo* and spotted hyenas *Crocutta crocutta* have been eliminated (Stuart & Wilson 1988). This brings cheetahs into conflict with humans in several ways. Farmers report that cheetahs prey on livestock, and although in Zimbabwe permits are issued to enable legal destruction of problem cheetahs,

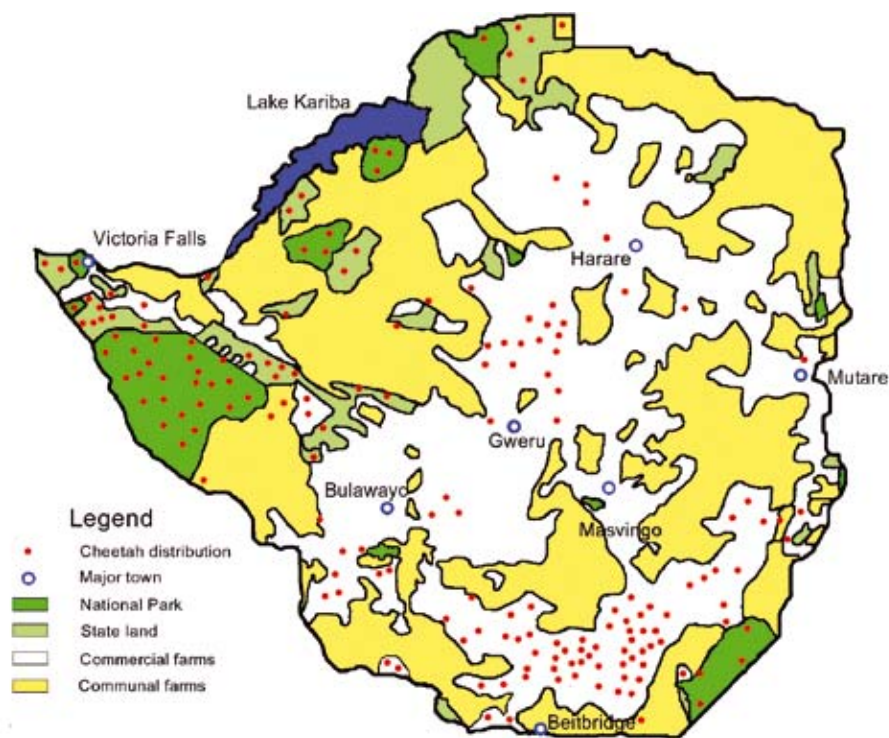


Fig. 2. Distribution of the cheetah in Zimbabwe in 1987. Subsequent studies have revealed similar distributions. Adapted from Wilson (1988).

the system is slow and cumbersome, and many farmers are thought to destroy cheetahs illegally (Purchase 2004, Wilson 1988). Myers (1975) reported that 28 of around 40 ranchers interviewed in Zimbabwe in 1972 removed cheetahs from their property illegally in the previous three years, and he estimated that 100 cheetahs per year were destroyed by livestock farmers in Zimbabwe's lowveld (low elevation southern areas) alone. Illegal removals of cheetahs on farm land is believed to have halved the cheetah population of Namibia during the 1980s (Morsbach 1987), and it may be a major threat to cheetahs in Zimbabwe, although as the number of commercial farmers operating in Zimbabwe is decreasing (Commercial Farmers Union, unpubl. data), this may become less important.

In an attempt to reduce illegal removals, the Convention on International Trade in Endangered Species of Wild Flora and Fauna (CITES) approved a quota of 50 cheetahs to be trophy hunted in Zimbabwe and exported annually since 1992 (CITES 1992). However, in order for an export quota to be approved, evidence must be supplied to demonstrate that the off take would not

be detrimental to the population. The quota was approved, despite the fact the no such evidence was ever submitted (Purchase 2004). There is currently no way of monitoring the effects of hunting on trophy quality, as trophy quality is not recorded by PWMA (Purchase 2004). Therefore it is not known if trophy hunting is a threat to the cheetah population.

The FTLRP could potentially be a very serious threat to cheetahs, due to increased habitat loss. Wildlife and livestock commercial farms thought to be most suitable for cheetahs are being converted to subsistence crop farms through the FTLRP, which may support lower cheetah densities (MZT, unpubl. data, Wolmer 2005). This threat has not been studied in detail, but it could be very important to the future of cheetahs in Zimbabwe.

Solutions

The CITES trophy hunting export quota system aims to encourage landowners to tolerate the presence of cheetahs by allowing them to gain income by selling cheetah hunts, although Purchase (2004) suggests that this has not improved tolerance.

Policy and Legislation

Cheetahs are specially protected in Zimbabwe under the 1996 revised Parks and Wildlife Act, and as such cannot be removed without permission from the Director General of PWMA (Anonymous 1996, Davison 1999b, Purchase 2004). A permit is required from PWMA in order to keep captive cheetahs. In order to breed cheetahs a breeder's permit is additionally required from PWMA. Cheetahs are also listed on Appendix 1 of CITES, prohibiting international trade of cheetahs or cheetah products in all but under certain circumstances, such as the export of privately owned trophies hunted under a quota granted by CITES to aid their conservation (CITES 1992). Cheetahs can be removed as problem animals or as trophies if permits are obtained from PWMA. There is no Red Data Book for Zimbabwe, although Sharp (1986) provided a Red Data Book inventory in 1986. He did not classify the cheetah into a Red Data Book category.

PWMA has used translocation of problem animals as a conservation tool. Between 1993 and 1994 fourteen adult cheetahs (eight males and six females) and three juvenile cheetahs were captured on private ranches as problem animals and translocated to Matusadona National Park (Zank 1995, cited in Purchase 1998). The translocated cheetahs appear to have become established in the park, and formed a breeding population (Purchase & Vhurumuku 2005). Chipangali Wildlife Trust captured a number of nuisance cheetahs, which it held in captivity, sometimes for several years, and subsequently released into National Parks. They released a pair of cheetahs into Matobo National Park in 2002, which still occur in the area (Wilson 2006). A group of four cheetahs were released into Hwange National Park in 2003, but three are now dead or missing and only one survived (Wilson 2006). A second group of cheetahs was reintroduced to the park (group size and release date not reported), and is thought to have become established (Wilson 2006). A pair of cheetahs were released into the park in 2005, and this release was also considered to be successful (Wilson 2006).

Sustainable Use

No direct data are available from PWMA on the number of cheetahs hunted as trophy animals, but the numbers of cheetah trophy export permits allocated is given in Table 1 as an indication of this.

Trade

Legal trade

Myers (1975) noted that 10 cheetah skins were legally exported between 1968 and 1972. Table 1 gives data on the number of CITES export tags issued since the trophy hunting export quota was introduced in 1992. Prior to 2005, export tags could be purchased at any time after the animal was hunted (often several years), meaning that a reasonable estimate of the number of export tags allocated for animals hunted in a given year cannot be calculated until several years later (G. Purchase, pers. comm.). The data provided in Table 1 should therefore be treated with caution. To address this problem the legislation was changed. From 2005 onwards if an export tag was required, the application must be made before the end of the year in which the cheetah was hunted (G. Purchase, pers. comm.).

The number of trophies exported has always been less than 50% of the maximum of 50 cheetah trophy exports permitted per year. Although no data are available from PWMA on the total number of cheetah on quota per year, the number of cheetahs for which trophy hunting quotas are applied is always greater than the maximum permitted (Masulani 1999). It is not clear if the low off take is attributable to failures of safari operators to sell sufficient hunts, failures of hunting clients to successfully hunt a cheetah, cheetahs being trophy hunted but not exported, or a combination of these factors (Purchase 2004). It is not known if the current off take is sustainable.

Illegal trade

There are little data available on current illegal trade in cheetahs in Zimbabwe. However, Myers (1975) came across 34 skins without documentation for sale from Zimbabwean fur dealers during his 3 month survey in 1972.

Cheetahs in Captivity

The current international cheetah stud-

Table 1. Numbers of metal CITES export tags allocated since cheetah trophy hunting was permitted in Zimbabwe by CITES in 1992. Data were collected from PWMA records at PWMA Head Office. Data collected in 2003 are from Purchase (2004). Data for 2006 were collected for this report. *These figures are likely to be lower than the actual values, as they were collected within 5 years of the hunting period being investigated.

Year cheetah was hunted	Metal export tags allocated	Year data collected
1992	7	2003
1993	8	2003
1994	5	2003
1995	24	2003
1996	12	2003
1997	4	2003
1998	5	2003
1999	10*	2003
2000	3*	2003
2001	7*	2003
2002	8*	2003
2003	11*	2006
2004	1*	2006
2005	2	2006
2006	1	2006
Mean 7.6, Total 68		

book lists only two cheetahs in one facility in Zimbabwe in 2005 (Marker 2007), but they have now left the country (V. Wilson, pers. comm.). There are currently three captive cheetahs in Zimbabwe kept at two private facilities: one facility is training two male cheetahs for outreach work, and one rancher has a single female cheetah. There are no known breeding centres in Zimbabwe.

Future Conservation Measures

An accurate assessment of the current cheetah population size and distribution is urgently needed to determine the status of the cheetah in Zimbabwe, and would help to assess the suitability of the trophy hunting quota. Trophy size should also be monitored in order to study the effects of hunting on the population. Research into the effect of the FTLRP on the status of the cheetah could help to guide future land use planning, management and development policies to minimise the impact on the cheetah, such as maintaining corridors between isolated cheetah populations. Research into non-lethal predator management techniques would allow the most efficient and cost effective techniques to be identified. This could be run in conjunction with an education programme, to show farmers how they can minimise

their livestock losses while reducing the impact on the cheetah population. An awareness programme aimed at children may also help to improve tolerance of cheetahs. Some of these issues are being addressed by MZT.

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Appendix I - List of projects

Marwell Zimbabwe Trust is conducting research into the status and distribution of cheetahs in Zimbabwe, outside of Parks Estates and running an education project with the aim of minimising human-cheetah conflict.

Chipangali Wildlife Trust (Wildlife Research Unit) is also conducting a survey of cheetah status and distribution in Zimbabwe.

The Zambezi Society is conducting research within the Zambezi basin, including an investigation of the distribution of cheetahs.

Roxy Dankwerts is training two cheetahs for community outreach work.

Appendix II - Organisations involved

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Appendix III - Responsible Authority

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