

# Status and Distribution of Cheetah in Zambia: A Preliminary Assessment

Gianetta Purchase<sup>1</sup>

<sup>1</sup>The Zambezi Society, P.O Box FM 441, Bulawayo, Zimbabwe, dnp@mweb.co.zw

The historical and present day distribution of cheetah in Zambia appear to be similar, although the range has contracted. Liuwa Plains National Park, the northern section of the Kafue National Park and South Luangwa National Park still hold populations of cheetahs, although it was not possible to estimate population sizes. Cheetahs are reported from the Chimbwi plains area of the Bangwelu complex of protected areas, but sightings are infrequent. Cheetahs are also reported from the area between North and South Luangwa Parks, but appear to now be absent from the North Luangwa Park. It is not clear if cheetahs are still vagrant or extirpated in the Lower Zambezi National Park and surrounds. No data were available regarding the status of cheetahs in the remaining national parks, and in unprotected areas. The main threat to cheetahs appears to be a loss of suitable habitat and competition with humans, and a reduction in available prey. Given the reduction in range, there is an urgent need for a survey of Zambia to determine cheetah population sizes, and threats to their survival.

Historically the cheetah was recorded as a widespread but rare to uncommon species in Zambia (Myers 1975, Ansell 1978). Cheetahs were resident in most protected areas, the Lower Zambezi complex being the only exception, where cheetahs were recorded as either absent (Skinner & Smithers, 1990) or as vagrants (Ansell 1978, Nowell & Jackson 1996, Skinner & Chimimba, 2005; Fig. 1).

In a review of mammal fauna in the Four Corners area of Africa (centred around where Botswana, Namibia, Zambia and Zimbabwe meet), Cotterill (2004) reports that cheetahs are present in this part of Zambia, but the report does not include distribution. Benson (1969) record cheetahs as present in Sioma Ngwesi and Liuwa Plains National Parks (Western Zambezi complex, Fig. 1). I. Manning (pers. comm.) also confirmed that cheetahs were found in many protected areas of Zambia in low numbers, with the exception being the northern sector of Kafue National Park where cheetahs were seen frequently (Kafue Complex, Fig. 1). Carr (1986) reports that cheetah were present in South Luangwa National Park but restricted to the plains habitat of the Park (Luangwa complex, Fig. 1). Myers (1975) reports that cheetah were present in Kasanka and Isangano National Park (Bangwelu complex, Fig. 1).

Myers (1975) argued that the distribution and status of cheetahs in Zambia was a result of limited areas of suitable habitat (<40,000km<sup>2</sup>, much of it outside of protected areas) and low densities of preferred prey, combined with persecution by humans sharing the same habitats. A large proportion of Zambia is covered with Miombo woodland, a relatively unproductive habitat, interspersed with areas of higher nutrient levels, such as floodplain grasslands and Mopane woodland (Fig. 2). The uncommon status of cheetahs in Zambia may simply be a result of the prevalence of miombo woodland. In addition, habitats favoured by prey and predators are also favoured by humans for agriculture, and Myers (1975) predicted that as the human population of Zambia increased, competition with cheetahs for habitat would also increase, resulting in a drastic decline in the national cheetah population. He reports that cheetahs were locally extirpated in the Kafue Flats area as a result of competition and persecution by humans (Kafue Complex, Fig. 1).

Cheetahs are specially protected in Zambia, but can be hunted as trophy animals and destroyed as problem animals with special permission from the government wildlife authority.

## Review of available information

Much of the published information

regarding the status and distribution of cheetah in Zambia was found to be outdated. This assessment is based on reports from individuals known to be working in the field in Zambia. Information was collected on a one to one basis, and not through the use of a questionnaire as the number of respondents was limited. The Zambia Wildlife Authority was approached for information, but by the time of writing, the author had received no feedback.

**Protected areas** (including National Parks and Game Management Areas) *The Western complex including Sioma Ngwesi and Liuwa Plains National Parks, and surrounding game management areas (A in Fig. 1)*

Cheetahs appear to have persisted in Liuwa Plains National Park with regular sightings of individuals and groups (Personal observation, T. Turner and E. Farmer, both pers. comm.). At present there is not enough data to estimate population size, but with the ongoing monitoring and research in the Park, by the African Parks Foundation it is hoped that a population estimate can be made soon. Cheetahs have also been sighted in the Sioma Ngwesi National Park and surrounding game management area, although it was not possible to estimate population sizes (Purchase *et al.* 2007).

The Kafue complex including the Kafue, Kafue Flats, Lochinvar and Blue Lagoon National Parks, and the surrounding areas (B in Fig. 1)

The Kafue National Park has historically had the most sightings of cheetahs recorded and sightings are relatively common throughout the park (W. Cotteril, I. Manning, E. Farmer, and F. Dunn, all pers. comm.; Purchase *et al.* 2007). This cheetah population may be the most significant in Zambia but no population estimate is available. Myers (1975) reported that cheetah had become locally extinct in the Kafue Flats areas incorporating the Lochinvar and Blue Lagoon National Parks.

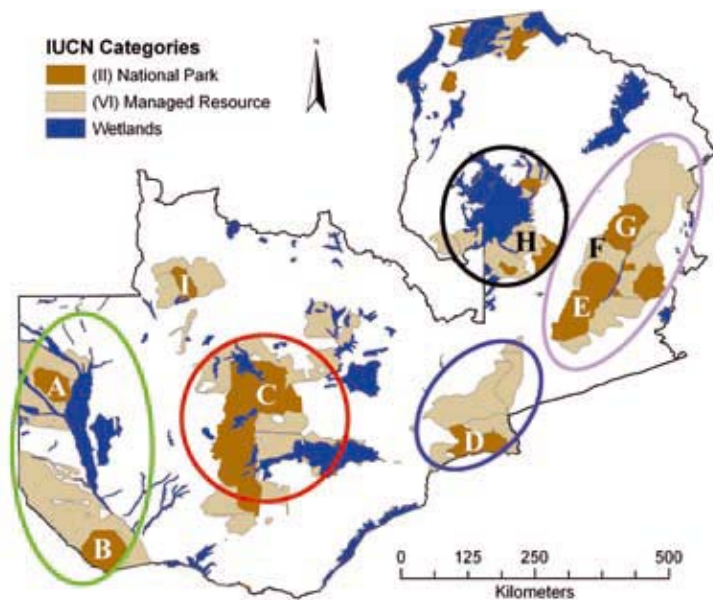
The Lower Zambezi Complex including the Lower Zambezi National Park and surrounding areas (C in Fig. 1)

There are no recent records of cheetah in this area of Zambia, although cheetahs are reported infrequently from the Zimbabwe side of the Zambezi river, and south of the Zambezi river across the border in Mozambique (Purchase *et al.* 2007; Purchase 2007). Historically this area was often excluded from distribution maps of cheetahs and cheetahs may still only be vagrants in this area.

Three cheetah were introduced into the Lower Zambezi National Park from Namibia in the late 1990's but none survived.

The Luangwa complex, including North and South Luangwa National Parks and the surrounding areas (D in Fig. 1)

The status of cheetahs in Luangwa appears to be in dispute. Cheetahs have always been recorded in South Luangwa but only infrequently (I. Manning and E. Farmer, both pers. comm.). Certainly there is an abundance of suitable prey with resident impala and puku. They are considered by people working in North Luangwa to be absent (Chomba, pers. comm.). They were hunted as trophy animals in the hunting block to the north of this Park in the 1970 and early 1980's, and may not have recovered from this persecution (P. White, pers. comm.). Cheetahs have been sighted in the Munyamadzi corridor between the North and South Parks (P. White, pers. comm.) in 2000,



**Fig. 1.** Protected areas and seasonal wetlands of Zambia (Source: WDPA Consortium, 2006). Brown = National Park NP; Beige = Game Management Area; Blue = seasonal wetland; Green circle = Western Zambezi complex; Red circle = Kafue Complex; Blue circle = Lower Zambezi Complex; Purple circle = Luangwa complex and Black circle = Bangwelu complex. A = Liuwa Plains NP; B = Sioma Ngwezi NP; C= Kafue NP; D = Lower Zambezi NP; E = South Luangwa NP; F = Munyamadzi corridor; G = North Luangwa NP; H = Chimbwi plains; I = West Lunga NP.

and this is the most recent sighting recorded to date (Purchase *et al.* 2007). There is an urgent need to accurately assess the current population size of this area of Zambia, given that protection status is high and hence good potential for conservation of the species.

The Bangwelu complex including Kasanka, Isangano and Lavushi Manda National Parks, and surrounding areas (E in Fig. 1).

The Chimbwi plains appear to have been the centre of cheetah activity in this area, and one respondent reported



Cheetah in the Zambezi Basin (Photo Zambezi Society).

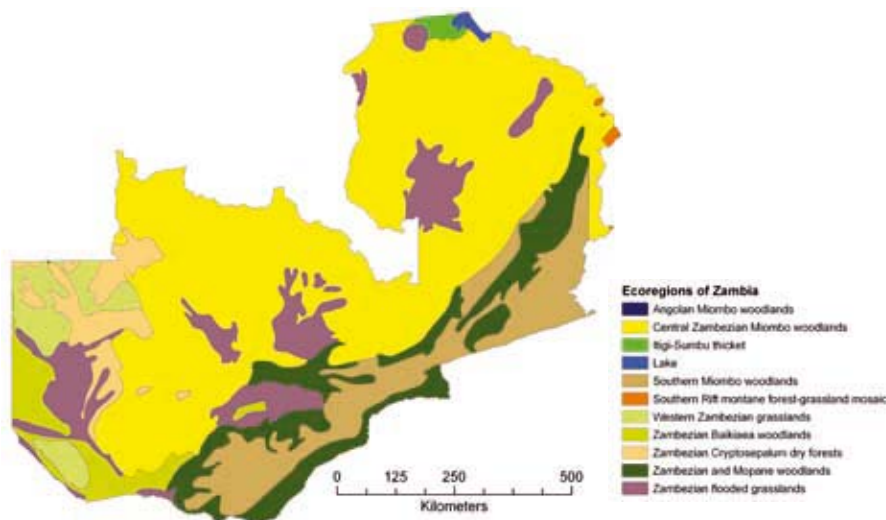


Fig. 2. Ecoregions of Zambia.

seeing cheetah there recently (I. Manning, pers. comm.). The Chimbwi plains are the main source of wildlife in the region, but are relatively unprotected, whilst the three national parks within the complex are unfortunately on the periphery of this area. No cheetah have been sighted in Kasanka National Park since 2000 (E. Farmer, pers. comm.), and historically cheetah numbers were thought to be low in the protected areas of this complex (Myers 1975). If cheetah are to survive in the region there is a need to increase the protection status of the Chimbwi plains (E. Farmer, pers. comm.).

#### Other protected areas of Zambia

Cheetahs are reported to have been extirpated from the West Lunga National Park and surrounding areas due to a loss of prey and high human populations within the protected areas. No recent information was available for the other protected areas of Zambia.

#### Outside Protected areas

All respondents contacted during this assessment could only provide infor-

mation regarding the status of cheetah within the protected area network of Zambia. However, all respondents felt that cheetahs were no longer present in areas outside of this network, and there were no reports of conflict between cheetahs and farmers.

#### Recommendations

Unfortunately the available information regarding the status and distribution of cheetahs in Zambia is still extremely limited. There are a number of potentially important populations of cheetahs in the country (in Liuwa Plains, Sioma Ngwezi, Kafue and possibly South Luangwa National Parks) but more information is required, especially with respect to population estimates and identification of threats. There are also a number of areas (such as the Bangwelu complex and the Kafue Flats) where there is potential to increase the small remaining populations of cheetahs, after improving the environment. The protected areas with resident cheetah populations are large in size (Table 1), and the priority is to improve management of prey and

protection of habitat, resulting in the protection of potentially large populations of cheetahs within the southern African region. Between these areas there are limited opportunities for dispersal, but as each protected area could hold viable populations independently, establishing corridors is unlikely to be a priority.

#### Acknowledgements

The Zambezi Society provided the financial support to carry out this preliminary assessment. I am very grateful for the feedback from the following people: Ian Manning, Fiona Dunn, Paula White, Edmund Farmer, Tom Turner, Andrew Chomba and Woody Cotterill. I am also grateful to the Natural History Museum, Bulawayo for allowing me to look through their records.

#### References

- Ansell W. F. H. 1978. The Mammals of Zambia. Dept of National Parks, Chilanga, Zambia.
- Benson C. W. 1969. Large Mammals of the Liuwa Plain and Sioma Ngwezi Game Reserves, Barotse. The Puku, 5, 49–57.
- Carr N. 1986. A guide to the wildlife of the Luangwa Valley. Save the Rhino Trust.
- Cotterill F. D. P. 2004 Mammal fauna of the four corners area. In Timberlake J. R. and Childes S. L. (eds). Biodiversity of the Four Corners Area: Technical Reviews Volume Two (Chapters 1–5) Occasional publications in Biodiversity No 15, Biodiversity Foundation for Africa, Bulawayo, Zimbabwe.
- Myers N. 1975. The Cheetah (*Acinonyx jubatus*) in Africa. IUCN Monograph No 4.
- Nowell K. and Jackson P. 1996. Wild Cats: Status Survey and Conservation Action Plan IUCN/SSC Cat Specialist Group, Gland, Switzerland.
- Purchase G. K., Mateke C. and Purchase D. 2007. A review of the status and distribution of carnivores, and levels of human-carnivore conflict, within the protected areas of the Zambezi Basin.
- Purchase G. K. 2007. Preliminary assessment of the status and distribution of cheetahs in Mozambique. Cat News Special Issue 3, 36–38.
- Skinner J. D. and Smithers R. H. N. 1990. The Mammals of the southern African Subregion University of Pretoria Press, Pretoria.
- Skinner J. D. and Chimimba C. T. 2005. The Mammals of the Southern African Subregion. Cambridge University Press, Cambridge.

Table 1. Summary of cheetah status and distribution in protected areas of Zambia

Protected area	Size (km <sup>2</sup> )	Status	Most recent sighting
Liuwa plains	3600	Resident	2007
Sioma Ngwezi and surrounding areas	43300	Not known	2005
Kafue	22400	Resident	2007
Chimbwi plains	~8000	Not known	2006
South Luangwa and Munyamadzi corridor	12350	Not known	2000