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Abstract: This study showed that, by 1989, the only resident cheetah population in Malawi occurred in Kasungu National Park. However, transient cheetahs, most likely coming from Zambia, occasionally visited Nyika National Park and Vwaza Marsh Wildlife Reserve. According to these results, it is critical for the long term survival of the species in Malawi to allow for cheetah movements between the three protected areas currently occupied or visited by cheetahs and the Luangwa Valley in Zambia.

STATUS OF THE CHEETAH IN MALAWI

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INTRODUCTION

The cheetah, *Acinonyx jubatus*, was never considered common in Malawi (Myers 1975). The species was already rare in the Central Region at the beginning of the century (Macpherson 1973), and had, according to Hayes (1978), never been authoritatively recorded in the Southern Region. By the early nineteen seventies, cheetahs were thought to be restricted to only two protected areas Kasungu and Nyika National Parks (Myers 1975: Figure 1), but in more recent publications, the species was reported only in Kasungu National Park (Clarke 1983, Ansell & Dowsett 1988).

I conducted a survey of the cheetah's distribution and abundance in Malawi between September and October 1989, as part of a larger assessment of the cheetah's status in Eastern and Southern Africa (Gros 1990). The survey was based on field interviews with 40 respondents comprised of wildlife biologists, National Park and Wildlife Reserve officials and staff, and Malawi residents. I also consulted all available unpublished monthly and annual reports for Malawi protected areas for the period 1975-1989 (see Gros *et al* in press for details of the survey method). This approach yielded a total of 32 sighting reports of cheetahs (Table 1).

SURVEY RESULTS

KASUNGU NATIONAL PARK

In the nineteen seventies, a small cheetah population was present in Kasungu National Park (Anstey & Hall-Martin 1977). This population was thought to be 'moderately secure' due to its geographical connections to larger cheetah populations in the Luangwa Valley, Zambia (Myers 1975: Figure 1). However, a few years later, Clarke (1983) considered the cheetahs of Kasungu 'rare and endangered'. Furthermore, Carter (1987) noticed that individual cheetah home ranges seemed to extend into bordering Zambia and that cheetahs could go unreported in the park over long periods of time. This suggested that the cheetahs of Kasungu were part of a population which was not contained within the park nor within the country's boundaries.

All the people I interviewed reported the presence of cheetahs in Kasungu National Park in 1989. They provided 21 sighting reports of cheetahs, 14 of which pertained to the 1986-1989 period (Table 1). Sighting reports were concentrated in two areas: the south east (Limamba, Lower-Lingadzi, and Mphayakwe) and the extreme south (Chipiri-Mzinje) of the park. The only sighting report that included a cub was from the Chipiri-Mzinje area.

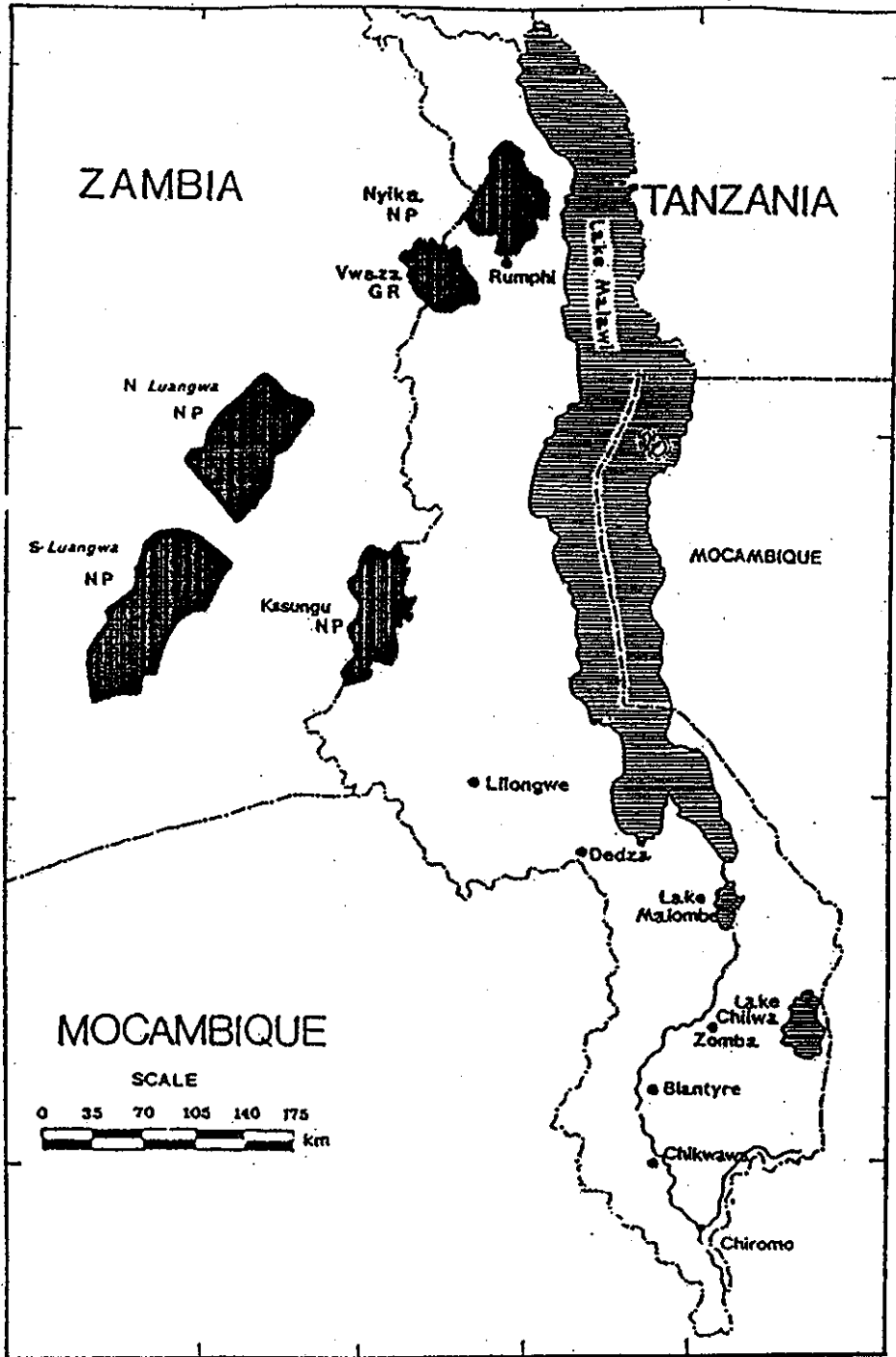


Figure 1. Protected areas of Malawi and Zambia cited in the text.

Status of Cheetah in Malawi

Table 1: Sighting reports of Cheetah in Malawi

PROTECTED AREA/REGION

CHEETAH SIGHTINGS

Date	Location	Description	Observer
1969 October	Kachipera/Liagedzi confluence	1 ad, killed desker	Dr. A. Hall-Martis
1970-73	Singwe hills	1 cheetah	Kasungu National Park Monthly report
1980 December	Lower Liagedzi	2 ad	Dr. C. O. Dudley, long term resident of Malawi
1981	Litwasi	1 ad	Mr. Mwebe, National Park officer
1982 July	Lifupa	2 cheetah	Kasungu National Park monthly report
1982 August	Chakolombo	1 cheetah	Kasungu National Park monthly report
1982 August	Liagedzi	3 cheetah	Kasungu National Park monthly report
1987	2km from HQ	1 ad	Mr. Davison, Tactis Project Coordinator
1987 December	Slagwe Hill	1 ad	Mr. Thamsaa, National Park's officer
1987	Mphayakwe-Fortified Village between Mphayakwe and Limamba Rivets	2 ad	Mr. Posiano, National Park's staff
1988 June	Chipiri Hill	1 ad	Mr. Posiano, National Park's staff
1988, December	Mzinje	1 ad, hunting reedbuck	Mr. Mwebe, National Park's officer
1988	Limamba	1 fm ad & cub	Mr. Kaiwala, National Park's officer
1988	Lower Liagedzi	1 ad	Mr. Kaiwala, National Park's officer
1989 April	Mzinje Dambo	1 ad	Mr. Kaiwala, National Park's officer
1989 June	Mzinje	1 ad	Mr. Kaiwala, National Park's officer
1989 June	Chipiri	1 cheetah	Mr. Kaiwala, National Park's officer
1989 July	Lower Liagedzi	1 ad	Kasungu National Park monthly report
1989 August	Iron Kilo-Mloadwe	2 ad	Mr. Posiano, National Park's staff
1989	Mphayakwe/Limamba confluence	1 ad	Mr. Mwebe, National Park's officer
			Mr. Kaiwala, National Park's officer
NYIKA NATIONAL PARK			
1978	within Nyika National Park	1 cheetah, eating eland	Nyika National Park annual report
1978	Vitumbi/Kassalamba	1 ad	Mr. Maomoya, National Park's staff
1979	SE Chelinda-Ndembets	1 cheetah	Nyika National Park annual report
1982	Chelinda Bridge	1 ad	Mr. Maomoya, National Park's staff
1986	Flagira	1 ad	Mr. Makasjira, National Park's officer
1986	Kaelime Lake	1 ad	Lady Roserwira, long term resident of Malawi
1988 December	near Zambita Rest House	2 cheetah	Zambian Rest House sighting book
VWAZA MARSH WILDLIFE RESERVE			
1985	South Kawoyeka/Lawewe confluence	1 ad	Mr. Phiri, National Park's staff
1987	Central Lawewe	1 ad	Mr. Phiri, National Park's staff
1987	Kalindamawe	1 ad	Mr. Thamsaa, National Park's officer
1968	20 km south of Mzuzu	1 ad	Mr. Creg, reported by Mrs. Cornelius, long term resident of Malawi
NORTHERN REGION			

Interestingly, Chipiri-Mzinje was also the only location in Kasungu where park staff claimed to see cheetah all year-around. Elsewhere in the southern part of Kasungu, cheetah were encountered at least once a year, but never on a regular basis. I did not obtain any definite sighting reports for the north of Kasungu, although one park ranger (Mr Posiano) recalled seeing cheetah in the two north-westernmost dambos of the park in the late nineteen eighties. The lack of reports in the north of Kasungu might be due to the irregularity of patrols in this part of the park owing to a poorly developed road network.

Most of the sighting reports were of lone adults, though pairs of adults were also observed, and rangers estimated between 15 to 30 cheetah in Kasungu National Park.

In short, my results indicate that a small cheetah population was present in Kasungu National Park in 1989. This population was organized into small groups of adults and showed little signs of reproduction. The population numbered at most 30 individuals, which is below the minimum viable size established by current conservation standards (Shaffer 1981). The long term persistence of such a small population depends upon its ability to remain in contact with other neighboring cheetah populations and thereby avoid local extinction through chance events or brutal environmental variation (Pulliam & Dunning 1994). Hence, based on my findings, it is critical to insure that cheetah can travel between Kasungu National Park and the Luangwa Valley in Zambia, the nearest location where other populations of cheetah occur.

NYIKA NATIONAL PARK

Although early references acknowledged the possible presence of cheetah in Nyika National Park (Myers 1975, Hayes 1978), more recent publications either did not mention cheetah in the park's species list (Anstey & Hall-Martin 1977) or referred to it as being extremely rare or as a 'sporadic visitor' (Mill 1979, Ansell & Dowset 1988). Elias (1982) even questioned that cheetah were ever found in the park.

In Nyika National Park's Chelinda research station, I found a picture of an adult cheetah, reportedly taken in the Park in the nineteen sixties. Its legend read 'Eat mainly reedbuck, more likely to be seen after first flush of rain'. Mr S. Mtumbuka, who worked in the park from the late fifties to the time I visited, confirmed that cheetah were resident on the plateau in the nineteen fifties but vanished shortly afterwards. These findings agree with earlier accounts in the literature and invalidate Elias' claim.

However, it is still not clear when cheetah ceased to be resident in the park. The disappearance of resident cheetah from Nyika National Park cannot be attributed to any sudden decrease in prey or suitable habitat in the park since these factors were relatively stable between 1960 and 1980 (Elias 1982). Furthermore, the addition of a substantial area of miombo woodlands to Nyika National Park in 1978 was not followed by a return of resident cheetah to the park. Most likely, pressures acting outside of the park, such as clearing of natural vegetation or increased human settlement, have contributed to the cheetah's demise in Nyika.

I collected seven cheetah sighting reports in Nyika National Park, including

three during the period from 1986 to 1989. These reports show that cheetah still occurred as visitors in the park in the late nineteen eighties. Two of the 1986-89 sighting reports were, unfortunately, second hand reports (a written account from tourists at the Zambian Rest House and a verbal report from a scout's patrol to the Assistant Parks and Wildlife Officer), which could not be verified. I obtained the third report directly from one of five members of the Wildlife Society of Malawi who observed a cheetah near Lake Kaulime in 1986.

In summary, there was no resident cheetah population in Nyika National Park in the late nineteen eighties, but transient cheetahs were occasionally observed. Nevertheless, both suitable cheetah habitat and abundant potential prey were still available in Nyika National Park in recent years (Ansell & Dowsett 1988). Moreover, my reports of transient cheetahs indicate that communication was still possible between Nyika National Park and a source cheetah population in 1989. Therefore, assuming that the source cheetah population is still existing and abundant today and that the paths taken by transient cheetah in the late nineteen eighties are still passable, natural re-colonization of Nyika National Park by cheetahs could occur.

VWAZA MARSH WILDLIFE RESERVE

The check list of Vwaza Marsh Wildlife Reserve mammals in McShane & McShane-Caluzi (1986) does not include the cheetah, and I found no reference to cheetah in the available monthly and annual reports of the reserve. I, nevertheless, collected three sighting reports of lone cheetahs, dated from 1985 to 1987, all located in the Western part of the reserve. This suggests that transient cheetahs from Zambia might have occasionally entered the reserve.

CONCLUSIONS

My results showed that, by 1989, the only resident cheetah population in Malawi occurred in Kasungu National Park. However, transient cheetahs, most likely coming from Zambia, occasionally visited Nyika National Park and Vwaza Marsh Wildlife Reserve. According to these results, it is critical for the long term survival of the species in Malawi to allow for cheetah movements between the three protected areas currently occupied or visited by cheetahs and the Luangwa Valley in Zambia.

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ON THE RECENT ADDITIONS TO THE NYIKA NATIONAL PARK CHECKLIST OF BIRDS

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Since the publication of *A Checklist of the birds of Nyika National (Medland 1994)*, some nine species have been added (Haugaard 1995a, 1995c, 1996). Benson (1980) has indicated that supporting evidence is credible. Thus, we here discuss the details of the respective records.

28. Woolly-necked Stork, *Ciconia episcopus*

A single bird seen on 22 December 1995 near Dam 3 by both authors an immature of this species. A typical ciconid, the white neck distinguishes it from any other black *Ciconia* spp. The upper tail was white with a white extending somewhat onto the back. The bill and eye were not yet the red adult of this species and the face was speckled darkly. The bird was first as it flew up the dam, then later flew across the dam and walked feeding through the grassland some 100m from the dam. The altitude here is 2220-2235m. Benson and Benson (1977) have no records of this species north of Njambwezi but otherwise indicate it is a sparse resident. This analysis is borne out by subsequent Malawi observations. The species is listed for Vwaza Marsh Wildlife Reserve (McShane & McShane-Caluzi 1988) but there is only one other record north of Njakwa, that being of two at Lake Chiwondo in 1993 (Bamford & Medland 1995).

31. African Marabou, *Leptoptilos crumeniferus*

Four birds were observed on the afternoon of 9 July 1995 at Dam 3 by S.C. Berg, initially on the side of the road away from the dam. They were present next morning, having moved to the edge of the dam. Photographs taken by Dr. Berg of the storks resting in grass on the edge of the water, have been seen by both authors.

Interestingly, although not occurring on any previous list of birds of Nyika (Dowsett 1978, Newman et al 1992), there is a published record of Marabou seen on the Nyika; unfortunately, no details are given (Anon. 1995). Benson & Benson (1977) state that the species is "apparently very rare north of Dowa", giving two records. Despite a request for all sightings to be reported (Hanmer 1989b), there appears to have been only one other record from the Nyika since 1974, that being of two at Kamuzu Academy in 1992 (Medland 1993). Yet, in the checklist of birds of Vwaza Marsh Wildlife Reserve, the species is recorded in all seasons, in a variety of habitats from three of the

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