

Stander PE. 1990. Notes on foraging habits of cheetah. S Afr J Wildl Res 20(4):130-2.

Keywords: 1NA/Acinonyx jubatus/Carnivora/cheetah/Etосha/group size/hunting/hunting behaviour/observation/scavenging/social behaviour

Abstract: Observations on two groups of cheetahs for one and three nights respectively revealed unusual and unrecorded behaviour. Both group compositions exposed unexpected social interactions. One group scavenged meat from a one-day-old carcass and the other hunted during new moon nights. Three cheetahs captured four springboks in two nights and lost them all to other large carnivores. Observations during three hunts suggest a certain degree of group hunting.

## Notes on foraging habits of cheetah



P.E. Stander \*

Etosha Ecological Institute, Namibia

Received 29 May 1990; accepted 21 August 1990

Observations on two groups of cheetahs for one and three nights respectively revealed unusual and unrecorded behaviour. Both group compositions exposed unexpected social interactions. One group scavenged meat from a one-day-old carcass and the other hunted during dark-moon nights. Three cheetahs captured four springbok in two nights and lost them all to other large carnivores. Observations during three hunts suggest a degree of group hunting.

Waarnemings van twee groepe jagluiperds vir een en drie nagte onderskeidelik, het ongewone en ongedokumenteerde bevindings aan die lig gebring. Albei groepsamestellings het onverwagte sosiale interaksies blootgestel. Een groep het vleis van 'n dag-oue karkas geëet en die ander het snags met donkermaan gejag. Drie jagluiperds het vier springbokke in twee aande gevang, en moes almal afstaan aan groter karnivore. Waarnemings tydens drie jagtogte dui op 'n mate van groep-jagaktiwiteite.

**Keywords:** Cheetah, hunting behaviour, scavenging, group composition, carnivores

\* Present address: Cornell Laboratory of Ornithology, 159 Sapsucker Woods Road, Ithaca NY 14850, U.S.A.

## Introduction

Some anecdotal observations on cheetahs *Acinonyx jubatus* between 1987–1988 in Etosha National Park, Namibia, present evidence of unusual social interactions, scavenging, nocturnal hunting activities, and cooperative hunting behaviour. Etosha National Park, referred to as Etosha, is located in northern Namibia (19°S / 16°E). The 22 270 km<sup>2</sup> semi-arid environment supported approximately 50–75 cheetahs between 1984 and 1988 (pers. obs.). The observations are treated as case histories (Cases 1 and 2), and are compared with presently available literature.

## Methods

Cheetahs were observed from a vehicle at distances of 20–100 m. With the aid of a soft red-filtered spotlight and an infra-red sensitive video camera, cheetahs were viewed at night.

## Results

### Case 1

Three cheetahs were observed feeding on a one-day-old giraffe *Giraffa camelopardalis* carcass for 5 h. The group consisted of an adult male and two large cubs, one male and one female. The two large cubs were over two thirds the size of the adult male, but were aged at between 12 and 18 months (Schaller 1972) based on their more slender build and the ruffs on their necks.

Several authors mention that cheetahs have not been observed to scavenge (Schaller 1972; Kruuk 1972; Bertram 1979), although Pienaar (1969) reports several cases of scavenging in the Kruger National Park, South Africa, and Caro (1982) recorded an incident in the Serengeti.

### Case 2

A separate group of an adult male and two large cubs (a male and female of approximately 18–24 months Schaller

1972), was observed for three consecutive nights during the new moon phase in mopane treeveld (Le Roux, Grunow, Morris, Bredenkamp & Scheepers 1988). The cheetahs were only observed at night and did not appear to move much during the day as they were twice relocated towards the late afternoon in the same area that they were in during the morning.

During the first night the cheetahs hunted springbok *Antidorcas marsupialis* whenever they came across them. On the third hunting attempt at 23:42 an adult male springbok was captured. A spotted hyaena *Crocuta crocuta* arrived at 23:56 and chased the cheetahs from their kill before they could commence eating. The adult and large male cub did initially attempt to resist the take-over by displaying aggressive postures, hissing and rushing at the hyaena. The cheetahs then continued moving, and after six subsequent hunts on springbok, captured a sub-adult male at 02:01. Once again a single spotted hyaena arrived and claimed the carcass, this time with no resistance from the cheetahs.

On the second night the three cheetahs made two hunting attempts on springbok, before the adult male left the group. The two large cubs continued hunting and captured two springbok (both adult females) at 04:15 during a hunt on a single herd. The two cubs fed for 1 h before a lioness *Panthera leo* arrived and they both abandoned their kills.

Hunts lasted an average of 1.8 min ( $n = 12$ ; range <1–3 min). The cheetahs did not stalk during any of the hunts, but approached prey, in 10 of the 12 hunts from down wind, by walking or trotting with heads held low, or sprinting into a herd. Vegetation and topographical cover were used to allow a closer approach.

During three hunts, details of the behaviour of the three cheetahs were obtained (Figure 1). The cheetahs appeared to coordinate their movements towards the springbok from different directions, possibly to intercept prey fleeing from one of the other cheetahs. In the hunt illustrated by Figure 1c the adult male cheetah was not present and each of the large

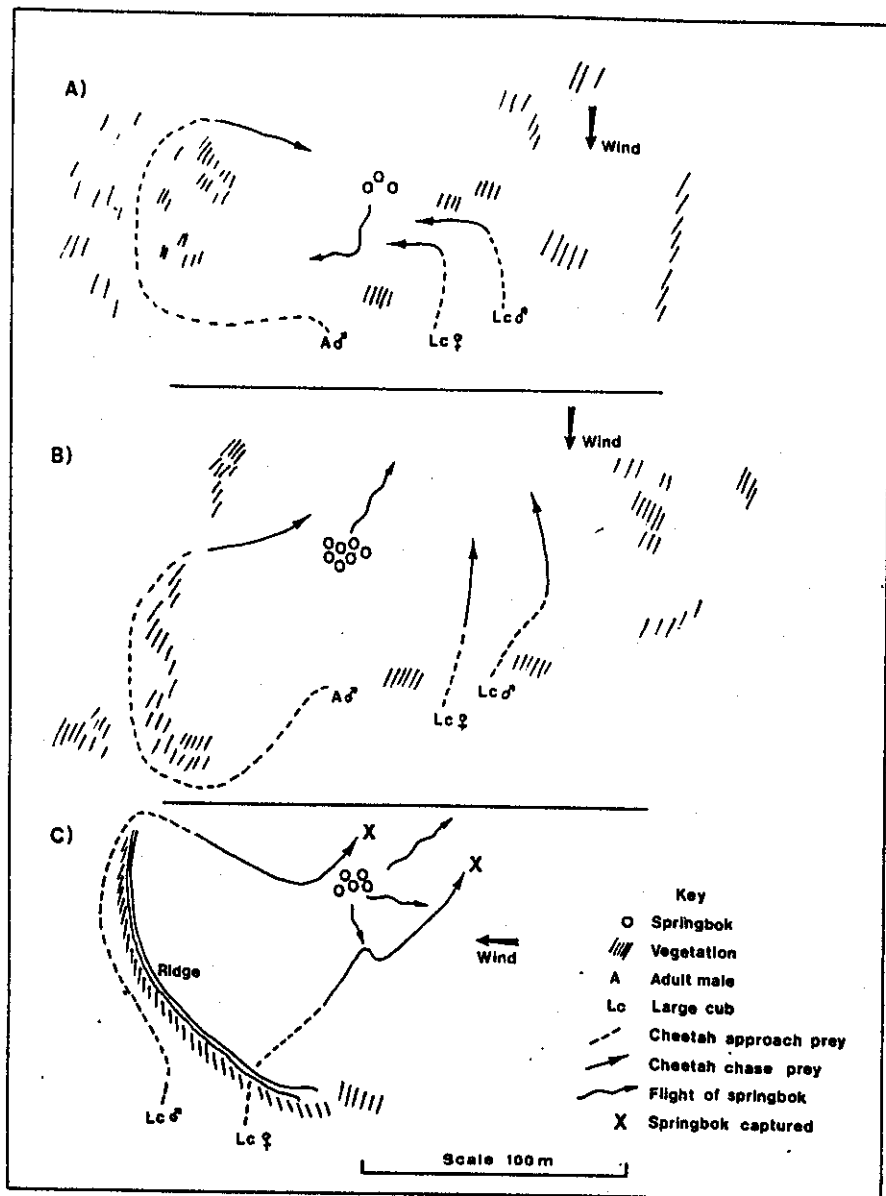


Figure 1 Routes taken by individual cheetahs during three hunts when approaching prey from different directions simultaneously.

cubs captured a springbok from the same herd. The female intercepted a springbok that was first flushed by the male as he rushed at the herd. During all observed hunts the cheetahs were watching both the prey and the movements of group members, which may have served as a function to coordinate their movements relative to the prey.

### Discussion

The group compositions of cheetahs presented here are atypical as adult males are either solitary or occur in adult male groups (Schaller 1972; McVittie 1979; Frame 1984; Caro & Collins 1986, 1987). McVittie (1979) suggested that in Namibia, the absence of large interspecific competitors leads to larger adult group sizes in cheetahs. Different from cheetah in the rest of Namibia, cheetahs in Etosha are subject to interference competition by lions and spotted hyaenas, but at a relatively low density of 0.2–0.3 cheetahs, 1.6–2.0 lions (Stander, in press) and five spotted hyaenas (Gasaway, Mossestad & Stander 1989) per 100 km<sup>2</sup>. Under these low large carnivore densities, cheetahs in Etosha may

also benefit from foraging in larger social groups (McVittie 1979).

Cheetahs are known to hunt mainly during the day (Kruuk & Turner 1967; Schaller 1968, 1972; Eaton 1970; McVittie 1979; Bertram 1979; Frame 1984), or occasionally at full moon (Schaller 1972). The observations of cheetahs hunting when there was no moon is therefore unusual. However, all four observed kills were lost to other predators, which is not unusual as several authors mention the vulnerability of cheetahs to interference competition with other large predators (Kruuk & Turner 1967; Schaller 1972; Frame & Frame 1976, in McVittie 1979; Mills 1990).

Bertram (1979) states that cheetahs require good visibility and freedom from obstruction during their high-speed chases, and suggests that this may explain why cheetahs hunt entirely by day and in open country (also see Mitchell, Shenton & Uys 1965; Frame 1984). However, data presented imply that they are proficient in total darkness and vegetated terrain. It is suggested that cheetahs usually hunt during the day to avoid exploitation competition with other

large nocturnal predators.

Several questions arise from these few observations: (i) How variable are cheetah social interactions? (ii) How dependent is the cheetah's optimum foraging group size on the intensity of interspecific competition with other carnivores? (iii) What importance does nocturnal hunting have in cheetah energy needs and food acquisition? (iv) Do cheetahs in larger and more diverse social groups engage in group hunting?

### Acknowledgements

This work was conducted while I was employed by the Department of Agriculture and Nature Conservation, Namibia. I am grateful to Holly Stander for recording the cheetah activities on video tape, and to Dr C.W. Clark for his comments on an earlier draft of this paper.

### References

- BERTRAM, B.C.R. 1979. Serengeti predators and their social systems. In: Serengeti: dynamics of an ecosystem. (Eds) A.R.E. Sinclair and M. Norton-Griffiths. University of Chicago Press, Chicago.
- CARO, T.M. 1982. A record of cheetah scavenging in the Serengeti. *Afr. J. Ecol.* 20: 213-214.
- CARO, T.M. & COLLINS, D.A. 1986. Male cheetahs of the Serengeti. *National Geogr. Res.* 2: 75-86.
- CARO, T.M. & COLLINS, D.A. 1987. Ecological characteristics of territories of male cheetahs (*Acinonyx jubatus*). *J. Zool., Lond.* 211: 89-105.
- EATON, R.L. 1970. The predatory sequence with emphasis on killing behavior and its ontogeny, in the cheetah. *Z. Tierpsychol.* 27: 492-504.
- LE ROUX C.J.G., GRUNOW, J.O., MORRIS, J.W., BREDEKAMP, G.J. & SCHEEPERS, J.C. 1988. A classification of the vegetation of the Etosha National Park. *S. Afr. J. Bot.* 54: 1-10.
- FRAME, G.W. 1984. Cheetah. In: The Encyclopedia of Mammals: 1 pp. 40-43. (Ed.) D. Macdonald. Allen and Unwin, London.
- GASAWAY, W.C., MOSSESTAD, K.T. & STANDER, P.E. 1989. Demography of spotted hyaenas in an arid savanna, Etosha National Park, South West Africa/Namibia. *Madoqua* 16: 121-127.
- KRUKK, H. 1972. The spotted hyena. University of Chicago Press, Chicago.
- KRUKK, H. & TURNER, M. 1967. Comparative notes on predation by lion, leopard, cheetah and wild dog in the Serengeti area, East Africa. *Mammalia*. 31: 1-27.
- McVITTIE, R. 1979. Changes in the social behaviour of South West African cheetah. *Madoqua* 11: 171-184.
- MILLS, M.G.L. 1990. Kalahari hyaenas. Comparative behavioural ecology of two species. Unwin Hyman, London.
- MITCHELL, B.L., SHENTON, J.B. & UYS, J.C.M. 1965. Predation on large mammals in the Kafue National Park, Zambia. *Zool. Afr.* 1: 297-318.
- PIENAAR, U. de V. 1969. Predator-prey relationships amongst larger mammals of the Kruger National Park. *Koedoe* 12: 108-176.
- SCHALLER, G.B. 1968. Hunting behaviour of the cheetah in the Serengeti National Park, Tanzania. *E. Afr. Wildl. J.* 6: 95-100.
- SCHALLER, G.B. 1972. The Serengeti lion. University of Chicago Press, Chicago.
- STANDER, P.E. In press. Demography of lions in the Etosha National Park, Namibia. *Madoqua*. 18(1).