

**Cheetah *Acinonyx jubatus* ecology in the Kruger National Park: a  
comparison with other studies across the grassland-woodland gradient  
in African savannas**

by

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*Cheetah Acinonyx jubatus* ecology in the Kruger National Park: a comparison with other studies  
Dedicated to  
in African savannas

## The spirit of joy and nature

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"i thank You God for most this amazing".... e.e. cummings

i thank You God for most this amazing day:  
for the leaping greenly spirits of trees and a blue true dream of sky;  
and for everything which is natural which is infinite which is yes  
(I who have died am alive again today, and this is the sun's birthday;  
this is the birthday of life and of love and wings:  
and of the gay great happening illimitably earth)

Abstract

Field study in Kruger

Abstract: The ecology of cheetahs (*Acinonyx jubatus*) in the Kruger National Park (KNP) was studied. Data on cheetahs were collected from 1996 to 2002. The study and literature were used to compare cheetahs in the KNP with cheetahs in African savanna ecosystems. Home range size in the KNP was similar to other savanna cheetahs. The cheetahs in the KNP were found to be more territorial than cheetahs in African savanna. Cheetahs prefer to hunt in areas with high prey density and hunt more frequently than males. The cheetahs in the KNP were found to be more

**Cheetah *Acinonyx jubatus* ecology in the Kruger National Park: a comparison with other studies across the grassland-woodland gradient in African savannas**

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**Abstract**

Field data on home range size, habitat utilisation, prey selection and hunting behaviour of cheetahs in the Kruger National Park (KNP) were analysed. Data synthesised from this study and from the literature were then used in a comparative study across a variety of African savanna ecosystems. Home range size in the KNP averaged 217 km<sup>2</sup> for territorial male cheetahs, 186 km<sup>2</sup> for female cheetahs and 438 km<sup>2</sup> for a nomadic male cheetah coalition. Cheetahs preferred open savanna habitat, although females used thicker bush more frequently than males. The cheetah's main prey impala *Aepyceros melampus*

preferred denser woodland habitat. Male cheetahs took larger prey than females. Cheetahs hunted and killed more frequently in open savanna habitat. Mean chase distance for successful hunts was 189 m and for unsuccessful hunts 96 m. Cheetah hunting success was 20.7%, kleptoparasitism was 11.8%, mean kill retention time was 165 min, and kill rate averaged 1 kill per 4.61 days.

Across African savanna ecosystems, female cheetah home range size was found to be significantly larger in areas with migratory than sedentary prey, while male cheetah territory size was significantly smaller. In areas with sedentary prey only, there was a significant negative relationship between medium-sized prey biomass and female cheetah home range size and significant positive correlation between female and male home range size. Across a range of African savannas, cheetahs preferred open habitat that provided some woody cover. Although medium-sized prey made up the largest proportion (60%) of the cheetahs' diet, there was a significant variation in the size and age groups of prey taken across ecosystems. Cheetahs in ecosystems with the least amount of cover appeared to have longer mean chase distances, and greater hunting success and incidents of kleptoparasitism.

A population viability analysis, using VORTEX, found that a woodland savanna cheetah population had a greater viability than a grassland savanna population, particularly at small population sizes. The grassland savanna population was most affected by changes in juvenile mortality while the woodland savanna population was most affected by changes in adult, followed by sub-adult mortality. Maximum annual litter size and female mortality rates had large impacts on population persistence.

Table of Contents

**Acknowledgements**

Abstract

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Table of Contents

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**Table of Contents**

<b>Abstract</b> .....	<b>i</b>
<b>Acknowledgements</b> .....	<b>iii</b>
<b>Table of Contents</b> .....	<b>iv</b>
<b>List of Tables</b> .....	<b>vi</b>
<b>List of Figures</b> .....	<b>viii</b>
<b>List of Appendices</b> .....	<b>ix</b>
<b>Chapter 1: Introduction</b> .....	<b>1</b>
1.1. OBJECTIVES .....	4
1.2 KEY QUESTIONS.....	4
1.3 APPROACH .....	5
1.4 REFERENCES .....	6
<b>Chapter 2: Kruger National Park study area</b> .....	<b>10</b>
2.1 LOCATION AND CLIMATE.....	10
2.2 VEGETATION.....	10
2.3 OTHER MAMMALS .....	12
2.4 REFERENCES .....	13
<b>Chapter 3: Home range and habitat use of cheetahs (<i>Acinonyx jubatus</i>) in the Kruger National Park and a comparison with other studies across the grassland-woodland continuum in African savannas.</b> .....	<b>14</b>
3.1 INTRODUCTION.....	14
3.2 METHODS .....	15
3.2.1 Data collection in the KNP .....	15
3.2.2 Home range estimates in KNP .....	17
3.2.3 Habitat use in the KNP .....	18
3.2.4 Across-ecosystem comparisons of cheetah home range size .....	20
3.2.5 Across-ecosystem comparisons of cheetah habitat use .....	23
3.3 RESULTS.....	23
3.3.1 Home range size and habitat use in KNP .....	23
3.3.2 Across-ecosystem comparisons of cheetah home range size .....	31
3.3.3 Across-ecosystem comparisons of cheetah habitat use .....	33

3.4 <i>DISCUSSION</i> .....	33
3.4.1 Home range and habitat use in the KNP.....	33
3.4.2 Across-ecosystem comparisons.....	39
3.5 <i>REFERENCES</i> .....	44
<b>Chapter 4: Cheetah predation in relation to prey composition, cover availability and kleptoparasitism in the Kruger National Park, including a comparison across African savanna study sites.....</b>	<b>51</b>
4.1 <i>INTRODUCTION</i> .....	51
4.2 <i>METHODS</i> .....	52
4.2.1 Data collection in the KNP.....	52
4.2.2 Analyses of KNP data.....	53
4.2.3 Across-ecosystem comparisons.....	56
4.3 <i>RESULTS</i> .....	57
4.3.1 Cheetahs in the KNP.....	57
4.3.2 Across-ecosystem comparisons.....	63
4.4 <i>DISCUSSION</i> .....	63
4.4.1 Cheetah predation.....	63
4.4.2 Kill retention time.....	69
4.4.3 Kill rates and consumption rates.....	70
4.4.4 Hunting and killing frequencies.....	70
4.4.5 Chase distance and hunting success.....	71
4.4.6 Kleptoparasitism.....	72
4.5 <i>CONCLUSIONS</i> .....	72
4.6 <i>REFERENCES</i> .....	73
<b>Chapter 5: Population viability of cheetahs in two contrasting habitats.....</b>	<b>79</b>
5.1 <i>INTRODUCTION</i> .....	79
5.2 <i>METHODS</i> .....	81
5.2.1 General species parameters used in VORTEX for both populations.....	81
5.2.2 Population specific parameters.....	84
5.3 <i>RESULTS</i> .....	88
5.4 <i>DISCUSSION</i> .....	94
5.4.1 Population Viability Analysis.....	94
5.4.2 Implications to management and conservation.....	97
5.4.3 Juvenile survival and benefits of cover.....	99
5.4.4 Reflections on the model.....	101
5.5 <i>CONCLUSIONS</i> .....	102
5.6 <i>REFERENCES</i> .....	103
<b>Chapter 6: Synthesis.....</b>	<b>108</b>
<b>Summary.....</b>	<b>114</b>

**List of Tables**

<b>Table 3.1.</b>	Predicted effects of key ecological determinants (prey movement patterns, prey density and cheetah mating opportunities) on male and female cheetah home range size.....	16
<b>Table 3.2.</b>	Brief description of the habitat types in eight cheetah study sites across southern and East Africa.....	22
<b>Table 3.3.</b>	Home range estimates (km <sup>2</sup> ) of radio-tracked cheetahs in the southern district of the Kruger National Park using three different non-parametric techniques.....	25
<b>Table 3.4.</b>	Percentage of habitat within a cheetah's home range in the south eastern region of the Kruger National Park using the 100% minimum convex polygon (MCP) method.....	25
<b>Table 3.5.</b>	Habitat selection by a three-male cheetah coalition (M3) and impala in the south eastern region of the Kruger National Park.....	25
<b>Table 3.6.</b>	Chi-squared test for use of different vegetation categories for different activities by a three-male cheetah coalition (M3) in the south eastern region of the Kruger National Park.....	32
<b>Table 3.7.</b>	Habitat use and preference by cheetahs in seven study sites across southern and East Africa.....	35
<b>Table 4.1.</b>	Habitat description in selected cheetah study sites across southern and East Africa.....	58
<b>Table 4.2.</b>	Cheetah prey composition in the Kruger National Park.....	59
<b>Table 4.3.</b>	The availability and kill frequency of five common prey species in the diet of cheetahs in the Kruger National Park.....	59
<b>Table 4.4.</b>	Cheetah hunting behaviour and the density of impala in different habitat types in the south eastern region of the Kruger National Park.....	62
<b>Table 4.5.</b>	Habitat selection by cheetahs for a) killing and hunting and b) hunting impala in the south eastern region of the Kruger National Park.....	62
<b>Table 4.6.</b>	Rates of hunting attempts and hunting success in different vegetation classes in the south eastern region of the Kruger National Park.....	64



<b>Table 4.7.</b>	Proportions (%) of size categories and age classes of cheetah prey in 10 study sites across southern and East Africa.....	64
<b>Table 4.8.</b>	Aspects of cheetah hunting behaviour and incidents of kleptoparasitism in eight study sites across southern and East Africa.....	66
<b>Table 5.1.</b>	Values for life history and demographic parameters used for input into VORTEX for simulating the population dynamics of two cheetah populations in contrasting habitats.....	82
<b>Table 5.2.</b>	The results of population viability analyses using VORTEX simulating two cheetah populations in contrasting habitats.....	89
<b>Table 5.3.</b>	Lion and spotted hyaena density and cheetah juvenile mortality across five protected areas of southern and East Africa.....	100

**List of Figures**

Figure 2.1. Location of study areas in the Kruger National Park showing six distinct habitat types.....11

Figure 3.1. Home range of female cheetahs (F1, F2, F3 and F4 with number of location points indicated for each, as n) and a three-male cheetah coalition M3 (n = 175) in the south eastern region of Kruger National Park, estimated by the 100% minimum convex polygon (MCP) method.....26

Figure 3.2. Home range of a single male cheetah M1 (n = 27 location points) and two-male cheetah coalition M3 (n = 21) in the southern district of the Kruger National Park, estimated by the 100% minimum convex polygon (MCP) method.....27

Figure 3.3. Three-male cheetah coalition M3 (●) and female cheetah F1 (▲) radio-location points in the south eastern region of the Kruger National Park.....29

Figure 3.4. Mean nearest distance (±SE) of male and female cheetah locations to drainage lines and roads in the south eastern region of the Kruger National Park.....30

Figure 3.5. Mean home range size (±SE) of female and male cheetahs in areas with migratory and sedentary prey.....32

Figure 3.6. Linear regression showing relationship between medium-sized prey biomass and female home range size, across seven protected areas of southern and East Africa.....34

Figure 3.7. The relationship between female and male home range size, across six protected areas of southern and East Africa.....34

Figure 4.1. Relationship between rank of cover per park and (a) rank of mean chase distance (m), (b) rank of % hunting success, and (c) rank of % kleptoparasitism across protected areas in southern and East Africa.....65

Figure 5.1. The effect of varying maximum litter size on the probability of a grassland savanna cheetah population surviving over 100 years.....90

Figure 5.2. The effects of varying age-specific mortality rates by 5% on mean population size of cheetahs in a) grassland savanna with 90% juvenile mortality; b) woodland savanna with 50% juvenile mortality; and c) woodland savanna with 25% juvenile mortality.....92

Chapter 3: Introduction

**Figure 5.3.** The effects of decreasing starting population size (from 250 individuals) on the probability of a grassland savanna cheetah population surviving over 100 years.....93

**List of Appendices**

**Appendix 3.1.** Data collated for eight protected areas of southern and East Africa.....50