Ecology of the gemsbok Oryx gazella gazella (Linnaeus) and blue wildebeest Connochaetes taurinus (Burchell) in the southern Kalahari

by

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Submitted in partial fulfilment of the requirements for the degree of

Philosophiae Doctor
(Zoology)

in the
Faculty of Science
University of Pretoria
Pretoria

April 1991

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Abstract

The feeding habits, movement patterns, habitat selection, activity patterns and population dynamics of the gemsbok and wildebeest, both grass and roughage feeders of equivalent body masses, were studied to elucidate the mechanisms of resource partitioning by the two species.

Plant productivity studies revealed that the river-bed and riverside habitats, with their more fertile soils and better water-holding capacity, were the most productive habitats during higher rainfall regimes. While in low rainfall periods the relatively infertile red sands were more productive.

The large muzzle width of wildebeest restricted them to the short grasses (particularly in the riverside habitats where the greatest biomass concentration per bite occurred) and also limited their ability to select for plant quality and hence maintain a sufficient intake to meet their water and protein requirements. The provision of water in the Kalahari Gemsbok National Park encouraged the permanent residence of a small wildebeest population. But their preferences for the limited short grass communities along the dry rivers near

fresh drinking water has resulted in relatively large home ranges in comparison with those of gemsbok.

On the other hand, the gemsbok's narrower muzzle allows them to occupy the taller grasslands of the dunes, in addition to utilizing limited amounts of browse during the dry season. Diet overlap between the two species was found to be greatest during the hot-wet period when food was abundant but as it became more scarce and of poorer quality, greater partitioning became evident, which occurred at the habitat, time of day, plant species and plant-part levels.

The fact that the wildebeest spent a greater proportion of the diurnal period feeding than that of gemsbok and other wildebeest populations elsewhere, indicates a possible resource limitation in the southern Kalahari. This lack of adaptation to a permanent existence in the harsh environment was also reflected in the wildebeests' overall negative rate of increase owing to poor calf and adult survival rates.

Acknowledgements

I would like to thank my supervisor Prof. John Skinner for his guidance and encouragement throughout the study.

To my employers, the National Parks Board of South Africa, I extend my sincere appreciation for granting me the privilege of working in the Kalahari Gemsbok National Park and for financially supporting the project. I am also indebted to the Department of Wildlife and National Parks of Botswana for allowing me to work in the Gemsbok National Park.

The generous support of Shikar Safari Club International in supplying an aircraft which formed a corner stone of the study and their enthusiastic support is greatly appreciated.

Many colleagues in the National Parks Board assisted and cooperated in the project. Dr Anthony Hall-Martin deserves special recognition, as it was his initial motivation that was instrumental in establishing the important ground work for the study and for efficiently administering the running of the project throughout its duration. His discussions and friendship are also appreciated. My assistants: Messrs Hermanus Jaeggers, Hannes Steenkamp and Piet Matthys are thanked for their excellent fieldwork and friendship. Dr Gus Mills was a constant source of inspiration and I thank him for sharing his knowledge of the Kalahari. Mr Peter Retief expertly assisted with computer problems and analyses, while Ms Heather Wildi pain-stakingly up-loaded data for me. Ms's Tanya Shenk and Maureen Rochat also kindly helped with computer snags. Dr's Valerius de Vos, Kobus Raath, Piet van Wyk, and Messrs Ross English, Rian Labuschagne, Kobols Le Riche, Johan Malan, Piet Otto, Hugo van Niekerk, Tiennie Visser and Mrs Doempie le Riche assisted in many ways. Elias le Riche, Warden of the Kalahari Gemsbok National Park, assisted with logistic support.

Discussions and assistance from Drs Peter Apps, Hector Dott, Graham Kerley, Barry Lovegrove, David Macdonald, Ken Nagy, Peter Novellie, Philip Richardson, the late Reay Smithers, Rudi van Aarde and Albert van Jaarsveld and Messrs Shaughn Doolan, Maans Dreyer and Colin Sapsford are appreciated.

I would like to thank Linda and the late Ben de Klerk for their kindness and support.

Finally, I would like to thank my wife Anette for her unending support, motivation and love, without whom the study could not have been completed. I also thank my sons Julian and Mendel for their patience.

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