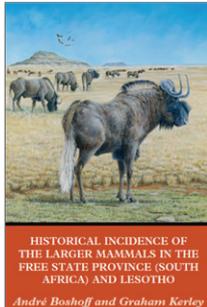


## Documenting a lost ecosystem

### BOOK TITLE:

Historical incidence of the larger mammals in the Free State Province (South Africa) and Lesotho

### BOOK COVER:



### AUTHORS:

André Boshoff and  
Graham Kerley

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### REVIEWER:

Brian W. van Wilgen

### EMAIL:

bvanwilgen@sun.ac.za

### AFFILIATION:

Centre for Invasion Biology,  
Department of Botany and  
Zoology, Stellenbosch University,  
Stellenbosch, South Africa

### POSTAL ADDRESS:

Department of Botany and  
Zoology, Stellenbosch University,  
Matieland 7602, South Africa

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The relatively recent, and ongoing, destruction of earth's wildlife is an unfortunate feature of today's world. Over large areas of South Africa, once plentiful populations of wild mammals have been eradicated or reduced to small relict populations in protected areas or on privately owned land. These changes have not been trivial, and it is often difficult to conceive the degree to which ecosystems have been transformed in a relatively short time. To have a concise, authoritative and comprehensive account of the conditions that prevailed in the recent past is an important step to understanding the ecology of any given region. In the case of the Free State and Lesotho, André Boshoff and Graham Kerley have produced a record for this region's grassland ecosystems, based on the eyewitness accounts and the illustrations of early literate travellers. Their book follows the publication of two volumes on a similar topic by C.J. Skead, one that dealt with the Eastern Cape and one with the Western and Northern Cape.<sup>1,2</sup> The two volumes compiled by Skead had the benefit of the often detailed and good quality distributional information recorded by early naturalists, including the Swedes Sparrman and Thunberg, the Englishmen Barrow and Burchell, the Scotsman Patterson, the Frenchman Le Vaillant and the Dutchman Gordon. By contrast, the historical distributions of the 59 larger mammal species that occurred in the Free State and Lesotho had to be reconstructed almost entirely from the records left by people other than competent naturalists or scientists. To construct maps of the historical distribution ranges of each species, the authors surveyed almost 100 texts describing travels in the 19th century. They classified any references to mammals by locality (either a precise locality was given or the locality was imprecise) and by species (either the species could be positively identified or the identity of the species referred to was not conclusive). Based on these accounts, it was possible to reconstruct the distributions of most large mammal species, although for some, uncertainty remains. For example, evidence for the occurrence of cheetahs was 'frustratingly vague'. Although there is evidence of the historical occurrence of cheetahs to the north, south and west of the Free State, and although the habitat was clearly suitable and appropriate prey species were abundant, no mention of cheetahs was found. Nonetheless, the picture that emerges is one of a remarkably diverse and unique large mammal fauna that occurred on the grasslands of the South African Highveld less than 150 years ago.

More remarkable are the accounts of the numbers of herd-forming plains game that existed in the 19th century, as well as the reconstruction of their precipitous demise. Early texts repeatedly refer to mixed herds of tens of thousands of animals that covered vast areas. Typical examples include: 'The number of wildebeest feeding on the flats is almost incredible'; 'the number of wild animals [blesbuck, springbuck, wildebeest and quagga]...almost realised fable'; and 'herds of gnus from 30 to 200 each, hartebeests and blesbucks...in larger numbers, and springboks in countless numbers'. Records show that these animals were systematically annihilated, both for sport and commercial gain, between the 1850s and 1870s. Trade records show that up to 300 000 hides were exported *per year* in the 1870s. Of 26 larger mammal species (7 carnivores and 19 herbivores, including 11 antelope species), 17 had been exterminated, 5 had been nearly exterminated, and 4 had experienced marked reductions in range and numbers by 1920. The book also presents some evidence for historical migrations in the area, although the herds were regrettably destroyed before these seasonal movements could be properly documented. The spectacle presented by vast migrating herds of antelope and other species, and accompanying predators, would have rivalled or eclipsed those on the famous Serengeti Plains. There are numerous illustrations, drawn by travellers from life, that help the reader to form a picture of the historical situation.

Where they still occur (or where they have been re-introduced), indigenous mammals can be a valuable source of income, both for venison and for ecotourism (hunting and game viewing). Given the value and growth potential of tourism, many private and government landowners have also re-stocked land with large mammals outside of their historical distribution ranges. The widespread redistribution of many species to areas outside of their natural ranges can have negative impacts on the biodiversity of ecosystems, and can lead to the genetic homogenisation of mammal populations. While these impacts have not been widely documented, a precautionary approach would seem advisable, and re-stocking of areas should be restricted to those mammal species that occurred there historically, and to which the ecosystems where they are being returned are adapted. This book will certainly be a valuable guide to the appropriate re-establishment of extirpated species.

This book has a wealth of well-organised information, and its production at a reasonable price was made possible by generous sponsorships from a number of sources. This book, and its two companion volumes, should therefore be of wide appeal, and I would recommend it to ecologists, conservationists, farmers and historians, as well as collectors of Africana.

### References

1. Skead CJ. Historical incidence of the larger land mammals in the broader Eastern Cape (edited by Boshoff AF, Kerley GIH, Lloyd PH). Port Elizabeth: Nelson Mandela Metropolitan University; 2007.
2. Skead CJ. Historical incidence of the larger land mammals in the broader Western and Northern Cape (edited by Boshoff AF, Kerley GIH, Lloyd PH). Port Elizabeth: Nelson Mandela Metropolitan University; 2011.



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RFF DP 10-31 Lost Ecosystem Goods and Services as a Measure of Marine Oil Pollution Damages James Boyd 1616 P St. NW Washington, DC 20036 202-328-5000 [www.rff.org](http://www.rff.org) Lost Ecosystem Goods and Services as a Measure of Marine Oil Pollution Damages James Boyd Abstract The paper addresses the definition and measurement of liability for marine oil pollution accidents. The economic value of lost or injured ecosystem goods and services is argued to be the most legally, economically, and ecologically defensible measure of damages. This is easier said than done, however. Calculating lost ecological wealth Documenting a lost ecosystem. Brian W. van Wilgen Centre for Invasion Biology, Department of Botany and Zoology, Stellenbosch University, Stellenbosch, South Africa. DOI: <https://doi.org/10.1590/sajs.2014/a0085>. PDF. EPUB. That has now changed with the publication of 22 articles in a special issue of Quaternary Science Reviews titled "The Palaeo-Agulhas Plain: A lost world and extinct ecosystem." About ten years ago, Marean began building a transdisciplinary international team to tackle the problem of building an ecology of this ancient landscape. ASU, Nelson Mandela University, the University of Cape Town, and the University of California, Riverside anchored the research team. Funded primarily by a \$1 million National Science Foundation grant to Marean, with significant funding and resources from the Hyde Family Biodiversity loss, the reduction in an area's biodiversity (the number of genes, species, individual organisms, or ecosystems) expressed by species loss, population declines and reductions in the genetic diversity within a species, and the collapse of biological communities. The primary drivers of biodiversity loss are influenced by the exponential growth of the human population, increased consumption as people strive for more affluent lifestyles, and reduced resource efficiency. Encyclopedia Britannica, Inc./Patrick O'Neill Riley. Even though a species is not eliminated from the ecosystem or from the biosphere, its niche (the role the species play in the ecosystems it inhabits) diminishes as its numbers fall.