

A scientific bibliography on the national parks of South Africa

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Introduction

The purpose of this bibliography is to enable students, researchers and managers working within the national parks of South Africa or comparable areas, to locate references relevant to their work. Researchers may find it useful as a guide to publications in subject areas ancillary to their own work and also to prevent duplication. To make scientifically sound management decisions managers should have insight into literature on the area under their jurisdiction, such as provided by this bibliography. Students and librarians should find it helpful in suggesting material for supplementary reading.

The considerable volume of references cited, 5 034 in number, written by nearly 3000 authors, has made a meaningful contribution to conservational, biological, biomedical and even human sciences literature in South Africa.

Judging from the trend over the past 50 years the output of scientific literature from the national parks, is escalating sharply (Fig. 1). On average, 214 scientific publications appeared per year over the last five-year period, whilst 126 per year were produced which are applicable to the Kruger National Park alone. This is a formidable research effort which is probably not equalled by other national parks or conservational areas in the world. This lends further scientific credence to management decisions within these areas.

Scientists from universities and other scientific institutions have played a major role in this monumental research effort, the bulk

of the NPB to make national parks accessible to these scientists, has therefore paid off quite handsomely.

The ultimate aim of the NPB of South Africa is to establish a system of parks that are representative of all the major biotic zones. To date, 17 national parks have been established (Fig. 2) that cover 15 of the 24 basic veld types (simplified from Acocks' 70 original veld types, by Bothma (1986, *Game Ranch Management*. Pretoria: Van Schaik)

The knowledge which can be gained and which is represented by this bibliography is therefore not limited to national parks, but is used on a much wider scale.

The importance (or significance) of this bibliography is further stressed by the fact that it refers to the description of 310 new animal species over the past 50 years (Table 1). The table also depicts the way in which the number of new species described escalated over the years. At this stage an average of about five new species are described every year. As far as plants are concerned, 151 new taxa from national parks have been described.

Year	National Parks
1989-1993	61
1984-1988	68
1979-1983	39
1974-1978	31
1969-1973	37
1964-1968	33
1959-1963	21
1954-1958	13
1949-1953	6
1944-1948	1
Total	310

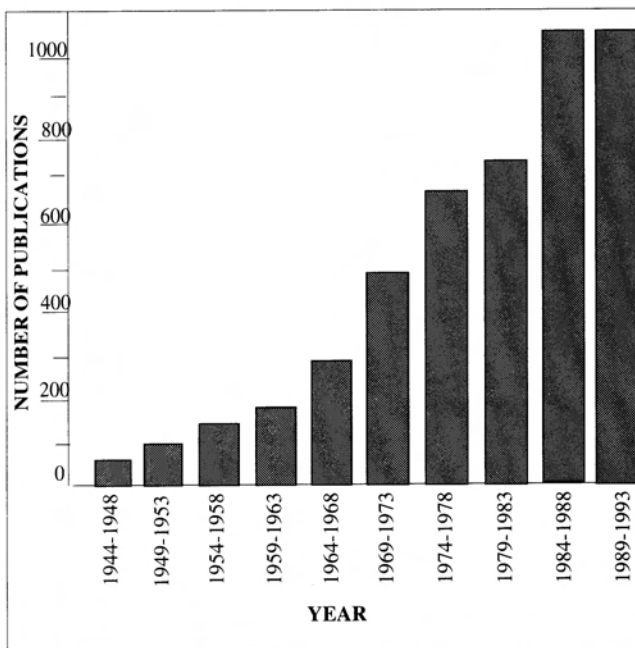


Fig. 1. Escalating trend over the past 50 years of scientific literature from the national parks in South Africa.

of the publications being credited to them. This fact is gratefully acknowledged by the National Parks Board (NPB). The policy

Although this publication was intended as a bibliography of scientific literature only, this principle was not strictly adhered to, as it is not always easy to assess the scientific value of a publication. In many cases the benefit of the doubt was given to the publication, rather than to leave it out. In this way, some textbooks and even adventure narrations found their way into this bibliography. It was felt that without books such as Bulpin's *Ivory Trail* this work would have been incomplete. As a rule, articles in popular scientific magazines such as *Custos*, were left out. This journal is, however, yet another valuable source of information on the national parks of South Africa.

Letters were sent to about 300 scientists with a request for lists of their publications. The reaction on the whole was excellent. For the sake of completeness, it was endeavoured to include references to areas even before they were proclaimed national parks.

No claim is made that this bibliography is complete. From the cutoff point (January 1993) another 100 or so references have already been found which are not included here. It must also be taken into consideration that there is often a delay in publishing dates of many magazines. Therefore, the number of publications that appeared during 1993, for instance, will still increase somewhat. Readers might probably notice omissions but the intention is to update this bibliography or to prepare addenda to it from time to time. All contributions of references will therefore be gratefully received.

Interesting statistics

Of the total amount of references, 382 are applicable to three or more national parks 2 464 to the Kruger National Park, 754 to the Kalahari Gemsbok National Park and 282 to the West Coast National Park. The best publicised animal is the elephant which features in 270 publications, followed by buffalo (195). Most publications credited to a single author are 118. References to mammals alone were divided into 12 orders, 20 families and 57 species. Birds were sorted down to family level. Most invertebrates were taken down to phylum level except Insecta and Arachnida which were sorted by order.

References are given in full, in alpha-numerical order. The original program into which the references were typed is Refman 5.02, from which it was transferred to Word Perfect 5.1. Because of incompatibility between the two programs it lead to a number of discrepancies in the sorting order. The reader is thus cautioned to be on the lookout for names with umlauts like: Küsel or Brückner, which might not be where they are expected. This discrepancy was, however, rectified in the Author Index.

To assist researchers who are unfamiliar with the national parks, on which the bibliography is based, a map (Fig. 2) showing the location of the parks was included, as well as a short description of each park.

National Parks of South Africa

Addo Elephant National Park

Situated about 60 km north of Port Elizabeth in the Eastern Cape Province. Rainfall is relatively low (about 480 mm per annum). The vegetation is a dense, evergreen thicket, termed the Addo Bush by Acocks (1975). The size of the park is 12 126 ha. The park is home to the well known Addo elephants.

Augrabies Falls National Park

The Augrabies Falls lies 120 km west of Upington in the Northern Cape Province. The park, created to protect the 56 m high Augrabies Falls and its surroundings (actual size 15 415 ha), has recently been enlarged to 90 415 ha, with the addition of an area belonging to the SA Defence Force and functions as contractual park. The vegetation is typical of an arid zone, with the presence of the quiver tree (*Aloe dichotoma*) unmistakable. Rainfall is 107 mm per annum.

Bontebok National Park

Situated in the Western Cape Province just south the town Swellendam on the left bank of the Breede River. Size: 2 786 ha. Rainfall: 545 mm per annum. Vegetation: mainly Coastal Renosterbos. Proclaimed in 1931 to protect the then almost

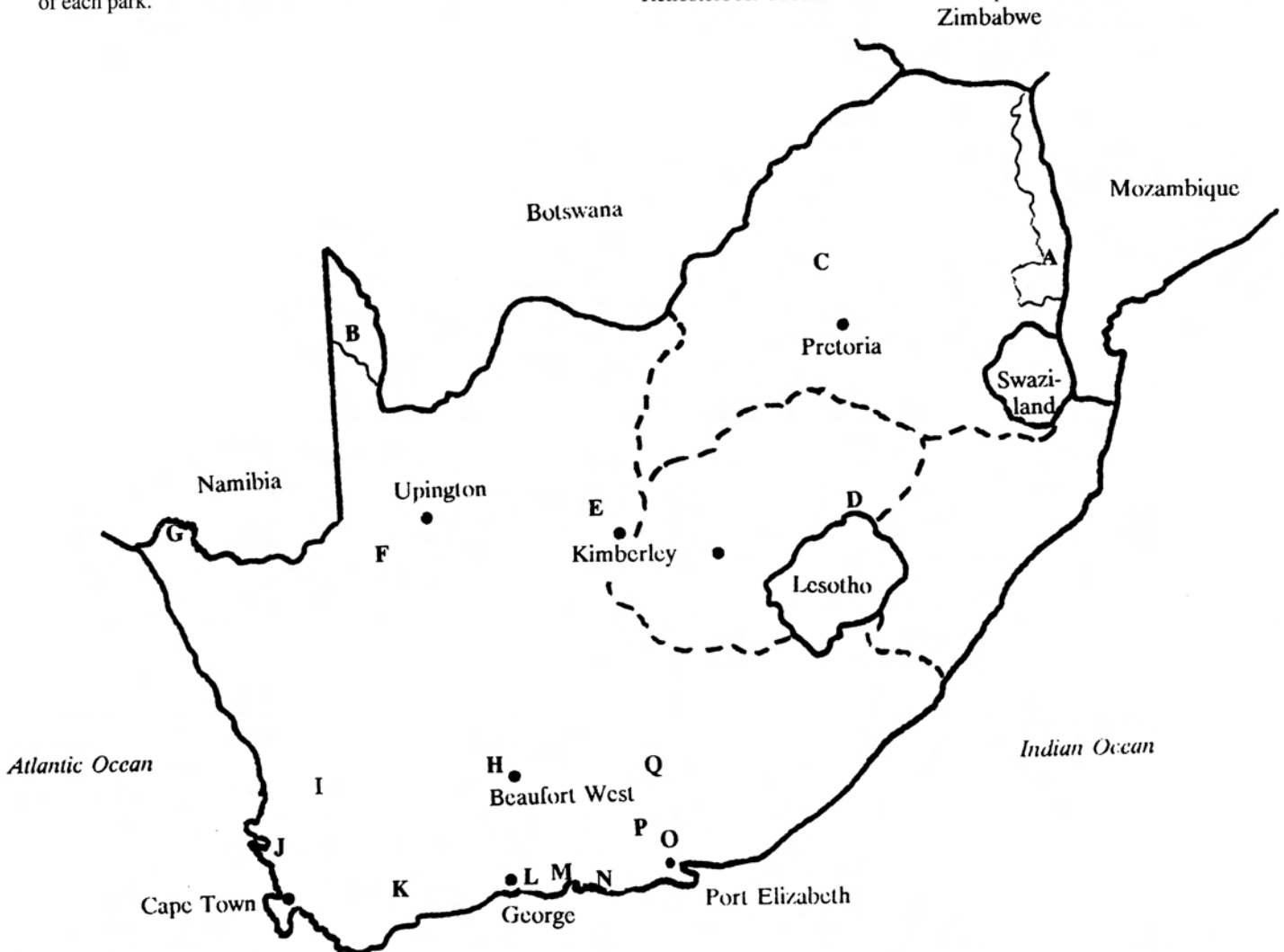


Fig. 2. Location of national parks of South Africa. A. Kruger National Park. B. Kalahari National Park. C. Marakele (Kransberg) National Park. D. Golden Gate Highlands National Park. E. Vaalbos (Kij Garieb) National Park. F. Augrabies Falls National Park. G. Richtersveld National Park. H. Karoo National Park. I. Tankwa Karoo National Park. J. West Coast National Park. K. Bontebok National Park. L. Wilderness National Park. M. Knysna National Lakes Area. N. Tsitsikamma National Park. O. Addo Elephant National Park. P. Zuurberg National Park. Q. Mountain Zebra National Park.

extinct bontebok. In 1960 the bontebok were moved from near Bredasdorp to the present location.

Golden Gate Highlands National Park

This park nestles among the foothills of the Maluti Mountains in the north-eastern Orange Free State. Mountainous landscapes with spectacular yellow and red rock faces are characteristic of this 10 710 ha park. The vegetation is mainly Sour Grassveld and the rainfall 800 mm per annum.

Kalahari Gemsbok National Park (KGNP)

The KGNP (959 103 ha) is situated in the far northern Cape. Together with the adjacent Gemsbok National Park in Botswana it provides a protected area of over 3,6 million ha. This is an arid region with a rainfall of 200 mm per annum. The park is characterised by its red sand dunes with sparse vegetation and dry riverbeds.

Kruger National Park (KNP)

This park is situated in the Lowveld region of the eastern and north-eastern Transvaal. It is 350 km long from north to south with a surface area of 1 948 528 ha. The climate is subtropical with the annual rainfall varying between 700 mm in the south to 400 mm in the north. The area forms part of the savanna subregion of the Aethiopian Region. Knowledge of the biotic and abiotic components of the KNP has increased to such an extent that it was possible to zonate the area into 35 landscapes (Gertenbach 1983).

Marakele (previously Kransberg) National Park

Situated in the north-western bushveld region of the Transvaal. This park of 41 000 ha falls mainly in the Sour Bushveld region. The rainfall varies between 760 mm to 1 200 mm on the mountainous areas. Parts of the Kransberg Mountain falls within the park. This mountain is known for its vulture colony.

Karoo National Park

Situated near the town of Beaufort West in the Great Karoo. The park occupies 32 792 ha with an annual rainfall of 260 mm. The vegetation is mostly Karoo Arid Broken Veld with well wooded water courses on the plains and Montane Grassland at the higher elevations. The park includes part of the Nuweveld Mountains.

Knysna National Lake Area

Knysna Estuary, situated on the Cape south coast, is a clear water estuary with a deep rocky mouth. The fauna is very rich. Knysna, like the rest of the forest belt has a warm climate with high rainfall. Like Wilderness National Park it falls in an area that is very heavily utilised for recreational purposes.

Mountain Zebra National Park

This mountainous park of 6 536 ha and rainfall of 392 mm per annum, is situated in the Eastern Cape Province. In this park the mountain zebra is afforded special protection. The area forms part of the Karoo.

Richtersveld National Park

The Richtersveld National Park is situated in the bend of the Orange River in the Northern Cape Province. The area experiences a desert climate with rainfall that varies between 15 and

300 mm per annum. This park (168 000 ha) is unique in that local inhabitants live and farm inside the park.

Tankwa Karoo National Park

This small park lies in the valley of the Tankwa and Doorn rivers in the Western Cape Province. The vegetation consists mainly of short succulent Karoo. This area is enclosed by mountains which cuts off the rain to such an extent that the whole valley receives about 130 mm per annum.

Tsitsikamma National Park (TNP)

The TNP lies along the southern Cape coast and consists of 80 km of rocky coastline. It also includes part of the evergreen Knysna forest, as well as fynbos and deep river valleys. Rainfall is 1 200 mm per annum.

Vaalbos Rhinoceros National Park (now called Kij-Garieb)

An area of 23 000 ha with rainfall of 400 mm per annum. Situated near Kimberley in the Northern Cape Province, the vegetation consists mainly of Kalahari Thornveld and Orange River Broken veld.

West Coast National Park

This park is situated on the west coast of South Africa and stretches from Yzerfontein to Langebaan. It includes the Langebaan Lagoon and four islands. Rainfall is below 300 mm per annum. The vegetation is classified as Strandveld (Acocks 1975), which is an open semi-succulent scrub of Fynbos form and intermediate between Coastal Fynbos and Succulent Karoo. The islands are inhabited by large numbers of seabirds and in summer thousands of migratory waders from the northern hemisphere feed on the shores of the lagoon.

Wilderness National Park

The Wilderness Lakes complex comprises three separate systems, namely the Wilderness Lakes System (WLS) in the west, the central Swartvlei System and Groenvlei in the east. The WLS consists of the Touw River and its estuary and floodplain which are linked by the Serpentine channel to Eilandvlei, Langvlei and Rondevlei. Mean annual rainfall varies from 750 to 850 mm and there are no distinct wet or dry seasons. The vegetation can be divided into three main components: submerged aquatic macrophytes, emergent macrophytes and marsh grasslands, and degraded coastal fynbos and coastal dune forest.

Zuurberg National Park

This park is situated in the Zuurberg Mountain, Eastern Cape Province, 70 km due north of Port Elizabeth. The park comprises of three separate parts with a total area of more than 20 000 ha. The area is situated on the eastern limits of the Fynbos Biome. The climate is temperate and the mean annual rainfall about 722 mm.

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