

## EXECUTIVE SUMMARY

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from submissions made by the participants in the Lajuma Synthesis Workshop, 9–10 May 2003.

This executive summary is based on the findings of a group of local human and natural scientists on research done in and around the Soutpansberg. The Soutpansberg is, in terms of geological and geographical parameters, defined as an area of approximately 6 800 km<sup>2</sup> in the Limpopo Province of South Africa stretching from the Blouberg Massif in the west for about 250 km to Punda Maria in the Kruger National Park in the east. It includes the entire Soutpansberg mountain range and its immediate outliers. This is South Africa's most northerly and least widely known mountain range. This workshop was aimed at producing brief syntheses on as many of the components of the area's cultural and natural assets as was possible. This summary and the series of component synopses themselves must be viewed as a "work in progress". Anybody with additional or improved knowledge on any component in the Soutpansberg is encouraged to contact the relevant authority on the list of workshop participants and contributors with a view to expanding and improving this synthesis.

### SOCIAL AND CULTURAL INFORMATION

The following three aspects were considered as being of particular importance in the archaeology of the Soutpansberg area:

- The Rock Art which is extensive and contains three separate traditions namely: San (Bushman) paintings and engravings with a wide range of animal and human images, Khoekhoe paintings (Geometric Tradition Paintings) consisting mainly of geometric images, dots, lines, representational forms and handprints, and Northern Sotho paintings (white finger paintings made by Bantu-speaking Agro-pastoralists) comprising anthropomorphic, zoomorphic and geometric designs, many of which relate to contact with early colonialists.
- Modern Venda culture which has a long history dating back to 1300AD and forms the final part of the Great Zimbabwe culture. This is reflected in a range of stone walled ruins, several of which are reminiscent of the Zimbabwe style of building.
- Human history as represented in the Soutpansberg covers the past 1 million years.

The unique inland lake of the Soutpansberg area, Lake Fundudzi, has many legends associated with it, particularly relating to the fact that water is never seen to flow out of the lake. Water spirits (Zwidudani) are reported to live at the bottom of the lake.

The Soutpansberg area has a uniquely rich history of missionary endeavours. The documents about missionaries in this area are the only sustained written source material dating back to the 1860's. This material covers the history

and provides a great deal of information about the area's ecology, medicine, local cultures and cultural and social change and exchange as well as linguistic developments. Physical remnants of former mission stations, cemeteries, hospitals and schools are interesting foci for tourism. Almost all the missionary denominations of Christianity are represented in the Soutpansberg area and there is also active development of African Initiated Churches.

The living cultural resources of the Soutpansberg are also extremely rich. The Venda was the last cultural group to be affected by colonialism and the Venda people's culture is still a way of life and is not just an object for material gain. There is a high emphasis on traditional divination and healing in the Soutpansberg area. This area has very high healer: patient ratio. An interesting aspect is the *Four-Tablet* system of spiritual healing. The area also has a long history of acclaimed artists: The Venda Wood Carvers are world renowned.

The sociological aspects of the Soutpansberg that will have to be considered in the conservation of the area were summarised as follows:

- Environmental, political, social and economic issues cannot be treated as individual elements.
- For any conservation action to be successful, local communities must be involved at all levels.
- The conservation of the mountain will depend on an interdisciplinary approach for the socio-economic upliftment of local communities and for the promotion of the sustainable use of ecosystems.
- Environmental education of local children is a necessity for the future conservation of the mountain range and its surrounds.
- The cooperation of local stakeholders and authorities is needed for any conservational project to succeed.

### ENVIRONMENTAL COMPONENTS

The geology of the Soutpansberg is remarkable in several ways. Firstly, the area represents the best exposed Rift Sequence in South Africa. Secondly, the Soutpansberg Group rocks represent the most intensively block-faulted sequence in the country. Thirdly, the 3–4 km thick Basalt unit at the base of the Soutpansberg Group represents the thickest uninterrupted volcanic sequence in South Africa.

The climate of the Soutpansberg area is strongly influenced by the east-west orientated mountain range. It represents an effective barrier between the south-easterly maritime climate influences from the Indian Ocean and the continental climate influences (predominantly the Inter-Tropical Convergence Zone and the Congo Air Mass) coming from the north. The mountains give rise to

wind patterns that play an important role in determining local climates. These wind effects include wind erosion, aridification and air warming.

In summary, the range ends up giving rise to three distinctive climatic regions:

- Humid on the southern and eastern slopes of the higher peaks,
- subhumid to the south of the range and
- semi-arid to the north of the Soutpansberg. In terms of seasonality, the region has only two clearly differentiated seasons:
  - the cool, dry season (May to August) and
  - the warm, wet season (October to March) — with April and September being transition months.

### BIOLOGICAL COMPONENTS

The complex interplay between topography and macroclimate gives rise to an intricate mosaic of habitats and micro-climates. The consequent exceptional diversity of biotopes is inhabited by complex and, as yet, mostly undescribed assemblages of plant and animal communities. This diversity of biotopes is unparalleled anywhere else in southern Africa. The impressive biotic diversity that the area holds is only one aspect of the ecological complexity of the Soutpansberg.

The vegetation types of the Soutpansberg area range from high Afro-montane forest to sparse Kalahari sand-type xeric scrub communities. One unique veld type, the Soutpansberg Arid Mountain Sour Bushveld, is entirely confined to this region. Unfortunately there has been virtually no detailed description of plant communities in the Soutpansberg, an area of study that urgently needs to be addressed.

The flora (or plant life) of the Soutpansberg is exceptionally diverse with between 2 500–3 000 taxa (different kinds) of vascular (higher) plants (ferns, cycads, gymnosperms and flowering plants) known to occur here. It has been identified as one of the 19 centres of floristic endemism (plants that are only found in a restricted area) in Southern Africa - the whole sub-continent being recognized as having one of the world's richest regional floras. The Soutpansberg is not only remarkable for having a tremendously high density of plant species in such a relatively small area (possibly 3 000 species in some 6 800 km<sup>2</sup> - by comparison the whole country of Canada in its 9 220 970 km<sup>2</sup> has roughly 3 160 plant species!), but it is even more remarkable for its diversity of higher taxonomic levels. For example, the Soutpansberg holds plants belonging to 1 066 different genera (a genus is a term for a group of closely related species such as the genus *Acacia* which includes all the species of thorn trees) which exceeds the number of genera in the world renowned Cape Floral Kingdom (1 000 genera in 90 000 km<sup>2</sup>) at the southern tip of South Africa and one of only six floral kingdoms that cover the entire

earth. The Soutpansberg flora is also remarkable for the diversity of its arborescent (tree and shrub) species: it holds 594 of these species — a higher number than in any area of comparable size anywhere else in South Africa. Many of the indigenous plant species of the Soutpansberg are utilized in traditional medicinal practices.

One of the highly conspicuous and sometimes rare and endangered components of the flora is the orchids. These often very beautiful flowering plants, occupy specialized niches, grow slowly and exhibit low germination success rates. These characteristics make them particularly susceptible to fires and environmental degradation (and possibly droughts). It has been suggested that several of the epiphytic (growing on other plants) orchids of the Soutpansberg have declined in abundance over the last three decades. It has also been proposed that the rarer species could be propagated in cultivation and then be reintroduced into the wild in suitable biotopes.

The invertebrate fauna of the Soutpansberg has, in main, not been subject to detailed surveys or intensive studies. However, some information is available for specific groups.

A five year survey of spiders in a 5 km area in the western Soutpansberg (at Lajuma) which consisted of less than 10 collecting trips, resulted in the collection of specimens representing 47 Spider Families. This represents 50% of the world's families of spiders. The study discovered ten species new to science. The afro-montane forests of the Soutpansberg have spiders of several families that are found only here and in the afro-montane forests of Kwa-Zulu Natal and the Eastern and Western Cape Provinces. The diversity at family level is higher than anywhere else in South Africa. Several of the spider species seem to be endemic (restricted) to this area.

The butterflies of the Soutpansberg comprise at least 250 species in 95 genera. This is about 29% of the total number of butterfly species found in South Africa (852 species). An additional 59 species known from the area have not been collected in the past few decades. Some of these may have been misidentified though. Several species are endemic to the area and although they are listed in the South African Red Data Book on Butterflies, their conservation status is unclear. There are indications that some species may already have disappeared from the Mountain due to habitat change (e.g. the wetland frequenting species *Catacroptera cloanthe*).

There is, as yet, no extensive list of moth species for the Soutpansberg. However, at least 23 species of Saturnid moths have been collected, representing almost 50% of the species of moths in this family known from southern Africa.

The dragonflies of the Soutpansberg have not yet been intensively studied. Notwithstanding this, a total of 52 species have been collected from the area. This is almost a third of the known South African dragonfly fauna (which totals 159 species). It is estimated that a thorough survey

of the Soutpansberg would reveal another 30–40 species, and it is likely that several new species for the South African list have still to be found here (and possibly even some which would be new to science). The known Soutpansberg species include two South African endemic species and three that are listed in the recently published dragonfly Red Data list.

Biomonitoring of the integrity of the Levuvhu River system showed that no sites were unaltered. SASS scores of invertebrates were only relatively good in the upper reaches of Luvuvhu River, in the Sterkstroom and in the Kruger National Park. The status of riparian vegetation outside the Kruger National Park was far from natural. Invasion of alien vegetation occurred at most monitoring sites.

The Soutpansberg has a relative high diversity of freshwater fishes. Forty-four of the 50 species that occur in the Limpopo River system have been recorded in the mountain. This represents 28% of all southern African freshwater fishes. The Soutpansberg contains no endemic fish species but it shares seven endemics with adjacent systems. It also contains the only known localities of the lungfish and of the rare snake catfish *Clarias theodora* in the northern part of South Africa. Each of these is only known from a single locality in the region. Three Red Data Book species occur, one of which is endangered. Conservation should concentrate on perennial streams and the localities of rare species.

The Soutpansberg has a very high biodiversity of reptiles. At least 116 species have been recorded which is 36% of all the species found in South Africa and approximately the same number as in the whole of the Kruger National Park (19 482 km<sup>2</sup>). This diversity of species is high compared to recognized biodiversity hotspots of the world. Eighteen species are of particular conservation importance: three endemic species, three endemic subspecies

and 12 near endemics or isolated populations. Habitat loss of forest species is of particular concern

The Soutpansberg has an amazingly high diversity of birds. 56% of the birds of Southern Africa and 75% of the relevant South African avifauna occur in the greater Soutpansberg area. A large number of forest bird species, often rare in South Africa, occur as isolated populations in the Soutpansberg in disjunct forest patches. Very high densities of birds of prey occur, including some very significant breeding populations of endangered species such as Cape Griffon, Crowned and Martial Eagles and Bat Hawk.

A remarkable total of 145 mammal species occur in the Soutpansberg. This is 60% of all mammal species that occur in South Africa and compares favourably with the diversity of mammals in the recognized biodiversity hotspots of the world. A relatively large number of species (20) are dependent on or associated with forest biotopes. Some of these are rare, e.g. Giant Rat, Samango Monkey and Red Duiker. No mammal species are endemic. Six are listed in the S.A. Red Data Book on Mammals of which one (Black Rhino) has been exterminated from the Soutpansberg.

Game ranching is now well established in the area. The wide range of habitat types present here is already being utilized for the ranching of a high diversity of animal species. There is a wide range of ecotourism facilities available, from the most primitive to the most luxurious, offering a wide variety of activities. It is estimated that 80% of former cattle ranches in the Greater Soutpansberg area north of the main mountain range have converted to game ranching. The consolidation of these areas, sometimes with adjacent statutory reserves and communally administered areas, into larger, more ecologically viable conservancies is seen as holding much promise for the future.