

Module # 3 – Component # 1



Discover the Ecology – South Africa

Introduction

South Africa caught the imagination of the world with **Nelson Mandela's** release from prison in **1991**, followed by the peaceful, first democratic elections in 1994.

South Africa is an **enigma** in that it is **neither First World nor Third World**. It is neither exclusively remote "old" Africa, nor is it exclusively African nor European. What South Africa has are blends and elements of the "Africa of old", today's Africa and the New World. In parts of the country, visitors **can escape to wild and remote parks**, and **experience exceptional game viewing** and true wilderness. Then, just an hours flight away, are **modern cities and hotels** that easily compete with the best in the World.

South Africa is **culturally diverse**, with eleven different official languages, which enrich every traveller's experience. It has an entire and **unique Floral Kingdom** in and around one of the World's most beautiful cities – **Cape Town**. There are more naturally occurring, different species of flowers just around Cape Town than there are in the **whole of North America or the whole of Europe**. Table Mountain alone has **more flowering plants** than the **United Kingdom**.

Everywhere you go the scenery is different. There are **lush temperate and coastal forests**, **open savanna** and many diverse and fascinating **World Heritage Sites**. South Africa also has **deserts** and arid areas, including the World's first **Transfrontier National Park**, The Kgalagadi Transfrontier National Park straddling the borders of South Africa and Botswana. The travel slogan , "**a world in one country**", is fitting. South Africa has something for everyone.

The Climate of South Africa

South Africa is a country of **diversity** and climate is no exception. Differences in altitude, latitude, proximity to the coast, the **effects of two oceans** and mountain ranges account for a rich mix of local climates.

Most of the country lies beneath the **Tropic of Capricorn** and is therefore classified as being in the **southern temperate zone**. Starting at its most Southern tip, **Cape Town** and the southernmost part of Western Cape has a **Mediterranean-type climate**. This is due to the **warm Mozambique current** of the Indian Ocean that flows down the eastern part of the country until it encounters the **cold Benguela current** of the Atlantic ocean on its west coast. The Cape has **hot dry summers** (September to March) and **cold wet winters** (April to August).

The east coast of the country (**Durban** and the Kwa-Zulu-Natal coastline) enjoys a **sub-tropical climate**, with plenty of sunshine throughout the year. However, the summer months can become very hot and humid. Winters are usually quite mild in these coastal regions.

On the **Highveld** (the area containing South Africa's major cities of **Johannesburg** and **Pretoria**) there are marked differences in temperature between day and night. Summers will range between 10 °C and 35 °C [**50 – 95 F**] and winters between -2 °C and 25 °C [**29 – 77 F**]. This region's summers are wet and **afternoon thunder showers** are a common feature, its winters are mostly dry.

The only areas in the country to **receive snow** are the mountain ranges of the Cape and Natal.

The **western segment** of South Africa is characterised by an **arid and semi-arid climate**. It is hot and dry in summer (with temperatures going up to 45 °C [**113 F**]) and cold (-5 °C [**23 F**]) and dry in winter. The Kalahari desert and the **Kgalagadi Transfrontier National Park** fall within this region.

Lastly the **Lowveld** (an area in the north-east of the country is home to the majority of the country's wildlife. The **Kruger National Park, Sabi Sands and Timbavati Reserves** (along with 3500 others) are concentrated in this region. This is a hot part of South Africa with mid-summer temperatures frequently peaking at 35 °C [**95 F**].

South Africa's **average daily hours of sunshine** are amongst the **highest in the world**: 8,5 compared with 3,8 in London; 6,4 in Rome and 6,9 in New York. Hence the phrase, Sunny South Africa.

Please Note: The only health precaution advised for travellers to South Africa is to take **Malarial prophylaxis**. Malaria is **only endemic to the Lowveld region**. Travellers not visiting this region need not take malarial precautions.

The Geography of South Africa

South Africa is one of the **most geographically varied countries of the African continent**, comprising territory that ranges from the rolling, fertile **plains** of the highveld and the wide **open savanna** of the Lowveld to the Kalahari **desert** and the peaks of the **Drakensberg** (*translated as Dragon's back*) **Mountains**.

South Africa is in the west, south and east **surrounded by mountains**. This chain, consisting of many single mountain ranges, is known as the **Great Escarpment**. In the east, in the area of the Drakensberg of Natal and in the **Kingdom of Lesotho**, it reaches heights of almost **4,000 metres** (13,125 feet).

After crossing the escarpment, one gets to the **central high plateau** of South Africa, called the **Highveld**. It has heights of between 1,000 **[3280 ft]** and 1,700 metres **[5577 ft]**. It slowly **declines towards the north**, to the Kalahari basin and to the north east into the area known as the **Lowveld**.

The land mass of South Africa is **very old** and **particularly rich in mineral resources**. South Africa is fortunate to have vast reserves of gold, diamond, platinum, palladium, uranium, plutonium and coal. It is geologically stable with no earthquakes or active volcanoes.

The Biomes of South Africa

(The following information on South African Biomes is taken from the **WildlifeCampus Survival Course**)

South Africa is blessed with one of the **most diverse vegetation varieties in the world**. These different vegetation regions are given the scientific term of **Biomes**, of which South Africa has 7.

- **Forest**
- **Savanna**
- **Thicket**
- **Grassland**
- **Nama Karoo**
- **Desert & Succulent Karoo**
- **Fynbos**

Each specific biome is characterised by its own **unique set of plant species, habitats, micro-climate, geography and geology**.

Biome	Forest
Description	Occurs mainly in the high rainfall (eastern) areas of South Africa. On the eastern escarpment of South Africa we find mountain forest. To the south the forests are confined to the south and East Coast. Another form also found is dune forest in pockets along the KwaZulu-Natal coastline.
Distinctive features	Distinctive features of forest are the high impenetrable canopy of tall trees with jungle-like undergrowth like large ferns, shrubs and climbers. Common trees of forests are the yellow woods (<i>Podocarpus spp.</i>), black stinkwood (<i>Ocotea bullata</i>), Matumi (<i>Breonadia salicina</i>), red mahogany (<i>Khaya anthotheca</i>) and Umzimbeet (<i>Milletia grandis</i>). The dune forests of the east coast may harbour species like the moepel (<i>Mimusops caffra</i>) with edible fruit, milkberries (<i>Manilkara sp.</i>) and wild banana (<i>Strelitzia spp.</i>)

Biome	Savanna
Description	To the north-east lies the moist savanna in the northern parts of South Africa, this is also sometimes called the Miombo Woodland Zone . Savanna is mostly a mixture of small to medium trees, grassland and scrubland.
Distinctive features	Clumps of small to medium trees and shrubs with large patches of grass in between. In the north <i>Brachystegia spp.</i> and <i>Julbernardia</i> dominates and in the sandy Kalahari distinctive types are combretums (leadwood and red-bushwillow) and the acacias especially camel thorn (<i>Acacia erioloba</i>)

Biome	Thicket
Description	Thickets refer to impenetrable thick bush and scrub found mostly on the southern and eastern coastlines and along river valleys in the interior. An interlaced mosaic of small trees, shrubs and undergrowth is distinctive of thicket.
Distinctive features	A mixture of thorny and evergreen species like acacias, Karee (<i>Rhus spp.</i>), Num-num, Boerbeans (<i>Schotia spp.</i>) and Porkbush. Thinly spread grass may be evident in open patches but not as distinctive as in savanna.

Biome	Grassland
Description	Grassland can be found on the highveld plateau of central and eastern South Africa and the whole of Lesotho (a land locked country within the border of South Africa).
Distinctive features	A distinctive feature is the presence of large grass swards and the absence or sparseness of trees and shrubs.

Biome	Nama Karoo
Description	Semi-desert arid areas with low woody scrub some grass and succulents. The area is mostly stony with low flat-topped hills, it is found in the dry western regions of the country.
Distinctive features	Vast open tracts of land with tough herbaceous and woody species, typically “bushy” (fields of low shrubs and succulents). Table topped hills are evident in some areas. Succulents (Family: Mesembryanthemaceae, plants with thick, moisture filled leaves) are indicative of this vegetation type. Seasonal grassland may be common, e.g. new grass growth in spring that is totally reduced in the ensuing few months by game and/or harsh weather conditions.

Biome	Desert and succulent Karoo
Description	The northern Cape is desert or semi-desert area with shifting coastal sand dunes and hard gravel plains.
Distinctive features	Plant cover is sparse and only specialised plants (the succulents) can survive the arid, dry conditions. Other survivor species of this vegetation type are the tough stunted woody Shepherds tree (<i>Boscia albitrunca</i>) as well as large clumps of Melktou (milky rope – <i>Sacrostemma viminale</i> – Which is also poisonous!).

Biome	Fynbos
Description	This is a very special biome, as it is unique to South Africa, and more than just being a Biome, it is classified as one of the world's six floral Kingdoms. It is found almost entirely within the Western Cape boasting in excess of 8500 plant species. Fynbos is found around the southern coastal tip of South Africa right up to Port Elizabeth.
Distinctive features	It looks like a Mediterranean heath-land with fine leafed heather, proteas and restios (reed-like grasses). Shrubs are common like the Cape sumach (<i>Osyris compressa</i>) and the bush-tick berry (<i>Chrysanthemoides monilifera</i>), even trees can be found in Kloofs (canyons).

The Kruger National Park

The world-renowned Kruger National Park offers a wildlife experience that ranks with the best in Africa. Established in **1898** to protect the wildlife of the South African Lowveld, this national park is nearly **2 million hectares**, South African National Parks - Kruger National Park is unrivalled in the diversity of its life forms and a **world leader in advanced environmental management techniques and policies.**

FAUNA AND FLORA

Truly the **flagship of the South African national parks**, Kruger is home to an impressive number of species:

- 336 trees
- 49 fish
- 34 amphibians
- 114 reptiles
- 507 birds
- 47 mammals.

Mammals

Kruger is one of the premier game-watching destinations in the world. Approximately **147 mammal species** occur in the park. It is possible to **see all the classical African big game**, including elephant, black and white rhino, hippopotamus, giraffe, zebra, buffalo, warthog and many antelope species. Large carnivores include lion, leopard, cheetah, wild dog and spotted hyaena. There are also **many smaller mammals** equally enticing species.

Birds

Kruger has a list of **almost 500 species**, some of which are not to be found elsewhere in South Africa. Hornbills, Starlings, Vultures, Rollers, Bee-eaters and Shrikes typify the ubiquitous avifauna and birders can look forward to seeing some of the **continent's most impressive larger species** such as *Saddle-billed Stork*, *Kori Bustard*, *Martial Eagle*, *Lappet-faced Vulture*, *Pel's Fishing Owl* and *Ground Hornbill*. The **far north of the Park** is regarded as one of the birding Mecca's of the country (with many regional rarities to be found), yet birding throughout the entire park is excellent. **Eagles** are common: *Bateleur*, *Martial*, *Black-breasted Snake*, *Brown Snake*, *African Hawk*, *African Fish* and *Tawny* are all regularly seen, and in summer: *Wahlberg's*, *Steppe*, *Lesser Spotted*. The Park's numerous **water points** also make for excellent birding

Vegetation

With Kruger being so vast it naturally has a tremendous botanic diversity. Simplistically the park can be divided into **16 macro ecozones**. The northern half of the park, north of the Olifants River is predominantly mopane veld, while south of the Olifants the ecozones are thornveld. There are **336 tree species in the park**. Of these the following are some of the more prevalent or striking species:

Natural & Archaeological Features

Man's interaction with the Lowveld environment over many centuries - from **bushman rock paintings** to majestic **archaeological** sites like **Masorini** and **Thulamela** - is very evident in the Kruger National Park. These treasures represent the cultures, persons and events that played a role in the history of the Kruger National Park and are conserved along with the park's natural assets.

- There is ample evidence that prehistoric man – *Homo erectus* roamed the area between **500 000 and 100 000 years ago**.
- Cultural artefacts of **Stone Age man** have been found for the period 100 000 to 30 000 years ago.
- More than 300 archaeological sites of Stone Age man have been found
- Evidence of **Bushman** (San) and Iron Age people from about 1500 years ago is also in great evidence.
- There are also many historical tales of the presence of **Nguni** people and European explorers and settlers in the Kruger area.
- There are significant archaeological ruins at **Thulamela** and **Masorini**
- There are numerous examples of **San Art** scattered throughout the park.
- The park was **first proclaimed in 1898** as the Sabie Game Reserve by the then president of the Transvaal Republic, **Paul Kruger**. He first proposed the need to protect the animals of the Lowveld in 1884, but his revolutionary vision took another 12 years to be realised when the area between the Sabie and Crocodile Rivers was set aside for restricted hunting.
- The Scottish born **James Stevenson-Hamilton** (born in 1867) was appointed the park's first warden on July 1, 1902. He began a two year contract and stayed for 50 years.
- On 31 May **1926 the National Parks Act** was proclaimed and with it the merging of the Sabie and Shingwedzi Game Reserves into the Kruger National Park.
- The first motorists entered the park in 1927 for a fee of one pound.
- Many accounts of the park's early days can be found in the Stevenson-Hamilton Memorial Library.

The Cape Floral Kingdom: Fynbos & Nama Karoo

Earlier in this Component we examined the Biomes and made special mention of the **Fynbos Biome**, and how it is actually much more than a Biome, but rather a whole complete and **unique Floral Kingdom**.

Part of this floral Kingdom is Fynbos, the **distinctive type of vegetation** common throughout all the undeveloped areas of the Southern Cape. However, just north of Cape Town, you'll find **Namaqualand**.

Namaqualand is renowned for its **annual mass display of wild flowers in spring and a rich diversity of succulent plants, with an estimated 3500 species**, more than 1000 endemic to the area. This spectacular display of floral grandeur is **unparalleled anywhere in the world**. Vistas upon vistas of densely packed plains completely covered in a never-ending mat of wild flowers, a truly magnificent sight to behold.

Amphibians and reptiles are also well represented, with a number of endemic species. The **mammal species** that have adapted to these harsh conditions include klipspringer, aardvark, baboon, steenbok, duiker, porcupine, black-backed jackal and leopard. **Birds** are typical of the dry arid western regions of the country. Namaqualand also enjoys a great variety of smaller succulents, as well as annuals and bulbous plants.