

FYNBOS

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# INTRODUCTION

Fynbos is the major vegetation type of the small botanical region known as the Cape Floral Kingdom. Only five other floral kingdoms are recognised, and these cover huge areas such as the whole of Australia and most of the northern hemisphere. The Cape Floral Kingdom is both the smallest and the richest floral kingdom, with the highest known concentration of plant species: 1 300 per 10 000 km2! The nearest rival, the South American rain forest has a concentration of only 400 per 10 000 km2. Conservation of the Cape Floral Kingdom, with its distinctive fynbos vegetation, is a national conservation priority demanding urgent action.

Fynbos covers the magnificent mountains, valleys and coastal plains of South Africa's southern and south-western Cape, in a crescent shaped band (click for map) from Niewoudtville in the north to Cape Town in the south and east to Grahamstown. Arguably the eastern boundary of fynbos terminates at the Indian Ocean near Port Elizabeth; the fynbos which extends to Grahamstown occurs at very high altitudes and are composed of very small patches which are poor in species richness (number of species). Some Botanists (those who study plants) consider it best to exclude them.

# WHAT IS FYNBOS?

Fynbos plants are readily recognised by the sclerophyllous (hard, tough and leathery leaved) and microphyllous (small leaved) nature of almost all woody plants and is characterised by having more than 5% cover of Cape reeds. Additionally, it contains proteas, Ericas and members of seven plant families found nowhere else in the world. True grasses are also relatively rare. Most of the plants have small, thin leaves, typically defined as ericoid leaves. The word fynbos comes from the Dutch for fine-leaved plants. Fynbos plants include the King Protea, South Africa's national flower, the beautiful Red Disa, symbol of the Cape Province and the popular garden plants, pelargoniums, commonly known as geraniums.

RICHNESS OF PLANT LIFE

Over 7 700 plant species are found in fynbos, an astonishing number for such a small area. Of these roughly 70% are endemic to the area - that is, they are found nowhere else in the world. Many of these are threatened with extinction. The richness of the fynbos is well demonstrated by its Ericas or heaths, of which there are over 600 different species. There are just 26 in the rest of the world. Although the most striking features of the composition of fynbos are the presence of many conspicuous members of Proteaceae (protea family) and Ericaceae (erica family), and the numerous Restionaceae (reed family) that fill the niche usually occupied by grasses, the largest family in number of species is Asteraceae (daisy family), with just under 1000 species of which more than 600 are endemic. Furthermore, fynbos is very rich in geophytes (bulbous plants) and many species from the family Iridaceae have become household names such as babiana, freesia, gladiolus, iris, moraea, sporaxis and watsonia. Another remarkable feature of fynbos is the number of species found within small areas.

## ANIMALS LIVING IN FYNBOS

Fynbos cannot support herds of large mammals since the nutrient poor soils on which it grows do not provide enough nitrogen for the protein requirements of large mammals. However, smaller mammals common to fynbos are chacma baboons, klipspringers, grysbok, dassies, mongooses, and the striped mouse. Fynbos does not support high numbers of birds, but all six bird species endemic to the south-west Cape are fynbos species, e.g. the Cape sugarbird and orange-breasted sunbird. These two birds are found only in fynbos and play an important role in pollinating flowers, including those of heaths (ericas) and proteas, from which they drink nectar. Another very common sunbird frequenting the fynbos biome, is the lesser double-collared sunbird.

Fynbos also supports large numbers of butterfly species. Many are however at risk, especially the myrmecophilous (ant associated) butterflies from the family Lycaenidae. The early stages (larvae) of many of these butterfly species are entirely carnivorous and live on a diet of ant brood. The butterfly larvae actually live inside the nest of their host ant. Myrmecophilous butterflies are at threat because they require the presence of both host ant and host plant as well as optimal climatic conditions. Thus the disturbance of their preferred habitat, often not larger than a tennis court, could lead to the extinction of a rare species confined to a single location.

The Cape has more than half of South Africa's frog species. Furthermore, of the 62 different frogs occurring here, 29 are endemic being found nowhere else on earth. The Table Mountain ghost frog lives only in the mountain's fast-flowing rocky streams. The tiny micro frog and Cape platanna are restricted to a few surviving vlei's in the south-west Cape. Besides these, a number of other endemic frogs also occur in fynbos.

Fynbos also has a high concentration of threatened fish species, particularly in the Oliphant's River system. The southern Cape has 1 rare fresh water endemic and 3 rare estuarine endemic fish, while the south Western Cape has 3 endangered and 3 vulnerable fresh water endemics. Some of these endangered endemics include the Berg River redfin, the fiery redfin (known only from the Oliphant's River) and the Cape whitefish.

With the widespread occurrence of alien vegetation which use up more water than indigenous fynbos plants, many habitats are becoming restricted leading to local extinction of certain species of fish because isolated tributaries are drying up.

## THREATS TO FYNBOS

\* The major threat to fynbos is the spread of alien plants such as hakea, the Australian wattles Acacia cyclops commonly known as rooikrans and Acacia saligna commonly known as Port Jackson, and pine trees from Europe.

\* Other significant threats include too frequent fires and fires in the wrong season; commercial afforestation; and the development of housing estates and farms.

An important aspect of fynbos conservation is that many species have such a tiny range that ploughing a field, or building a single house can wipe out the entire world population of a unique form of life. Part of the dilemma is whether or not to tell members of the public where a rare species occurs so that they can keep an eye on it. This may put the species at risk to unscrupulous collectors and cultivators. The alternative of keeping this knowledge secret might lead to sympathetic landowners destroying plants out of ignorance.

The Cape Flora is ecologically (Cowling, 1992) very delicately balanced. Alien species readily become established in fynbos and displace the native plants and animals. As a result of this, combined with the naturally limited range of many species, urbanisation and the spread of agriculture, numerous fynbos plants are now seriously endangered or extinct.

# CONSERVATION ACTION

Twenty-six species of fynbos plants have already become extinct. The entire Cape Floral Kingdom (Fraser, 1988) should be proclaimed a Biosphere Reserve. Other measures should include:

* the promotion of public awareness of the Cape Floral Kingdom;
* encouraging land owners to care for their fynbos;
* setting aside important areas of land as nature reserves and national parks;
* the conservation of corridors of fynbos within urban areas;
* the promotion of ecotours allowing people to experience the amazing floral diversity of fynbos;
* control of alien, invasive vegetation;
* research into fynbos and its myriad plant and animal species.
* encouraging environmental workshops at all tertiary institutions.
* the establishment of environmental groups within communities.
* the support and establishment of environmental outreach to schools.
* the promotion of environmental awareness exhibitions, for example, on....
  + World Environment Day
  + Arbour Day
  + Fynbos Day
  + Careers exhibitions
  + Marine Day
  + Care for the Earth Day

### DID YOU KNOW?

\* The 470 km2 of the Cape Peninsula, including Table Mountain, is home to

2 256 different plant species - more than the whole of Great Britain, an area

5 000 times bigger! The 60 km2 of Table Mountain alone supports 1 470 species.

\* The Cape Flats have the highest concentration of Red Data Book species: 15 species per square kilometre are in danger of extinction.

\* It is estimated that 75 % of South Africa's rare and threatened plants are found in the fynbos.

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