

# *The farmer's role in biodiversity conservation*

**L**ANDOWNERS AND FARMERS ARE but temporary custodians of the land under their control. These articles are intended to help farmers and landowners recognise important plants, and to provide some conservation guidelines.

The intricate and complex ecosystems that make up the veld on which we farm have taken millions of years to develop. Factors such as geology and soil, altitude, climate and topography have given rise to a vast number of different veld types with an extremely rich and variable flora and fauna. In *Veld Types of South Africa* (1953), John Acocks listed 70 types of vegetation in Southern Africa. The South African National Biodiversity Institute publication, *The Vegetation of South Africa, Lesotho and Swaziland* (2006), lists a staggering 435 vegetation types under a number of biomes (large areas of relatively uniform vegetation). The most important are:

- Cape fynbos
- Succulent Karoo
- Nama-Karoo
- Grassland
- Savanna
- Albany or valley thicket
- Maputoland/Pondoland coastal belt
- Afromontane and subtropical forest.

Within each of these biomes, the heterogeneous nature of the terrain results in a mosaic of variable microhabitats allowing for large-scale diversification. As a consequence of this fantastic variation in plant habitats, South Africa has one of the richest floras in the world, in terms of both the diversity of species and the number of species per area.

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In their book *Regions of Floristic Endemism in Southern Africa* (2001), Abraham van Wyk and Gideon Smith estimate there are more than 30 000 species in our region – almost 10% of the world's plant species amazingly concentrated on less than 2,5% of the earth's land surface.

They estimate that more than 60% of these species are endemic to our region – that is, they occur nowhere else on earth. Some of our endemics are confined to small isolated populations in particular areas and are therefore extremely vulnerable to extinction. Plants are essential for all life on earth.

Through the wonderful process of photosynthesis, green plants harness the energy of the sun to convert carbon dioxide in the atmosphere into starches and sugars, the basis of all animal food. Furthermore, in the process they release oxygen into the atmosphere, another element essential to life. In aeons past the energy of the sun was stored by plants

in the form of oil and coal, the fossil fuels upon which our modern civilization is so dependant. Plants also provide us with medicines, clothing, wood for construction and paper, thatching, baskets and a host of other useful products. Their beauty provides pleasure in our gardens and parks.

There is a high degree of interdependence between the plants, insects and animals that constitute a stable ecosystem, developed over millions of years. The loss of only a few of the elements in a sensitive system can disturb the balance necessary for sustainability and can lead to rapid degradation of the environment. It is the



1. Montane grassland at Naudé's Nek, the highest road pass in South Africa, on the road from Maclear to Rhodes in the NE Cape.

2. Valley thicket, Antelope Farm, Stutterheim, Eastern Cape.

3. Cape Mountain fynbos, Fairfield, Napier, Western Cape.

4. Summer rainfall grassland at Windvogel Mountain, Cathcart.

5. Tanqua Karoo in the spring, Western Cape.

PHOTOS: CAMERON McMASTER

farmers and other landowners such as the state, municipalities, forest companies, national parks and road and rail authorities, the custodians of the land, who have the responsibility to manage the land in a sustainable manner and pass it down to the next generation in a better state than they received it. Failure to do so will result in irreparable loss of our natural heritage.

The first step a farmer or landowner should take in fulfilling his role as land custodian is to know what species occur on his land, which ones are important and which are rare and vulnerable. The species that are present are often indicators of the health and condition of the land, and an awareness of this can assist the landowner in making management decisions.

The farmer or landowner should then try to discover appropriate management programmes to put in place to preserve the biodiversity on the land, and should enlist the help of experts in eradicating invasive aliens and applying sound land and water conservation programmes. – Cameron McMaster (cameron@haznet.co.za). |fw

