Plant Formations in the Western Cape BioProvince

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Western Cape Vygieveld

Named after the local name vygie for a plants of the family Aizoaceae (mesembryanthems), vygieveld is an open, dwarf shrubland usually less than one metre tall dominated by dwarf succulents especially vygies and crassulas. It is the most widespread veld type in this BioProvince occupying, for example, low lying parts of Namaqualand, the escarpment and much of the flat areas of the Knersvlakte basin, and the arid gravel plains of the lower Orange River. The area usually receives less than 150 mm of annual rainfall, but much of it is exposed to frequent fogs. Many of the succulents are less than 10 mm tall and in summer many retreat into the ground or cover their nascent leaves with the whitened skins of last year’s growth. Quartz field vygieveld is possibly the most intriguing with plants growing from an almost soil-less terrain of angular stones of quartzite – the premier site being in the Knersvlakte where there are 51 specialist species, 39 of which are found nowhere else. Plant cover rarely exceeds more than about 5% of ground surface, but because many of the plants are so small up to 250 individuals can be contained within one square metre. Each quartzite field has its own specialist flora. In the Knersvlakte, species of the genus Argyroderma and Monilaria, in particular, have diversified, while in the Little Karoo, it is the genus Gibbaeum that shows the greatest diversity and here it has many features in common with the development Argyroderma in the Knersvlakte. This is an outstanding example of convergent evolution. The many endemic species of the Vygieveld include mesembryanthemums such as Argyroderma delaetii, Conophytum subfenestratum, Cerochlamys pachyphylla, Delosperma pageanum, Gibbaeum shandii, Glottiphylhum fragrans, Hereroa stanleyi, Lampranthus uniflorus and Oophytum nanum (Aizoaceae), together with many other endemic taxa including lilies such as Aloe pearsonii (Liliaceae), crassulas such as Adromischus mammilaris and Crassula brevifolia (Crassulaceae), euphorbias such as Euphorbia schoenlandii (Euphorbiaceae) and asters such Pteronia heterocarpa (Asteraceae). In spring there are massflowering displays of annuals (mainly Asteraceae, Brassicaceae and Scrophulariaceae), and geophytes (mainly Amaryllidaceae, Iridaceae and Liliaceae). The total flora of the vygieveld is estimated to exceed 7000 taxa and up to 50% of these may be endemic.

Western Cape Broken Veld

Dominating rugged, broken landscapes strewn with weathered rocks of granitic bedrock, the term broken veld is used to describe the characteristic vegetation of these dramatic landscapes. It is found, for example, throughout the Hardeveld and the higher reaches of the Richtersveld mountains in Namaqualand, and is the dominant vegetation of the Little Karoo. Annual rainfall varies from about 100-300 mm. The vegetation is varied but typically comprises a scattering of trees such as Boscia foetida, Ficus ilicina, Olea europaea subsp. africana, Rhus undulata, the endemicNamaque resin tree Ozoroa dispar (Anacardiaceae) and the enigmatic endemic halfmen Pachypodium namaquanum (Apocynaceae). There is even a tree-like tylecodon (Tylecodon paniculata) – botterboom, which gets its name from the soft sheen of its stout stems. Another characteristic feature here is the regular occurrence of the endemic Aloe dictotoma (Liliaceae). Below the tree layer, a tall succulent stratum may be present comprising species such as Zygophyllum morgsana, various species of Ruschia, and the endemic Stoeberia frutescens (Aizoaceae), while the lower strata include a wealth of dwarf succulents (of the genera Crassula, Ruschia and Tylecodon). Interspersed with the succulents are various non-succulent daisy shrubs such as Berkheyia frutcosa, Didelta spinosa, Eriocephalus ericoides, Euryops multifidus and
Tripteris oppositifolium. Other endemic species include Portulacaria pygmaea (Portulaceae).

**Western Cape Renosterveld**

In the wetter parts of the Hardeveld and the Richtersveld where annual rainfall exceeds 300 mm, the vegetation, described as Renosterveld, has more in common with fynbos than that of Succulent Karoo. It is characteristically dominated by tall, evergreen shrubs many belonging to the Asteraceae. Common species include Didelta spinosa, Dodonea angustifolia, Elytropappus rhinocerotis, Eriocephalus africanus, Erythrophysa alata, Euryops multifidus, Montinia carophyllacea and Nylandia spinosa, while the few succulents are mainly tall shrubby species of Lampranthus and Ruschia. A few grasses such as Cymbopogon marginatus, Ehrharta calycina and Themeda triandra are present, but the outstanding feature of this formation is the abundance of geophytes including many bulbous species of Albuca, Babiana, Bulbine, Bulbinella, Ferraria, Gladiolus, Haemanthus, Hesperanthus, Ixia, Lachenalia, Lapeirousia, Moraea, Ornithogalum, Oxalis, Romulea, Spiloxene and Trachyandra.

**Western Cape Fynbos**

Although resembling the fynbos of the Cape Floral BioRegion, this formation has its own suite of endemic plant species. It comprises a dense shrubland up to 2 m tall, but is confined to areas where the annual rainfall exceeds 400 mm such as the upper reaches of the Kamiesberg in Namaqualand. The main species groups are proteoids and ericoides with a scattering of restioides in the undergrowth. In the Kamiesberg fynbos both the indigenous proteoides, Protea namaquana and Vexatorella alpine (Proteaceae), are endemic to the Kamiesberg area. Among the ericoides of Kamiesberg there are about seven species of Erica and one species of the allied genus Scyphogyne. Erica verekunda colours large areas of the wetter parts, but this species is also widespread in the fynbos of the southwestern Cape. The restioides, evergreen reed-like plants, are represented by the genera Calopsis, Hypodiscus, Ischyrolepis, Restio and Wildenowia. Other genera present here include Agathosma, Aspalathus, Cliffortia, Diosma, Gnidia, Muralitia, Passerina, Phylica and Struthiola, and like its counterpart in the Cape BioProvince, this fynbos is rich in bulbous species such as the endemic Gladiolus equitans (Iridaceae). Succulents, on the other hand, are comparatively rare.

**Western Cape Strandveld**

Occurring on the sands of marine origin on the coastal plain of Namaqualand, this veld type varies according to age, origin and depth of sand, and can be broadly divided into five subtypes: coastal zone strandveld, dunefield strandveld, tall strandveld and short strandveld. Coastal zone strandveld occurs in a belt just above high tide with a strong maritime influence. Cladoraphis cyperoides colonises the hummock dunes of this zone together with small shrubs such as Didelta camosa and Tetraysia fruticosa. Other characteristic species are Amphibolia hutchinsonia and Salsola nallothensis. In slightly more stable areas the monotypic endemic Woolyua farinosa (Aizoaceae) can be found. Dunefield strandveld largely comprises a sparse community of mobile sand, but in the semi-mobile areas dense stands of Chrysantheoides incana and Lebeckia multiflora may be present. Tall strandveld, reaching heights of 2 m or so, is the characteristic community of more stable dunes where there is deep sands. Typical species are Eriocephalus africanus, Othonna cylindrica, Salvia lanceolata, Zygophyllum morgsana and the endemic Stoeberia utilis (Aizoaceae). Often tangled among this vegetation are the magnificent red blooms of Babiana thunbergii. In spring there are brilliant displays of spring annuals, while in autumn colourful ammaryllids make their appearance. Short strandveld occurs where sand forms only a thin veneer possibly as a result of erosion. It reaches about knee-height
and includes more succulent species than tall strandveld. In addition to the presence of a number of dwarf specimens of tall strandveld species there are also large blooms of *Cephalophyllum spongiosum*, *Vanzijlia annulata*, *Zygophyllum cordifolium* together with various crassulas, pelargonium and many vygie genera.

**Western Cape Lichen Field**

One of the most spectacular veld types of this BioProvince is the magnificent lichen field of Alexander Bay in Namaqualand. This coastal, fog-drenched area composed of fine gypsum clay, has the highest cover, density and diversity of lichens in the world. It covers an area of some 50 ha and has 29 species such as *Teloschistes capensis*. There are also about 40 higher plants, which are mainly embedded succulents such as the endemic *Euphorbia stepelioides* (*Euphorbiaceae*), *Fenestraria rhopalophyllum* and *Lythops herrei* (*Aizoaceae*). In fact, most of the higher plants are endemic to northwestern Namaqualand.

Further information required.

**References**


