Special Plants in Rangeland Thickets of the Eastern Cape






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Where leaders learn

List of Abbreviations

AOO	Area of Occupancy
ATB	Albany Thicket Biome
CR PE	Critically Endangered, Possible Extinct
CR	Critically Endangered
CRARE	Critically Rare
D	Declining
DDD	Data Deficient – Insufficient Information
DDT	Data Deficient - Taxonomically Problematic
EOO	Expected Area of Occurrence
EOV	Ecological Outcomes Verification
EW	Extinct in the Wild
EX	Extinct
IUCN	International Union for the Conservation of Nature
LC	**LC**
masl	meters above sea level
NE	Not Evaluated
NT	Near Threatened
R	Rare
RDL	Red Data List
RE	Regionally Extinct
SANBI	South African National Biodiversity Institute
spp.	species
VU	Vulnerable

Introduction

H & M Rationale and objectives

A biodiversity footprint assessment has shown that H&M Group has a significant impact on biodiversity through the wool sourced from South Africa. This is partly due to the high levels of plant endemism, as well as the high levels of species diversity in our rangelands. The H&M Group has committed to contributing to the global goals on reaching positive impact on nature, and reducing the impact on nature and biodiversity. As part of our goal to source all materials more sustainably by 2030, H&M Group recognizes the need to support the transition to regenerative practices and the restoration of critical ecosystems in connection with its sourcing practices.

The H&M Group are investing in projects connected to the parts of our value chain where we have the biggest environmental impact – raw materials.

Cotton and wool are two important materials for the products of the fashion industry. Conventional production methods can lead to negative impacts like soil erosion, pollution and overgrazing. It is therefore imperative, to support regenerative agriculture projects, which focus on the links between nature and farming to improve soil health and biodiversity.

For a full report on H&Ms Sustainability disclosure see: https://hmgroup.com/wp-content/uploads/2024/03/HM-Group-Sustainability-Disclosure-2023.pdf.

The H&M Biodiversity Restoration and Regenerative Land Management Project

H&M Group and BKB Ltd, the leading supplier of RWS wool (Responsible Wool Standard), have partnered to implement the Biodiversity Restoration and Regenerative Land Management Project. H&M Group sources the vast majority of its wool for its products from RWS-certified farms in South Africa. The joint project aims to not only build on the existing standards for responsible wool sourcing, but to go beyond the holistically scope of social standards and animal welfare.The project will be implemented in the Albany Thicket Biome in South Africa due to its endemism & sensitivity. The area has a high conservation value and is a priority for biodiversity conservation in the Eastern Cape. The project has been restricted to farmers that produce wool and have various forms of thicket from the Albany Thicket Biome (ATB).

The project is composed of a number of components:

- Fine-Scale Vegetation Mapping
- Botanical Reserves
- Restoration Plots
- Botanical Booklet
- Biodiversity Score Assessment

i) Fine-Scale Vegetation Mapping

At each of the recipient farmer properties, a thicket vegetation expert will redefine the vegetation classes boundaries at a much finer scale than is currently available (typically 1: 10 000). The national vegetation mapping is freely available, but the scale is not suitable for biodiversity monitoring. https://www.sanbi.org/biodiversity/foundations/national-vegetation-map/. The fine-scale mapping with provide the farmer with accurate delineation of the various thicket vegetation types, as well as alignment with the latest SANBI vegetation class namings.

ii) Botanical Reserves

At each of the recent farmer properties, an intensive search will be undertaken for “special plants” (which appear in this booklet). The term special has been defined as follows:

- Plants that are rare, threatened or endemic.
- Plants that are protected either provincially or nationally.
- Plants that are indicators of a particular thicket type, ecological condition or trend in biodiversity status.With increased awareness and monitoring there will be close to 100 botanical reserves across the footprint of the project, which will help protect these species from local extinction, but also serve as refugia and sites for rewilding and relocation of other special species.

iii) Restoration Plots

At each of the recipient farmer properties, a pilot restoration site will be implemented. Some of the sites require restoration through replanting, while others require restoration via the clearing of invader plants that reduce biodiversity and productivity. Although the plots are small, it will provide a fantastic opportunity for long-term monitoring of the implementation. The restoration plots will be fenced and monitored over time. The figures below are an example of a fixed point photo series where the GPS coordinated are recorded and the site can be re-visited to track change over time.

Restoration Plot Facing North

Restoration Plot Facing West

Restoration Plot Facing South

Restoration Plot. Plot 1 Facing East

iv) Botanical Booklet

The ATB is rich in plant species and exhibits high levels of endemism, some highly localised. These plants are internationally important, a treasure and a vital component of our intergenerational equity. The Botanical Booklet is an attempt highlight, showcase and increase awareness in these plants – especially the rare, threatened and endemic species.

v) Biodiversity Score and the Ecological Outcomes Verification (EOV)

The cumulative anthropogenic impacts have precipitated both a global Climate Change crisis, as well as a Biodiversity crisis. A strong component of the strategy towards reversing the decline in biodiversity has been invoking the concept of traceability, as well as the science of biodiversity certification. The project seeks to develop methodologies and reporting systems to track both ecological integrity and biodiversity on each farm.

Albany (Subtropical) Thicket Biome (ATB)

The Subtropical (a.k.a. Albany) Thicket Biome is internationally important, biodiversity rich and some of the plants only occur in this area. The thicket is an ancient vegetation, probably emerging in the Eocene, and initially came from parts of ancient forests. Many of the trees are shrub-like and multi-stemmed and there are many succulents in the understory. Many of the special species occur in mosaic Vegetation Types with thicket adjacent to grassland, fynbos or forest. The thicket biome can be divided into five main Vegetation Types subdivided further into almost 44 functionally different thicket sub-types.

The Albany Thicket is threatened because of historical land-use that led to overgrazing, erosion, urban expansion and degradation. The best approach to management is not well known as it was only recognised as a unique biome in the 1990s.

Thicket is divided in five main Vegetation Types. These main Vegetation Types vary a lot from west to east resulting in 44 unique Vegetation Types.

Dune thicket 

Occurs on the sandy soils along the coast from the Bree river in the west to the Kei river in the East . Rainfall is about half summer and half winter and varies from 350-950mm pa with temperatures varying from 7.7o C minimum to 26.3o C maximum. Vegetation changes with several different Dune Vegetation Types from west to East becoming a bit more tropical in the East. The White Milkwood (Sideroxylon inerme) is the most common tree in this vegetation type.

Photos: Wildernis and Kei river mouth

Valley thicket 

Occurs more inland from the dune strip. Soils contain more clay . The climate is quite subtropical with relatively high rainfall varies of 300-650mm pa with temperatures varying from 3.3o C minimum to 32.3o C maximum. Trees tend to form a dense stand with Candelabra Euphorbias sticking out above the canopy in some of the m ın Types as it changes from West to East. Dominant trees are Gwarrie (Euclea undulata) and Pruim bome (Pappea capensis).

Mesic thicket 

Occurs further inland towards the more mountainous areas. The rainfall here is a bit higher at 500 to 800 mm per annum with a temperature range 3.9 to 31.2 o C . Olive trees (Olea europeae) are common. This Vegetation Type changes a lot from the west to the east resulting in many Vegetation Types.

Arid (or xeric) thicket 

This Vegetation Type occurs behind the coastal mountains. It is in a rainfall shadow with low rainfall of 200 to 300mm pa and temperatures range from cold winters of 0.9o C minimum to hot summers of 32.6o C maximum. The vegetation is much shorter and Noors (Euphorbia caerulescens) becomes the most common Euphorbia. Spekboom is also very common in this vegetation type and in a pristine condition Spekboom should form 25-30% of the canopy cover.

Mosaic Vegetation Types 

These Vegetation Types are a result of huge climate changes over the millennia probably remnant of arid thicket becoming more arid. Gwarrieveld is a mosaic example where thicket patches occur in a Succulent Karoo landscape. Forest-thicket occurs further south where the subtropical thicket meets the Afromontane forests. It can be identified by the presence of tree *Euphorbias*. Bontveld is species rich and occurs where different vegetation types such as Grassland, Succulent Karroo and Fynbos meet.

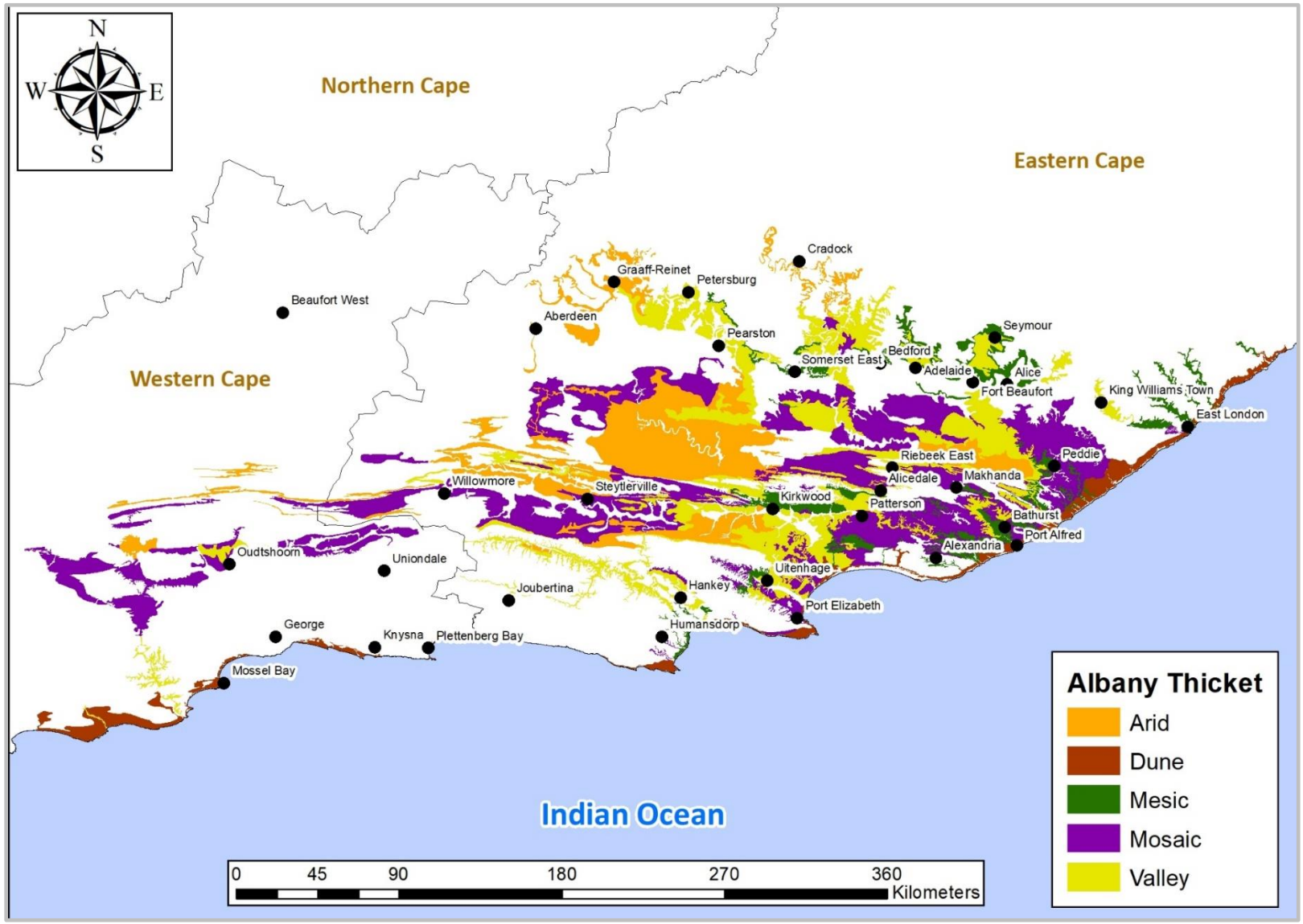


Figure 1. Illustration of the locality of the five main Vegetation Types

Plants characteristic of specific Vegetation Types

Dune Thicket

Witmelkhout White Milkwood (Sideroxylon inerme)

Specific Vegetation Type

Milkwood is characteristic of the Dune thicket.

How to identify:

This can be a fairly tall tree with a dense, spreading crown of dark green leaves. The grey-brown to black bark in older trees is characteristic with rough rectangular cracks.

Flowering time:

Flowers are small, but purple-black berry-like fruit can be conspicuous from February to September.

Management implications:

Both flowers and fruit attract insects and birds, and the fruit also appeals to bats, monkeys, baboons and bush pigs. It is a protected tree.

Valley Thicket

Boom Noors, Tree Euphorbia (Euphorbia tetragon*a*)

Specific Vegetation Type:

It is typical and most abundant in Valley Thicket.

How to identify:

Tall, single-stemmed tree up to 15 m tall. The stems are greyish and the outer stems are thin, about 2 cm in diameter. Branchlets a slightly 4 -5 angled. It is easily mistaken for E.triangularis, but in the latter species the outer stems are thicker and green.

Management implications:

It is rarely browsed, but the favourite fodder of Black rhinoceros, to the point that they eradicate local populations.

Gwarrie (Euclea undulata)

Specific Vegetation Type:

It is most abundant in Arid Thicket and is typical of the Thicket clumps of Karroid Thicket called Gwarrieveld, but may also occur sporadically in Valley Thicket.

How to identify:

A single-stemmed tree with characteristic coarse dark bark and leaves with a wavy margin.

Management implications:

It is rarely browsed. These long-lived, slow-growing trees often have exposed roots indicating the degree of soil loss in an area.

Doppruim, Jacket-plum (*Pappea capensis*)

Indicator in:

Valley spekboomveld

How to identify:

A single-stemmed tree with the lower branches often browsed off, creating an umbrella-shaped tree.

Flowering time:

They flower irregularly, but when they do tend to produce a lot of fruit. The fleshy red part of the fruit is edible and high in Vitamin C.

Management implications:

These slow-growing, long-lived trees often have their roots exposed that indicated the level of soil loss from an area. Both the leaves and young stems are often browsed.

An abundance of moderately browsed these trees indicates well managed veld.

Mesic thicket

Olienbout Wild Olive (Olea europeae subsp cuspidata),

Specific Vegetation Type:

This tree is most abundant and typical of Mesic Thicket.

How to identify:

A single-stemmed, evergreen tree that is rarely more than 5 m tall. It often has a dense spreading crown of glossy grey-green to dark-green foliage. Leaves are grey-green to dark-green above and greyish below. Fruits are only produced sporadically, but then in profusion.

Management implications:

It is rarely browsed.

Kiepersol, Cabbage Tree (*Cussonia spicata*)

Specific Vegetation Type

It is typical and most abundant in Mesic Thicket

How to identify:

Usually single-stemmed tree that can be up to 10 m tall and often emerge above the canopy of other trees. The large, dark green leaves are hand-shaped and consist of several leaflets.

Management implications:

It is not browsed.

Boom Noors, River Tree Euphorbia (*Euphorbia triangularis)*

Specific Vegetation Type:

It is typical and most abundant in Mesic Thicket.

How to identify:

Tall, single-stemmed tree up to 15 m tall. The stems are green and the outer stems are to 10 cm in diameter and are three angled and in divided into segments. It is easily mistaken for E.tetragona, but in the latter species the outer stems are thinner and grayish and more angled.

Management implications:

Seedlings of both E. triangularis and E. tetragona are rarely observed, whilst many of the mature trees are dying due to baboons that damage the crowns.

Katdoringboom, Cat-thorn (*Scutia myrtina*)

Specific Vegetation Type:

It is most abundant in Mesic Thicket, but also occurs sporadically in Valley Thicket.

How to identify:

A multi-stemmed tree that can be to 5 m tall. As the common name indicates, it has hooked thorns between the shiny green leaves. The purple berries are edible, but tend to dry the mouth, hence the other Afrikaans common name 'Droog-my-keel'.

Flowering time:

The small white flowers occur from October to March and the berries are present from January to June.

Management implications:

These trees are rarely browsed and may become invasive in disturbed areas.

Bosboerboon (Schotia latifolia)

Specific Vegetation Type:

These trees are most abundant and typical of Mesic Thicket.

How to identify:

Single-stemmed tree that is rarely more than 3 m tall. Leaves are broadare broad up to 100mm. This renders it easily distinguishable from S. afra.

Flowering time:

The pink flowers growing in loose bunches are present from November to January.

Management implications:

The leaves, young stems and pods are not very palatable to stock and game.

Arid Thicket

Noors (*Euphorbia redyeri* until recently called *E. caerulescens*)

Indicator in:

It is typical of and most abundant in Arid Thicket, but can also occur in transitions to Valley Thicket.

How to identify:

Multi-stemmed stem-succulent with greyish stems.

Management implications:

It is rarely browsed, but fresh growth is sometimes nibbled. It is a useful fodder during drought, once the milky sap has been blead out. The milky sap can cause blisters, especially in the eye.

Spekboom, Porkbush (*Portulacaria afra*)

Specific Vegetation Type:

It is most abundant in Arid and Valley Thicket, but also occurs along the edges of Thicket clumps in Gwarrieveld and other Karroid Vegetation Types.

How to identify:

This stem and leaf-succulent can be to 3 m tall.

Flowering time:

The pink corral-like flowers are periodically produced in masses in summer, but the event can be unpredictable.

Management implications:

Some forms of this plants are highly palatable, while some forms are never browsed. These forms are often mixed, a general glance of the occurrence of Spekboom is thus not adequate to evaluate veld condition.

Plants that can help to evaluate management.

Klapperbos, Chinese Lanterns (*Nymania capensis)*

Indicator in: It is typical of and most abundant in Arid Thicket and Karroid Vegetation Types, but can also occur in transitions to Valley Thicket.

How to identify:

Multi-stemmed shrub that is rarely more than 3 m tall. Distinctive are the inflated fruit. Leaves are often dropped during a drought, when plants may appear dead.

Flowering time:

Dull red, small flowers (10mm) appear in early spring and early summer, but also responds to rain.

Management implications:

An abundance of these plants, without signs of heavy browsing thus indicates well managed veld.

Boerboon (Schotia afra)

Indicator in:

These slow-growing trees are most abundant and typical of Arid Thicket.

How to identify:

Single-stemmed tree that is rarely more that 5 m tall.

Flowering time:

The red-flowers are often produced in profusion after rain and an important source of nectar for Sun birds.

Management implications:

The leaves, young stems and pods are highly palatable to stock and game. Their often-exposed roots also indicate long-term soil loss in an area. An abundance of these trees that have not been browsed into an 'umbrella' shape, with the base of the stem at soil level indicates well managed veld.

Saffraan (Jamesbrittenia tortuosa)

Indicator in:

This species in most abundant in Karroid Thicket (such as Gwarrieveld), but may also be present in openings in Arid and Valley Thicket.

How to identify:

A small shrub that is rarely more than 30 cm tall. It has narrow stems and leaves.

Flowering time:

Flowers are produced in spring and summer.

Management implications:

It is often highly browsed and the presence of flowering plants indicates well-managed veld.

Poprosie, Dolls Rose (*Hermannia filifolia)*

Indicator in:

This species can be abundant in claye soils in Spekboomveld in Karroid Thicket (such as Gwarrieveld).

How to identify:

A small shrub that is mostly about 50cm but can be up to 1m. 30 cm tall. Narrow leaves are strap-shaped and grouped in tufts.

Flowering time:

Flowers are produced in spring and summer after rain.

Management implications:

It is often highly browsed and the presence fully grown, flowering plants indicates well-managed veld.

Slaaibos (Roepera morgsana)

Indicator in:

It is most abundant in Arid Thicket, but may also occur in openings in Valley Thicket.

How to identify:

A shrub with somewhat (usually grayish) succulent leaves that is to 1.5 m tall. Flowers are yellow, marked with red at the base of the 4 petals. The fruit has 4 wide wings.

Flowering time:

Autumn to Spring after rains.

Management implications:

This is a highly palatable species, and an abundance of these plants indicate well managed veld. It is often mistaken with Stinkbos (R.foetidum) which has five petals and is unpalatable.

Septemberbos, Butterfly-bush (*Polygala myrtifolia)*

Indicator in:

This tree is typical and most abundant in Valley Thicket, but may also be present in Arid Thicket. This species also occurs in openings in all the Vegetation Types.

How to identify:

A single-stemmed shrub that about 2 m tall.

Flowering time:

The flowers are produced in spring and summer.

Management implications:

These plants are often browsed and abundance of lightly browsed plants thus indicate well-managed veld.

Kurkei (Crassula ovata)

Indicator in:

It is most abundant in Valley Thicket, but occasionally also occurs in Arid Thicket.

How to identify:

Shrubby succulent is usually about 1 m tall with thick succulent stems.

Flowering time:

The creamy flowers grow in dense bunches and appear in winter and early spring.

Management implications:

It is not browsed, but is very sensitive to disturbance and easily broken down. Old ‘carcasses’ of these plants usually indicate heavily disturbed Thicket. An abundance of these plants thus indicates well managed veld.

Blou-blommetjie karoo (*Felicia filifolia)*

Indicator in:

It is most abundant in Arid Thicket, Valley Thicket and Gwarrieveld, but can be present in openings in Mesic Thicket.

How to identify:

A shrub to 1 m tall with narrow leaves that are about 1 cm long.

Flowering time:

The purple-blue flowers appear in spring and early summer.

Management implications:

They are often heavily browsed and an abundance of these shrubs indicate well-managed veld.

Bietou (Oteospermum sinuatum)

Indicator in:

It is most abundant in Arid Thicket and Gwarrieveld, but can be present in openings in Valley Thicket.

How to identify:

A shrub that is rarely more than 30 cm tall. Leaves are small and grey-green and up to 25 mm long.

Flowering time:

Flowers with a yellow centre and ray of petals appear in spring, but plants also flower after rain in summer.

Management implications:

They are often heavily browsed and an abundance of these shrubs indicate well-managed veld.

Bush Violet (Barleria obtusa)

Indicator in:

It is most abundant in Arid and Valley Thicket.

How to identify:

A Multi-stemmed, perennial shrub that is to 50 cm tall. The leaves are about 1 cm broad and somewhat hairy.

Flowering time:

The 20-30 mm wide flower petals grow on the top part of the branch. Flowers are blue or pink. They flower mostly from Autumn to Winter.

Management implications:

It is a highly palatable plant that tends to grow under the protection of taller shrubs. An abundance of these plants indicates well managed Thicket.

Kinkelbossie (Tetragonia fruticosa)

Indicator in:

Arid and Valley Thicket

How to identify:

A perennial shrub, usually bout 30 cm tall, with white woody stems at the base.

Flowering time:

Plants flower in spring. The small flowers are yellow and the fruit have four wings and turns black when ripe.

Management implications:

Leaves are often dropped during a drought.

This highly palatable plant often grows in the protection of other shrubs. An abundance of these plants indicates well managed Thicket.

Deurmekaarbos, Cape Lilac, Puzzle Bush (*Ehretia rigida)*

Indicator in:

Arid Thicket, Valley Thicket and Gwarrieveld, but can be present in openings in Mesic Thicket

How to identify:

Multistemmed, sparsely branched shrub or small tree with drooping and tangled branches. It is usually 2-3 m tall.

Flowering time:

The light purple flowers appear in summer.

Management implications:

It is often heavily browsed, even the young stems are often browsed. An abundance of these plants that are not heavily browsed thus indicates well managed veld.

Buffelsgras ***(***Cenchrus ciliaris)

Indicator in:

Arid Thicket (drainage areas), Valley Thicket, Karroid Thicket Gwarrieveld It is most abundant in drainage areas in Arid Thicket, Valley Thicket and Gwarrieveld.

How to identify:

A perennial grass that is up to 1 m tall that has good grazing value when green. It appears after rain in summer and dry down in autumn. The leaves are to 1 cm wide, hairy and relatively soft when green.

Management implications:

An abundance of this grass indicates well managed Thicket.

Common Panicum (*Panicum deustum)*


From Guide to Grasses of Southern Africa, Briza publications

Indicator in:

It occurs in all of the Vegetation Types, but usually in the shade of shrubs and trees in the more arid Vegetation Types.

How to identify:

A perennial grass that is often 1 m tall when flowering. The leaves are about 1 cm broad when green.

Management implications:

This a highly palatable grass and tends to grow in the shade of shrubs and trees, even when the leaves are dry.

An abundance of this species (and very similar looking species) indicates well managed Thicket.

Rooigras, Red Grass *Themeda triandra*

Indicator of intact thicket in:

It occurs in open areas in all of the Vegetation Types.

How to identify:

A perennial grass that is usually 50 cm tall when flowering. The leaves are about 5 mm broad when green.

Flowering time:

The flowering period is from December to February. It produces distinct large red-brown spikelets, which occur on branched stems.

Management implications:

It is a highly palatable grass, even when the leaves are dry. An abundance of this species, especially in a flowering stage, indicates well managed Thicket. In being a climax grass species, it is difficult to re-establish in disturbed areas.

Witgat, False Shepards Tree (*Boscia oleoides)*

Indicator in:

Arid Thicket, Valley Thicket and occasionally in Gwarrieveld.

How to identify:

A single-stemmed tree with characteristic white bark.

Management implications:

It is heavily browsed, with even the young stems often browsed. An abundance of these plants that are not heavily browsed thus indicates well managed veld. These long-lived, slow-growing trees often have exposed roots indicating the degree of soil loss in an area.

Kaapse kweek; Couch Grass (*Cynodon dactylon)*

Indicator in:

It is abundant in disturbed areas in all the Vegetation Types.

How to identify:

A sprawling perennial grass that is rarely more than 15 cm tall.

Management implications:

It has good grazing value when green, dries down rapidly when it is dry, but recovers rapidly after rain.

It is an important pioneer grass to curb soil erosion and to re-establish disturbed areas.

Syselbos, Plumbago (*Plumbago auriculate)*

Indicator in:

It is most abundant and a useful secondary pioneer plant in Mesic Thicket. An abundance of these plants often indicates disturbed Mesic Thicket.

How to identify:

A multi-stemmed shrub that is rarely more than 3 m tall.

Flowering time:

In summer the bush is covered with pretty trusses of pale sky blue flowers, although there are often flowers at other times of the year. The main flowering period is between November and May.

Management implications:

It is rarely browsed and if browsed usually indicates overutilized veld. It is most abundant and a useful secondary pioneer plant in Mesic Thicket. An abundance of these plants often indicates disturbed Mesic Thicket.

Katdoring (Asparagus burchellii)

Indicator in:

Arid Thicket, Valley Thicket, Karroid Thicket

These plants are prominent and abundant in disturbed Thicket

How to identify:

Shrubby plant with many stems arising from an underground stem, mostly about 60 cm tall, but can be to 1.5 m tall. The thorns on the stem are strait or slightly curved. The seed of the berries are dispersed by birds.

Flowering time:

The creamy-white flowers appear in autumn.

Management implications:

These plants can be problematic as they are unpalatable and the hair of Angora goats sometimes become so tangled in the plants that the goats die of thirst. This is also true for several of the other *Asparagus* species that occur in the Thicket.

Bitter Aalwyn, Bitter Aloe (*Aloe ferox)*

Indicator in:

Arid Thicket, Valley Thicket, Karroid Thicket It is often common in Arid Thicket,

How to identify:

Succulent with stems up to 5 m tall. The leaves are thorny and succulent.

Flowering time:

The orange flowers are produced in winter or early spring.

Management implications:

Leaves are often harvested to extract the sap that has medicinal properties. The young leaves in the centre of the leaf rosette are often browsed by kudu and eland. Dead plants contribute much to the mu**LC**h of disturbed areas. This is also true for the much smaller and thornless Coral Aloe (Aloe striata). An abundance of these plants indicates severely disturbed Thicket.

Donkie-oor Aalwyn; Spaansaalwyn (*Aloe speciose)*

Indicator in:

It can be locally common and is typical of Valley Thicket

How to identify:

Succulent with stems up to 5 m tall. The blue-grey leaves have a few weak thorns on the margin of the leaves and are usually tilted to the one side.

Flowering time:

The orange buds to mature green flowers are produced in winter or early spring.

Management implications:

It is one of the few Aloes that only establishes in the shade of other plants. This Aloe hence cannot be re-established in disturbed areas before adequate shelter has been created for the successful establishment of seedlings. A stand of these plants on the open hence usually indicates disturbed Thicket.

Steekgras; Annual three-awn grass (*Aristida adscensionis*))

Indicator in:

Arid Thicket, Valley Thicket and Gwarrieveld.

How to identify:

A short-lived (annual) grass that is up to 30 cm tall. It appears after rain in summer and dries down in autumn. The leaves are narrow and relatively hard. The three-awned seed often gets stuck in your socks and the wool of sheep.

Management implications:

It has low grazing value. An abundance of these plants indicates severely disturbed areas in Arid Thicket, Valley Thicket and Gwarrieveld. Albeit a rather useless grass regarding grazing purposes, it is a very useful grass to start the restoration of highly disturbed areas. The dry material of this grass helps to much disturbed areas.

Steekgras; Tasseled three-awn grass (*Aristida congesta*)

Indicator in:

An abundance of these plants indicates severely disturbed areas in Arid Thicket, Valley Thicket and Gwarrieveld.

How to identify:

A short-lived (sometimes annual) grass that is up to 30 cm tall. It appears after rain in summer and dry down in autumn. The leaves are narrow and relatively hard. It is very similar to Aristida adscensionis (Annual three-awn grass) , but the flower spokes are more congest.

Management implications:

It has almost no grazing value. The tree-awned seed also often gets stuck in the wool of sheep.

Albeit a rather useless grass regarding grazing purposes, it is also a very useful grass to start the restoration of highly disturbed areas.

Geel Vygie, Spingbokvygie (*Malephora uitenhagensis)*

Indicator in:

it is most abundant in Arid and Valley Thicket in deep loamy soils in rivers and floodplains.

How to identify:

A sprawling, perennial leaf-succulent that forms large mats of green leaves.

Flowering time:

Spring to Autumn

Management implications:

It is naturally common in deep alluvial soils, but can become abundant in other disturbed areas. An abundance of these plants indicates severely disturbed areas.

Doringvygie (Ruchia cradockensis)

Indicator in:

It is most abundant in Arid and Valley Thicket.

How to identify:

A leaf succulent that is usually about 30 cm tall. It is easily identified by the inflorescence that forms a white, thorny cover over the plant, making the plants unmistakable.

Flowering time:

The mauve-purple flowers appear in Winter and early Spring.

Management implications:

An abundance of these plants indicates severely disturbed areas.

Bitter karoo (Chrysocoma ciliata)

Indicator in:

It is most abundant in Arid Thicket, Valley Thicket and Gwarrieveld

How to identify:

A rounded shrub with fine leaves that is usually about 20 cm tall.

Flowering time:

The button-like flowers appear in spring and summer.

Management implications:

It is rarely browsed, but when stock browse the plants, they lose their hair or wool, which causes sunburn.

An abundance of these plants indicate overgrazed veld.

Doringtaaibos (Searsia longispina)

Indicator in:

It is most abundant in Arid Thicket, Valley Thicket and Gwarrieveld.

How to identify:

A rounded tree to 5 m tall with a dense cover of branches. The branches end in a spine and the leaf stalk has three leaflets.

Management implications:

It is usually not much browsed, so when browsed it indicates veld that is overutilized.

Ankerkaroo (Pentzia incana)

Indicator in:

It is most abundant in Arid Thicket and Gwarrieveld, but can be present in openings in Valley Thicket.

How to identify:

A small shrub with small greyish leaves that is rarely more than 30 cm tall. The outer branches often bend down to the ground and root. Plants hence often form large mats.

Flowering time:

The button-like yellow flowers appear in spring, but plants also flower after rain in summer.

Management implications:

It is usually not much browsed, so heavily browsed plants indicate overutilized veld. An abundance of these plants indicates veld that is in a recovering phase.

Granaatbos, Karoo Gold (*Rhigozum obovatum)*

Indicator in:

It is most abundant in Arid Thicket and Gwarrieveld, but can be present in openings in Valley Thicket.

How to identify:

A shrub that is rarely more than 2 m tall. The leaves are often dropped in winter and during a drought.

Flowering time:

Masses of yellow flowers can appear in spring and summer after good rain, especially after a prolonged drought.

Management implications:

It is usually not much browsed, so heavily browsed plants indicate overutilized veld. An abundance of this species can indicate areas where Spekboom was removed through overgrazing.

Special plants

The initial aim of the entire booklet was to showcase the very rare, highly endemic and threatened[1] species, and also limit these to those species found in thicket. We later expanded the scope to include special plants that occur in non-thicket vegetations (savanna, karoo, fynbos etc), but we also wanted to include other species as well. The species presented below definitely include all the rare, threatened and highly endemic (localised) species we could find. These species are included largely due to the risk of species extinction as a result of the wide-spread pattern of population declines and local extinctions. However, this initiative is aimed to also showcase some of the non-threatened species, but which are either nationally or provincially protected or are endemics (narrow and local). In addition to the species we identified in the field on the 85 farms we surveyed, we also included species we identified during an EIA process we conducted and a Biodiversity Assessment for HIVE Ecosystems and the Department of Forestry Fisheries and Environment or DFFE. We relied on Tony Dold to compile a most likely list of key species (10-20) that we should have located as well.

Globally and Nationally there are systematic assessments made of all the plant and animal species according to the guidelines from the International Union for the Conservation of Nature (IUCN). Each country has a department or institute that is responsible for the national assessments and classification, and these are used by the national, provincial and local government departments mandated to conserve biodiversity. The section below is an extract from the SANBI Red Data List (RDL).

"South Africa uses the internationally endorsed IUCN Red List Categories and Criteria in the Red List of South African plants. This scientific system is designed to measure species' risk of extinction. The purpose of this system is to highlight those species that are most urgently in need of conservation action.

Due to its strong focus on determining risk of extinction, the IUCN system does not highlight species that are at low risk of extinction, but may nonetheless be of high conservation importance. Because the Red List of South African plants is used widely in South African conservation practices such as systematic conservation planning or protected area expansion, we use an amended system of categories designed to highlight those species that are at low risk of extinction but of conservation concern".

Global and national (regional) assessments

The IUCN Red List categories and criteria are designed to be applied to the entire, or global, range of a species. Such assessments, which take into account the world-wide distribution range of a species, are known as global assessments and are included in the IUCN's international Red List of Threatened Species.

However, the system also allows for assessments of geographical subsections of a species' global range. Such subsections are typically marked by a human-defined boundary, such as a country of provincial border. The assessments of such subsections are known as regional assessments, and use the same set of criteria as global assessments. However, if a species is not endemic to the region, the regional assessment procedures contain an additional step to adjust the regional status to allow for the impact of individuals moving between populations within and outside the region on the extinction risk of the species within the region.

The assessments contained in the Red List of South African plants are regional assessments, also called national assessments. This means that if a plant species is not endemic to South Africa, only that part of the species' distribution range falling within South Africa was evaluated in the assessment. Therefore a species' status on the national Red List may differ from its global status on the IUCN Red List. Where category adjustments were made according to regional assessment procedures, the adjusted status is indicated by the category abbreviation followed by an asterisk (*).

[1] Threatened status is determined by botanical experts through the South African National Biodiversity Institute (SANBI) and there are specific internationally recognized classes http://redlist.sanbi.org/glossary.php and http://redlist.sanbi.org/redcat.php

Definitions of the national Red List categories

Extinct: A species is Extinct when there is no reasonable doubt that the last individual has died. Species should be classified as Extinct only once exhaustive surveys throughout the species' known range have failed to record an individual.

Extinct in the Wild: A species is Extinct in the Wild when it is known to survive only in cultivation or as a naturalized population (or populations) well outside the past range.

Regionally Extinct: A species is Regionally Extinct when it is extinct within the region assessed (in this case South Africa), but wild populations can still be found in areas outside the region.

Critically Endangered, Possibly Extinct: Possibly Extinct is a special tag associated with the category Critically Endangered, indicating species that are highly likely to be extinct, but the exhaustive surveys required for classifying the species as Extinct has not yet been completed. A small chance remains that such species may still be rediscovered.

Critically Endangered: A species is Critically Endangered when the best available evidence indicates that it meets at least one of the five IUCN criteria for Critically Endangered, indicating that the species is facing an extremely high risk of extinction.

Endangered: A species is Endangered when the best available evidence indicates that it meets at least one of the five IUCN criteria for Endangered, indicating that the species is facing a very high risk of extinction.

Vulnerable: A species is Vulnerable when the best available evidence indicates that it meets at least one of the five IUCN criteria for Vulnerable, indicating that the species is facing a high risk of extinction.

Near Threatened: A species is Near Threatened when available evidence indicates that it nearly meets any of the IUCN criteria for Vulnerable, and is therefore likely to become at risk of extinction in the near future.

Critically Rare: A species is Critically Rare when it is known to occur at a single site, but is not exposed to any direct or plausible potential threat and does not otherwise qualify for a category of threat according to one of the five IUCN criteria.

Rare: A species is Rare when it meets at least one of four South African criteria for rarity, but is not exposed to any direct or plausible potential threat and does not qualify for a category of threat according to one of the five IUCN criteria. The four criteria are as follows:

Restricted range: Extent of Occurrence (EOO) <500 km^2, OR

Habitat specialist: Species is restricted to a specialized microhabitat so that it has a very small Area of Occupancy (AOO), typically smaller than 20 km^2, OR

Low densities of individuals: Species always occurs as single individuals or very small subpopulations (typically fewer than 50 mature individuals) scattered over a wide area, OR

Small global population: Less than 10 000 mature individuals.

Least Concern: A species is Least Concern when it has been evaluated against the IUCN criteria and does not qualify for any of the above categories. Species classified as LC are considered at low risk of extinction. Widespread and abundant species are typically classified in this category.

Data Deficient- Insufficient Information: A species is DDD when there is inadequate information to make an assessment of its risk of extinction, but the species is well defined. Listing of species in this category indicates that more information is required and that future research could show that a threatened classification is appropriate.

Data Deficient- Taxonomically Problematic: A species is DDT when taxonomic problems hinder the distribution range and habitat from being well defined, so that an assessment of risk of extinction is not possible.

Not Evaluated: A species is Not Evaluated when it has not been evaluated against the criteria. The national Red List of South African plants is a comprehensive assessment of all South African indigenous plants, and therefore all species are assessed and given a national Red List status. However, some species included in Plants of southern Africa: an online checklist are species that do not qualify for national listing because they are naturalized exotics, hybrids (natural or cultivated), or synonyms. These species are given the status Not Evaluated and the reasons why they have not been assessed are included in the assessment justification.

Table 1. The current threatened RDL classes for South Africa

RDL CLASS	ABBREVIATION
EXTINCT	EX
EXTINCT in the WILD	EW
REGIONALLY EXTINCT	RE
CRITICALLY ENDANGERED, possibly EXTINCT	CR PE
CRITICALLY ENDANGERED	CR PE
ENDANGERED	EN
VULNERABLE	VU
NEAR THREATENED	NT
CRITICALLY RARE	CR
RARE	R
DECLINING	D
DATA DEFICIENT - insufficient information	DDD
DATA DEFICIENT - TAXONOMICALLY PROBLEMATIC	DDT
LC	**LC**
NOT EVALUATED	NE

Threatened Species

Species of Conservation Concern

Aloinopsis rubrolineata (Steenvygie, Stoneplant)

Status:

The SANBI RDL classification is **LC** **[RDL]**. Eastern Cape endemic with a narrow range, and protected by the Eastern Cape Provincial Ordinance of 1974.

Distribution:

The species is limited to a much narrow range around Graaff Reinet, Cradock and Jansenville **[RDL]**.

Vegetation Type:

Nama Karoo

Habitat:

Karroid shrubland on low dolerite hills and slopes.

Description:

A small, compact, dwarf, leaf succulent with extremely well camoflauged triangular leaves that lie flat on the ground.. The leaves have rough textures and the flowers are pale yellow.

Aloe claviflora (Kraal aloe, Kanonaalwyn, Kraalaalwyn, Aanteelaalwyn, Laeraalwyn)

Status:

The SANBI RDL classification is **LC** and it is not a SA endemic. The species is protected under the Eastern Cape provincial ordinance of 1974.

Distribution:

Widespread across the arid interior of the Northern, Western and Eastern Cape provinces, as well as the Free State.

Vegetation Type:

Nama Karoo and Savanna

Habitat:

The plants love well drained areas on rocky slopes or flat stony areas, usually. A strong association has been recorded on calcrete susbtrates.

Description:

The plants are distinctive in that they grow in a compact circle, often with the center dying out to give the name Kraal Aloe). These succulent shrubs have short stout spinescent leaves (often reddish-pink). The striking flower stalks resemble canons pointing up (hence the other common name Kanonaalwyn).

Aloe longistyla (Karoo aloe, Karoo-aalwyn, Ramenas)

Status

The SANBI RDL classification is **LC**, but the population is declinging. due to illegal succulent collecting, as well as habitat degradation due to overgrazing. Protected under the NEMBA Regulations as well as the Eastern Cape Provincial Ordinance of 1974.

Distribution:

This species is widespread across the Little Karoo and southern Great Karoo, from Laignsburg to Cradock (Eastern and Western Cape).

Vegetation Type:

Oudshoorn Karroid Thicket, Eastern Little Karoo, North Swartberg Sandstone Fynbos, Gamka Karoo, Prince Albert Succulent Karoo, Eastern Lower Karoo, Karoo Escarpment Grassland, Eastern Upper Karoo, Kouga Grassy Sandstone Fynbos, Fish Valley Thicket.

Habitat:

The plants can be found on gentle slopes, flat or stony ground in karroid shrubland and arid thickets. The species enjoys the protection of nurse plants and can often be located under the canopy of Pteronia and Pentzia species.

Description:

This is a distinctive dwarf aloe, with short leaves covered in white spikes. Flowers (1-2) are produced in July-August on a thick flower stalk. The flowers are reddish in colour and appear too large for the plant.

Aloiampelos striatula (Hardy aloe)

Status:

The species is protected under the Eastern Cape Provincial ordinance of 1974 and listed as **LC**. The plants are not endemic to SA.

Distribution:

Although the species only occurs in the grasslands of the Eastern Cape, it extends into Lesotho.

Vegetation Type:

Grasslands

Habitat:

It occurs in rocky outcrops, and cliff edges in high altitude montane grassland.

Description:

A robust, multi-stemmed aloe that can reach a height of 2m. It is recognizable from the stripes on the leaf base (hence striatula). The plants flower from November to December, with red buds that later become bright yellow flowers.

Anacampseros albidiflora (Haasballetjies, Boesmansuring)

Status:

The SANBI RDL classification is **LC**, South African endemic. The species is protected by the Eastern Cape Provincial Ordinance of 1974.

Distribution:

Widespread across the Little Karoo and southern Great Karoo, Worchester to Steytlerville (Eastern Cape, Western Cape and Northern Cape).

Vegetation Type:

Nama Karoo, Albany Thicket and Succulent Karoo

Habitat:

Stony slopes.

Description:

The plant is a dwarf succulent (less than 80mm), with reddish-green leaves compacted on the stems and surrounded by cobbwebby hairs. The flowers are white.

Anacampseros arachnoides (Haasballetjies)

Status:

The SANBI RDL classification is **LC**, South African endemic. Protected by the Provincial Conservation Ordinance of 1974.

Distribution:

Little and Great Karoo, from Worchester to King Williams Town.

Vegetation Type:

Arid Thicket, Nama Karoo, Succulent Karoo

Habitat:

Stony flats and slopes, sheltered under shrubs or on rock ledges

Description:

The plants are mostly to be found in open sun, tucked away between cracks in the rocks. The plants appear as a cluster of succulent leaves and shoots, with leaves being brown-purple. Young plants are typically covered with a web of fine hairs. White to pink flowers are produced in mid-summer.

Anacampseros telephiastrum (Gemsboksuring, Goothaaskos, Haassuring, Groothasiekos)

Status:

The SANBI RDL classification is **LC**, South African endemic. Protected by the Provincial Conservation Ordinance of 1974.

Distribution:

Eastern Cape, Free State, Northern Cape, Western Cape, from Worchester to the Eastern Cape.

Vegetation Type:

Gwarrieveld, Apronveld, Ranteveld and Spekboomveld.

Habitat:

Sporadically distributed in loamy and clay soils.

Description:

A dwarf succulent, up to 15cm in height, with leaves that are often reddish-brown. The flowers appear in summer and are bright pink.

Apodolirion bolusii (Kukumakranka)

Status:

The SANBI RDL classification is DDT. The literature and records suggest that this is an Eastern Cape endemic (see below). Protected by the Provincial Conservation Ordinance of 1974.

Distribution:

The SANBI RDL indicates that this plant until recently, was only collected once in 1868, when it was described and never seen again. It has only ever been collected from the Valley of Desolation in the Camdeboo National Park (very range-restricted). But the authors have found flowering plants recently near Waterford and Pearston and on the farm Cranmere near Pearston.

Vegetation Type:

The SANBI RDL records the only vegetation type as Upper Karoo Hardeveld, but recent sightings have been ion Double Drift Karroid Thicket and Eastern Lower Karoo.

Habitat:

The species is said to favour karroid shrubland and Albany Thicket on shale soils.

Description:

A bulb (<10cm in height), usually with three green, twisted leaves and a funnel-shaped white flower (December).

Austronea oblongifolia (No common name)

Status:

This species was discovered by the authors in 2022, and only described as a new species in 2023. The SANBI RDL does not include the species or the genus. Current knowledge makes this a narrow-range endemic to the Eastern Cape.

Distribution:

The distribution may be much wider but currently it is only known from a few locations south of the town of Bedford and near Fort Beaufort.

Vegetation Type:

The authors located the species at the ecotone between Bedford Dry Grasslands and Double Drift Karroid Thicket.

Habitat:

Open bare areas with shallow soils.

Description:

This very small bulb is difficult to locate as it has only one small, thin strap-shaped leaf (leatherly) that lies flat on the ground. Flowering and fruiting in October, with flowers opening in the morning and withering by late afternoon.

Astroloba foliolosa (No common name)

Status:

The SANBI RDL classification is **LC**, South African endemic. Protected by the Provincial Conservation Ordinance of 1974.

Distribution:

Eastern Cape, Northern Cape, Western Cape: from Lainsburg, Beauford West through the Eastern Cape to Cradock and Graaff Reinet.

Vegetation Type:

Mostly short karroid shrubland and arid forms of Albany Thicket.

Habitat:

Various.

Description:

The plant has slender stems (up to 30cm) but covered with stout triangular leaves with a terminal spine. Flowers are pale-white and borne on the end of a long slender flower-stalk. Plants often grow in compact "colonies".

Bergeranthus scapiger (No common name)

Status:

Protected by the Provincial Conservation Ordinance of 1974. It is a range-restricted endemic to the Eastern Cape.

Distribution:

The plants can be found from Gqeberha to the Kap River and inland to Alice.

Vegetation Type:

Motherwell Karroid Thicket, Koedoesberge-Moordenaars Karoo, Grass Ridge Bontveld, Albany Bontveld, Albany Arid Thicket, Crossroads Grassland Thicket, Fish Valley Thicket, Algoa Sandstone Fynbos, Sundays Valley Thicket, Nanaga Savanna Thicket, Grahamstown Grassland Thicket, Fish Arid Thicket

Habitat:

Most common in the valley and arid thickets, as well as savannas.

Description:

The plants are dwarf succulents, with typically three sided leaves that are pointed at the end. Flowers are bright yellow and produce a large capsule.

Bergeranthus katbergensis (No common name)

Status:

The SANBI RDL classification is **LC** and not range-restricted, but an endemic to the Eastern Cape Province that is locally common. Protected by the Provincial Conservation Ordinance of 1974.

Distribution:

Widely distributed in the interior mountains of the Eastern Cape from Burgersdorrp to Adelaide.

Vegetation Type:

Montane grasslands on sandstone geology (1100 – 17690 masl)

Habitat:

Grasslands.

Description:

The plants are dwarf succulents and form clumps, with typically three sided leaves that are pointed at the end. Flowers are bright yellow and produce a large capsule.

Bergeranthus vespertinus (No common name)

Status:

Due to urban expansion and trampling from livestock, this range-restricted species (AOO < 200km2) is listed as **NT**. it is a narrow Eastern Cape endemic and protected by the Provincial Conservation Ordinance of 1974.

Distribution:

The historical distribution was from Klienpoort, Fort Brown to Cradock and down to Qeberha, but it is now known from ~20 scattered populations.

Vegetation Type:

Albany Thickets and Grassland (xeric succulent thicket, southern mountain grassland, sub-arid and eastern thorn bushveld.)

Habitat:

It is associated with karroid elements with little or no grass cover

Description:

The plants are dwarf succulents, with typically three sided leaves that are pointed at the end. Flowers are bright yellow and produce a large.

Chasmatophyllum musculinum (Geel-bergvygie, geelswaelstertvygie)

Status:

The SANBI REDL status is **LC**. The species is not endemic to South Africa but Protected by the Provincial Conservation Ordinance of 1974.

Distribution:

Found in all provinces, (bar KwaZulu Natal and Limpopo), as well as Namibia.

Vegetation Type:

Various.

Habitat:

It occurs in stony grasslands with shallow soils, karroid and dry thicket vegetation.

Description:

Short, prostrate, dwarf succulent with slightly woody stems that form dense mats. The bright yellow flowers appear on raised flower stalks (up to 5cm tall).

Crassula decidua (No common name)

Status:

The species is known from only four populations and hence listed **NT**. It is an Eastern Cape endemic with a restricted range and protected by the Eastern Cape Provincial Conservation Ordinance of 1974.

Distribution:

The records indicate the species to occur from Somerset East, Cookhouse and Cradock, but the authors found several individuals near Waterford (40km west of the known distribution).

Vegetation Type:

Fish Valley Thicket, Karroid vegetation types and Double Drift Karroid Thicket.

Habitat:

It is associated with karroid elements and succulent Euphorbias.

Description:

Dwarf succulent with short branches and flattened grey-blue leaves. Under severe drought stress the plants drop their leaves (hence the species name to indicate deciduous leaf habits).

Cylindrophyllum calamiforme (No common name)

Status:

The SANBI REDL status is LC, but is a range-restricted species endemic to the Eastern Cape and is protected by the Provincial Conservation Ordinance of 1974.

Distribution:

The distribution is not well understood, but estimated to occur from Graaff Reinet through Somerset East to Willowmore and Jansenville.

Vegetation Type:

Escarpment Arid Thicket, Eastern Lower Karoo and Eastern Gwarrieveld.

Habitat:

It occurs on stony slopes and flats, especially on Karoo sediments and arid thicket.

Description:

This is a short succulent shrub that grows in small clumps. The long round succulent leaves are characteristic and the flowers are bright yellow and open at midday.

Cyrtanthus mackenii cooperi (No common name)

Status:

Although the species is very common in some locations it is listed as **NT** and protected by the Provincial Conservation Ordinance of 1974. It is an Eastern Cape endemic.

Distribution:

Below the Amathole Mountains around King William's Town and Stutterheim and near East London. The authors found populations north of Adelaide.

Vegetation Type:

Grassland, Indian Ocean Coastal Belt, Savanna

Habitat:

Seasonally damp places in open grasslands, forest margins and stony slopes..

Description:

A bulb, usually in clumps and when flowering can be 20cm in height. Flowering is from June to November, with very attractive tubular flowers (whitish, yellow, to creamy pinkish).

Cyrtanthus contractus (No common name)

Status:

The species is not endemic to South Africa and enjoys a wide distribution range. It is protected by the Provincial Conservation Ordinance of 1974, but listed as **LC**.

Distribution:

Eastern Cape, Free State, Gauteng, KwaZulu-Natal, Mpumalanga – From East London to Mpumalanga.

Vegetation Type:

Grassland

Habitat:

Grassy slopes and flats.

Description:

A tall bulb (25cm) with thin strap shaped leaves – which appear only after the flowers. The striking tubular, crimson-red flowers appear September to November.

Delosperma adelaidensis (No common name, Sheepfigs = Genus)

o **Status:**

The SANBI REDL status is **LC**. The species is endemic to the Eastern Cape and Protected by the Provincial Conservation Ordinance of 1974.

Distribution:

Limited to a small area in the centre of the Eastern Fort Beaufort to Komgha.

Vegetation Type:

Albany Thicket and Sub-Escarpment Grassland.

Habitat:

Favours the flats and hills on Karoo geological sediments.

Description:

A dense dwarf succulent shrub, with a height of 30cm. The leaves are succulent and the flowers are a deep pink. Flowering in spring and summer.

Delosperma incomptum (No common name, Sheepfigs = Genus)

Status:

The SANBI RDL classification is **LC**, and a Northern Cape endemic. It is protected by the Provincial Conservation Ordinance of 1974.

Distribution:

The SANBI RDL records the species as being limited to the Northern Cape, but the authors found speciments outside Pearston, which is a considerable range expansion.

Vegetation Type:

Karroid and thicket vegetation, Nama Karoo.

Habitat:

Open stony ground and flat karroid plains.

Description:

Succulent shrub with a creeping habit, forming mats Leaves are typically bluish-purple and resemble fingers. The flowers are pale yellow.

Dioscorea elephantipes (Elephants foot, Turtleback, Olifantspoot, Hotnotsbrood, Skilpaddop)

Status:

The SANBI RDL classification is **LC**, It is still fairly common, but numbers are decreasing. It is threatened by grazing and trampling by Angora goats and the illegal collection. It is Protected by the Provincial Conservation Ordinance of 1974 as well as the NEMBA regulations.

Distribution:

Endemic to the Easterm Cape, Northern Cape and Western Cape. The species occurs from the Richtersveld to Uniondale and Graaff Reinet.

Vegetation Type:

Albany Thicket, Desert, Fynbos, Grassland, Succulent Karoo

Habitat:

It grows in rocky (quartzite and shale), east-facing hillsides.

Description:

The are 400 species of Dioscorea globally, but only 15 spp. in South Africa. The plant is essentially a creeper with a large succulent base that is covered with corky scales (bark) that resemble the pattern on a tortoise and the skin of an elephant. The leaves are recognizable from the heart shape, but the base or stem is often difficult to locate. The plant prefers dry rocky areas and will perish if the soil is saturated for too long. It is a highly prized medicinal plant.

Dierama robustum (Hairbell)

Status:

Protected by the Provincial Conservation Ordinance of 1974. The SANBI RDL classification is **LC**, and the species is not endemic to SA.

Distribution:

A wide distribution: Eastern Cape, Free State, KwaZulu-Natal and Lesotho at altitudes from 1 600 to 2 900 masl.

Vegetation Type:

Grasslands

Habitat:

High altitude grassland.

Description:

A single-stemmed tall bulb (2m) that grows in clumps. The leaves are fibrous, thin and strap-like. The flowers typically are hanging and creamy white to pale pink in colour. Plants can flower from October to March.

Drosanthemum floribundum (No common name)

Status:

The SANBI RDL classification is **LC**, The species is declining across most of its range, but is not yet in danger of extinction. A South African endemic and protected by the Provincial Conservation Ordinance of 1974.

Distribution:

Eastern Cape, Western Cape

Vegetation Type:

Cape Flats Dune Strandveld, Langebaan Dune Strandveld, Namaqualand Strandveld, Saldanha Flats Strandveld, Saldanha Granite Strandveld, Lambert's Bay Strandveld, Cape Seashore Vegetation, Hartenbos Dune Thicket, Saldanha Limestone Strandveld, Cape Winelands Shale Fynbos, Albany Alluvial Vegetation, Sundays Valley Thicket, Motherwell Karroid Thicket

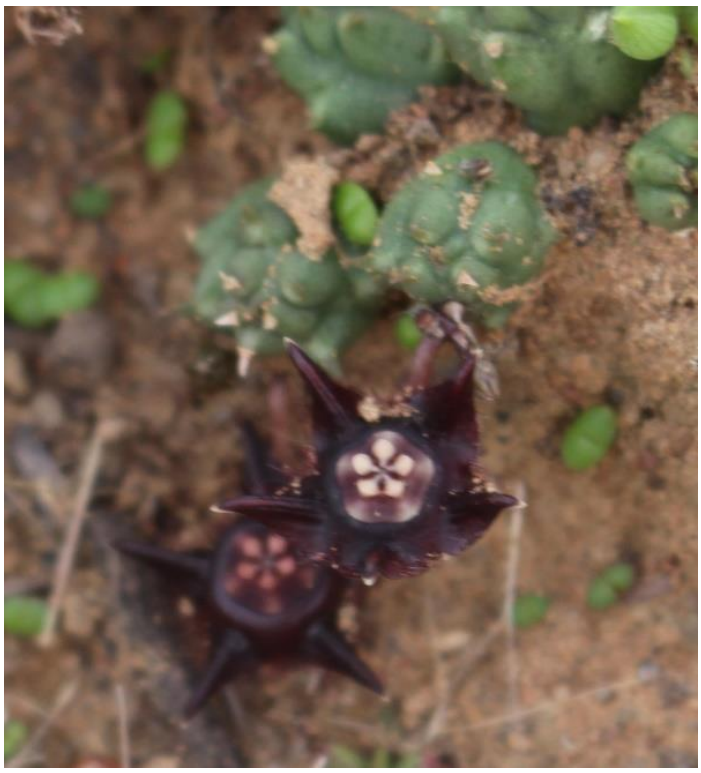
Habitat:

It occurs on coastal flats close to the sea, from Elands Bay on the West Coast of the Western Cape to Port Elizabeth in the Eastern Cape. The authors found this specimen close to Jansenville.

Description:

A short succulent shrub with a creeping habit. The leaves are succulent “fingers” that glisten in the sub. The species produces copious flower heads, which are a pale pink.

Duvalia modesta (No common name)Status:



The SANBI RDL classification is **LC**. An Eastern Cape endemic, with a wider distribution than was previously recorded.. It is protected by the Provincial Conservation Ordinance of 1974.

Distribution:

Limited to the Eastern Cape: Widespread in the central Great Karoo, eastern parts of the Little Karoo and dry coastal areas near Port Elizabeth.

Vegetation Type:

Albany Thicket, Fynbos, Nama Karoo and Succulent Karoo

Habitat:

Associated with karroid shrublands and gravel areas.

Description:

Short, dwarf succulent with symmetrical star-shaped flowers which are a dark chocolate colour.

Duvalia caespitosa (Hotnotstoontjie)

Status:

The SANBI RDL classification is **LC**, and a South African Endemic. It is protected by the Provincial Conservation Ordinance of 1974.

Distribution:

Eastern Cape, Western Cape, Northern Cape and Namibia

Vegetation Type:

Albany Thicket and Succulent Karoo

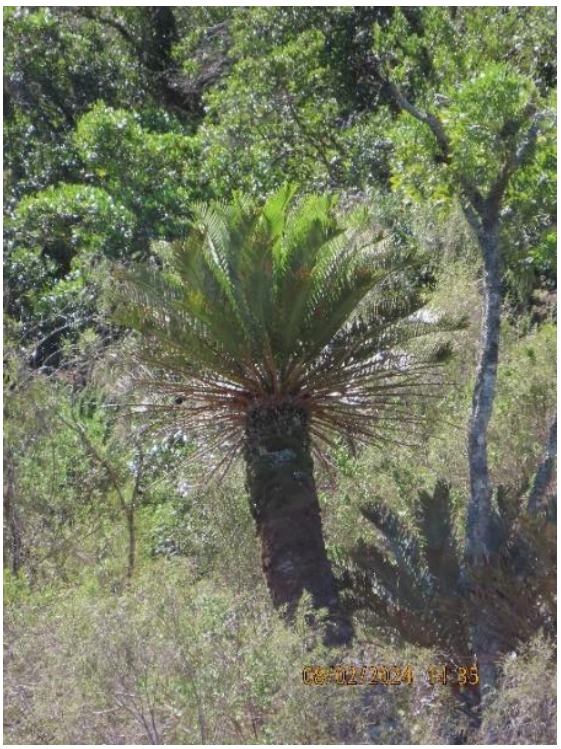
Habitat:

Under small bushes (shady), stony flats and slopes.

Description:

This is a dwarf succulent that forms mats that can be 300 mm in diameter. The plant is leafless. Flower is from March to October with star-shaped dark brown-purple flowers.

Encephalartos longifolius (Thunbergs Cycad or Suurberg Cycad)



Status:

The species is protected both provincially and nationally under the Eastern Cape Provincial Ordinance of 1974 and the NEMBA Regulations. The SANBI RDL status is Near Threatened, as a result of declining populations from poaching. It is an Eastern Cape range-restricted endemic.

Distribution:

This majestic cycad has known distribution from west of Joubertina, through the Kouga Mountains, the Baviaanskloof Mountains and the Suurberg Mountains to Grahamstown/Makanda.

Vegetation Type:

Suurberg Shale Fynbos, Sundays Mesic Thicket, Algoa Sandstone Fynbos, Vanstadens Forest Thicket, Kouga Grassy Sandstone Fynbos

Habitat:

The species is able to survive in a wide range of habitat types, geologies and vegetation types. It exists in thicket, fynbos and grasslands, and is adapted to fire. The plants tolerate acidic soils as well as those from shale and mudstones.

Description:

This species has a very distinct shape (umbrella due to the crown of leaves), but can reach a height of 3m, with leaves (dark green) reaching 2m in length. The species also makes cones in autumn. It is an Eastern Cape endemic that can be found from Joubertina to Somerset East.

Encephalartos lehmannii (Karoo Cycad, Karoo-broodboom, Bread palm)

Status:

The endemic Eastern Cape population has declined by 50% over the last 20 years, and is now listed as **VU**. The species is protected both provincially and nationally under the Provincial Ordinance of 1974 and the NEMBA Regulations. The plants are sensitive to sustained browsing by goats, and adult mortality is common. Medicinal plant harvesting, drought, porcupines and poaching have also taken their tolls.

Distribution:

This species is an Eastern Cape endemic and occurs between Steyterville and Cookhouse

Vegetation Type:

Suurberg Quartzite Fynbos, Sundays Arid Thicket

Habitat:

This species usually grows on sandstone hills and mountainsides amongst arid Karoo scrub and amongst thicket vegetation.

Description:

E. lehmannii can reach a height of 2m, but is typically a multi-stemmed short tree, with long robust, palm-like leaves (blue-grey).

Euphorbia tridentata (No common name)

Status:

The species is not listed on the SANBI RDL. South African endemic. It is potentially threatened by illegal collection of wild plants for the succulent trade.

Distribution:

From Riversdale to Grahamstown

Vegetation Type:

Arid Thicket, Beford Dry Grasslands, Double Drift Karroid Thicket.

Habitat:

It typically occurs in open karroid shrubland, stony slopes and flats, in loose sandy soils under small shrubs, or wedged among stones.

Description

The species is a dwarf succulent with a large underground succulent stem, with only the little “fingers” appearing above the soil.

Euphorbia meloformis (Skilpadkos, Eselpol, Bobbejaankos, Eselkos)

Status:

This is a **NT** species according to the updated SANBI assessment on 2022. E. meloformis is endemic to the Eastern Cape, with a declining population and a small range. It is potentially threatened by illegal collection of wild plants for the succulent trade.

Distribution:

Makhanda (Grahamstown) to Peddie and Alice.

Vegetation Type:

Albany Bontveld, Grahamstown Grassland Thicket, Grass Ridge Bontveld, Sundays Valley Thicket, Bhisho Thornveld, Motherwell Karroid Thicket. We found the species on the ecotone between Double Drift Karooid Thicket and Bedford Dry Grasslands.

Habitat:

It occurs in open karroid shrubland, stony slopes and flats, in loose sandy soils under small shrubs, or wedged among stones

Description:

The very attractive succulent is dome shaped with a radial geometric pattern (formed by reddish bands between the stem ribs). The plant is completely leafless. The species has male and female plants and flowers (yellow-green) in summer and early autumn.

Euphorbia stellata subsp. *micracantha* (Melkdoring)

Status:

The SANBI RDL status is LC (although only at the species level). It is potentially threatened by illegal collection of wild plants for the succulent trade. It is an Eastern Cape endemic.

Distribution:

This species occurs further inland that the subspecies E. stellata stellata and especially in the Fish River Valley, stretching slightly north of Cradock. Populations have also been recorded from Jansenville.

Vegetation Type:

Various.

Habitat:

Found in flat areas or gentle slopes on shale substrate. Being palatable, the plants are often restricted to the under-canopy of short shrubs and the cracks between rocks. **Description:**

This is a spiny, dwarf succulent which has the stem completely underground. The spiny branches occur in a whorl from the base of the stem. The branches are more erect than E. stellata stellate and the spines are longer.

Euphorbia stellata subsp. *stellata* (Melkdoring)

Status:

The SANBI RDL status is LC. It is potentially threatened by illegal collection of wild plants for the succulent trade. It is another Eastern Cape endemic.

Distribution:

This species occurs from Qeberga to East London and inland as far as Cradock and Jansenville.

Vegetation Type:

Various

Habitat:

It occurs in open sunny areas, stony slopes and flats. It is often found in the cracks between rocks.

Description:

This is a spiny, dwarf succulent which has the stem completely underground. The spiny branches occur in a whorl from the base of the stem.

Euphorbia procumbems (Melkbol, Slanggif, Fingerpol).

Status:

The SANBI RDL lists the species as LC, and it is and Eastern Cape-Western Cape endemic. It is potentially threatened by illegal collection of wild plants for the succulent trade.

Distribution:

From Mosselbay to along the coast to Port Alfred and inland to Peddie.

Vegetation Type:

Various.

Habitat:

Among pebbles and short grass in flat and hilly terrain

.**Description:**

This circular, spineless succulent has a large buried main stem (15cm diameter), with a series of above ground branches.

Euphorbia huttoniae (No common name)

Status:

This species is locally common but a narrow-range Eastern Cape endemic, but listed as LC.

Distribution:

Eastern Cape, from the Fish River valley to Kariega (Uitenhage).

Vegetation Type:

Nama Karoo, low scrub vegetation.

Habitat:

Sandy loam soils from Shales and tillites on gentle slopes.

Description:

The plant consist of a succulent under-ground stem which is often slightly raised above the soil surface. It has a series of rings consisting of long succulent "fingers". The flowers are yellow.

Euphorbia jansenvillensis (Poor mans spiral Euphorbia)

Status:

This is an Eastern Cape endemic, and a narrow-range endemic. The SANBI RDL states the species as VU. It is extremely uncommon, bordering on rare (R). It is potentially threatened by illegal collection of wild plants for the succulent trade.

Distribution:

It has only been recorded from 3 locations, but the species is poorly known. The plants occur around Steyterville, Jansenville and Klipplaat.

Vegetation Type:

Arid Thickets (Willowmore Gwarrieveld, Sundays Arid Thicket), Steytlerville Karoo and Southern Karoo Riviere.

Habitat:

It occurs in open karroid shrubland, stony slopes and flats, in loose sandy soils under small shrubs, or wedged among stones.

Description:

A spineless dwarf succulent with a few 5-angled branches coming directly from the soil. The plants range in size from 20-50cm in height and mostly found under the protection of other plants or wedged in rock cracks.

Euphorbia polygona (Bobbejaannoors, Gnap, Regopnoors, Regopnoorsdoring)

Status:

This is an Eastern and Western Cape endemic and listed as LC on the SANBI RDL.

Distribution:

It is a wide-ranging species found on sandstone mountains especially (Kouga, Baviaanskloof, Suurberg, Groot Winterhoek). It occurs from Uniondale and Prince Albert to Makanda and Bathurst.

Vegetation Type:

Various.

Habitat:

It favours hot north or east facing slopes, and sandstone geologies.

Description:

This is a succulent shrub that can attain a height of 2m. It closely resembles a cactus with multiple spinescent stems arising from the soil. The stems have distictive ridges and groves, often twisted.

Euphorbia pulvinata (Prickly Heaps, Voetangel, Pincushion Cactus, Mother-in-Laws-cushion)

Status:

The SANBI RDL classification is LC, and the species is not endemic to SA.

Distribution:

The species is widely distributed: Eastern Cape, Free State, KwaZulu-Natal, Limpopo, Mpumalanga. Its southern limits are around King Williamstown and it occurs in the drier habitats through KwaZulu Natal and into Swaziland.

Vegetation Type:

Grasslands

Habitat:

Rocky grasslands on gentle to steep slopes where the soil is very shallow.

Description:

The plant comprises a densely-packed mound of 7-10-angled spinescent stems. These plants can attain heights of 1.5m and flowers from spring to mid-summer with flowers that range from yellow to red-brown.

Faucaria bosscheana (No common name)

Status:

The SANBI RDL classification is LC. South African endemic, Protected by the Provincial Conservation Ordinance of 1974.

Distribution:

Eastern Cape, Western Cape: Prince Albert and Beaufort West to Graaff Reinet.

Vegetation Type:

Nama Karoo and Succulent Karoo

Habitat:

Open stony ground with shallow soils, often wedged in the cracks of rocks.

Description:

The dwarf succulent has the typical *Faucaria* leaves and "tiger teeth", but the upper surfaces are smooth. It is also distinguished by the thin white trim on the borders of the leaves.

Faucaria felina (Tiger jaws, Tierbekvygie)

Status:

The SANBI RDL classification is LC. *F. felina* is an Eastern Cape endemic and protected by the Provincial Conservation Ordinance of 1974.

Distribution:

Eastern Cape but limited to the Sundays Catchment near the towns of Pearston, and Cradock.

Vegetation Type:

Albany Thickets, Nama Karoo, Double Drift Karroid Thicket

Habitat:

Open stony ground with shallow soils, often wedged in the cracks of rocks.

Description:

A dwarf succulent with the typical compact Faucaria leaves and "tiger teeth". The yellow flowers (sometimes white) open late afternoon in summer. Leaves have white dots and long "teeth on the margins.

Faucaria gratiae (No common name)

Status:

This species is a SANBI RDL R (rare) [] listing and a range-restricted species. It is also protected by the Provincial Conservation Ordinance of 1974.

Distribution:

The species is restricted to a few populations in the Eastern Cape, near Riebeeck East. The EOO is less than 200 km^2.

Vegetation Type:

Saltaire Karroid Thicket

Habitat:

Grasslands with open patches of thicket

Description:

This is a clump-forming dwarf succulent with the characteristic "tiger teeth" on the edges of the leaves. Plants have yellow flowers that always flower in the afternoons during summer. The plants are smaller than other *Faucaria* spp. Leaves are short and reddish and 2-5 hairs on each side of the leaf.

Faucaria tuberculosa (No common name)

Status:

Although *F. tubercolosa* is listed as a LC by SANBI, we think this is not correct due to the declining populations. It is a range-restricted species, and should at the very least be classified as VU. It is also protected by the Provincial Conservation Ordinance of 1974.

Distribution:

The species is restricted to a few populations in the Eastern Cape, south of Bedford.

Vegetation Type:

The ecotone between Double Drift Karroid Thicket and Bedford Dry Grasslands.

Habitat:

Open patches between thicket clumps on rocky soils with very shallow soils depth.

Description:

Compact dwarf succulent with the typical *Faucaria* leaves and whitish "tiger teeth" on the leaf edges. The species is distinguished by the leaf surfaces being covered with white tubercles.

Gasteria bicolor **(Common name)**

Status:

The SANBI RDL status is LC. but endemic to the Eastern Cape and Protected by the Provincial Conservation Ordinance of 1974.

Distribution:

Along the coast and inland: Cape St Francis to Port Alfred and inland to Graaff Reinet.

Vegetation Type:

Various but common in Albany Thickets (mesic and arid).

Habitat: Stony slopes

Description

This is a leaf succulent (no stem) that has smooth fleshy leaves, (tongue-shaped) with a distinct mottled patterning. The pinky-green flowers are borne on a long spike and edible. Plants can reach 50cm in height, and flowering is from September to October.

Gladiolus permeabilis subsp. *edulis* (No Common name)

Status:

The SANBI RDL classification is LC. The species is widespread, common and not in danger of extinction. All *Gladiolius* spp. are protected by the Provincial Conservation Ordinance of 1974.

Distribution:

Eastern Cape, Free State, Gauteng, KwaZulu-Natal, Limpopo, Mpumalanga, North West, Northern Cape, Western Cape, as well as Namibia.

Vegetation Type:

Albany Thicket, Fynbos, Grassland, Indian Ocean Coastal Belt, Nama Karoo, Savanna, Succulent Karoo

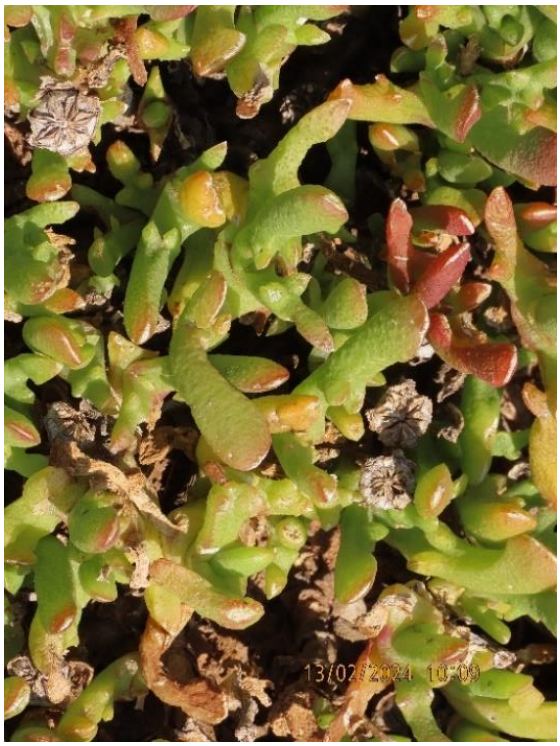
Habitat:

Deep sandy-loam soils, and Kalahari dunes. Its also prefers low karroid scrubland, rocky outcrops, dry grassland and open woodlands.

Description:

The plant can reach of height of nearly 60cm and has a typical Gladiolus flower, which is whitish cream with yellow and purple markings (flowering in August to October). It is pollinated by long-tongued bees.

Glottiphyllum difforme (No Common name)



Status:

The SANBI RDL classification is LC and endemic to the Eastern and Western Cape. It is protected by the Provincial Conservation Ordinance of 1974.

Distribution:

Eastern and Western Cape, with large populations in the Steytelrville area.

Vegetation Type:

Arid Thicket and Nama Karoo (Steytlerville Karoo, Southern Karoo Riviere, Willowmore Gwarrieveld).

Habitat:

It grows in shaly sandstone or sandy to silty flats in karroid shrubland.

Description:

A dwarf succulent that keeps close to the ground. The leaves are very succulent and delicate. This species can form dense stands.

Glottiphyllum longum (No Common name)

Status:

The SANBI RDL classification is LC, and an Eastern Cape endemic. It is protected by the Provincial Conservation Ordinance of 1974.

Distribution:

Eastern Cape

Vegetation Type:

Double Drift Karroid Thicket

Habitat:

Open sunny areas, on shallow soils.

Description:

A dwarf succulent that keeps close to the ground. The leaves are very succulent and delicate. The flowers are large and bright yellow.

Glottiphyllum nelii (No Common name)

Status:

The SANBI RDL classification is **LC**. This species is an Eastern-Western Cape endemic, and protected by the Provincial Conservation Ordinance of 1974.

Distribution:

Eastern and Western Cape, from Prince Albert to Willowmore.

Vegetation Type:

Rainshadow Valley Karoo, Eastern Fynbos-Renosterveld.

Habitat:

It grows on open quarts patches.

Description:

A dwarf succulent that keeps close to the ground. The leaves are very succulent and delicate. The flowers are large and bright yellow This species is palatable and often found under the canopy of small shrubs.

Glottiphyllum peersii (No common name)

Status:

The SANBI RDL classification is **LC**, and an Eastern-Western Cape endemic. It is protected by the Provincial Conservation Ordinance of 1974.

Distribution:

Eastern and Western Cape, from Prince Albert to Willowmore.

Vegetation Type:

Succulent Karoo and Nama Karoo

Habitat:

Open gravelly plains.

Description:

A dwarf succulent that keeps close to the ground. The leaves are very succulent, delicate curving upwards. The flowers are large and bright yellow This species is unpalatable and often found in large numbers.

Gonialoe variegata (Kanniedood, Patridge-breasted aloe, Variegated aloe)

Status:

The SANBI RDL classification is LC, but it is protected by the Provincial Conservation Ordinance of 1974.

Distribution:

This species is widespread in the dry interior of the western parts (Little Karoo and Great Karoo (Eastern Cape, Western Cape and Northern Cape, Free State and Namibia).

Vegetation Type:

Albany Thicket, Nama Karoo, Succulent Karoo

Habitat:

It occurs in clay soils in dry karroid shrubland, often found growing in the shade of shrubs.

Description:

The leaves are characteristically speckled with white specs and triangular in shape (resembling Gasteria leaves). The leaves have a white margin but no teeth (unlike many other aloes). The flowers are red, borne in winter or early spring and tubular. The seeds are large and papery for wind dispersal.

Haemanthus coccineus (Maartblom, Paintbrush lily, Powderpuff lily, April fool, Bloedblom, Velskooenblaar)

Status:

The SANBI RDL classification is LC. Not endemic to South Africa, but protected by the Provincial Conservation Ordinance of 1974.

Distribution:

A very wide distribution: Eastern Cape, Northern Cape, Western Cape and southern Namibia.

Vegetation Type:

The authors found this species on a rocky ledge in Sundays Valley Thicket, Eastern Fynbos- Renosterveld.

Habitat:

Coastal scrub and rocky slopes.

Description:

When in flower, up to 40 cm in height. The two leaves appear flat and tongue shaped. The flowers are bright red and appear from February to April.

Haemanthus humilis (No common name)

Status:

The SANBI RDL classification is LC. And it is not endemic to South Africa, All *Haemanthus* spp. are protected by the Provincial Conservation Ordinance of 1974.

Distribution:

Eastern Cape, Free State, Gauteng, KwaZulu-Natal, Lesotho and Mpumalanga.

Vegetation Type:

Drakensburg grasslands, Upper Karoo, Sub-Escarpment Grasslands, Lower Karoo, Sub-Escarpment Savannas.

Habitat:

Sandy-loam soils, but always found on rocky ledges and south facing slopes.

Description:

These are bulbs that can reach 35cm in height when in flower (September to February.) The large tongue-shaped leaves appear when the plant flowers. The flowers are white to pink.

Haworthia arachnoidea (Spinerkopbolletjies)

Status:

The SANBI RDL classification is LC and the species is a South African endemic. All *Haworthias* are protected by the Provincial Conservation Ordinance of 1974.

Distribution:

Northern Cape, Western Cape and Eastern Cape. From the Richtersveld through Namaqualand, Worcester and the Little Karoo to Coega.

Vegetation Type:

Rainshadow valley karoo

Habitat:

Rocky slopes, shady areas under bushes, rocky southern slopes.

Description:

The dwarf succulent has leaves that appear in a compact roseate, close to the soil. Each leaf margin has a row of soft white spines. Flowering is November to December.

Haworthia angustifolia (No common name)

Status:

The SANBI RDL classification is LC, and it is an Eastern Cape endemic, Protected by the Provincial Conservation Ordinance of 1974. There are a number of subsp.

Distribution:

Between Port Elizabeth, the Zuurberg Mountains and the Fish River Valley

Vegetation Type:

In Albany Thicket, Succulent Karoo and Fynbos.

Habitat:

Rocky quartzitic kopjies, with shade, often in the cracks of rocks.

Description:

This dwarf succulent species is highly variable in its growth forms. Leaves are green to green-brown and thinly trianglular in shape. Flowers are dull white with three flower lobes flared upwards and three downwards. It often forms clumps or lines in the rock cracks.

Haworthia bolusii var. *blackbeardii* (No common name)

Status:

All *Haworthias* are protected by the Provincial Conservation Ordinance of 1974. This is a SA endemic.

Distribution:

Britstown to Kingwilliamstown, with isolated records in Hanover – but largely Eastern Cape

Vegetation Type:

Nama Karoo.

Habitat:

Rocky slopes, with a preference for light shade (under canopy or in the cracks of rocks).

Description:

The translucent light green leaves are arranged in a compact whole around the stem. The dwarf succulent has hundreds of white soft spines along the edges of the leaves.

Haworthia bolusii var. *pringlei* (No common name)

Status:

The SANBI RDL status is **NE**. The variant is a South African endemic, All *Haworthias* are protected by the Provincial Conservation Ordinance of 1974.

Distribution:

Not well understood but thought to be a small area in the Pearston district.

Vegetation Type:

Nama Karoo and Eastern Gwarrieveld.

Habitat:

Dry rocky slopes.

Description:

This attractive species has blue-green leaves with fine "spines" which are soft and cover the entire plant. The plant does not favour direct sunlight. This variant is named after a Mr Pringle who was a famous amateur naturalist but the species was named after Harry Bolus who was world-renown botanist (amateur) and collected hundreds of thousands of plants and donated his collection (320 plant samples) to the Bolus Herbarium in Cape Town.

Haworthia cooperii var. *cooperii* (No common name)

Status:

All *Haworthias* are protected by the Provincial Conservation Ordinance of 1974 and the SANBI RDL is listed as **NE**. All variants of H. cooperi are Eastern Cape endemics.

Distribution:

It occurs in a small, northerly part of the Eastern Province near Stutterheim, particularly around Thomas River, but extending to south of Cradock, and Kommadagga.

Vegetation Type:

Albany Thickets, Zuurberg Grasslands

Habitat

Dry rocky, grassed slopes or grassland flats, often under thorn trees.

Description:

Dwarf, stemless, leaf succulent often with the leaves drawn into the soil. The leaves (blue-green and translucent) usually appear turgid (swollen).

Haworthia marumiana (No common name)

Status:

The species is an Eastern Cape-Western Cape endemic and protected by the Provincial Conservation Ordinance of 1974. The SANBI RDL status is **DDT.**

Distribution:

Eastern Cape, Western Cape: Beaufort West to Sterkstroom.

Vegetation Type:

Nama Karoo and Succulent Karoo.

Habitat:

Hot dry slopes and flat areas.

Description:

This small dwarf succulent occurs in clumps woth individuals showing the typical rosette compact leaf pattern. This species has subspecies which vary in form a lot, but they all exhibit a thread-like awn at the end of each leaf.

Haworthiopsis viscosa (Koedoekos)

Status:

The SANBI RDL classification is **LC** and the species is a SA endemic. The plants are protected by the Provincial Conservation Ordinance of 1974.

Distribution:

Eastern Cape, Northern Cape, Western Cape, widespread across the south eastern Great Karoo, the Little Karoo and east to Baviaanskloof.

Vegetation Type:

Albany Thicket, Fynbos, Nama Karoo and Succulent Karoo.

Habitat:

Rocky karroid slopes, quartz patches and dry fynbos.

Description:

Plants often grow in clumps with long stems. The leaves are triangular with sharp tips.

Hereroa herrei (Nightfigs = genus)

Status:

The SANBI RDL classification is **DDT.** The species is an Eastern Cape endemic and protected by the Provincial Conservation Ordinance of 1974.

Distribution:

The distribution is poorly known, but reported as around Graaff Reinet. We located this species west of Jansenville.

Vegetation Type:

Nama Karoo

Habitat:

Rocky karroid slopes, quartz patches and dry fynbos.

Description:

Dwarf succulent plants are mat-forming. The yellow flowers are scented and often stay open at night.

Hoodia pilifera subsp. *annulata* (Ghaap)

Status:

The species is listed as **VU** .and endemic to the Eastern and Western Cape. It has a restricted distribution range whuch is declining for unknown reasons. Protected by the Provincial Conservation Ordinance of 1974.

Distribution:

Eastern Cape, Western Cape, Nama Karoo especially from Rietbron/Steyterville to Graaff Reinet.

Vegetation Type:

Nama Karoo.

Habitat:

It occurs on flat areas between low hills on slightly gravelly ground, rarely on hill slopes.

Description:

Closely resembles a shrubby alien cactus, The plants grow in small clumps with distinctive column-like spiny stems (up to 2m in height). The flowers are small, dark brown-purple and appear on the upper parts of the stems directly.

Hoodia pilifera subsp. *pilifera* (Ghaap)

Status:

This subspecies is listed as NT. It is an South African endemic It has a restricted distribution range and is declining for unknown reasons. This subspecies is also protected by the Provincial Conservation Ordinance of 1974.

Distribution:

Eastern Cape, Western Cape: In the Little Karoo from Motagu to Uniondale and in the Great Karoo from Matjiesfontein to Gamka Poort.

Vegetation Type:

Nama Karoo and Succulent Karoo.

Habitat:

It occurs on flat areas between low hills on slightly gravelly ground, rarely on hill slopes.

Description:

Very similar in appearance to *H. pilifera* subsp *annulata*, just much smaller (<85cm in height). The stems are also covered with rows of spines and flowers form on the top third of the stem (also dark purple-brown in colour).

Huernia thuretii (Bitterghaap)

Status:

The SANBI RDL classification is LC. Not endemic to South Africa. Protected by the Provincial Conservation Ordinance of 1974.

Distribution:

Widely distributed in the arid and semi-arid parts of the Eastern Cape and KwaZulu Natal. From the coast to Cradock and Graaff Reinet and an isolated population in Namibia.

Vegetation Type:

Albany Thicket, Upper Karoo, Lower Karoo, Drakensberg Grasslands, Rainshadow Valley Karoo, Sub-Escarpment Grasslands, Eastern Fynbos-Renosterveld.

Habitat:

Amongst short grass, usually on rocky outcrops (30m- 1500 masl).

Description:

The species a dwarf-succulent, low-growing and creeping. The plant is stubby with distinctive angular stems with short, soft spines along the length of the stems. The plant flowers in summer with flowers that resemble flesh, and exhibit a foul smell to attract flies. There is quite a wide variation in the forms across the plants range.

Ixia orientalis (No Common name)

Status:

The SANBI RDL classification is LC and it is an Eastern Cape-Western Cape endemic. Like all species of Iridaceae it is protected by the Provincial Conservation Ordinance of 1974.

Distribution:

Eastern Cape, Western Cape, from Villiersdorp/Caledon to Port Alfred/Bathurst and inland to north of Adelaide and the Amatole Mountains.

Vegetation Type:

Grassland, Fynbos and Albany Thicket

Habitat:

Seasonally marshy sites, stony coastal grassland, clay hills and dry sandstone slopes.

Description:

The multi-stemmed bulbs can reach a height of 80cm with flowers that are cream to pink and flower from September to October.

Lachenalia perryae (No common name)

Status:

The SANBI RDL classification is LC and an Eastern Cape-Western Cape endemic. All Lachenalias are protected by the Provincial Conservation Ordinance of 1974.

Distribution:

South-Western Cape (Albertina) and Eastern Cape

Vegetation Type:

Albany Broken Veld, Breede Shale Renosterveld, Mossel Bay Shale Renosterveld, Eastern Ruens Shale Renosterveld, Western Ruens Shale Renosterveld, Breede Alluvium Renosterveld, Northern Inland Shale Band Vegetation

Habitat:

It occurs on moist stony flats and mountain slopes, on clay or sandy soil among succulents.

Description:

Plants typically 12-32cm in height, with one narrow leaf only. Flowers are pale blue and white with green and brown markings. The plants flower July to September.

Moraea elliotii (Bloutulp)

Status:

The SANBI RDL classification is LC and it is not endemic to South Africa. All Morarea are protected by the Provincial Conservation Ordinance of 1974.

Distribution:

Eastern Cape, Free State, KwaZulu-Natal, Limpopo, Mpumalanga, Western Cape. From Mossel Bay to Malawi

Vegetation Type:

Sub-Escarpment grasslands, Albany Thicket, Eastern Fynbos-Renosterveld and Sub-Escarpment savannas.

Habitat:

Moist montane grassy sandstone slopes and marshes.

Description:

The plants are typically 15-55 cm in height, with one linear leaf. Flowers are blue-violet with yellow markings to guide the pollinators towards the nectar. Flowering is around October to November.

Moraea polystachya (Wildetulp, Kraai-uintjie, Kaapse-bloutulp, Blue Moraea, Blue tulp)

Status:

The SANBI RDL classification is LC. Not endemic to South Africa but protected by the Provincial Conservation Ordinance of 1974.

Distribution:

Eastern Cape, North West, Western Cape, from Ladismith to Oudtshoorn through the Karoo and into southern Namibia.

Vegetation Type:

Upper Karoo, Lower Karoo, Albany Thicket, Rainshadow Valley Karoo.

Habitat:

Dry karroid slopes, dry stony or shale flats.

Description:

This is a tall, multi-stemmed bulb that can reach 80cm in height and flowers January to Septemner. Flowers are violet to blue with yellow nectar guides.

Moraea stricta **(Bloutullp)**

Status:

The SANBI RDL classification is **LC** and not endemic to South Africa. All Moraeas are protected by the Provincial Conservation Ordinance of 1974.

Distribution:

Not endemic to SA. But found in Free State, Gauteng, KwaZulu-Natal, Limpopo, Mpumalanga.

Vegetation Type:

Sub-Escarpment grasslands, Drakensburg grasslands.

Habitat:

Open dry grasslands with rocky or shallow soils.

Description:

A short bulb that can reach 25cm in height, with 2-3 branches. The plant has a single leaf that is only seen at the time of flowering. Flowers typically are pale lilac with orange or yellow nectar guides. Flowering is usually from September to November.

Nerine undulata (No common name)

Status:

The SANBI RDL class is **LC**. This species is an Eastern Cape endemic, and protected by the Provincial Conservation Ordinance of 1974.

Distribution:

From Kirkwood to Kentani and inland to Engcobo. Very common around Beford and Adelaide (400 – 1400 masl).

Vegetation Type:

Grasslands

Habitat:

Open grassland in wetlands, along streams and on steep slopes on forest verges. It favours steep slopes, light shade and loan, sandy or shale soils.

Description:

An attractive bulb growing up to 60cm in height, with evergreen leaves (4-6) that are often curved. The flowers are borne in clusters, purple to pale pink and appear from April to June. Plants can grow in dense colonies.

Orthopterum waltoniae (No common name)

Status:

The SANBI RDL classes this species as NT and a range restricted species.. It is also protected under the Eastern Cape Provincial Ordinance of 1974.

Distribution:

This is a Rare, Eastern Cape range-restricted, endemic, known from only 10 locations, between Addo and Grahamstown/Makanda. It has an EOO of less than 1 815 km^2. The location the authors saw the plant is a significant range extension for the species.

Vegetation Type:

Bhisho Thornveld, Albany Alluvial Vegetation, Sundays Arid Thicket, Koedoeskloof Karroid Thicket, Fish Arid Thicket, Albany Bontveld, Albany Arid Thicket. The authors located the species in Double Drift Karroid Thicket.

Habitat:

The species favours rocky soils with shale substrate.

Description:A short compact succulent shrub, that forms low clumps, with golden yellow flowers (reddish on the edges).

Pachypodium bispinosum (Bell-flower thick-foot , kragman, sterkman, dikvoet)

Status:

The species has recently been upgraded to EN as a direct result of illegal collection for the specialist succulent trade. It is a South African endemic but limited to the Eastern Cape and eastern parts of the Western Cape. Protected by the Provincial Conservation Ordinance of 1974, as well as the NEMBA regulations.

Distribution:

The plant occurs from Ladismith to Somerset East, Willowmore districts to east of Steytlerville, Port Elizabeth and Ecca River Valley.

Vegetation Type:

Various forms of Albany Thicket and Nama Karoo: Gwarrieveld, Apronveld, and Ranteveld.

Habitat:

It occurs in dry, rocky areas and favours loamy soils.

Description:

A stem succulent shrub (50cm in height) with a large under-ground tuber. Flowers are produced as wide tubes with pale pink-purple colour.

Pachypodium succulentum (Thickfoot)

Status:

The species has recently been upgraded to VU as a direct result of illegal collection for the specialist succulent trade. This endemic is limited to the Eastern Cape and eastern parts of the Western Cape. All Pachypodium species are protected by the Provincial Conservation Ordinance of 1974, as well as the NEMBA regulations.

Distribution:

The plant occurs from Ladismith to Somerset East, Willowmore districts to east of Steytlerville, Port Elizabeth and Ecca River Valley.

Vegetation Type:

Various forms of Albany Thicket and Nama Karoo.

Habitat:

It occurs in dry, rocky areas.

Description:

The plant grows to a height of 50cm, with shoots which have strong spines and dusty-green leaves. The flowers are white to pink or crimson and seen in spring. The most distinctive feature of the plant is the large under-ground tuber.

Pelargonium reniforme (Kidney-leaved pelargonium; rooirabas, Rabassam)

Status:

The SANBI RDL classification is NT, and protected by the NEMBA regulations. Widescale population declines are reported as a result of medicinal harvesting. A South African endemic.

Distribution:

Widely distributed in the Eastern Cape and Western Cape.

Vegetation Type:

Various forms of fynbos, valley thickets, thicket mosaics, Albany Alluvial Vegetation, mistbelt grasslands, Albany Mesic Thicket, Bisho Thornveld, Southern Mistbelt Forest.

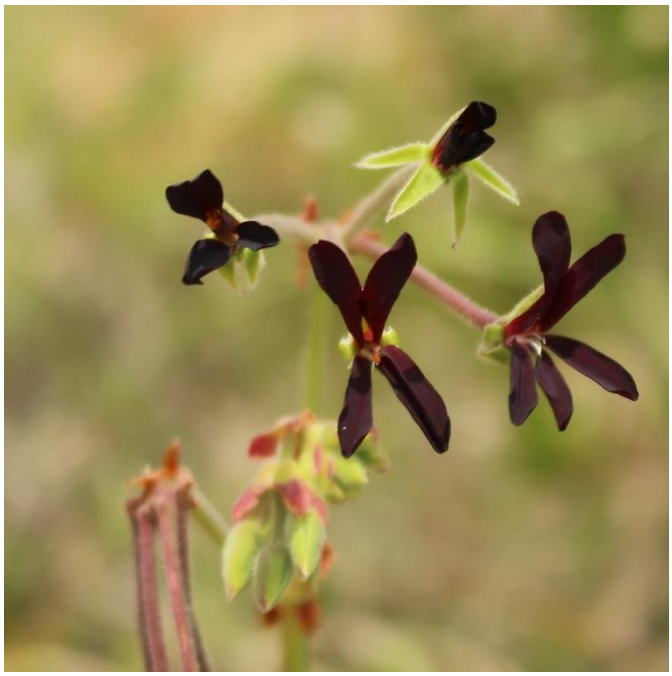
Habitat:

Various but favours dry flats and open grassland.

Description:

An attractive shurblet (40cm in height) with ruberous roots. The leaves are leathery and kidney shaped. The plants flower all year with bunches of bright pink flowers.

Pelargonium sidoides (Kalwerbossie; rooirabas)



Status:

The SANBI RDL classification is LC, but the species is protected by the NEMBA regulations.

Distribution:

Eastern Cape, Free State, Gauteng, KwaZulu-Natal, Mpumalanga, North West, Western Cape. The species can be found from Uniondale to Lichtenburg and Lydenburg.

Vegetation Type:

Albany Thicket, Fynbos, Grassland, Nama Karoo, Succulent Karoo

Habitat:

Sandy, Clay, Loam soils in short grassland, sometimes with occasional shrubs or trees, often in stony shallow soils.

Description:

This is a tufted perennial plant that canreach a height of 50cm. The plant has swollen under-ground tubers that have considerable pharmaceutical value. Flowers are striking dark purple-black (October to January).

Raphionacme zeyheri (No common name)

Status:

The SANBI RDL classification is NT, and is protected by the Eastern Cape Provincial Ordinance of 1974. This species is an Eastern Cape endemic with a known AOO of 76km^2. Should the current threats persist and the populations continue to decline, the species will be upgraded to VU status.

Distribution:

The species is distributed from Mont Pellier, Steytlerville, Jansenville, Fish River Valley and Grahamstown

Vegetation Type:

Bhisho Thornveld, Southern Karoo Riviere, Willowmore Gwarrieveld, Sundays Valley Thicket, Sundays Arid Thicket, Saltaire Karroid Thicket, Fish Arid Thicket, Doubledrift Karroid Thicket

Habitat:

The plants favours stony environments in grassland, Dry Albany Thickets and savannas.

Description:

A bulb with up to 65 thin leaves (blue-green with a maroon vein). Flowering is from November to January.

Rhombophyllum dolabriforme (No common name)

Status:

The SANBI RDL classification is LC. The species is an Eastern Cape endemic. Protected by the Provincial Conservation Ordinance of 1974.

Distribution:

Eastern Cape: Makanda, Baviaanskloof, Aberdeen, Graaff-Reinet, Waterford.

Vegetation Type:

Albany Thicket, Upper Karoo, Lower Karoo, Eastern Fynbos Renosterveld.

Habitat:

Flats and hills of weather Karoo shales.

Description:

Small dwarf succulents (<30cm tall), with a charastertic leaf with a keel shape. Flowers bright yellow and roots like a turnip.

Ruschia putterillii (No common name)

Status:

The SANBI RDL classification is LC. Not endemic to South Africa. Protected by the Provincial Conservation Ordinance of 1974.

Distribution:

Eastern Cape, Free State, but not endemic to South Africa.

Vegetation Type:

Albany Thicket, Sub-Escarpment Grasslands, Upper Karoo, Drakensburg Grasslands.

Habitat:

Open areas with shallow soils, rock sheets at high altitudes.

Description:

A short dwarft succulent with a creeping habit (forming clumps) and short 3-sided leaves. Flowers pale pink and found year round.

Stapelia grandiflora (Bobbejaankambro, Makghaap, Slangghaap)

Status:

The species is listed as LC, but protected under the Eastern Cape Provincial Ordinance of 1974.

Distribution:

The species has a wide distribution (Eastern Cape, Free State, Northern Cape, Western Cape), but not limited in its distribution to South Africa.

Vegetation Type:

Albany Thicket and Nama Karoo.

Habitat:

The plants are typically found in thicket and karoo vegetation, or in the light shade of trees.

Description:

The plants form dense colonies with distinctive 4-sided stems (grey-green). The flowers are light red in colour, covered with soft hairs and emit a foul smell to attract pollinators

Tritonia gladiolaris (Bergkatjietee, Yellow Tritonia, Pencilled Tritonia)

Status:

The SANBI REDL status is LC. The species is not endemic to South Africa but Protected by the Provincial Conservation Ordinance of 1974.

Distribution:

Widely distributed in SA, (Eastern Cape, Free State, KwaZulu-Natal, Mpumalanga, Western Cape) but also found in Eswatini (Swaziland) and Lesotho.

Vegetation Type:)

Various forms of Fynbos, Forest, Grassland and Savanna.

Habitat:

It occurs in stony grasslands, typically on dolerite or sandstone soils

Description:

Plants typically 20-50cm in height (but can reach 80cm) with 5-8 leaves. Flowering is from August to November with pale-cream to yellow flowers that appear in clusters.

Tritonia securigera (No common name)

Status:

The SANBI RDL classification is LC and an Eastern Cape-Western Cape endemic but Protected by the Provincial Conservation Ordinance of 1974.

Distribution:

Eastern Cape & Western Cape from Riversdale and Mosselbay, through Ladismith and the Little Karoo, Adelaide, Somerset East and up to Graaff Reinet.

Vegetation Type:

Various

Habitat:

Clay soils on slopes in grassland, fynbos as well as on stony flats in renosterveld and karroid shrubland.

Description:

This is a common bulb (geophyte) 15-40cm tall with orange to reddish flowers. The plants usually flower from September to November.

Trichodiadema olivaceum (No common name)

Status:

The species is an Eastern Cape endemic, and protected by the Eastern Cape provincial ordinance of 1974.

Distribution:

The species is only known from 10 locations stretching from Somerset East to Steynsburg. The location of the species found by the authors extends the range westwards to Waterford.

Vegetation Type:

Eastern Upper Karoo, Bedford Dry Grassland, Tarkastad Montane Shrubland, Karoo Escarpment Grassland, Southern Karoo Riviere, Sundays Arid Thicket.

Habitat:

The species prefers weathered karoo sediments.

Description:

A dwarf succulent with round leaves that have a ring of bristles at the tip. Single vygie-type flowers are borne, and a bright white colour.

Trichodiadema pomerdiamum (Clock plant, Perdevygie, Soetaartapel)

Status:

The SANBI REDL status is **LC**. The species is not endemic to South Africa but Protected by the Provincial Conservation Ordinance of 1974. The species is not endemic to SA.

Distribution:

Eastern Cape, Free State, Northern Cape, North West, Western Cape: Bethulie to Aliwal North, Graaff Reinet, Somerset East, and from Steytlerville to Addo.

Vegetation Type:

Upper Karoo, Dry Highveld Grassland, Rainshadow Valley Karoo, Albany Thickets.

Habitat:

Plains and hills on karoo sediments, near drainage lines and clay pans.

Description:

A dwarf succulent with round leaves that have a ring of bristles at the tip. Single vygie-type flowers are borne, and a bright purple colour.

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Useful links:

www.planz4africa.

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