

# Renosterveld remnants of the Swartland:

a rainbow of colour and rarity veiled in black

A typical rural Swartland scene. Fallow fields in the foreground waiting to be sown with grain or canola in autumn. A water course filled with indigenous *Phragmites* reeds, and “black” renosterveld on the hill in the background. The vegetation looks deceptively dull and monotonous, but recent botanical research has shown that there can be over 30 plant species per square metre in this vegetation type, which is called Swartland Shale Renosterveld. There is less than 5% of this species-rich veld type left in the world, and it is classified as Critically Endangered. Photo by Stephen Cousins.



BY STEPHEN COUSINS,

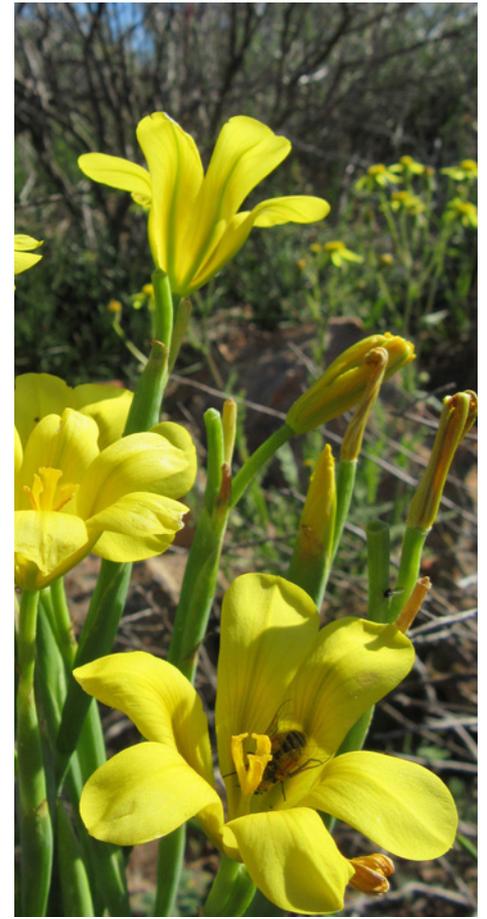
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## THE “BLACK LAND”

For newcomers to the area, the name Swartland (formerly *het Zwarteland*) may seem a complete misnomer, as the region’s vast undulating wheat fields – green in winter and gold in summer – are anything but swarthy in appearance. The first Professor of Geography at the University of Cape Town, William Talbot, noted in his book *Swartland and Sandveld*: “The name Swartland, so inappropriate to the present landscape of grain fields and fallows, almost unbroken by any remnant area of the native vegetation, was an apt description of the country as it appeared to the first Europeans.” The renosterveld shrublands that formerly covered most of the region – dominated by *Renosterbos* (*Elytropappus rhinocerotis*), Wild Rosemary (*Eriocephalus africanus*), and various other shrubs – turn a dark, almost black colour during the hot, dry summer months. Hence, to those first European settlers who gazed across the untransformed landscape, it was indeed a vast, renosterveld-clad ‘black land’.



Left: The white form of the Peacock Moraea (*Moraea villosa* subsp. *villosa*), seen flowering in Swartland Shale Renosterveld on the Porseleinberg near Riebeeck-Kasteel. Once common in the Cape lowlands, this beautiful species is now classified as Vulnerable owing to extensive habitat loss for crop cultivation. Photo by Stephen Cousins.



Right: *Moraea ochroleuca* (Least Concern) flowering in the first spring after a fire in a renosterveld remnant near Riebeeck West. This species is also found in fynbos, and has a broad distribution from Citrusdal to Caledon. Photo by Stephen Cousins.

The exact boundaries of the Swartland differ depending on the map used, but the Swartland Municipality extends from the boundary of the City of Cape Town at the northern end of Durbanville northwards to Piketberg, and from Yzerfontein in the west, to the Berg River near Riebeeck-Kasteel and Riebeeck-West in the east. At the heart of the region lies its largest town – Malmesbury – originally known as *Zwartlands-kerk* (Black land church). Due to its relatively flat topography, fertile soils, and close proximity to Cape Town, the Swartland became established as a wheat-growing area around the mid-1700s. In the late 1800s, when gold and diamonds were discovered upcountry, farming in the region expanded significantly. In the 1930s, when it was cheaper to import wheat than produce it locally, wheat farmers were subsidised by the government, and it became profitable to farm even on marginal lands with poorer soils and/or steep slopes. During this period the Swartland became an almost uninterrupted agricultural area.

## RENOSTERVELD IN THE SWARTLAND

While the region does encompass patches of fynbos, the predominant vegetation type in the Swartland was historically renosterveld – an evergreen shrubland characterised by a shrubby component which mainly comprises species in the daisy family – with a wealth of grasses, annuals, herbaceous perennials, and an extraordinary array of geophytes. The three major families that typify adjacent fynbos shrublands – Proteaceae, Ericaceae and Restionaceae – are rare or entirely absent in renosterveld. While it is most often seen in a shrubland state, renosterveld also encompasses other structural forms, including tussock grasslands, grazing lawns and bulb lands. Renosterveld is found on richer soils such as shale-derived clays (although fynbos – usually asteraceous fynbos – can occur on these same soils in higher rainfall areas). These richer soils, so well-suited to wheat- and deciduous fruit

production, are the primary reason for the wholesale destruction of this lowland habitat.

A very prominent feature of Swartland renosterveld is its *heuweltjies* (known broadly as earth mounds). These are the distinctive circular patches or “spots” in the veld that give the Tygerberg its name. *Heuweltjies* are associated with terminate nests (one of the dominant theories is that they originated due to the activities of termites and continue to be maintained by them). These patches are subjected to constant disturbance by the termites and their predators, and the ongoing transportation of plant material by the termites to the *heuweltjies* results in nutrient enrichment of the mounds. Hence, they contain assemblages of plants that are very different from the surrounding vegetation matrix, and with some imagination they resemble the spots of a leopard, which early Dutch settlers in the Cape referred to as ‘tigers’.



Top: One of Darling's flagship species, *Geissorhiza darlingensis* only occurs at four known localities in Swartland Granite Renosterveld around Darling and Malmesbury, and is listed as Critically Endangered. Photo by Helene Preston.

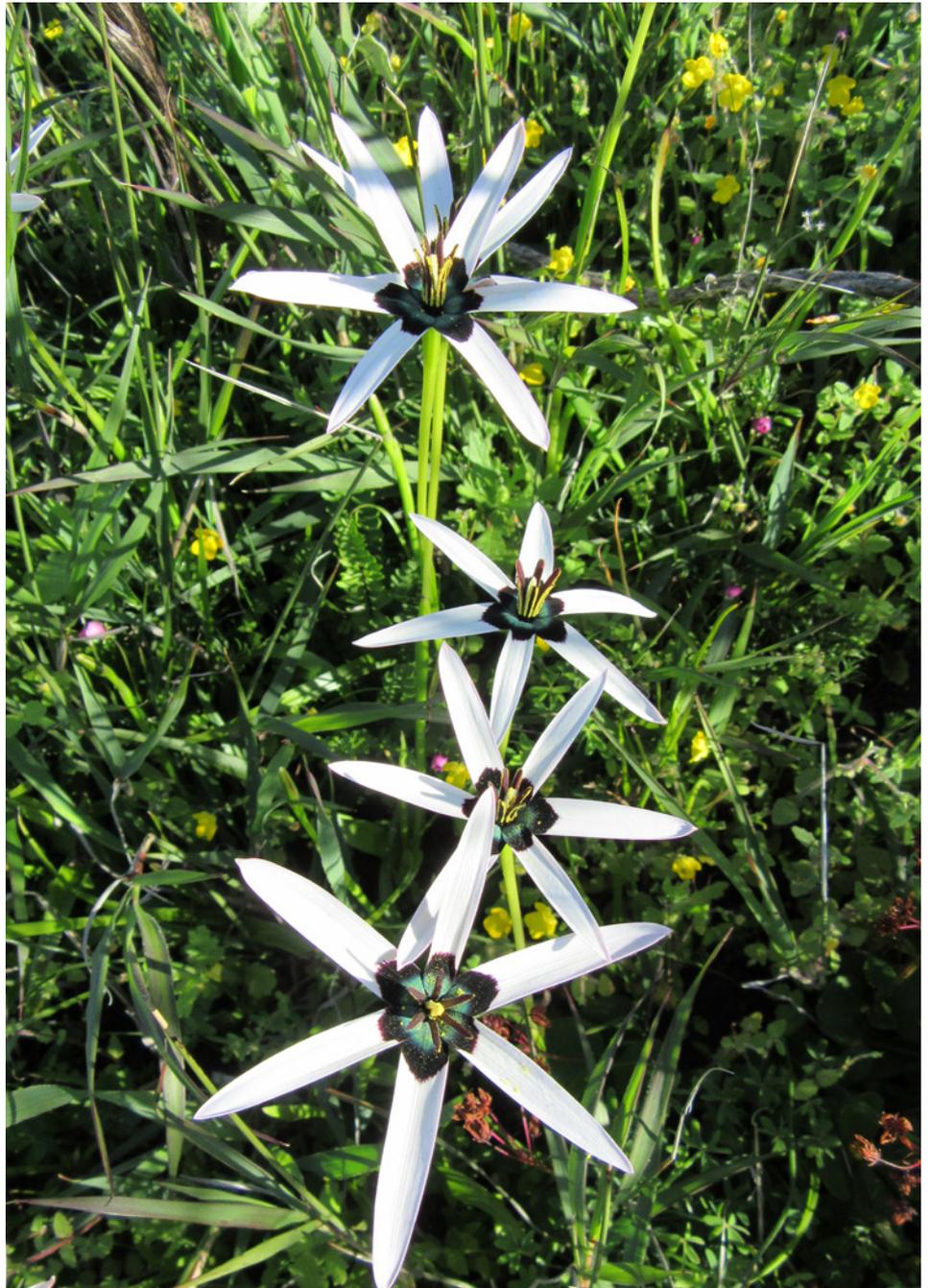
Bottom: The Critically Endangered Daggerleaf Sugarbush (*Protea mucronifolia*) occurs at only two sites – one in the eastern Swartland near the Berg River and at Elandsberg Private Nature Reserve. Photo by Stephen Cousins.

The large-scale conversion of lowland renosterveld for agricultural production left only a few patches of natural Swartland vegetation untouched, and these are mainly confined to steep slopes and rocky outcrops that were unsuitable for ploughing. These highly fragmented remnants appear very dull and monotonous from afar, but closer inspection reveals their wealth of plant diversity. Beneath the canopy of drab-looking shrubs lies a kaleidoscope of colourful annuals, herbaceous perennials and geophytes. In fact, renosterveld is world-renowned for harbouring one of the highest concentrations of geophytic plants on the planet. Despite its global botanical significance, this "Cinderella vegetation type" has been relatively understudied over much of its range, and in the Overberg, recent intensive botanical research has uncovered several species that are new to science.

The most notable renosterveld remnants in the Swartland are found on the Darling hills, the lower slopes of the Paardeberg and surrounds, and several patches around Malmesbury, Moorreesburg and the village of Koringberg. The lower slopes of Piketberg and Kasteelberg, and the upper slopes of the Porseleinberg also support noteworthy tracts of renosterveld. Most of the remnants that are not associated with larger mountains are scattered as small pockets on isolated hillocks or as slivers of veld flanking watercourses that snake across the landscape.

## A VEGETATION TYPE UNDER THREAT

Of the 30 recognised types of renosterveld, four occur in the Swartland, namely Swartland Shale-, Granite-, Silcrete- and Alluvium Renosterveld. Given the broad-scale transformation of the region it is not surprising that three of these types are classified as Critically Endangered, and the fourth Vulnerable. Swartland Shale Renosterveld formerly covered the majority of the region, and sizeable remnants of this type are conserved within the Elandsberg Private Nature Reserve and Voëlvlei Nature Reserve north of Wellington, and in the Tygerberg Nature Reserve within the City of Cape Town. The South African Red List 2017 (<http://redlist.sanbi.org/>) notes that, of South Africa's 449 national vegetation types, Swartland Shale Renosterveld contains the highest concentration of threatened plant species: 214 species in total, 25 of which are endemic to the vegetation type. Threatened species tend to be strongly associated with habitats that are extensively degraded or transformed for other land uses such as agriculture, urban development or mining. Swartland Shale Renosterveld is a case in point. Historically, the Swartland's next most widespread type was Swartland Granite Renosterveld, which is found mainly on the Darling hills, on remnants around Malmesbury and the Paardeberg, and the Bottelary Hills near Stellenbosch. Silcrete Renosterveld is naturally fragmented across the region, while Alluvium Renosterveld occurs in narrow belts in the southern Swartland, primarily around Klipheuwel, Malmesbury, Moorreesburg and Darling along the Groen and Diep Rivers.



## THE SWARTLAND'S DARLING

One of the most significant parts of the Swartland from a botanical perspective is the hilly area to the west of the region, with the charming town of Darling at its heart. Every spring, the town attracts thousands of people who come to see the area's beautiful wildflowers at the famous Darling Wildflower Show, which celebrated its centenary exhibit this year. Packed with geophytes, these hills boast an astonishing diversity of plants in the Iridaceae, most notably the genera *Babiana*, *Geissorhiza*, *Ixia* and *Moraea*. A survey of seven hills in the area by the Flora Conservation Committee in 1994 yielded no less than

Flowering in white, yellow, and rarely pink colour forms, the Peacock flower (*Pauridia capensis*; formerly *Spiloxene capensis*), occurs throughout the southwestern Cape on seasonally wet clay and granitic soils. Here it is seen growing on a south-facing slope on the Porseleinberg near Riebeeck-Kasteel. Photo by Stephen Cousins.

420 different plant species. There are also several endemics in the area including the Blue-and-red Babiana (*Babiana rubrocyanea*, Endangered), the Geelbobbjeaantjie (*Babiana pygmaea*, Critically Endangered), which has extraordinarily large flowers in relation to its leaves, and the Geel Kelkiewyn (*Geissorhiza darlingensis*, Critically Endangered). Most of the renosterveld around Darling is on privately owned farms, some of which open their gates to the public in spring to come and view the flowers. The area falls within

the West Coast Biosphere Reserve, and protected tracts of renosterveld are to be found in the Darling Renosterveld Reserve, the Groenkloof Reserve on the north western side of Darling, Waylands Wildflower Reserve and at Tienie Versveld Reserve on the road between Darling and Yzerfontein. Unfortunately, there are no full-time managers working at the municipal reserves at present, so too-frequent or infrequent fires and alien plant invasions are issues of concern.

## RARITIES YET UNDISCOVERED

In view of the fact that so much of the Swartland's renosterveld has been lost, one would think that the little that remains is well botanised, but perhaps because of their isolated nature – mostly on privately owned land – the remaining remnants are still turning up some noteworthy rarities. In 2004, a small population of the Critically Endangered Daggerleaf Sugarbush (*Protea mucronifolia*) was found on a veld remnant on the banks of the Berg River near Saron, where Swartland Shale Renosterveld, Atlantis Sand Fynbos and Swartland Alluvium Fynbos come together forming an interesting mosaic. *Protea mucronifolia* was previously thought to occur exclusively in the Elandsberg Private Nature Reserve. Then, during a CREW field trip to the same veld remnant in May 2016, a new population of *Marasmodes spinosa* (Endangered) was found – another species also previously known only from Elandsberg. New populations of several other rare and threatened species were also found in 2017, some of which constitute important range extensions. One of the most exciting finds was that of *Polhillia ignota*, a shrub species in the Fabaceae that was previously collected over 80 years ago, and classified as Extinct due to several failed attempts to relocate it. In September 2016, a small population of 13 plants was rediscovered by CREW in a remnant of Swartland Shale Renosterveld near Eendekuil northeast of Piketberg. What a joy to find a botanical treasure that was thought to have been lost forever! These exciting and significant finds highlight the value of the renosterveld remnants that remain in the Swartland. They all deserve

careful management to conserve the rare and threatened species they support, which form part of our natural heritage.

## NEW BOTANICAL AND ECOLOGICAL WORK ON SWARTLAND RENOSTERVELD

A new CREW group – the Swartland CREW – is working in a number of under-botanised veld remnants in the region, and in 2016 and 2017, with the help of the Tygerberg and Blouberg CREW groups, they conducted botanical inventories of several renosterveld remnants in the Riebeeek Valley, Moorreesburg and Malmesbury areas. Much of their efforts have focused on two very diverse remnants in Malmesbury, which are now being proclaimed as Contract Stewardship Nature Reserves co-managed by Swartland Municipality and CapeNature.

Formal research on renosterveld fire ecology and the restoration potential of alien-invaded renosterveld is also underway in some of the region's remnants. This research forms part of a PhD project by the author at Stellenbosch University. The intention is to use the results from the CREW work and the research to assist us in conserving and managing these precious renosterveld remnants for future generations to appreciate and enjoy.

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## LITERATURE AND FURTHER READING

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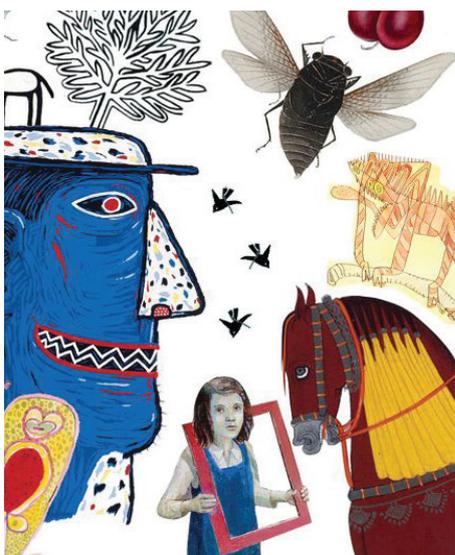
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