

The remains of the Renosterveld

Overberg Lowlands Conservation Trust director **Odette Curtis** talks about the value of fragments in this threatened ecosystem and the exciting discovery of six previously unknown botanical species.



Fertile, low-lying habitats of the world have always been the most suitable for cultivation, and have been exposed to exploitation and transformation since the advent of large-scale, intensive agriculture. One of the results of this is that the biological integrity of these natural systems is negatively affected by fragmentation.

A MERE 4% TO 6% OF THE RENOSTERVELD REMAINS

Lowland fynbos vegetation types in the Cape Floristic Region (CFR) of the southwestern part of South Africa are no exception, and the Renosterveld systems found here are seriously threatened.

The fynbos biome, a diverse, unique botanical kingdom, is recognised as one of the earth's seven biodiversity hotspots, yet it faces problems such

as invasive, exotic plant infestations, transformation of land for development, and agriculture and habitat degradation associated with mismanagement.

'True' fynbos habitats tend to be concentrated in mountainous and coastal regions of the CFR and are generally associated with poor, acidic, sandy soils. A dominance of proteas, ericas and restios (reeds) is typical of these fire-adapted and fire-dependent systems.

In the CFR lowlands, vegetation changes in response to the more fertile, clay- and shale-based soils. The dominant vegetation type here is known as Renosterveld. It is typified by the absence of the three primary 'fynbos indicators' (proteas, ericas and restios) and tends to be dominated by Asteraceous shrubs of the daisy family, of which the renosterbos is



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one example. There is often a diversity of palatable and unpalatable grasses. It is still, however, considered part of the fynbos biome.

Renosterveld is known as the richest bulb kingdom in the world and is renowned for its spectacular spring (August/September) flower displays, when the grassy shrubland comes alive with colour.

Because large tracts of Renosterveld and other lowland habitats have been cultivated, it is estimated that only 4% to 6% of the original habitat remains, almost all of it on privately owned land.

A major challenge in Renosterveld conservation is dealing with the system's species diversity. Multiple reserves are required to represent the full range of species. Recent research has

shown that Renosterveld fragments less than 2km apart can differ by 80% in species composition. On a smaller scale, there are also significant variations in plant communities on different aspects – north and south-facing slopes can differ dramatically from each other.

This diversity presents some difficulty when it comes to determining appropriate reserve size and location. Essentially, every fragment of the 4% to 6% remnant of the Renosterveld makes a contribution towards conserving this unique vegetation type.

NEW PLANT DISCOVERIES ON QUARTZ KOPPIES

While undertaking research associated with the Overberg Lowlands Conservation Trust and the University of Cape Town, ecologists recently discovered six new plant species in a small part of the Overberg's

ABOVE: *Hesperantha kiaratayloriae* is a tiny iris discovered at a Renosterveld site in the Overberg. PHOTOS COURTESY OF ODETTE CURTIS



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Renosterveld. The plants were found on silcrete-quartz patches occurring on outcrops of the Renosterveld east of Bredasdorp and Swellendam. The quartz koppies hold a significant number of endemic plants.

When more detailed surveys were conducted on the koppies, researchers were amazed to discover, over a period of less than a year, no fewer than six new species.

IDENTIFICATION AND DESCRIPTION

New legumes, which have now been named and described by legume specialist Professor Charles Stirton include *Aspalathus microlithica*, *Aspalathus quartzicola*, *Polhillia curtisiae* and *Otholobium curtisiae*. These four legumes vary from creeping plants with tiny flowers less than 5mm in length (the two *Aspalathus* species), to a medium-sized shrub (just under 30cm high) (*Otholobium*), which scientists suspect might

only flower after a fire, to a larger shrub (just under 1m tall) (*Polhillia*) that was found on a single site.

Researchers also identified an attractive new sedge, 10cm tall, that was described and named by sedge expert Dr Muthama Muasya as *Ficinia overbergensis*.

A new species of iris (*Hesperantha kiaratayloriae*) was also discovered and is currently being described by John Manning and Peter Goldblatt. This tiny yet but striking bulb has been found at a single site and is named in honour of the daughter of Oren Taylor, who made a generous donation to the Overberg Lowlands Conservation Trust to support Renosterveld conservation.

Subsequent visits to the flowers also led to

1. *Aspalathus microlithica*. This newly-discovered creeping legume has tiny flowers, varying in colour from yellow to orange to red, depending on the age of the flower.

2. *Ficinia overbergensis* is a miniature sedge that grows to a height of about 10cm.

3. *Polhillia curtisiae*. Only a single population of this rare plant, comprising about 80 individuals, has been found.

4. *Otholobium curtisiae* is a recently discovered legume that botanists suspect may flower only after fire.

5. *Aspalathus quartzicola*. This creeping legume has flowers the size of matchstick heads.



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the discovery of their pollinator: a butterfly of the genus *Tsitana*. Hours of patience next to an unpollinated flower were finally rewarded with an opportunity to photograph the pollinator. It is hard to imagine a world in which there is nothing left to discover. Yet few would have expected to find these beautiful species on small islands of Renosterveld in a cultivated area. The discoveries are heartening, and a powerful reminder

of the importance of taking ownership of the remnants of natural veld.

Hopefully these discoveries will encourage landowners who have rare and threatened habitats on their farms to look at them a little more closely and not to consider natural veld as *uitvalgrond* (unused land of little value), but as a treasure to preserve for the future.

• Contact the Overberg Lowlands Conservation trust on 083 551 3341 or visit www.overbergrenosterveld.org.za. ■ FW

FAST FACTS

- The low-lying Renosterveld is part of the fynbos biome.
- Only tiny fragments of this vegetation type remain.
- The discovery of six new plant species highlights the ecosystem's biodiversity, and the need to preserve it at all costs.