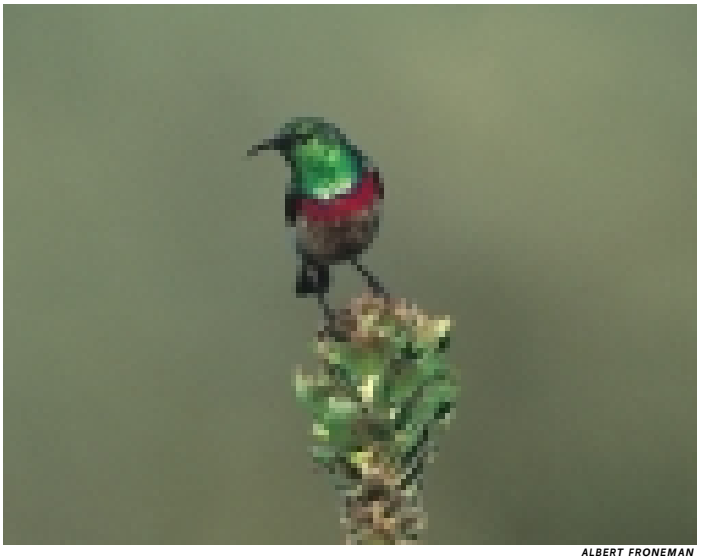
Conserving renosterveld – do birds matter?

At first sight, renosterveld is a rather uninspiring shrub community dominated by renosterbos *Elytropappus rhinocerotis* and other bushes, but it is part of the extraordinarily diverse Cape Floristic Kingdom and is home to some 350 endemic plants, including an amazing array of geophytes. It is also one of the most threatened habitats in South Africa. Because it grows on rich soils derived from Malmesbury shales, most renosterveld has been ploughed up to create fields for cereals and an increasing number of other crops, ranging from canola to grapes. On the coastal lowlands around Cape Town, less than five per cent of the original area remains, mostly on steep slopes or rocky outcrops. Many plant species have probably already gone extinct, and of the surviving endemics more than a third are listed as threatened. To make matters worse, only four per cent of the remaining areas are conserved within protected areas.

But what does this have to do with birds? Although renosterveld is home to one endemic bird species, the Agulhas Long-billed Lark, it is not great birding habitat. Even the lark is more common on old pastures than in remnant patches of renosterveld, which suggests that much of the area that has been transformed (all the level and gently sloping areas) were once more open and grassy. To misquote John F. Kennedy, ask not what renosterveld can do for birds, but what birds can do for renosterveld.

With a few notable exceptions, birds play a relatively minor role in energy and nutrient cycling within ecosystems. However, thanks to their high mobility, they are often extremely important dispersal vectors for plants, as they carry both pollen and fruits. This role may be crucial for the long-term persistence of renosterveld. Even assuming that no more habitat is lost to agriculture, the remaining areas are highly fragmented and, without a regular interchange of genes through pollination or seed dispersal, the surviving plant species will be prone to inbreeding and chance extinction events. In the shorter term, any plant species that is totally reliant on a bird for pollination (such as the bizarre *Microloma*) will be unable to reproduce if its pollinator disappears.

There is abundant evidence to show that small islands or habitat patches support fewer species than large patches. Similarly, as habitats are fragmented by agriculture or other human activities, populations of birds and other organisms are less likely to survive in the smaller habitat patches. In 1998/99, Alison Cameron examined the effects of habitat fragmentation on renosterveld bird communities in the Overberg (see News from the FitzPatrick Institute, June/July 1999). She found that small patches supported many fewer bird species than larger patches did, and that to some extent the identity of the species lost was predictable.



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The loss of Southern (Lesser) Double-collared Sunbirds from small remnants of renosterveld may ring the knell for those plant species dependent upon them for pollination.

In 2002/03, Harison Randrianasolo repeated this study for a larger sample of renosterveld patches on the more highly fragmented West Coast lowlands. Although there are differences in the bird communities between these two regions, he also found a very strong area effect, with the distribution of nine of the 12 common bird species being most strongly influenced by patch size. Again there were consistent patterns of species loss in smaller fragments, and these tended to confirm the patterns detected in the Overberg. From a plant perspective, Southern (Lesser) Double-collared Sunbirds were mostly absent from small patches, whereas the larger and more mobile Malachite Sunbird occurred in both small and large patches. This suggests that there is little movement of Southern Double-collared Sunbirds between patches, so that plants that rely on them for pollination are unlikely to have their genes carried between patches and will struggle to set seed in small patches. In terms of seed dispersal, frugivores such as Chestnut-vented Tit-Babblers, Cape Bulbuls and White-backed Mousebirds were also absent from small patches, suggesting limited potential for natural recolonisation by bird-dispersed plants.

Although these results are not good news for the many small fragments, they provide a framework for making management decisions to conserve renosterveld in the long term. □

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