

# Karoo birds and climate change

**M**ore than 60 per cent of the endemic and range-restricted birds found in southern Africa occur in or are confined to the Karoo. These include several larks, chats, tits, and warblers, as well as Karoo Korhaan, Namaqua Sandgrouse, Karoo Robin and Karoo Eremomela. These birds all occur in areas with low human population densities and, as a result, most are not classified as being under threat, even though there are few protected areas in the Karoo. Recent research at the National Botanical Institute, however, has shown that the wide open spaces that form the core of these species' ranges are likely to experience rapid transformation as a result of impending climate change. For example, the Succulent Karoo, Nama Karoo and Fynbos biomes in the region are expected to shrink by up to 55 per cent in the next 30 to 50 years. Added to this, vegetation in these areas is currently undergoing changes in structure and composition because of other factors such as overgrazing.

In response to these impending threats, Jean Mwicigi and Dean Fairbanks recently completed the first part of a two-phase project aimed at understanding how current climate and habitat features influence the distribution and biology of endemic birds of the Karoo. Several national environmental databases on climate,



ALBERT FRONEMAN

*Climate change in the Karoo threatens to alter or reduce the ranges of several endemic and range-restricted birds, such as the Karoo Robin.*

land-cover and vegetation structure were explored and compared with the distribution patterns of Karoo birds. In these analyses, the birds themselves were grouped by food type and by whether or not they were resident (occur only within the Karoo) or nomadic (also occurring in other biomes).

Results indicated that the distributions of both resident and seed-eating birds are more sensitive to climate than to vegetation structure. Variability and seasonal extremes of climate explained species diversity within these two groups better than did

average climatic conditions, such as mean annual rainfall or temperature. Birds that respond to these climate extremes include nomadic, seed-eating larks, canaries, buntings and the Namaqua Sandgrouse, and several residents including Pale Chanting Goshawk, tits, chats, warblers, the Karoo Robin and Karoo Eremomela. It can be safely predicted, therefore, that as the climate changes in the Karoo, so will the distributions of many of the Karoo's birds.

Climate change is a hotly debated reality that threatens to re-shuffle distributions of

habitats and species that have experienced little change for centuries. Models of future vegetation changes, along with the findings of this study, clearly demonstrate that basing future conservation planning on the status quo would be a dangerous act of complacency likely to accelerate species' extinction rates. Awareness of the need for a new conservation paradigm was identified more than 15 years ago. The time is now rapidly approaching where the theory will have to be put into practice. □

Visit the FitzPatrick website: <http://www.uct.ac.za/depts/fitzpatrick>

Percy FitzPatrick Institute of African Ornithology, University of Cape Town, Rondebosch 7701, Cape Town, South Africa.

Tel. (021) 650 3290; fax (021) 650 3295; e-mail [birds@botzoo.uct.ac.za](mailto:birds@botzoo.uct.ac.za)