

BELOW PAR



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The increasing number of golf developments, particularly in coastal habitats, has generated considerable controversy. In the Western Cape, golf courses and estates cover almost 5 000 hectares of land and this could increase to more than 11 000 hectares if current applications are approved. This represents a considerable threat to coastal environments, through fragmentation and loss of habitat. However, few attempts have been made to assess the direct consequences of these developments on biodiversity and, although many golf estates claim to be environmentally or biodiversity friendly, no one has put these claims to the test.

Sarah-Jane Fox, a Conservation Biology Masters student at the FitzPatrick Institute, studied the effect on bird communities of replacing natural strandveld habitat with a golf estate. The 'biodiversity-friendly' golf estate was carved out of predominantly pristine natural strandveld, leaving remnant strandveld fragments of varying size and shape. Those parts of the estate that were not pristine were cleared of alien trees and rehabilitated. The species richness, diversity and abundance of birds in fragments were then compared with a conservation area immediately adjacent to it. The golf estate was more species rich overall, as a result of the arrival of water-associated and generalist species such as Blacksmith Lapwing, Cape Wagtail, Common Waxbill, Pin-tailed Whydah and various

doves. However, it lacked a couple of species encountered in the conservation area, such as Cape Grassbird and Grey-winged Francolin and, overall, the diversity and abundance of birds was much lower in the golf estate. Of the species shared by the golf estate and the conservation area, those that were proportionally more abundant on the estate included Cape Spurfowl, Cape Sparrow and Southern Red Bishop, whereas those more abundant in the conservation area included Cape Bunting, Layard's Tit-Babbler and Cape Bulbul. Although the golf estate attracted a high proportion of generalist and granivorous species, this was at the cost of reduced numbers of insectivores, frugivores and nectarivores.

For example, the Southern Double-collared Sunbird was found in much lower numbers in the golf estate and seems to be particularly susceptible to fragmentation, which is likely to be a problem for those plant species that rely on it for pollination. The fragmentation of natural habitat presumably increases exposure of strandveld birds to edge effects, such as increased predation. Fragment size was the most important predictor of species richness, with larger fragments containing more species. To maintain the natural species assemblage found in the conservation area, a fragment of approximately 51 hectares of continuous pristine habitat would be required – the same area occupied by the average golf

The creation of golf estates results in fragmentation of habitats, with a dramatic effect on bird numbers.

course. There was no effect of distance from the adjacent reserve on birds, possibly suggesting that birds can move through the estate. However, the golf estate has only recently been developed and, for at least some resident territorial species, it is likely that insufficient time has elapsed for the full effects of fragmentation to be felt.

In order to minimise the effects of golf-course design on birds and other species, fewer, larger areas of natural vegetation should be maintained, rather than a plethora of small, narrow fragments. While admirable efforts are starting to be made to develop biodiversity-friendly golf estates, it is apparent that there is still considerable room for improvement. □

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