PERCY FITZPATRICK INSTITUTE (2)

The tiny Cloud Cisticola (left) was not found in habitat fragments smaller than 10 hectares, but Orange-throated Longclaws persisted in fragments as small as one hectare.

HABITAT FRAGMENTS AND BIRD DIVERSITY

Habitat loss and fragmentation are global problems and are recognized as one of the greatest current threats to the planet's biological diversity. Ecological theory (and common sense) predict that as patches of particular habitats become smaller and more isolated from one another, progressively fewer species will be able to survive within them. However, although theory may be able to predict the loss of species, the same theory generally is unable to predict which species will be lost.

The Cape Floral Kingdom has been identified as being especially at risk from habitat loss and fragmentation, but the only studies of these risks have targeted plants and their pollinators and almost nothing is known about the risks to most vertebrate taxa. Within the Cape Floral Kingdom, the most threatened and fragmented vegetation type is renosterveld. In the Overberg, renosterveld fragments are largely confined to steep slopes and shallow, rocky soils, where they lie embedded in a matrix comprising mostly uniform croplands.

Alison Cameron has recently completed a study in these fragments that set out to answer two key questions: firstly, how rapidly are bird species lost as fragments become smaller; and secondly, can we predict which species will be lost first? She selected 20 fragments for study, ranging in size from 245 hectares down to less than one-tenth of a hectare. In terms of species numbers within fragments of different size, she found a pattern that we could have predicted from theory. Interestingly, the patches behaved more like oceanic islands than mainland habitat patches in as much as small patches lost species rapidly. This suggests that the surrounding cropland matrix is an unfriendly environment for dispersal. By the time fragment size was down to about 50 hectares, approximately half the species had been lost, and below this size, the rate of species loss accelerated rapidly.

No theory can predict accurately which species will disappear from small patches. In general, large species are expected to disappear first because of their larger space requirements and hence smaller population sizes in fragments. However, Cameron found that patches smaller than 10–12 hectares had lost many small species including Lesser Double-collared Sunbirds, Cape Canaries and Cloud Cisticolas, whereas Malachite Sunbirds, Yellow Canaries and Grey-backed Cisticolas were found in patches smaller than one hectare.

Over the range of fragment sizes studied, there was no conclusive evidence that larger birds were more likely to disappear from small patches than were smaller birds. This may, of course, be because the truly large birds, such as Stanley's Bustard, had already disappeared from even the largest fragments.

Renosterveld is not a habitat high on most birders' habitat agendas. It is not particularly species-rich, nor is it frequented by scarce endemics. This study did, however, turn up one or two surprises. Striped Flufftails were present in the largest fragment – this species was not recorded from the Overberg area during the Atlas project. More exciting, and of greater conservation interest, was the presence of Grass Owls in two of the fragments. The only recent record of this species west of the Mossel Bay–George area is from De Hoop Nature Reserve. A specimen was collected 'near Cape Town' last century, indicating that the species has undergone an eastward range contraction. This study showed, however, that there is a small, remnant population in the Overberg and suggests that the future conservation of renosterveld may be important to its survival. □

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