Protected areas provide African birds with stepping stones to survival

June 20 2013

The protected area network in Tanzania is playing a vital role in the survival of savannah bird species as they move west in response to climate and environmental changes, according to new research led by the University of York.

Using data on savannah birds from the Tanzanian Bird Atlas project - which has documented Tanzanian bird distributions over recent decades - the researchers found that they are using protected areas as stepping stones as they move to areas further west where dry seasons are getting longer, with movements of up to 300km noted.

Much debate has centred on the effectiveness of the current protected area network to protect biodiversity in the face of climate and environmental changes.

However, the new study, which is published in *Ecology Letters*, not only provides the first evidence of climate-driven shifts for an African bird community, but suggests that continued maintenance of existing protected areas – which include national parks and game reserves – remains an appropriate response to the challenge of climate and environmental changes.

Lead author Dr Colin Beale, from York's Department of Biology, said: "Although the protected area network was set up for mammals, our research shows it is assisting dry bush species of birds to respond to land degradation, caused by over-grazing, conversion to crops and the loss of

trees, as well as climate change.

"We discovered that rather than declining in value as birds move in response to climate changes, protected areas in Tanzania are becoming increasingly valuable as land degradation exerts pressures elsewhere. Our research suggests that protected areas are buffering the bird community against extinction due to land degradation and offer stepping stones for species that are altering their distribution in response to climate change."

The study, which also involved researchers from Queens University Belfast and Biomathematics and Statistics Scotland, compared data for 139 Tanzanian savannah bird species, such as hornbills, francolins, the Rufous-tailed Weaver, Fischer's Sparrowlark and the Pangani Longclaw. Data from 1960 to 1989 was compared to data post 2000.

Unlike previous assessments of the efficiency of the protected area network in the face of climate change, the new study is based on observed changes rather than modelling.

Neil Baker, from Tanzania Bird Atlas, said: "This study once again emphasises the value of the long term collection of reliable, meaningful data and the vital role of the citizen scientist. Indeed, with so few professionals in the Afrotropics this is the only way to collect this information. With the accuracy of satellite derived variables improving and with widespread use of hand held GPS units, georeferenced observations will allow even more accurate assessments of population movements in the near future."

Provided by University of York

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