



marshalling FORCES

MARIETJIE FRONEMAN

The FitzPatrick Report in the July/August 2013 issue of *African Birdlife* highlighted the apparent plight of Martial Eagles. The comparison of SABAP1 and 2 data showed declines in reporting rates of up to 60 per cent of the species across South Africa. Particularly alarming was the fact that these declines have occurred even in the country's largest protected areas, including the Kruger National Park, long considered a stronghold for the species. As a result, Rowen van Eeden started a PhD study to understand the drivers of the declines of these impressive birds in Kruger.

By GPS tracking Martial Eagles, Rowen has begun to unravel the mystery of how the eagles use their habitat. Over 70 000 GPS locations have been recorded to date and are being used to understand the eagles' habitat requirements. The territory size of adults averages 110 square kilometres, which is similar to that of a pride of lions (100 to 250 square kilometres) and greater than that of leopards (15 to 40 square kilometres). Based on these crude figures, Kruger could potentially hold at most 175 breeding pairs of eagles, assuming all habitat within the park was

equally suitable for the species. This suggests that the total Martial Eagle population in Kruger is smaller than that of lions (approximately 1 600) and leopards (approximately 2 000).

However, not all adults remain on their territories year round. One female left her territory, travelling back and forth between Kruger and Mozambique for 272 days, and covered more than 2 200 kilometres before she was eventually killed in rural Mozambique. Evidently, during these travels, the eagles are exposed to a greater risk of human-induced mortality, with surrounding lands acting as a 'sink' for the Kruger population. To date, deaths of tagged Martial Eagles have also resulted from electrocutions and conflict during territorial disputes with conspecifics.

Young eagles are probably most at risk of dying as they are thought to travel widely before claiming a breeding territory. The GPS tracking has shown that after fledging, juvenile Martial Eagles remain on the parental territory for up to nine months before they disperse over large distances. The three juveniles tracked thus far each ranged over an area averaging 35 000 square kilometres, more than 1.5 times

the size of the Kruger National Park. They spend as much as 60 per cent of their time beyond protected area boundaries, traversing much of the lowveld and adjacent Mozambique. Thus even parks as large as Kruger are too small to adequately protect such a wide-ranging species. By identifying and mitigating the main sources of mortality we hope to successfully conserve the species.

Compounding the problems of dispersal beyond the park boundaries, breeding success also appears to have been surprisingly low during the 2013 and 2014 seasons, averaging just 0.24 chicks fledged per pair per year, only half the expected 0.5 (a fledgling every second year) reported elsewhere in Africa for this species. The possible reasons for this low productivity will be investigated in 2015.

In another research project, Masters student Jessie Berndt has explored the importance of Martial Eagles nesting on Eskom's power transmission pylons. This is particularly important in the largely treeless Karoo, where natural nesting sites are scarce. In collaboration with supervisors Andrew Jenkins, Res Altwegg and Arjun Amar, Jessie has developed a habitat-association model

to predict where Martial Eagles are likely to nest on pylons, and has used it to estimate how many pairs of eagles nest on pylons. So far 92 Martial Eagle territories have been found through aerial surveys, and the models predict a further 50 eagle territories along non-surveyed lines. The 140 or so Martial Eagle nests on the South African transmission network is clearly of national importance for this declining species.

Birders can help by reporting Martial Eagle sightings and nest locations, particularly those on power pylons, to *martial eaglesightings@gmail.com*. In the Kruger National Park we have colour-ringed 18 Martial Eagles and are especially keen to obtain sightings or photographs of these birds. Please include the date and location with all sightings submitted.

For more information, contact
The Director, Percy FitzPatrick
Institute of African Ornithology,
University of Cape Town,
Rondebosch, South Africa 7701.
E-mail fitz@uct.ac.za,
tel. +27 (0)21 650 3291 or
visit www.fitzpatrick.uct.ac.za



CHRIS VAN ROOYEN

below Most adult Martial Eagles hold discrete territories whereas juveniles tend to roam widely.

