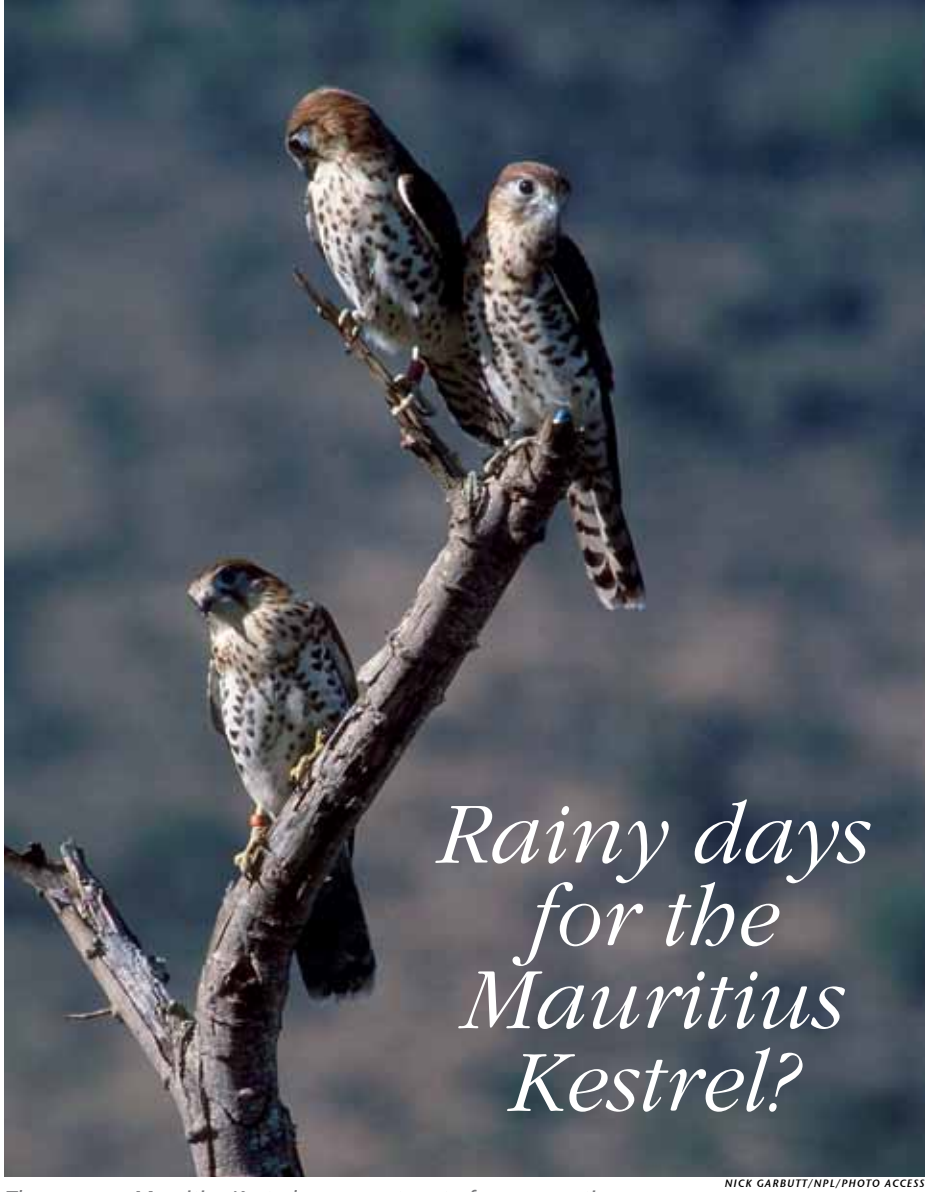

Rainy days for the Mauritius Kestrel?

NICK GARBUTT/NPL/PHOTO ACCESS

These young Mauritius Kestrels represent part of a conservation success story, but climate change may be threatening the future of this island species.

One of the most edifying bird conservation success stories of the 20th century concerns the Mauritius Kestrel *Falco punctatus*. It came within a hair's breadth of being added to the long list of island species that have slipped into oblivion; in 1974, the entire known population consisted of just six birds, two in captivity and four in the wild. The subsequent recovery of the kestrel is lent particular poignancy by the fact that it occurred on an island that was formerly home to the most iconic extinct bird of all time, the Dodo.

The seemingly doomed kestrel was winched back from the brink of extinction by the inspired efforts of a handful of dedicated conservationists. The ongoing recovery programme has been so successful that today the species is no longer red-listed as Critically Endangered or even Endangered, but is instead placed in the comparatively comfortable category of Vulnerable. However, the future of the Mauritius Kestrel may not be quite as secure as its upward trajectory on the stairway of Red Data threat categories suggests.

Research published earlier this year identified a hitherto unsuspected threat to the kestrels: climate change. The findings of this particular study reiterate the indirect nature of many global-warming effects, which in this case are mediated by interrelated links between weather patterns and the timing of key events in the kestrel's reproductive cycle. They also underscore the need for urgent intervention to slow the accelerating warming trend, a subject that will be echoed at the COP 17 conference to be held in Durban, KwaZulu-Natal, at the end of November.

In the study, biologists monitoring the kestrels at a site in the mountains of eastern Mauritius – where the birds were reintroduced in the late 1980s – discovered that breeding success is closely tied to rainfall at two critical times of year. First, the date on which the first egg is laid correlates with spring rainfall. Generally, the more rainy days there are in August, the later the females lay their first eggs. This pattern appears to arise from the effect inclement weather has on food provisioning rates by male kestrels: on overcast, rainy days it is more difficult for the males to hunt diurnal geckos, their major prey.

The data also revealed a second rainfall-related pattern. On average, the number of fledglings produced by a female is higher when she starts breeding earlier in the spring. The precise cause of this relationship has yet to be confirmed, but the most likely explanation is that chicks still in the nest during storms in the wet mid- to late summer have a greater likelihood of dying from hypothermia or drowning in flooded nests. A direct link thus exists between the number of rainy days in August and the number of young successfully raised in a season.

One of the many manifestations of global climate change has been a steady increase in spring rainfall in Mauritius. In the 1960s there were typically 10 to 15 rainy days in August each year, but this number has steadily increased to a present average of 20 to 25 days. More rain in August equals lower breeding success for the kestrels, and so this climatic shift means that the population's overall rate of reproduction has probably slowed.

While any reduction in overall breeding success may not currently be preventing the Mauritius Kestrel population from increasing, the problem is that it could severely hamper recovery from future catastrophic events, such as a once-in-a-century hurricane or an outbreak of disease. Small populations restricted to islands are inherently vulnerable to such unpredictable natural disasters and the reduced reproduction rate caused by climate change is of significant concern to those working to conserve the kestrels.

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REFERENCE
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