

dead heat

Extreme heatwaves can devastate animal populations in a matter of hours. In late 2018, Australia lost a third of its entire population of spectacled flying foxes during two days of extremely hot and humid conditions in the Cairns area. Mortality events involving tens to thousands of Australian birds have also been documented during the past few decades; in January 2010, approximately 200 endangered Carnaby's Black Cockatoos succumbed when air temperatures reached 48 degrees Celsius near Hope-toun in south-western Australia.

Until recently, mortality events comparable to those seen in Australia had not been reported in southern Africa. However, on 8 November 2020 air temperatures in northern KwaZulu-Natal passed the 40-degree mark by mid-morning and continued to rise, reaching between 43 and 45 degrees. Staff at Phongolo Nature Reserve started noticing dead and dying birds around the reserve headquarters. Subsequent searches turned up carcasses of 43 birds of 12 species, including Blue Waxbills, Fork-tailed Drongos, Magpie Shrikes, Green-winged Pytilias and Yellow-fronted Canaries. However, only one per cent of the reserve was searched, and the actual number of deaths was probably far higher.

Additional deaths were reported in the surrounding area, including about 50 Wahlberg's epauletted fruit bats in the town of Pongola and smaller numbers of bats around Hluhluwe village. Weather conditions on the day were strikingly similar to those associated with large-scale die-offs among



PHONGOLO NATURE RESERVE

Australian flying foxes, suggesting that the heat tolerance limits of African fruit bats are very similar to those of their antipodean counterparts.

On the same day, birds were observed frantically trying to drink and bathe in small pools of water in nearby Manyoni Private Game Reserve, where Adam Riley reported seeing unprecedented numbers of visibly heat-stressed birds drinking at and bathing in a puddle of water below an air-conditioning unit at Zebra Hills Lodge. The species included small insectivores such as Grey Tit-Flycatcher and Willow Warbler, which glean insects in tree canopies and usually do not descend to ground level.

The events marked a deeply concerning milestone for members of the FitzPatrick's Hot Birds Research Project. Until now, major heat-related mortality has been something that happened an ocean away in Australia, not on our doorstep. The increasing temperatures and more frequent heatwaves associated with global heating mean that similar events are likely to occur more often. Although only common, widely

A selection of the many small birds that died during an extreme hot-weather event in northern KwaZulu-Natal, 8 November 2020.

distributed species were involved in the KZN incident, extreme heat events potentially pose a serious threat to range-restricted, threatened species and they highlight the need for increased awareness and reporting of similar events.

We ask anyone who encounters dead birds during extremely hot weather to contact us at andrew.mckechnie@up.ac.za or susan.cunningham@uct.ac.za with details of the species and numbers involved. This will enable us to monitor similar occurrences and identify priority areas for management interventions to reduce birds' exposure to potentially lethal conditions.

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