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Satellite telemetry reveals site fidelity and rainfall event triggers of directed movement of Palearctic migrant in southern African savannas

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ABSTRACT:

Migratory raptors have long been assumed to range widely and randomly over their wintering ranges in southern Africa. Telemetry data are used to test this notion for one Palearctic migrant, the Lesser Spotted Eagle, *Aquila pomarina*, during the three to four months it spends in the semi-arid savannah of southern Africa. Kernel density estimation shows the existence of specific locations where one bird tracked over eight years (2004-2012), and another two birds tracked over one year (2012), spend the majority of their time, and to which areas bird one returns over successive years. A simple chi-square of directed versus wondering movements of birds to areas that had experience rainfall events (1mm or more of rainfall over two consecutive days) two days previous to the movement was significant, and showed that 75% of directed movements occur after a rainfall event. Rainfall events are known to trigger emergence of prey species, such as termites in this region of semi-arid savannah. The presence of site fidelity among Palearctic raptors enables conservationist to identify and protect critical sites required by such species during migratory journey stop-overs and winter grounds.

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