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20 April 2018

Power-line collisions threaten South African bird species

With a rich community of large terrestrial birds, southern Africa is of particular importance for its unique diversity of bustards, with six of its 11 species endemic to the region.

Ludwig's Bustard is southern Africa's third largest bustard species and as is generally the case with bustards, its conservation status is poor; it is listed regionally and globally as endangered. Collisions with power-lines pose a particular threat to South Africa's larger bustards, in particular the relatively little-known Ludwig's Bustard, *Neotis ludwigii*, according to a study done by researchers at the Percy Fitzpatrick Institute of African Ornithology (PFIA) at the University of Cape Town (UCT).

Dr Jessica Shaw of the PFIA says: "With an increasing number of other studies from around the world highlighting the threat that overhead wires pose to bustards, these results add to growing concern about power-line impacts on bustards globally. To adequately conserve these birds, it will be vital to better understand the ecology of lesser known species, to focus efforts on the search for effective mitigation (there is little evidence to date that commonly used line markers are effective in reducing bustard collisions relative to other species) and to work with power utilities to minimise impacts as far as possible. For example by avoiding key areas and taking contributory collision risk factors into account when route planning."

The global power-line network is continually being expanded, particularly in developing countries such as South Africa, but the construction of these man-made structures is built largely without taking measures to safeguard wildlife. And while much research has focused on high-voltage transmission power lines, lower voltage distribution lines, which are far more extensive, also kill birds.

The remote Karoo is home to Ludwig's Bustard and the team of researchers conducted comprehensive surveys throughout the core range of this species in South Africa every three months from July 2010 to April 2012. They surveyed high-voltage transmission lines by vehicle at five sites right across the Karoo region for two years and low-voltage distribution lines were surveyed on foot for one year (July 2011 – October 2012) to locate birds killed by collision with the lines.

Ludwig's Bustard's susceptibility to collisions is in part due to its large and relatively heavy body which affects its aerial manoeuvrability, penchant for flying in low light, extensive seasonal migrations and nomadic movements, and limited frontal vision.

The results showed of the 679 carcasses recovered, Ludwig's Bustards constituted 69% and other bustards a further 18% of the 30 species found dead. Contributory factors included: the season (collisions were more likely in winter), rainfall (were less likely in drier areas) and year on transmission lines (highlighting variability between years). Season and proximity to roads were significant variables on distribution lines, with collisions more likely during winter and away from roads. It may be helpful therefore to run future distribution lines along roads.

Although there is no evidence of a population decline for Ludwig's Bustard to date, results from the study make it difficult to understand how mortality can be sustained. A compounding factor is the mobility of the species in a remote area which means population and mortality estimates are highly variable, so it may be difficult to detect any decline until it is severe.

Notes to editors

To read the BOU blog on the recent collision paper (IBIS. DOI: 10.1111/ibi.12553.), click [here](#).

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