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Abstract

An assessment of population size is a fundamental stage in the conservation of any species. The recent availability of data from the Southern African Bird Atlas Project (SABAP) provides a tool to investigate the status and distribution of approximately 900 bird species covered by this work. It is often assumed, but rarely shown, that bird atlas reporting rates provide a measure of relative abundance. Here, we go one step further to assess whether or not reporting rate can be used to establish absolute abundance and thereby produce estimates of population size. To do so, one must establish consistent relationships between reporting rates and bird densities from samples throughout the species' range, and then extrapolate those densities to all areas where the species occurs. Field transects were undertaken in the austral winter of 1993, across the distributions of most near-endemic birds in north-western Namibia. Density values

obtained from the main riverine and upland zones inhabited by these species were used in combination with a Geographic Information System (GIS) and overlays of three spatial layers (vegetation, altitude and rainfall) to produce bird estimates for each sampled square. The relationship between reporting rate and abundance was investigated using log-linear regression for four species differing in size and habitat specialisation. We found significant relationships ($p < 0.005$) for three of the four species and results marginally significant ($p = 0.051$) for the fourth, most cryptic, species. We conclude that reporting rates can be used to give reasonable estimates of abundance for some species, but careful consideration must be given to factors such as field sampling effort, detail of GIS overlays and particularly the quality of the original atlas data.



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Keywords

bird atlas data; Namibia; endemic birds; reporting rate; population status

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