Diversity of bird species and their potential ecological roles in habitat maintenance on the wild coast of the Eastern Cape Province, South Africa

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Abstract

Birds provide important ecological services for the maintenance of ecosystems' integrity. However, there is limited research on ecological roles of different bird species in maintenance of habitats in South Africa yet many bird species are experiencing continuous conservation threats. In this study, we aimed to document the diversity of bird species in South Africa's Wild Coast nature reserves, and to determine potential role of each bird species in habitat maintenance using bird feeding mode classifications as a species function's proxy. Bird observations were conducted afield over four years (2017 to 2020). Over 864 hours of field sampling in 2017-2020, we accumulated 818 bird records containing 178 different bird species classified into 58 families. Shannon-Wiener Diversity Indices showed very high overall species diversity, and across the nature reserves ($H > 3.5$) with however, all nature reserves being non-significantly different. We noted 32 bird species representing 30 families occurring across four nature reserves with Silaka Nature Reserve having significantly more diverse bird families than Mkhambathi Nature Reserve while not significantly different to others. Forest bird species were more dominant (42.1%; $N = 178$) throughout observations than other habitat species. Annual bird species diversity across the observation years remained very high ($H > 3.5$) with non-significant differences across the years. However, the year 2018/2019, showed significantly higher abundance of birds across all nature reserves. Among different feeding modes, potential seed dispersers had a significantly greater number of records than other groups while pollinators were not significantly different in number compared to seed predators. A non-significantly different number of birds in medium to large size body size classes suggest availability of a variety of both pollinators and subsequent seed dispersal vectors. Consistent with other studies, conservation status and implications of bird species loss on sustainable vegetation integrity must be prioritised.

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