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DENSITY, DISTRIBUTION AND POPULATION DYNAMICS OF RUFOUS WOODPECKER (*Micropternus brachyurus jerdonii*) OVER THREE DECADES IN SRI LANKA

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The Rufous Woodpecker (*Micropternus brachyurus jerdonii*) is arguably the rarest woodpecker and probably one of the rarest birds in Sri Lanka. Its population seems to be declining in the recent past. Its density, distribution, and population status were evaluated using various techniques. Variable line transects with a fixed 20 m distance for either side were taken in locations where Rufous Woodpecker had been reported over the past 30 years. The information from the Global Biodiversity Information Facility (www.GBIF.org), eBIRD (www.ebird.org), and Ceylon Bird Club notes (CBCN: www.ceylonbirdclub.org) were used to determine the extent of occurrence (EOO) and area of occupancy (AOO). The EOO and AOO are 42,609.84 km^2 and 180 km^2, respectively. The total population size of the species calculated using the line transect data from 2020 to 2022 in Sri Lanka was estimated to be about 32,744 individuals. Kernel density estimation in QGIS was used to produce a heatmap to understand its density and distribution from the past to the present using GBIF (n=139). The equation ($H\ opt = (2/3n)(1/4)\times\sigma$) was adopted to calculate the kernels using the mean centre and standard distance. This occurrence data resulted in 48,733.26 km^2 of EOO. The area of occupancy evaluated over the past three decades (1990-2020) represents over 15 generations of the species to determine whether there has been any shrinking of its range during this period. Our analysis showed that the range of the species had not changed during the past three decades. Further, it suggests that the Rufous Woodpecker has a patchy distribution with fluctuating population size.

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Keywords: Area of occupancy, Extent of occurrence, Kernel density, Population dynamics