

DIVERSITY AND SPATIAL DISTRIBUTION OF AVIFAUNA ALONG THE RECREATIONAL ROADS OF KUMANA NATIONAL PARK

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Kumana National Park (KNP) is a distinct protected area situated in the southeast coast of Sri Lanka and is known as a paradise for birds. This study is a comprehensive attempt to investigate the avifaunal diversity of KNP targeting both aquatic and terrestrial ecosystems along the recreational roads. Depending on the vehicle activities in the park, recreational roads were categorized into two categories as the main and inner recreational roads from May 2023 to February 2024. Visual encounter surveys were conducted along the recreational roads by establishing 500 m transects and fixed-point count stations. Bird counts were taken at two different times, in the morning (0600-1100 h) and evening (1300-1800 h). The relative abundance and Shannon diversity index (H') were calculated to compare species composition and species diversity, respectively, across multiple sampling sites. A total of 136 bird species were recorded with a diversity of $H' = 4.15$. The highest species diversity was recorded from the main recreational road ($H' = 4.06$) compared to the inner recreational road ($H' = 3.60$). The availability of a variety of water bodies, including villu, lagoons, and lakes bordering the main recreational road, could be a significant driver of this phenomenon. Water bodies sustain bird diversity by supplying important resources such as food, shelter, and nesting grounds. This observation was further supported by a high species diversity within the aquatic ($H' = 4.00$) compared to the terrestrial ecosystems ($H' = 3.64$). The diversity between the aquatic and terrestrial ecosystems was significantly different (Hutcheson t-test, $p < 0.05$). According to the relative abundance, the most abundant species was the little cormorant (*Microcarbo niger*) in aquatic ecosystems (relative abundance = 4.87%) and the little green bee-eater (*Merops orientalis*) within the terrestrial ecosystems (relative abundance = 6.85%). Despite the possible anthropogenic disturbances along the main recreational road, the rich avifaunal assemblage in aquatic ecosystems signifies the importance of conservation and management interventions to preserve these vital ecosystems in KNP.

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