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Camera Trapping Coupled With Field Sign Survey Reveal the Mammalian Diversity and Abundance at Murree-Kotli Sattian-Kahuta National Park, Pakistan

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Abstract : Murree-Kotli Sattian-Kahta National Park (MKKNP) was declared in 2009. However, not much is known about the diversity and relative abundance of the mammalian fauna of this park. In the current study, we used field sign survey and infrared camera trapping techniques to get an insight into the diversity of mammalian species and their relative abundance. We conducted field surveys in different areas of the park at various elevations from April 2023 up to March 2024 to record the field signs (scats, pug marks etc.) of the mammals' species; in addition, we deployed a total of 22 infrared trail camera traps in different areas of the park, for 116 nights. We obtained a total of 5201 photographs using camera trapping. Results of camera trapping coupled with field sign surveys confirmed the presence of a total of twenty-one different mammalian species (large, meso and small mammals) recorded in the study area. The common leopard was recorded at four different sites in the park, with an altitudinal range between 648m-1533m. Distribution of Asiatic jackal and a red fox was recorded positive at all the sites surveyed in the park with an altitudinal range between 498m-1287m and 433m-2049m, respectively. Leopard cats were recorded at two different sites within the altitudinal range between 498m-894m. Jungle cat was recorded at three sites within an altitudinal range between 498m-846. Asian palm civets and small Indian civets were both recorded at three sites. Grey mongoose and small Indian mongoose were recorded at four and three sites. We also collected a total of 75 scats of different mammal species in the park to further confirm their occurrence. For the Indian pangolin, we recorded three field burrows at two different sites. Diversity index (H'=2.369960) and species evenness (E=0.81995) were calculated. Analysis of data revealed that wild boar (Sus sucrofa) was the most abundant species in the park; most of the mammal species were found nocturnal; these remain active from dusk throughout the night, and some of them remain active at dawn time. Leopard and Asian palm civets were highly overlapping species in the study area. Their temporal activity pattern overlapped 61%. Barking deer and Indian crested porcupine were also found to be nocturnal species they remained active throughout the night.

Keywords : MKKNP, diversity, abundance, evenness, distribution, mammals, overlapped
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