

Dietary Analysis of Sri Lankan Leopard (*Panthera Pardus Kotiya*) in the Unprotected Landscape of Upper Kelani River Basin of the Central Highlands: Implications for Conservation

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The Sri Lankan leopard is an endemic subspecies and the island's apex predator. Despite this status and the importance of the leopard as a flagship, umbrella and potential keystone species, little is known of its diet outside protected areas. This study investigated leopard diet in the unprotected tea estate landscape of the Central Highlands' Upper Kelani River Basin (UKRB). Eighty-three leopard scats were opportunistically collected during field surveys between 2017 and 2023, of which representative samples of prey hair were microscopically analyzed using established procedures. To further investigate diet composition, two biodiversity indexes were applied to analyze the diversity and evenness of prey species in the leopard's diet – the Shannon-Wiener and Simpson's Indexes. Results confirmed 18 prey species of leopard, with black-naped hare being the most common, followed by barking deer and toque macaque monkey. The first known record of a montane slender loris being consumed by a leopard was a significant finding of this study. Despite the study area being an unprotected landscape with human settlements, leopards mostly consumed wild prey (88%). Domestic cattle were not detected in scats with domestic dogs and cats found at relatively low levels (> 15% combined). Shannon-Wiener Diversity Index ($H^1 = 2.5$) showed a moderate diversity of prey species in the leopard diet with fairly high evenness implying that leopards in this area ingest a wide range of prey species. Simpson's Diversity Index ($D = 0.099$) supports the same, indicating no dominance among prey species. These results highlight the leopard's adaptability and its status as an opportunistic, generalist predator. Furthermore, the study demonstrates the importance of wild prey in the leopard diet, even in a human-dominated landscape and highlights the need to conserve both natural habitats and wild prey populations. Findings broaden leopard ecology knowledge and have practical implications for conservation initiatives in UKRB.

Keywords: *Sri Lankan leopard, Diet composition, Upper Kelani River basin, Opportunistic predator*