

Spatio-temporal patterns of human-wildlife conflict in North Wayanad Forest Division, India

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Human-wildlife conflict presented a substantial and intricate challenge in India, emanating from the overlapping interests and interactions between human communities and diverse wildlife species inhabiting the country. The escalating competition for space, resources, and habitat between human populations and wildlife emerged as a primary driver of these conflicts. The surge in urbanisation and the encroachment of human activities into wildlife habitats contributed to heightened conflicts between humans and wildlife. Furthermore, the expansion of agricultural activities was identified as a major catalyst for alterations in land use and the destruction of habitats. The scrutiny of spatiotemporal data pertaining to human-wildlife conflict incidents within the North Forest Division of Wayanad district in Kerala, India, from 2014 to 2018 was conducted. Over the study duration, a cumulative count of 3,869 conflicts transpired, involving diverse wildlife species encompassing Asian elephants, bonnet macaques and wild pigs. Asian elephants constituted nearly half of the aggregate conflict incidents spanning from 2014–15 to 2018–19, registering the pre-eminent number of occurrences. Within the North Wayanad Forest Division, the bonnet macaque emerged as the second-most vexatious species among the quintet causing the most issues, with recorded conflicts tallying 1,399 in the North Wayanad Forest Division.

these entities compete for scarce resources such as water, land, and sustenance, leading to conflicts. With the continual expansion of human activities, the clash between human interests and wildlife has become a pivotal concern for conservationists, policymakers, and researchers². As defined by the International Union for Conservation of Nature in 2022, human-wildlife conflict entails adverse repercussions on people, wildlife, and the environment arising from their interactions, posing a formidable challenge to biodiversity conservation.

Various investigations have corroborated those modifications in land use, particularly habitat fragmentation and depletion, exert detrimental effects on the biodiversity of an area, escalating human-animal conflict. Moreover, the proliferation of the human populace and the expansion of agricultural pursuits have been identified as pivotal catalysts for changes in land use and habitat despoliation³. In the densely populated state of Kerala, India, rapid transformations in topography due to amplified agricultural, touristic, and infrastructural activities have led to a pronounced loss of natural habitats, intensifying conflicts between humans and wildlife⁴. The objective of the study is to ascertain the most troublesome animals and their spatial and temporal patterns in the North Forest Division of Wayanad during the study period. The research aims to decipher the complex interaction between wildlife distribution and conflicts between humans and wildlife in Wayanad, which is home to several endangered species often involved in clashes with human communities, including elephants, tigers, and leopards⁵. The study, conducted over a five-year period from 2014 to 2018, assesses the spatial and temporal patterns of human-wildlife conflict in North

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