

Simple spatial & statistical analytical techniques to aid wildlife management: a case of elephants in multiple use area of Uttar Kanada district, Karnataka, India

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ABSTRACT

The available information hosted on the Western Ghat Spatial Data Infrastructure – an open-source database was used to showcase some simple yet useful spatial and statistical analysis tools for the wildlife managers away in the field with limited GIS and statistics capacity. In Indian scenario, the flagship species Asian Elephant (*Elephas maximus*) is an important subject for application of management efforts of landscape. Available data on elephant sighting as well as anthropogenic and landscape parameters were extracted. Elephants were found to be frequent in primary moist deciduous vegetation type ($\chi^2 = 12.62$, $p \leq 0.05$) with gentle to moderate undulation ($\chi^2 = 25.42$, $p \leq 0.01$). Elephants responded to anthropogenic structures like roads ($t = -3.36$, $p \leq 0.05$), human settlements ($t = -2.06$, $p \leq 0.05$) and agriculture tanks ($t = -2.18$, $p \leq 0.05$). The current work is not intended to arrive at any conclusion on elephant ecology or behaviour but to showcase how open-source data and tools can help wildlife managers in assessing the animal distribution pattern and animal response to various environmental and anthropogenic factors.

Key words: Habitat use, Open-source Database, Quantum GIS, Tropical Forest, Western Ghat

