

Study of the Ranging Behaviour Pattern of Two Male Elephants of the Sinharaja World Heritage Forest with Reference to Human-Elephant Conflict

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Abstract

Sinharaja World Heritage Forest is inhabited by two male elephants who seem to be the last remnant members of an isolated, small wild population who are not a part of a metapopulation. Identification of focal individuals was possible as one bears tusks while the other does not bear tusks or tushes. The Human elephant conflict (HEC) has become a problem to some peripheral villages of the Sinharaja forest. Ranging behaviour pattern of the two focal animals was studied based on secondary information available for the past 17 years (2001-2018) and using direct observations conducted from March-July 2018. A structured interview survey was carried out among the people of peripheral areas of the forest (n=60) to study the pattern of activity of elephants with reference to their occurrence, crop raiding and other conflicts with humans including attacks and casualties. In addition, records at beat offices of the Department of Wildlife Conservation (DWLC) and Grama Niladari offices; field-notes of wildlife rangers and GN were examined to obtain locations as to which elephants have become a problem. Thus, there were 110 respondents representing an array of stakeholders. The presence data of elephants obtained from direct and secondary sources were analyzed using a GIS Platform where ArcGIS 10.4 was used to determine the spatial dispersion of the elephants. The time of activity showed a ranging pattern as from March to July both individuals had been occurring together in Dolekanda, Rambuka, Rakwana South and Kathlana GN divisions causing HEC. It was revealed that this was the time that both elephants showed musth behaviour. During the remaining time of the year they were known to be roaming predominantly in forest-edge habitats. Based on sighting data, a relatively predictable pattern of elephant movement was evident, for instance elephants move out from the HEC core at the end of August heading towards Morningside of Sinharaja. Using the present data, the fundamental niche or the extent of occurrence of the elephants was estimated to be 22,853.8 ha (56,472.9 Acres). The area of occupancy determined by elephant sightings was used to estimate the potential home range of the elephants which was estimated as 2117 ha. Elephants in the Sinharaja WHF are an important component of the ecosystem. In-depth study is mandatory to understand resource utilization of them throughout the year. Minimizing HEC should be conducted using integrated mitigatory measures where the DWLC and communities operate together.

Keywords: Elephants, Ranging behaviour, Sinharaja Forest, Human-Elephant Conflict