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Assessment of the landscape characteristics of the habitat of wild elephants in Sri Lanka

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Abstract

For the long term conservation of wild elephants in Sri Lanka, information on landscape characteristics i.e. where and what landscape support the population of wild elephants is vital. Though there have been several studies on the biology, distribution and habitat preferences of elephant in the past yet landscape characters have not been considered any detail. Hence the present study was done using 5X5km grid overlaid on 1:50000 scale land use maps of the country covering the historic elephant range in Sri Lanka. In 2011, each of the 25 km² cell was covered by interviewing knowledgeable forest communities and wildlife officers as a reliable source of information on presence and absent of elephants in the area. Vegetation types, terrain, water availability and road densities & human population densities were recognized as landscape characteristics. The study was focused to assess correlation among landscape characters and elephant presence. Elephants occupied >30% of Sri Lanka's land area with approximately 40% being contained within protected areas where human access is regulated. Elephant range was largely contiguous except for a few isolated forest areas. However the large portion of elephant range is not protected. Prevalence of monsoonal forest and mosaic of different vegetation types were the strongest positive predictors of elephant presence. Road density and human population density were significant negative predictors. That the elephant populations had increased was the common perception among 78% of respondents. Although 36% of respondents regarded elephants as a threat, 93% support their legal protection. This positive attitude toward protection would facilitate conservation efforts. Establishment of additional protected areas and forest connectivity through implementing proper land use plans in areas where the elephants are present would enhance elephant conservation. In addition to that further studies could be implemented to plan for the maintenance of viable population of wild elephants in Sri Lanka.

Key words: Wild elephants, distribution, landscape analysis, conservation, forest connectivity, land use plan