Habitat suitability analysis of elephant in palamau tiger reserve, Jharkhand using geospatial technology

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Abstract

Nature supports a great variety of ecosystems with very diverse flora and fauna. Since the turn of this century people have speeded up the species extinction process by polluting the environment, destroying habitats including plant and animal species. Hence, Wildlife is at the brink of destruction. Elephant is the largest living land mammal found in tropical regions of Africa and Asia. The influence elephants have over much plant and animal species means they are often referred to as keystone species that are vital to the long-term survival of the ecosystems in which they live. Nowadays it has threat for survival due to anthropogenic reasons and the destruction of natural habitats. In the present study, evaluation of elephants habitat in Palamau Tiger Reserve is carried out using remote sensing, ground and other ancillary sources and is integrated using GIS using Weighted Overlay model. Different thematic maps viz., land use/cover, railway buffer, drainage buffer, fire buffer and multiple ring buffers of roads have been prepared to support the objective of the study. The weighted overlay analysis model is used for identifying different potential areas of habitat for this threatened species. The most suitable area for Elephants within the Tiger Reserve is found about 70.43% of the total area which could be due to is probably due to dense forest, least disturbance from people away from road and railway line, presence of bamboo trees. Other reasons of elephant's occurrence in this region may be due to the presence of food and water body and being least prone to poachers. The moderate and least suitable areas come about 22.25% and 4.85% respectively. Identification of habitat potential areas for Elephants species could be considered as one of the most important steps towards the conservation and geospatial technology could be utilized for any similar species for this purpose which is under threat.

Biography

Ranjan has completed her B.Sc. degree in Bio Medical Sciences from University of Delhi, India, in 2012 and at the age of 23 years she did her M.Sc. in Natural Resource Management from Guru Gobind Singh Indraprastha University (India), in 2014. Her basic interest is in, Wildlife conservation and Geospatial Information Technology.

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