

**Research Article**

## **Land use change pattern of the greater one-horned rhinoceros (*Rhinoceros unicornis*) in Chitwan national park of Nepal**

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### **ABSTRACT**

Land use change pattern shrinking habitats of greater one-horned rhinoceros (*Rhinoceros unicornis*) in lowland of Nepal. It has been attributed to many factors including habitat conversion, fragmentation, infestation of weeds and climate change. We examined the land use change and habitats utilization by *R.unicornis* overtime in the Chitwan National Park and surrounding area of Central Nepal through field observations combined with geographical information system (GIS) data and satellite images. We used landsat Imageries of 1993, 2000, 2010, and 2014 to examine land use change in the Chitwan Valley. These findings were verified through field observation. Sighting locations of *R. unicornis* in different land were carried in field observation and from literature review. We found that land use has significantly ( $\chi^2=271.87$ ,  $\alpha=0.05$ ) changed over time and influenced habitat utilization of *R. unicornis* in the Chitwan Valley. We also analyzed effect of land use change on habitat of rhinoceros and shifting of rhinoceros from the east area to west area with changing preferred habitat as grassland and riverbeds over time. Interestingly, we found that preferred habitat of *R.unicornis* significantly ( $\chi^2=410.2$ ,  $\alpha=0.05$ ) different in the Chitwan Valley and, preferably habitat is sparse forest/grasslands and riverbeds. Infestation of *Mikania micrantha* decouple with climate change are also responsible factors for changing land use pattern of the eastern and central lowland of Nepal. Our findings provide information useful for implementing effective strategies for long-term conservation of wildlife in the Nepal and beyond.

**Key words:** Chitwan National Park, land use pattern, *Rhinoceros unicornis*, riverbeds, sparse forest

