

Land cover change and its impact on human - wildlife conflicts in Mullaitivu District in Sri Lanka

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Abstract

Land-cover change has caused and will continue to cause dramatic changes in the structure and function of ecosystems. Researches provide descriptive and explanative information on dynamics of land cover changes. This is one of the prime driving factors of deterioration of biodiversity and human wildlife conflict. After ending the long lasting civil conflict in 2009, Mullaitivu District has undergone rapid rehabilitation, reconstruction and development processes. As a result, a significant land covers change has occurred in many parts of the district. According to local communities and officers, incidents of wildlife conflicts have increased considerably in recent years. The aim of this study was to identify changes in land cover in Mullaitivu District and analyze the contribution of land cover changes in the human - wildlife conflict. The study was carried out using primary data such as field observations, interviews etc., and satellite images as secondary data. Data were analyzed using Geographic Information System (GIS) and statistical methods such as Normalized Difference Vegetation Index, transition matrix and persistence indices. In the study, land cover maps of 1994, 2006 and 2018 were generated and changes observed with accurate statistics, that could be compared with the available information on reported human-wildlife conflicts. Accordingly, it is confirmed that land cover changes significantly contribute to the conflict between human and wildlife; particularly the highest correlation were observed between extent of forest cover and incidents of the conflicts reported. The causes for deforestation are encroachment of forest due to the anthropogenic activities. Local people continually reported the conflict events to the officers concerned. However, no effective measures were adopted to protect settlements and farms from the wildlife. It is suggested as immediate measures the establishment of fence around the agriculture and settlement areas and control of deforestation, and as a long term measure the establishment of forest corridor merging the isolated forest patches and rezoning the wildlife reserve, human settlement and agriculture. Moreover, this study implies to create the awareness on wildlife conflict and protect biodiversity, which are essential for conserving the wildlife species.

Keywords: *Deforestation, Geographic Information System, Human-wildlife conflict, Land cover change, Mullaitivu District*

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