

Abstract

Habitat conversion can be a major threat to biodiversity. Recent and current levels of human activities on landscapes appear to be overriding the natural changes to ecosystems brought about by climate variations in the past millennia. The impact of anthropogenic activities on wildlife habitat and species vary depending on the spatial and temporal scales considered and the persistence of the activities in the landscape. This study was carried out in Meru Conservation Area (MCA) to examine land use and land cover changes (LULC) that have taken place within and around the Protected Area (PA) from 1985 with an emphasis of anthropogenic activities which have altered wildlife habitat and species. The distribution of land use types within and around MCA has produced land use patterns which this study seeks to establish the extent and effects in relation to wildlife conservation. To establish the LULC, Landsat satellite images of medium resolution were acquired and interpretation done using ArcGIS. Four satellite images with a span of three decades from 1985 to 2015 were acquired for analysis. The results revealed significant changes in MCA ecosystem over the study period, accounting for 9.9% and 6.1% increase in grassland and bareland respectively. This means that agricultural activities are encroaching towards the protected areas in the land that was formerly used as wildlife corridors and dispersal areas. It is also an indication that there is a significant change in the forestland and shrubland which has reduced by 2.3% and 15.7% respectively resulting to bareland and grassland. The results of the study provide an insight on the threat to the future survival of wildlife in their ecosystems due to declining ecosystems productivity as well as socioeconomic livelihood of communities living around the MCA. The results of this study therefore call for an integrated planning approach towards management of protected areas in order to meet wildlife and human needs in view of the changing climate regimes.