



Analysis of Land Use and Land Cover Dynamics and Forest Disturbance in Western Ghats Region of Maharashtra, India

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Abstract: Human activities have influenced landscapes due to its various development activities, which in turn has led to degradation of environmental quality. In the present study, land use land cover (LULC) dynamics of Western Ghats of Maharashtra were mapped using Landsat and LISS 3 satellite data. Hybrid image classification approach was employed for mapping different land use land cover types and diverse forest ecosystem at 1:50000 scale. Altogether ten vegetation type classes were mapped in the study region for the year 1991, 2000 and 2011. Results reveals that forest types like dry deciduous, moist deciduous, semi-evergreen and evergreen forests have decreased by 0.22% (79.70 km²), 0.25% (88.80 km²), 0.26% (94.30 km²) and 0.11% (37.60 km²). Other classes like built-up, waterbodies and agriculture have increased by 0.26% (93.1 km²), 1% (358.7 km²) and 0.93% (333.9 km²). Landscape metrics were used in the study area to examine the levels of fragmentation of the forested area and to study the degree of disturbance. Fragmentation analysis reveals increase in edge and perforated areas, 5.9% and 8.3% in 2011. Very high disturbance areas increased from 12.4% in 1991 to 26.2% in 2011. The research finding and analysis will help us to prioritize or develop an approach to conserve tropical forest ecosystems.

Keywords: Western Ghats (WG), LULC dynamics, GIS (Geographical information system), Landscape metrics, Disturbance index
