

Statistical modeling of old Oyo national resources depletion using socio-spatial indices

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ABSTRACT:

National park is a pre-requisite one to the development of successful biodiversity. This study was carried out to examine the effectiveness of using statistical modeling for predicting socio-spatial variable in Old Oyo National park area less than 30 Km and above 30 Km. The coverage area were less than 30 Km (inside the park) and above 30 Km (outside the park). Geographical Information System software was used to map the area within and outside the National Park. Statistical modeling was done using multivariate linear regression model. High correlated effect was observed for roads less than 30 Km ($r=0.78^{**}$) and 30 Km (0.52^{**}) above the buffer zone. Road density had higher prediction accuracy ($R^2=0.87$) within the buffer zone. Total area and number of polygons had significant ($P<0.05$) and high correlated effect with human land cover. It is therefore concluded that change in natural land cover had a significant degrading effect on park resources below <30 Km and >30 Km in OONP, Oyo State, Nigeria.

Keywords:

GIS, Statistical modeling, Socio-spatial variables, OONP resources.