

ABSTRACT

Since 1999 when democracy was reintroduced in Nigeria, the increasing revenue from crude oil export has resulted in tremendous expansion and intensification of land uses in several towns including Sokoto. In Sokoto Metropolis, residential and commercial land uses have largely encroached upon green areas within and at the margin of the town. This study inventoried biodiversity resources in some vegetation patches in the metropolis. Normalized Difference Vegetation Index (NDVI) was computed for the study area after applying image pre-processing and processing standard algorithms to near-anniversary dry season Landsat data of 1984, 1998, 2013 and 2017. Z-scores were calculated for the NDVI images, while each was classified using 1 standard deviation to the mean ($\mu \pm \sigma$) algorithm. A field inventory of both woody and herbaceous vegetation as well as faunal species was subsequently conducted at some selected patches using quadrat samples. An in-depth interview with people living in the neighbourhood of the patches was also conducted. Results show a downward trend in vegetation coverage of the metropolis over the years. Patches A and D are 100% lost, while only 4% and 21% of B and C are left as at 2017. Also, there are 34 woody species belonging to 21 families; and 19 herbaceous species belonging to 20 families. While the Combretaceae family constitute the most abundant woody species, the Gramineae family is the most abundant of the herbaceous species. In the faunal study, the most abundant were invertebrates, followed by vertebrate avian, rodent and reptilian species. Utilitarian product/services provided by vegetation patches include food supplements, feed for livestock, medication, fuel-wood and building materials amongst others. Consequent upon biodiversity resource degradation, it is recommended that the fragmented patches be protected while already destroyed ones should be replicated in the neighbourhood lands.

Keywords: Land use, Green Area, Woody species, Herbaceous species, Fauna