

## PLANT STRUCTURAL POPULATION AND DYNAMICS OF DEGRADED ECOSYSTEMS IN SOUTHERN BENOUE OF NORTH CAMEROON

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### ABSTRACT

The study of the structure and dynamics of vegetation was carried out in the ecosystems of southern Benoue in northern Cameroon. The general objective of this work is to characterize the structure of the vegetation and to assess the degradation of the ecosystems. The inventory methods chosen include biodiversity survey techniques commonly used in ecological studies. A total of 36 100 m x 100 m quadrat plots were established in four plant formation: reserve, forest gallery, field and anthropized savanna to take dendrometric parameters such as size, diameter at breast height of all woody species. Landsat satellite images were processed and analyzed between 1989 and 2019 using Google Earth and GIS software, QGIS 10.12.1. The vegetation presents a physiognomy of open forest with a diametral L-shaped structure reflecting the dominance of individuals of small DBH and a vertical "U" structure reversed from sites and plant formations reflecting a low representation of juvenile and adult individuals. As for the diachronic study by remote sensing, it emerges from the variations of land use elements an increase in field (by 29%, 10% and 20%), of the grassy savannah (by 2%, 14% and 8 %) and buildings and bare soil (by 5%, 8% and 2%) and a decrease in shrub savannah (by -31%, -23% and -14%), in wooded savannah (by -2%) , -5% and -12%) and gallery forest (-4%, -5% and -4%) respectively for Garoua 3, Lagdo and Ngong. Overall, our zone is marked by an accentuated state of degradation of the vegetation with a current state of cover of the grassy savanna of 38%, of the field of 28%, of the shrub savannah of 16%, of the wooded savanna and the frame and bare floors of 7% each, the forest gallery of 5% and the open water of 4%. These results open up better prospects for the development of planning and development mechanisms of this area not yet deeply explored for the bases of a good management strategy.

**Keys words:** plant population, dynamics, ecosystem, Benoue, Cameroon