



Comparative Assessment of Tree Species Diversity and Conservation Status in Farin Dutse and Wardawa Forest Reserves, Jigawa State, Nigeria

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ABSTRACT

This study evaluated the diversity and conservation status of tree species in Farin Dutse and Wardawa forest reserves in Jigawa State, Nigeria. The study focused on the assessment of conservation status and species diversity, identifying threatened species to protect biodiversity, promote ecosystem resilience, and ensure long-term sustainability of ecosystems. A systematic sampling technique of two line transects of 1km length with a 400m interval was employed, which consisted of 4 plots of 100 x 100m each at an interval of 200m was laid alternately along each transect. The Simpson diversity index revealed high diversity in both reserves, with Farin Dutse exhibiting the highest diversity index ($D = 0.985$) and Wardawa ($D = 0.970$). The Sorensen's similarity index showed a high floristic similarity (89.01%) between the two reserves, indicating a shared species composition. The IUCN conservation status assessment revealed that 60% of tree species were of "least concern," while 6% were threatened (2% vulnerable, 2% endangered, and 2% near threatened). Notably, 29% of species were data deficient, requiring further evaluation. This study emphasizes the importance of sustainable management and conservation practices to preserve the ecological integrity and biodiversity of these forest reserves, ensuring the long-term availability tree species. Effective conservation strategies are essential to protect these valuable ecosystems.

Keywords: Diversity, Sorensen's similarity index, conservation status, Tree species, Forest reserve.

INTRODUCTION

Forests are the most diverse terrestrial ecosystem endowed with wide array of tree species which have economic, social and cultural roles in the lives of many local communities (Wunder, 2021). Tree is a vital resource as they help in the improvement of human welfare and have economic, social and environmental benefits; they play important roles in the economic development of many societies (Okonkwo et al., 2021). They are

generally exploited for three main products namely, for: (1) quality timber, (2) non-wood products, (like bamboo, resin, spices, fruits, and other food) and (3) fire wood charcoal. However, the increased demand for forest resources and the technology adopted for the extraction of forest products, without corresponding advancement in sustainable management practices, have caused severe deforestation and degradation of forest

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