

## Geographic Information System Applications in Prioritizing Karlahi Forest Reserve Area for Conservation

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**Abstract :** This study focused on assessing conservation priorities within the Karlahi Forest Reserve of Fufore Local Government in Adamawa State. The main objective was to identify specific areas within the forest reserve that require immediate conservation attention. The research employed remote sensing and GIS techniques to achieve this goal. By overlaying the IDRIS Silva module results, a spatial distribution map was generated, highlighting the cumulative priority areas within and outside the forest. Among the total vegetated area of 26.38 km<sup>2</sup> in the Karlahi Forest Reserve, the analysis revealed that 16.16 km<sup>2</sup> were classified as high-priority conservation zones. Additionally, 4.59 km<sup>2</sup> and 5.63 km<sup>2</sup> were identified as medium and low-priority areas, respectively. In light of these findings, it is recommended that conservation efforts incorporate detailed land cover information and regular assessments of species diversity. Furthermore, strict adherence to national and state policies regarding forest reserves and parks is crucial for effective conservation management.

**Keywords :** priority, Karlahi, forest, reserve, IDRIS Silva, species diversity

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