Title: Vegetation structure and regeneration status of the moist, evergreen, afromontane Bore Anferara–Wadera forest in southern Ethiopia

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Abstract

In a survey of the Bore–Anferara–Wadera forest to study the vegetation structure and regeneration status of woody plant species, 112 quadrats were systematically sampled along altitudinal transects to collect vegetation data. Nested sample plots of 30 m × 30 m and 5 m × 5 m were laid for collecting data on abundance and some variables of tree and shrub size. The regeneration status of woody species was assessed by counting all seedlings within the main sample plot. Woody plant species taller than or equal to 3 m were counted and their height and DBH measured. Density, frequency, basal area and importance value (IV) of woody plant species were computed. A total of 136 vascular plant species belonging to 119 genera and 63 families were recorded. The overall Shannon—Wiener diversity value was 3.84 and evenness was 0.78. Total density of trees and shrubs with DBH > 2 cm was 1047 ha−1. Size class distribution of woody species across different DBH and height classes indicated a relatively high proportion of individuals at lower classes, suggesting impacts of past anthropogenic disturbances. Analysis of population structure and regeneration status of the forest revealed various patterns of population dynamics where some species were represented by only a few mature plants, suggesting that they are on the verge of local extinction and that immediate conservation measures should be taken. The results highlight the need for joint management and conservation measures by the government, local people and other stakeholders to abate the rapid rate of deforestation and promote sustainable utilization of the forest resources in this forest in southern Ethiopia.

Keywords:

Journal of Forestry Research 31 (2020), 953–967

DOI: https://doi.org/10.1007/s11676-018-00872-y

Link: https://link.springer.com/article/10.1007/s11676-018-00872-y