IMPACTS OF *PROSOPIS JULIFLORA* (FABACEAE) INVASION LEVEL ON NATIVE PLANT DIVERSITY, BIOMASS, AND STRUCTURE IN THE LOWER OMO VALLEY, SOUTH ETHIOPIA

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The invasion of *Prosopis juliflora* (Swartz) DC increased at alarming rate devastating native plant diversity. This study aims to investigate the impacts of *P. juliflora* on native plant species in the Lower Omo Valley, South Ethiopia: A stratified systematic sampling technique was used to collect vegetation data. The study area was stratified into four strata based on the level of invasion of *P. juliflora,* as High, Medium, Low and Negligible invasions. In each stratum, 10 × 10 m quadrats were laid systematically to collect data on trees and shrubs, whereas 3 × 3 m sub-quadrats were established at the four corners and the center of 10 × 10 m quadrats to collect data on saplings, and seedlings. Within each 3 × 3m sub-plots, 1 × 1 m sub-quadrats were laid to collect data on herbaceous plants. The findings revealed that most plant species were recorded from negligible and low invaded levels (46.66% and 34.78%). The true diversity (effective number of species) and Evenness were higher in negligible and low invaded levels (17.81 and 17.64) and (0.62, in each). The low and negligible invaded levels had the highest aboveground biomass. At highly invaded levels (HIL), all native woody species exhibited markedly reduced diameters at breast height (DBH), forming a J-shaped population structure. Thus, native plant species had poor regeneration status. A notable reduction in native species was observed with increasing *P. juliflora* invasion area. To protect biodiversity, comprehensive ecological and botanical studies are necessary, examining species composition, diversity, and distribution in relation to environmental and edaphic variables.

Keywords: Abundance; invasion levels, native plant diversity; Nyangatom district and *Prosopis juliflora*

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