XIII | Congresso de
ECOLOGIA
III International Symposium
of Ecology and Evolution
Múltiplas ecologias: evolução e diversidade
08 a 12 de outubro de 2017 • UFV - VIÇOSA | MG

CONGRUENCE OF ENDEMIC, THREATENED AND OVERALL TREE SPECIES RICHNESS PATTERNS REGARDING ATLANTIC FOREST PROTECTED AREAS

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Tema/Meio de apresentação: Conservação da Biodiversidade/oral

Statistical and macroecological approaches allow us to evaluate the relationship between species richness distribution and environment, thus, helping us to select priority areas for conservation regarding features such as overall richness, conservation status and endemism. This study aims to evaluate the congruence between endemic, threatened and total tree species richness considering the Atlantic Forest protected areas. Georeferenced data of 4298 species of trees of the NeoTropTree database (Oliveira-Filho 2014). Using a grid of the approximate area of Atlantic Forest domain with cells of 0.5 x 0.5 degrees, we determine the maps of richness distribution. We performed a rarefaction model using the Jackknife – 1 estimator to determine the quality of the grid inventory. We also compared the correspondence of endemic and threatened richness with overall richness, and the correlation of richness with Protected Areas coverage per cell. We found a high correlation ($r > 0.94$ $p < 0.0001$) between endemic species richness and overall species richness that suggest a high congruence between endemism and total richness, differing with the reported in the literature at global scale. High correlation between threatened species richness and overall species richness were found too. Protected areas does not show significant correlation with either overall richness, conservation status or endemism, suggesting that these areas really does not protect the majority of Brazilian Atlantic forest trees. The richest areas (either overall richness, conservation status or endemism) of trees should be used as priority areas for conservation in the Atlantic forest, creating new or enlarging preexistent natural reserves.