



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

DISTURBANCE IN CAATINGA PLANT COMMUNITIES: IMPACTS ON FUNCTIONAL AND PHYLOGENETIC DIVERSITY

Nayara Mesquita Mota^{1*}, Markus Gastauer², Juan Fernando Carrión^{1,3}, João Augusto Alves Meira-Neto¹

1. Laboratory of Ecology and Evolution of Plants, Universidade Federal de Viçosa, Viçosa, Minas Gerais, 36570-900, Brazil; 2. Instituto Tecnológico Vale, Rua Boaventura da Silva, 955, Belém, Pará, 66055-090, Brazil; 3. Programa de Pós-Graduação em Botânica, Universidade Estadual de Feira de Santana, Avenida Transnordestina s/n, Novo Horizonte, Feira de Santana, Bahia, 44036-900, Brazil. *Correspondence to nay.mmota@ymail.com

Tema/Meio de apresentação: Ecologia de comunidades/Pôster

Frequent disturbances in Caatinga vegetation are a large concern for the maintenance of the region's biodiversity. Studies that evaluate consequences of these disturbances on the functional and phylogenetic diversity of communities are still incipient. In this sense, this work seeks to assess whether the constant disturbance in this vegetation has as consequence the functional and phylogenetic impoverishment of the communities evaluated. Thus, wood vegetation (circumference at ground level ≤ 10 cm) was sampled in eight 20x50 m plots, four of them near a road (unprotected area, high disturbance regime) and four of them at the Canudos Biological Station (protected area, low disturbance regime). To analyze the functional diversity, we used four indices: functional richness (FRic), functional evenness (FEve), functional divergence (FDiv) and functional dispersion (FDis). We used eight functional attributes to measure functional diversity: resprouting abilities, nitrogen fixation capacity, succulence with spines, urticancy/toxicity, life form, endozoochory, maximum height and maximum diameter. We also calculated the phylogenetic diversity (PD) as the total sum of branch lengths joining all species from each plot and their respective standardized measure (SESPD). These metrics were analyzed in generalized linear models to test if unprotected areas differs of protected areas. F-test was used to assess significance. Unprotected areas differed significantly from protected areas in relation to species richness ($p < 0.001$), PD ($p = 0.023$) and Friq ($p = 0.0004$). However, these variables are correlated. So, Friq and PD are maintained proportionally to the number of species. The other attributes of functional diversity and SESPd did not differ ($p > 0.05$). Our results show that communities under high disturbance regime suffer a decrease in richness of species and consequent loss of functional richness and phylogenetic diversity. Therefore, results suggest that high disturbance regime in Caatinga leads to the impoverishment of this vegetation, which is able to diminish communities' ability to respond to environmental changes.

The authors thank the DNIT (50600.056799/2013-21), Funarbe (6991), CNPq (301913/2012-9), CAPES and FAPEMIG (APQ-01309-16) for grants, financial support and scholarships.