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

HERBIVORY LEVELS ACROSS A DISTURBANCE GRADIENT IN AMAZONIA

Júlia Barreto[1*] & Jos Barlow[1,2,3]

1. Universidade Federal de Lavras, Setor de Ecologia e Conservacao. Lavras, Minas Gerais, CEP 37200-000, Brasil; 2. Lancaster Environment Centre, Lancaster University, Lancaster LA1 4YQ, UK; 3. MCTI/Museu Paraense Emílio Goeldi, CP 399, CEP 66040-170 Belém, PA, Brasil. *Correspondence to barretoju91@gmail.com

Tema/Meio de apresentação: Interações Ecológicas/Oral

Abstract:

Current rates of disturbance in tropical ecosystems are redesigning communities and driving species loss influencing resilience. We undertook an extensive survey of herbivory from canopy leaves collected from 1100 individual stems that composed 80% of plot basal area of 20 sites in eastern Amazonian, Tapajós region. We assessed mean levels of accumulated leaf damaged area of three invertebrate-mediated herbivore guilds (chewing, mining and galling) per stem along a disturbance gradient (undisturbed primary forests, logged primary forests, logged and burnt primary forests and secondary forests). We also tested if herbivory levels can be predicted by environmental variables reflecting forest disturbance history (biomass), soil fertility (pH) and landscape configuration (amount of primary forest in a 1km buffer). Herbivory levels varied in intensity between guilds but not along the disturbance classes, except for chewing. Mean chewing levels were enhanced in intermediate disturbance sites ($p<0.01$), peak at logged sites (7.82% damaged leaf area). Plot biomass had positive influence over chewers and gall-formers' damage while none of the predictors we tested influenced mining levels. We demonstrated that chewers slightly increase with intermediate disturbance while neither miners nor gall-formers' levels varied. Forest disturbance had no effect on overall herbivory however. Between guilds, levels responded differently to disturbance classes and environmental predictors. Non-linear trends evidence the complexity of disturbance effects on this ecological process. Human driven forest disturbances may severely affect biodiversity however our results suggest that the process of herbivory is overall maintained. Plot biomass had positive influence over chewers and gall-formers, giving a clue of how these dynamics may be disrupted by disturbance history. Achieving such evidences can help understand human driven forest disturbances effects on plant-herbivore ecological functions, either by changing control mechanisms through alternative control (e.g. disturbance itself) or offsetting negative effects on herbivores.

This research is part of ECOFOR project supported by United Kingdom Natural Environment Research Council (NERC; NE/K016431/1). Julia Barreto had also been supported by CAPES MS scholarship through Universidade Federal de Lavras.