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

TEMPORAL VARIATION IN METACOMMUNITY STRUCTURE OF ANURANS ASSOCIATED TO STILL WATERBODIES IN AN FARMLAND LANDSCAPE

Vitor Nelson Teixeira Borges Júnior[1*], Carlos Frederico Duarte Rocha[2], Carlos Eduardo Viveiros Grelle[1]

1. Laboratório de Vertebrados, Departamento de Ecologia, Universidade Federal do Rio de Janeiro, Rio de Janeiro, Ilha do Fundão, 21941-902, Brasil; 2. Laboratório de Ecologia de Vertebrados, Departamento de Ecologia, Universidade do Estado do Rio de Janeiro, 220550-013, Brasil. *Correspondence to vntborgesjr@gmail.com

Theme/Presentation: Community ecology/Oral

Understanding on the importance of local and regional processes structuring ecological communities has greatly advanced with the advent of the metacommunity framework. Nonetheless, information on how metacommunity structure and the relative strengths of their underlying mechanisms change through time is still lacking. Dynamic systems that undergo environmental temporal changes and disturbances, such as still waterbodies in farmland landscapes, serve as natural laboratories to explore how their metacommunity structure change in time. We applied the Elements of Metacommunity Structure framework and variation partitioning analysis to assess how temporal changes in local environmental factors and regional dispersal processes in the rain season influence a seasonal pond-breeding amphibian metacommunity. Across two months, we searched for frogs and measured patch area, type/hydroperiod, presence of trees on the shore, and intensity of forest cover across 20 temporary and 7 permanent still waterbodies, in four occasions in the surroundings Reserva Ecológica do Guapiaçu, Rio de Janeiro, Brazil. We sampled over 2800 individual frogs belonging to 26 species. We assessed spatial variation in metacommunity structure via Moran's Eigenvector Map (MEM). The metacommunity structure changed from random, at the first visit, to a quasi-Clementsian gradient at the second visits, a quasi-Nested in the third visit (both with clumped species loss), and random again at the end. Type/hydroperiod, patch size, and intensity of forest cover were the drivers of metacommunity structure. The relative contribution of environmental factors, like type/hydroperiod and presence of trees, were the most important though its importance decreased through time. Spatial factor were important only in the third visit when environmental factors were not important. Our analyses show that habitat quality is important during most of the rain season whereas spatial factors are only important next to the end. These results suggest that this metacommunity is predominantly structured by niched-based process and species sorting mechanism.