The variation in frog biodiversity along the forested landscape in Rio de Janeiro State in Brazil

During large-scale field surveys in Rio de Janeiro State, southeastern Brazil, we analyzed how the biodiversity, density and similarity of frogs varied along the forested landscape in the Atlantic Rainforest Biome. We estimated frog biodiversity based on intensive field surveys sampling frog assemblages in nine Atlantic Rainforest areas covering all regions of the state. At each locality, we employed similar sampling effort in different periods of day in order to sample both diurnal and nocturnal species. Our searches in the areas totaled 706 sampling hours, recording 817 individual frogs from 69 species. Mean species richness varied among areas being highest at Estação Ecológica Paraíso - EEP (21 species) and lower in Parque Estadual Desengano - PED (9 species). Analyzing each frog species separately, abundance and density varied markedly among areas. Frog-species-independent overall abundances also varied consistently among areas being highest at Area Proteção da Mantiqueira (APAM) (133 individuals) and lower in PED (37 individuals). NMDS analysis showed that higher similarity in frog communities was found between Reserva Rio das Pedras (RERP) and Serra Concórdia (SC) and between EEP and Reserva Guapiacu (REGUA). Our study evidences a trend for a conspicuous change in biodiversity of frogs along the forested landscape in Rio de Janeiro and most of such change may be explained based on geographic distance among areas possibly reflecting also structural and altitudinal differences among areas. Our results indicated the need of conservation efforts on amphibian species, especially in those frog-rich areas of the state.

Biography

Carlos Frederico Duarte Rocha is Professor of Ecology at the Department of Ecology, Institute of Biology at the Rio de Janeiro State University (UERJ) where he works since 1988. He received his Master’s (1987) and PhD (1992) degrees in Ecology both from the Universidade Estadual de Campinas (UNICAMP) in Campinas, São Paulo State, Brazil. His main interests are in Ecology and Conservation of amphibians and reptiles. And he has more than 360 published articles. He has already supervised 31 students in PhD degree and 39 in Master’s degree. He is Adjunct Coordinator of the Graduate Program in Ecology and Evolution at UERJ. Since 1993, he is the Leader of the Tropical Vertebrate Ecology Group of the Brazilian Council of Science and Technology (CNPq) of the Brazilian Environmental Ministry Coordinating 101 researchers (44 PhD researchers and 57 Graduate and undergraduate students). Since 2004, he is Level I-A CNPq Researcher (Higher level of Brazilian scientists attributed by the Brazilian Council of Science and Technology (CNPq) of the Brazilian Environmental Ministry.

cfdrocha@gmail.br

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