TRAIT-ENVIRONMENT RELATIONSHIPS IN ATLANTIC RAINFOREST STREAM FISHES

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RESUMO

The permanency of species in a particular site is determined by their functional traits. According to the niche filtering hypothesis, the environment filters select species that exhibit traits that can cope with local environmental conditions. Human activities can change environmental characteristics which may modify filtering conditions and therefore the occurrence of species. Thus, it is important to assess the relationship between environmental variables and species traits in modified landscapes to understand how human activity affects functional diversity. Herein, we assess how morphological traits are related to physical and chemical environmental variables in 20 streams under a varying level of riparian deforestation in the Atlantic Forest. Morphological traits comprised measurements from fins, body proportions and mouth position which are correlated to resource use in freshwater fishes, and included a total of nine traits. Streams with higher canopy density and turbidity were related to a fish community with a more depressed body shape and ventrally located mouth openings, characteristics associated with loricariids in the regional species pool. These streams also presented lower values of pH and temperature. Although the literature often relates body shape morphological traits to water velocity, we did not find a relationship between them. In conclusion, body shape and mouth position are important traits related to the distribution of fishes in Atlantic Forest streams, and might be useful to understand community organization and human impacts in this ecosystem.

Palavras-chave: RLQ, Community assembly, Deforestation, Functional traits, Land-use.

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