

Elements of fish metacommunity structure in Neotropical freshwater streams

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Abstract

The identification of the mechanisms underlying co-occurrence patterns of species is a way to identify which processes (niche, neutral or both) structure metacommunities. In this paper, our goals are to identify patterns of co-occurrence in neotropical stream fish and determine which processes structure the metacommunity and the gradients that underlie this structure. Our results pointed out that the metacommunity formed by the total pool of species is structured by a nested pattern (Hyperdispersed Species Loss) of co-occurrence and the mass effect mechanism. On the other hand, a set of core species displays a Clementisian pattern and is structured by the species sorting mechanism. Both, hyperdispersed species loss and the Clementisian patterns point to a discrete set of communities in the metacommunity. These communities could be isolated by physicochemical conditions, or physical barriers, like dams or waterfalls.

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