Evolution in metacommunities: The role of population structure

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Abstract

Session: Selection at the level of the community and ecosystem (Manuel Blouin, Frédéric Bouchard & Karine Prévot, Charles J. Goodnight A metacommunity can be defined as a set of communities that are linked by migration and extinction and recolonization. In metacommunities evolution can occur both by process that occur within communities such as drift and individual selection, but also by among community processes such as divergent selection due to random among communities differences in species composition, and group and community level selection. The effect of these among community level processes depends on the pattern of migration among communities. Migrating units may be individuals (migrant pool model), groups of individuals (single-species propagule pool model), or multi-species associations (multi-species propagule pool model). The most interesting case is the multi-species propagule pool model. Although this pattern of migration may a priori seem rare, it becomes more plausible in small well-defined "communities" such as symbiotic associations between two or a few species. Theoretical models and experimental studies show that community selection is potentially an effective evolutionary force. Such evolution can occur either through genetic changes within species or through changes in the species composition of the communities.

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