
Advances in landscape ecology in urban areas

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Abstract

Urbanisation is recognized as one of the main global cause of landscape changes. Urban landscapes are characterized by an important heterogeneity and soil mineralization known to have many impacts on animal and plant communities and populations. First studies on urban ecosystems consisted mainly on descriptive analyses of communities' structure along rural-urban gradient. Then, landscape ecological approaches were developed to relate the urban landscape and habitat configurations to the pattern of biodiversity's organization from town-centers to their rural surroundings. Nowadays, researches focus on the underlying processes of these patterns especially through the study of functional connectivity between habitats. Connectivity is necessary to palliate the deleterious effects of habitat's fragmentation on biodiversity. More than the structural connectivity which corresponds to physical links between habitats, it is relevant to evaluate and restore the functional connectivity, i.e. movements' possibilities between habitats. This is even more important in urbanized areas where habitats are isolated in a potentially highly hostile matrix. Functional connectivity can be assessed by a large range of methods, from genetic analyses to landscape models, which can be applied at different spatial and temporal scales. We will discuss these different methodological approaches and the new questionings emerging from these researches such as city temporality and the new landscapes' perceptions. Then, we will see how these researches can help the management of urban landscapes and the development of urban greenways.

Keywords: Landscape ecology, urban landscape, habitat, fragmentation, functional connectivity.

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