
Analysis of the relationship between structural landscape heterogeneity of urban green spaces and the psychological well-being of their users

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Abstract

In this era of global urbanization, there is a growing number of studies showing that biodiversity within urban green spaces (UGS) can provide psychological well-being values to their users. Most of these studies have focused on biodiversity in terms of species diversity. However, studies also showed that the majority of the UGS users are not able to perceive the full diversity of species present in an environment. Recent studies suggest that they perceive biological diversity on a more structural level. Thus, the indirect correlation between species diversity within UGS and the psychological well-being of the users has not yet fully been explained.

We tested in 13 UGS in Rennes (France) the hypothesis that ; (1) a correlation between the psychological well-being experienced by the users and effective measures of landscape structural heterogeneity, (2) a correlation between landscape structural heterogeneity as objectified by landscape ecology and landscape structural heterogeneity as perceived by the users, and (3) a correlation between the subjective perception of landscape structural heterogeneity and the psychological well-being experienced by the users can be expected.

Following landscape ecology theory, structural heterogeneity was based on configurational and compositional landscape metrics. The perception of landscape structural heterogeneity and the well-being of the 13 UGS users were measured by surveys. First results showed a significant correlation between the subjective perception of landscape structural heterogeneity and the psychological well-being experienced by the respondents. We also found a correlation between the landscape structural heterogeneity measures and the subjective perceptions of landscape structural heterogeneity, and finally a correlation between the psychological well-being experienced by the respondents and the measure of configurational heterogeneity. These results confirm the paradigm that urban dwellers perceive the biological diversity of UGS on a structural level.

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