
Earthworms of urban parks in a Mediterranean context: effects of management, park age and landscape

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Abstract

The Mediterranean bioregion shelters one of the highest diversity and level of endemism of earthworms in Europe but faces rapid urbanization. Unfortunately, most of the studies investigating the ecological drivers of the composition of urban earthworm communities are located in the continental or the oceanic bioregion.

The aim of this study was to investigate the link between urban earthworm communities and landscape features and management practices in a Mediterranean city.

We sampled earthworms in 14 patches of lawn located in parks in the city of Montpellier (France). Patches were chosen so that management practices (intensive or ecologically oriented) and age since park construction varied. Normalized Difference Vegetation Index (NDVI) around patches, management practices and soil physico-chemical properties (%C, %N and granulometry) were recorded.

Our preliminary results showed a high variability of species richness and abundance among patches and a complex spatial pattern of community composition. Our sampling revealed that urban parks in Montpellier host some earthworm species that are endemic to the Mediterranean bioregion.

This first insight into the diversity of urban earthworm stresses the point that earthworms and soil biodiversity should be taken into account in the management of urban parks.

Keywords: urban soil, lumbricidae, management, mediterranean context, macrofauna

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