Spatial Prioritization of Urban Biodiversity in the Helsinki Metropolitan Area

Short description: Spatial prioritization of the urban biodiversity of the Helsinki Metropolitan Area. The aim of the thesis was to identify the most important areas for the functioning of ecosystems (and, thus, indirectly for ecosystem services provisioning) in the urban Helsinki Metropolitan Area (Fig. 1). Urban biodiversity was taken to mean a more holistic representation of the urban ecosystem than a set of observed species only. Hence, the work was based on an expert elicitation (see Materials), in which different urban biotopes were evaluated in terms of how well they supported species richness and the occurrence of specialist species of several taxonomic groups. In addition, the effects of the new Helsinki Strategic Plan 2050 proposal on priorities in the entire Helsinki Metropolitan Area were examined.

Study area: The terrestrial area of the Helsinki Metropolitan Area (municipal cities of Helsinki, Espoo, Vantaa & Kauniainen). The study area included cities' coastal islands and islets, but not marine areas.

Materials: The analyses were based on an urban biotope map that described the biotopes/land cover types in the Helsinki Matropolitan Area. The map was compiled from 35 separate GIS sources from different authorities (e.g. zoning plans and green area databases of the cities, biotope data from the Regional Council of Uusimaa, Corine Land Cover, multi-source national forest inventory of Finland).

The degree to which different urban biotopes supported different taxonomic groups was estimated based on the expert elicitation results of Vierikko et al. (2014): The Sustainable Green Infrastructure of Helsinki. Reports of the Strategic Planning Office of the City of Helsinki 2014:27. In Finnish with English summary.), in which the suitability of biotopes was evaluated separately for vascular plants, lichens, polypores, birds, bats, reptiles and amphibians, dragonflies and hymenoptera.

Aim of the study: To prioritize over ecologically relevant biodiversity, and to identify top biodiversity areas of the urban Helsinki Metropolitan Area.

Where the work can be used: Results of this work have direct utility for land-use planning in the Helsinki Metropolitan Area. The approach of the study can also be easily replicated in other urban areas of Finland to support e.g. strategic land-use planning.

Characteristics of the study: Spatial prioritization of urban biodiversity, in a manner relevant for urban ecology specifically.

Link: *Master's thesis: Jalkanen, J. (2016). Pääkaupunkiseudun viherrakenteen arvotus Zonation-menetelmällä. University of Helsinki, Faculty of Biological and Environmental Sciences, Department of Biosciences. http://urn.fi/URN:NBN:fi-fe201701201201*

Note: The method and the analysis have been further developed in a continuation, in which additional biodiversity categories were added, a more extensive expert elicitation was organized, and the urban biotope map was improved.

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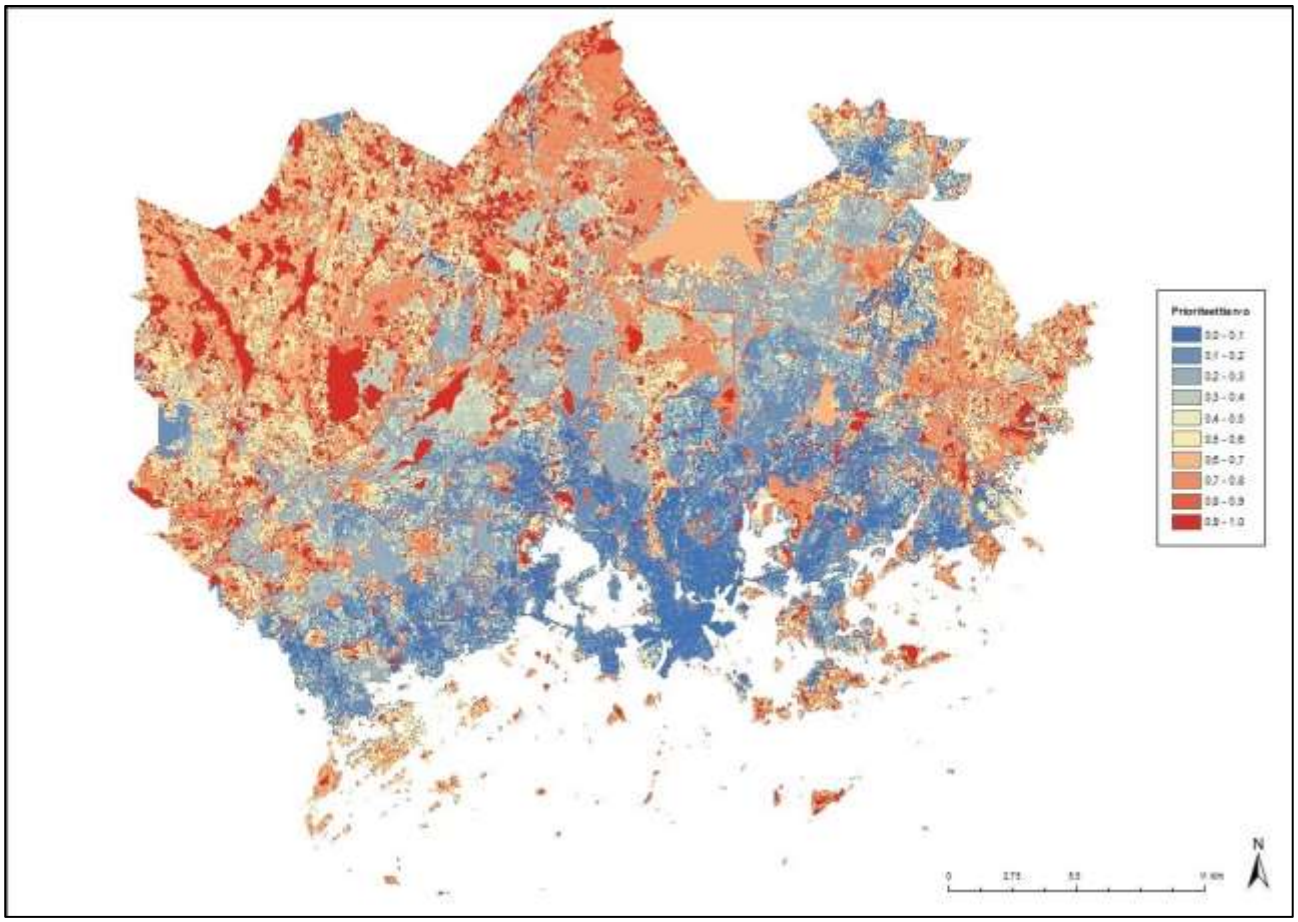

Fig. 1. Spatial prioritization map of the urban biodiversity of the Helsinki Metropolitan Area.