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# Scale of community assembly: Small birds in boreal forests

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## Abstract

Spatial scale has a leading role in wildlife ecology and habitat suitability studies. The influential role of scale in ecological interactions has not yet been clarified in previous studies. In this study on a group of small birds in boreal forests of Finland, we found possible patterns of relationships between species composition and habitat characteristics in different spatial scales. Additionally, we recognized the most influential spatial scales for each relationship. We followed a multiscale process of landscape analysis in GIS (Geographic Information System) by quantifying different habitat variables in different size buffers from 50m to 10km around bird count points. We combined habitat data with bird data (abundance and richness) in GIS. This has been provided the possibility of comparing bird composition, as well as their abundances and diversity in comparison to habitat characteristics in different scales. Our calculations resulted in knowing the most important buffer sizes or scales for each habitat variable using AIC (Akaike Information Criterion) calculations in R. For example, some results show the high importance of small (100-250m) buffers in composition and suitability of habitats. We also, achieved interesting results related to patterns of relationships between abundance-diversity parameters and habitat characteristics in different scales.

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