

Spatial pattern of occurrence of eleven epiphytic lichen species in a heterogeneous landscape

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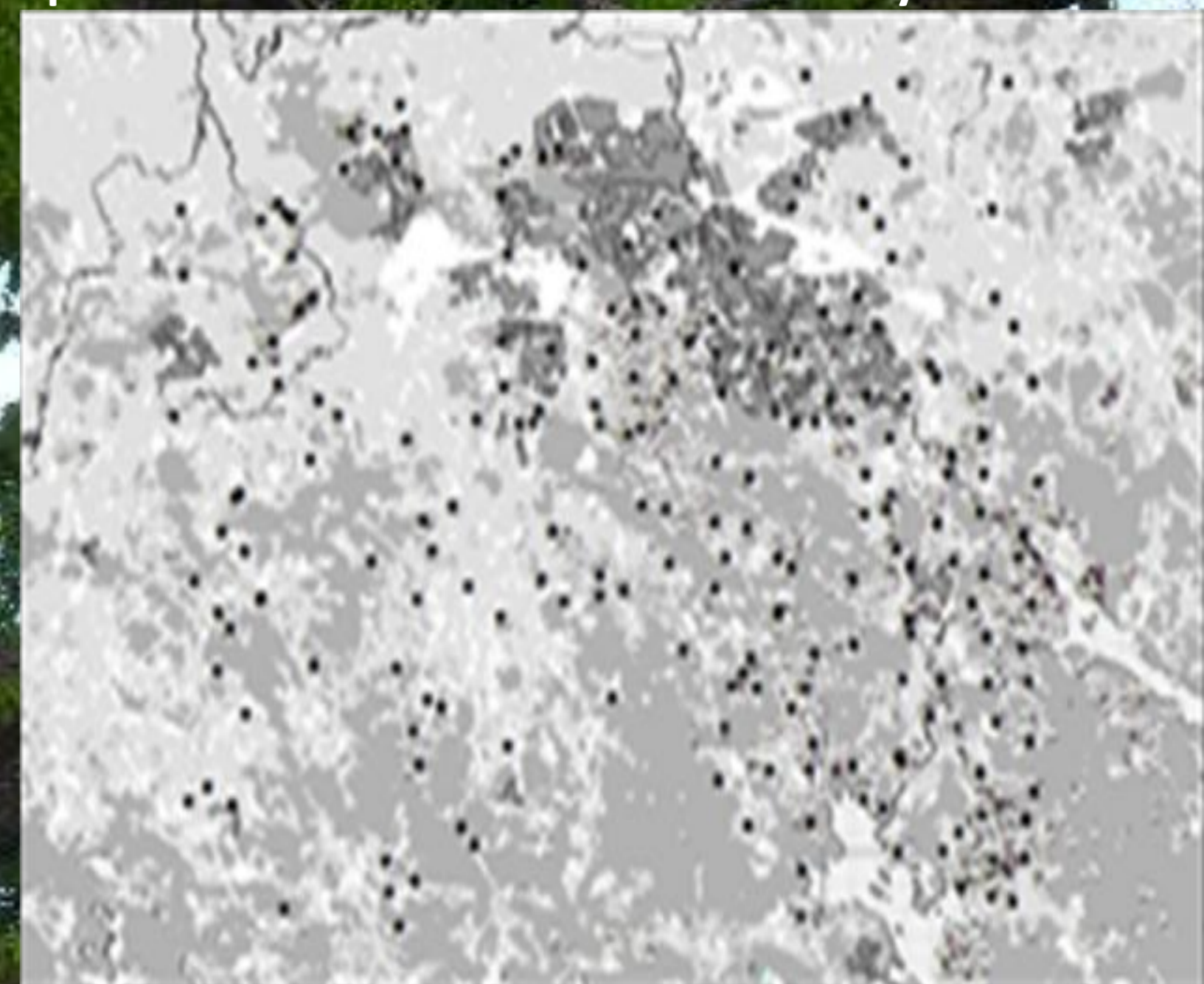


Introduction: Oaks (*Q. robur*) is a host of diverse lichens flora, and with increasing age the bark become suitable for the species.

Aim: Investigate eleven epiphytic lichens preferring large old-oaks in a heterogeneous landscape, and to identify the spatial scales, in the range of 30 to 1200m, that different environmental and landscape factors affect species occurrence on.

Method: The study was conducted in Östergötland, described a 20 km * 20 km², was further divided into 400 grid squares, each grid square was 1 km². Moreover, five land use types (consisted of forest, water, housing and arable fields) were calculated at 28-1225m scales, and three tree variables (Sun exposure, Circumference in between 3.1-4.1m, and density of trees and shrubs near oaks) were estimated on 213 oaks.

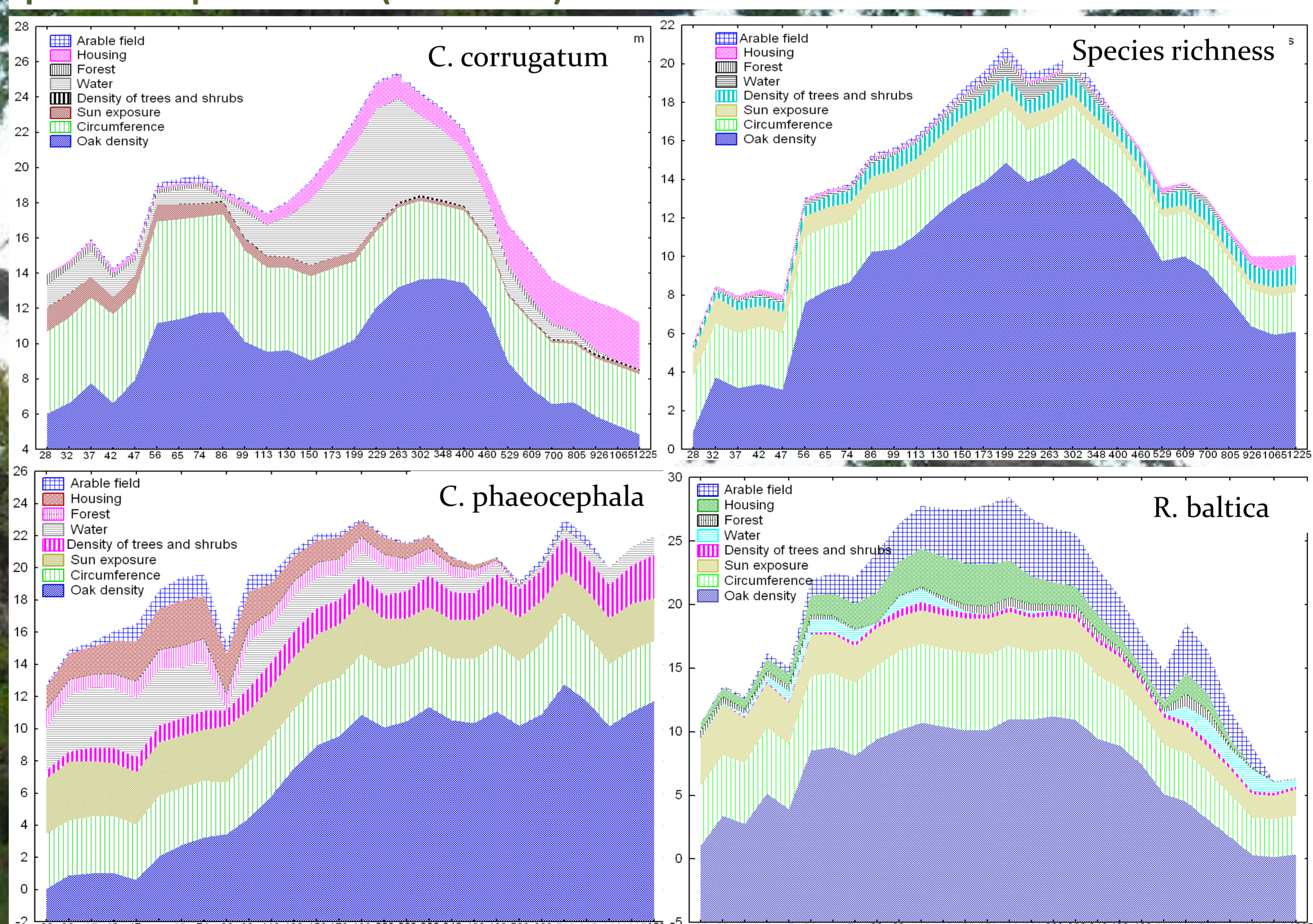
Spatial distribution of oaks at the study site



Data analysis: Three most frequent individual lichens and richness of species on oaks were analyzed, and 28 models at all the scales (with tree and land use variables) were run, in order to find the best explained model according to the Akaike Information Criterion (AIC) values.

Discussion & Conclusion: Land use and tree variables affected occurrence of different lichen species and richness differently and at different scales. Oak density was the single most important factor. Occurrence of *C. corrugatum* was best explained by the oak density at 400m, and *C. phaeocephala* at 302m. However *R. baltica* was best explained by the density of oaks at smaller scale 263m. While, species richness was best explained by the oak density at 302m. Whereas, circumference was also reacted positively on richness and the occurrence of three lichens.

Effects of tree and land use variables on the occurrence and richness of lichen species at spatial scale (28-1225m).



C. phaeocephala



C. corrugatum



R. baltica



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