Ecography

Supplementary material

Appendix 1: Scheme of point pattern analysis.
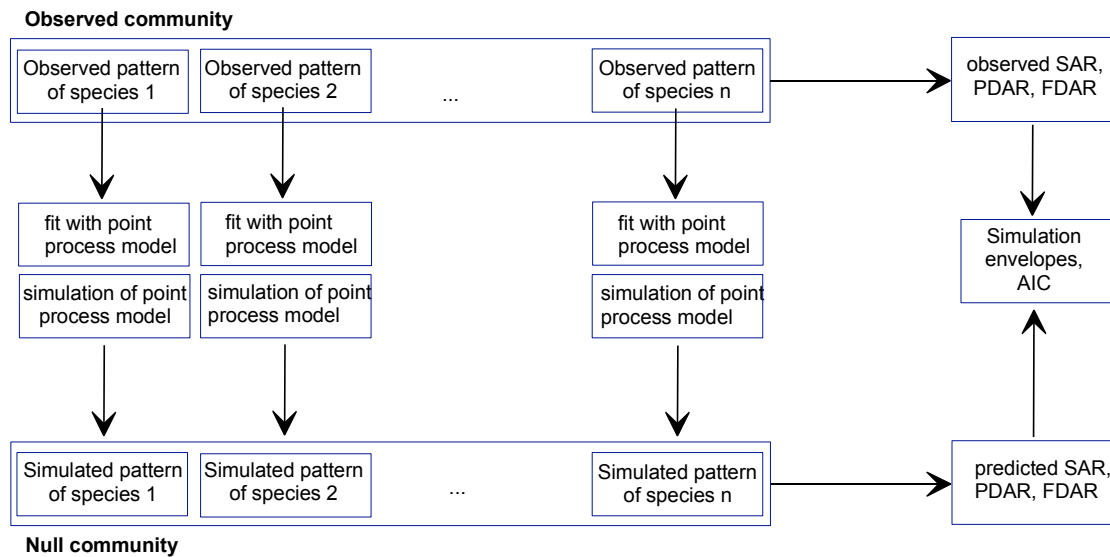
Figure A1. Scheme of the point pattern analysis. First, the point process model that represents a given hypothesis is fitted to each observed species distribution pattern. Second, a stochastic realization of the fitted point process is generated. Third, the simulated patterns of all species are superimposed to yield one null community. We generate for each hypothesis a total of 100 null communities and we select among the competing hypotheses the most parsimonious model by using the Akaike's information criterion (AIC). Finally, we compare the observed and predicted PDAR and FDAR using simulation envelopes, and interpreted departures from the observed PDAR and FDAR using our conceptual model Fig. 1.

Table A1. Expectations of how competitive exclusion, habitat filtering and dispersal limitation may influence the co-occurrence of species at the local, within-habitat, and inter-habitat spatial scales.

| Spatial scale	Competitive exclusion	Habitat filtering	Intraspecific clustering
local scale (0-30m)	more distantly related species compared to species assemblage at within-habitat scale	stochastic occurrence of more similar species belonging to species assemblages at within-habitat scale	co-occurrence of fewer species compared to random placement
within-habitat scale (30-200m)	no impact	more similar species	co-occurrence of fewer species compared to random placement
intra-habitat scale > 200m	no impact	more distantly related species	no impact

Appendix 2: The relationships between phylogenetic diversity, functional diversity and species richness.
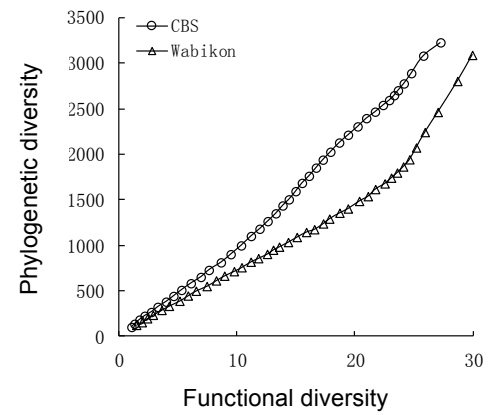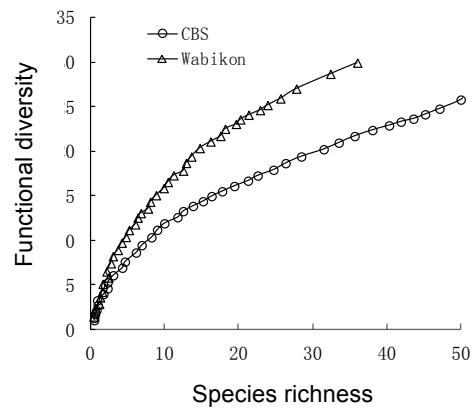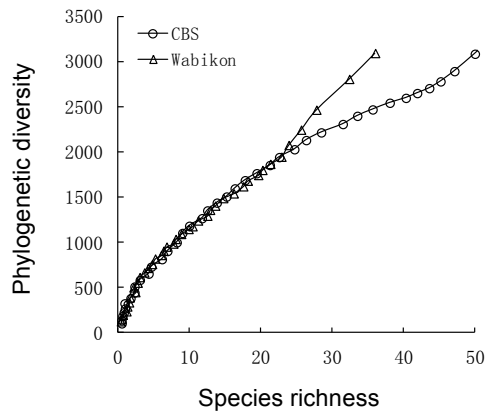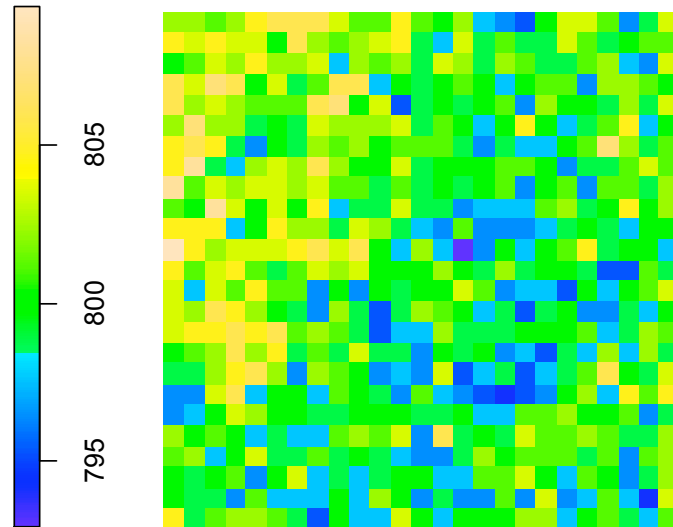
Appendix 3: Elevation, species richness, phylogenetic diversity and functional diversity at the Wabikon plot (20×20m).
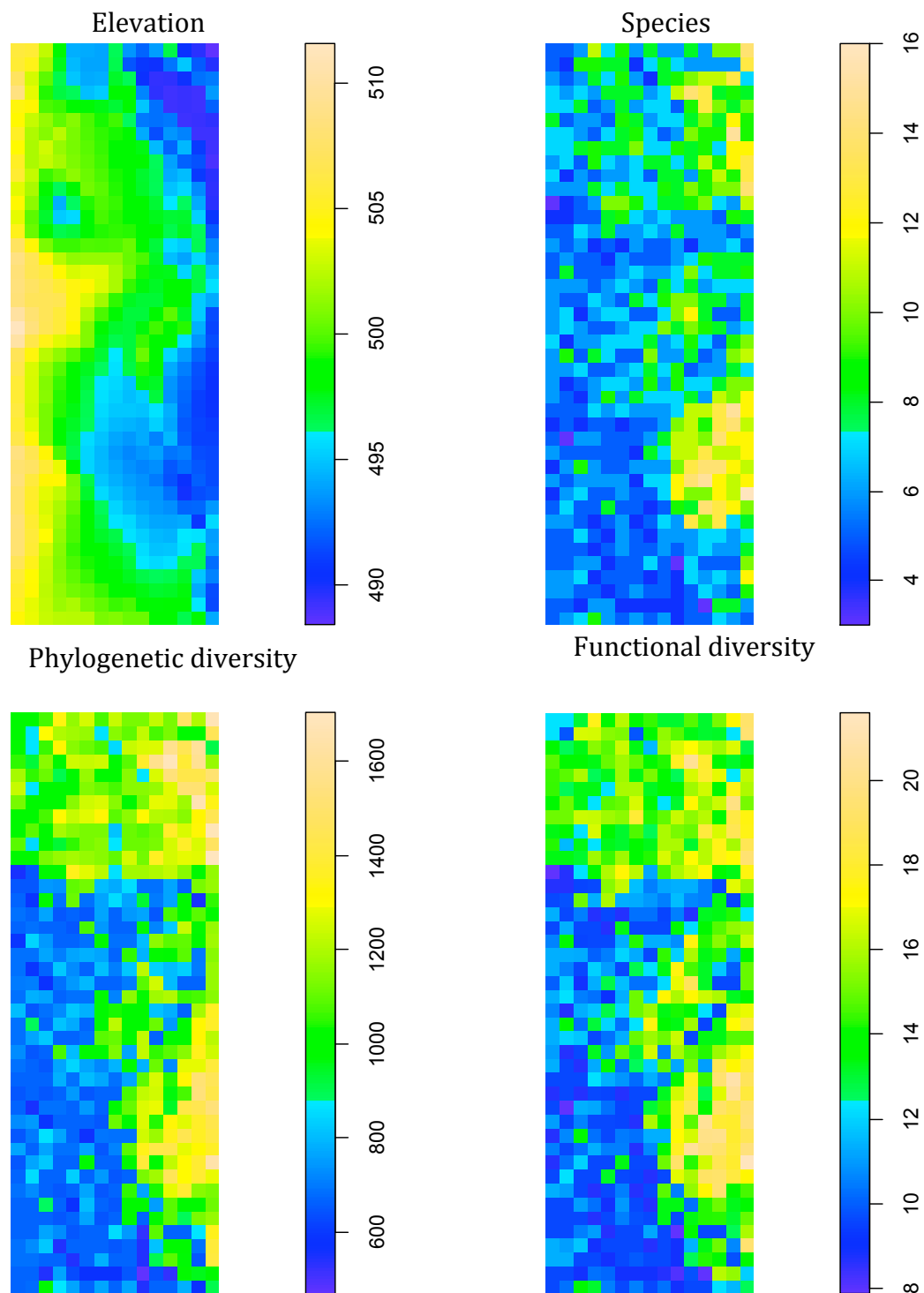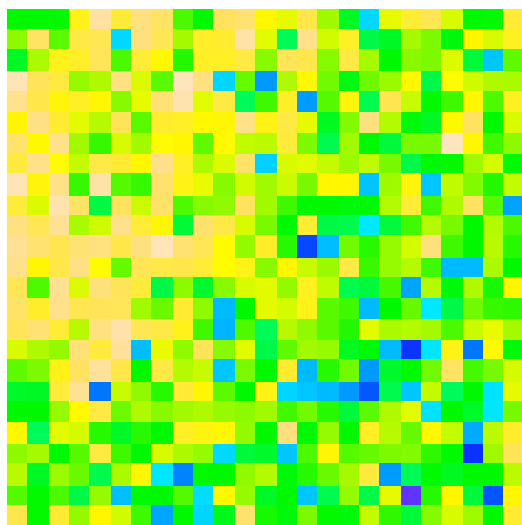
Appendix 4: Elevation, species richness, phylogenetic diversity and functional diversity
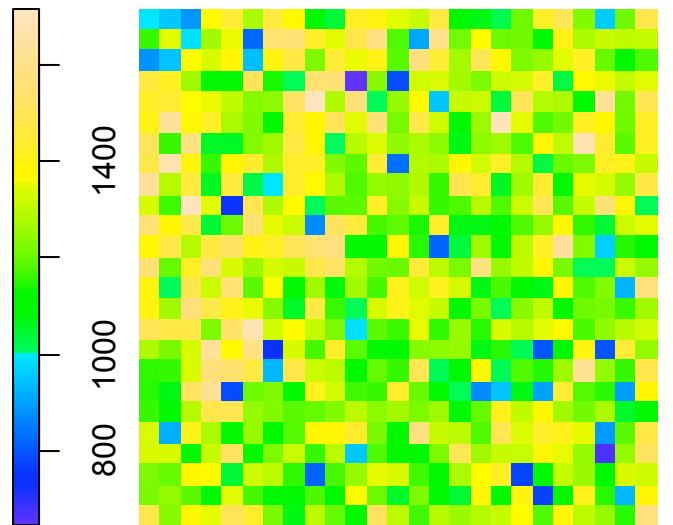at the CBS plot (20×20m).
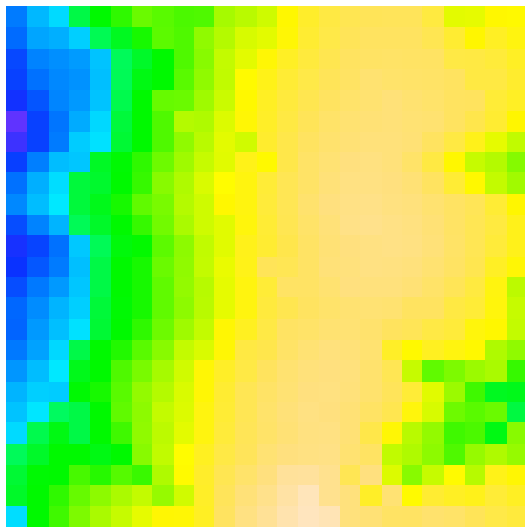
Elevation

Species

Phylogenetic diversity

Functional diversity