

Invited speaker for the session "Indicators & measures of biodiversity"

Inferring species richness from floras with heterogeneous sampling efforts

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Abstract: Species richness of sampling units such as grid cells is frequently calculated by counting species in databases resulting from coordinated sampling schemes (such as the ones of Germany, Britain, Austria or Poland). Unfortunately, not all regions (or grid cells) are equally well sampled. Hence species richness is underestimated in less well sampled grid cells. We propose a method that takes into account sampling preference even if this is correlated with an environmental variable by applying Bayesian Image Restoration (Bierman et al. 2010). Besides environmental covariates, we will consider a spatial neighbourhood component and a model of sampling effort, based on semi-quantitative expert advice. This method allows to restore maps of species richness that come closer to true species richness than methods which do not take sampling effort into account.

References

Bierman, S. M., Butler, A., Marion, G. and Kühn, I. (2010) Bayesian image restoration models for combining expert knowledge on recording activity with species distribution data. *Ecography*, 33:451-460.