

# Opportunistic data and estimation of species abundances in a habitat-structured space

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## Abstract:

Our aim is to estimate abundances of common species by combining standardized and opportunistic data, following the approach originated in Giraud et al. (2013). The space is divided into sites and we estimate the relative abundances of each species between any two sites. More specifically, our problem here is to consider a habitat-structured space and to take into account and distinguish the respective preferences of observers and of each observed species for habitats. On any site, each species has an unknown spatial distribution which is determined by its preferences for each habitat. The model for the behavior of observers is different for each dataset. We estimate abundances, habitat preferences and observation efforts, and study the role of opportunistic data in improving the accuracy of these estimations.

## References

Giraud, C., Calenge, C., and Julliard, R. (2013) Capitalizing on opportunistic data for monitoring biodiversity. *Submitted*.