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La Asociación Española para la Conservación y el Estudio de los Murciélagos (SECEMU) **CERTIFICA** que

J. Tiago Marques

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- *"Gathering information of cryptic species: Insights from Integrated Occupancy Models combining bat acoustic and mist net data"* *

Abstract

Effective conservation planning relies on an adequate understanding of species occurrence at both individual and community levels. However, detecting some species presents a challenge, and the efficiency of sampling methods varies. Data integration from multiple methods is a natural solution to address these issues and enhance species parameter estimation. This study explores the benefits of combining sampling methods and using an integrated modelling framework with Bayesian inference in occupancy models. We combine two recurring methods to estimate bat occupancy and detection: acoustic recording and mist netting. Combining data from these methods can be a great advantage because acoustic recording facilitates the collection of a substantial dataset of species echolocations, while mist nets, although time-consuming, can target acoustically challenging species. By implementing an integrated Bayesian occupancy model to jointly analyse data from both methods, we found that this approach significantly improved occupancy probability estimates, particularly for acoustically undersampled species in single-method surveys. Our findings underscore the practical implications of integrating multiple methodologies to understand better species distributions and community diversity, capturing variability in detectability across different taxa and both methods. This integrated approach represents a broadly applicable strategy for monitoring communities with species with differing detection probabilities. From a management perspective, it can improve communities' research and provide valuable insights for conservation planning.

Authors and affiliation:
F. C. Martins, P. Segurado, Paulo Barros, João Cabral and J. T. Marques
MED, Instituto Mediterrâneo para a Agricultura, Ambiente e Desenvolvimento, and CHANGE, Global Change and Sustainability Institute, IIFA, Instituto de Investigação e Formação Avançada, Universidade de Évora, Évora, Portugal
CITAB, Centro de Investigação e Tecnologias Agroambientais e Biológicas, Universidade de Trás-Os-Montes E Alto Douro, Vila Real, Portugal
CEF, Centro de Estudos Florestais, Laboratório Associado TERRA, Instituto Superior de Agronomia, Universidade de Lisboa, Lisbon, Portugal

* Realiza la ponencia oral