**Species-people correlations and the need to account for survey effort in biodiversity analyses**

**Type**

Article

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**Abstract**

**Aim** Positive regional correlations between biodiversity and human population have been detected for several taxonomic groups and geographic regions. Such correlations could have important conservation implications and have been mainly attributed to ecological factors, with little testing for an artefactual explanation: more populated regions may show higher biodiversity because they are more thoroughly surveyed. We tested the hypothesis that the correlation between people and herptile diversity in Europe is influenced by survey effort.
**Location** Europe.
**Methods** Although no explicit survey effort information is available in our dataset, we can divide Europe into three nested regions which were subjected to different levels of survey coverage. We compared species-people correlations among these regions, both with and without controlling for landscape diversity and latitude (a wrapper for energy-related variables whose individual effects on species richness were weaker). We also tested for relationships between human population and the distributions of single species.
**Results** Both mean species richness and human population density increased as we restricted the analyses towards better-surveyed regions. Whether or not accounting for ecological factors, the positive relationship between species richness and human density was significant at the lower survey coverage levels, but faded as the analysis focused on better surveyed regions and disappeared in the best-surveyed level. Single-species analyses revealed identical patterns, for both human-avoiding and human-adapted species.
**Main conclusions** Our findings suggest an artefactual origin for the herptile-people correlation in Europe. More importantly, they highlight the importance of addressing sampling bias in biodiversity analyses, which may be possible even when survey effort is not recorded. We also emphasize the utility of noting survey effort along with biodiversity records, and the need for better surveys of biodiversity in less populated areas. An adequate identification of conservation conflicts requires more rigorous assessments of the effects of survey effort on biodiversity data.

**Palavras Chave(47)**

Amphibians, artefacts, biodiversity patterns, confounding effects, reptiles, sampling effort, species-people correlation, spurious relationships

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