

Accounting for species detectability is not a waste!

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Abstract: It has long been recognized that detection is often imperfect in wildlife surveys, and that this can bias the estimators of ecologically relevant state variables. As a response to this problem, a suite of statistical methods have been developed that account for detectability, aiming to provide more reliable estimates. “Detectability-aware” methods are generally considered a step forward with respect to approaches that naïvely ignore detection issues. However, recent published work (Welsh et al. 2013) strongly questions the usefulness of models that estimate species occupancy while accounting for detectability. Claims include that these models are difficult to fit and that disregarding detectability can be better than trying to adjust for it, with authors concluding that adjusting for non-detection “is simply not worthwhile”. In this talk I will explain why we think that these conclusions and related recommendation are not well founded and may have a negative impact on the quality of statistical inference in ecology. In particular, I will show how it is the choice of specific scenarios used to support these negative claims that provides a distorted picture of the actual value of accounting for detectability (Guillera-Arroita et al., in review).

References

Welsh, A.H., Lindenmayer, D.B. and Donnelly, C.F. (2013) Fitting and interpreting occupancy models. *PLoS ONE*, 8: e52015.

Guillera-Arroita, G., Lahoz-Monfort, J.J, MacKenzie, D.I., Wintle, B.A. and McCarthy, M.A. (in review) A response to ‘Fitting and interpreting occupancy models’.

** Will consider delivering lightning talk