
The selection ratio as the unifying metric of habitat selection analyses

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Abstract

In the last decades, the study of habitat selection by animals has shifted towards more complex analyses, integrating more variables, often both categorical and continuous. This has led the field to shift from the use of selection ratios – which were once the standard metrics of selection strength – to the use of resource selection functions (RSF). However, the use and interpretation of RSF analyses is deceptively simple. The concept of relative probability of selection is not always understood, sometimes leading to misinterpretations and inconsistent reporting of RSF results, and statisticians still debate what functions can actually be used as RSF. These issues have been known for some time (e.g. Lele et al. 2013 *J. Anim. Ecol.* 82:1183-1191), but haven't yet found obvious solutions. In the hope of solving some of these issues, I will present an updated, yet simple, framework for the analysis of habitat selection, based on the reformulation of selection ratios, thereby facilitating the interpretation of habitat selection analyses. I will demonstrate the strength of this framework using simulations, and its application to real-world data by analyzing the habitat selection of Plains zebras in an African protected area.

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