

# Comparing the effectiveness of two types of camera trap for surveying ground-dwelling mammals

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## **Abstract**

Camera trapping is an increasingly popular method for surveying wildlife. Practitioners, however, have limited information about the effectiveness of different camera types and hence the potential for camera type to influence survey results. Here we present a case study of two widely used motion cameras: Reconyx™ HC500 and ScoutGuard™ 550v. Concurrent sampling with the two camera types at 182 sites allowed us to compare camera efficacy in terms of observed mammal species richness and detections of different size classes of mammal. We also investigated whether camera type influenced which environmental variables appeared to be the most important drivers of mammal occurrence. On average, the Reconyx recorded more species per site than the ScoutGuard. The Reconyx was also more effective at detecting small and medium-sized mammals, but there was no difference between the two cameras in the detection of larger bodied mammals. Occupancy modelling showed that the two cameras would lead to very different conclusions about key environmental drivers of mammal presence in the landscape. These results highlight the need for cau-

tion when using motion cameras in wildlife studies. Given the potential for bias if there is limited ability to detect certain species, we recommend more research comparing different camera types under a range of conditions.

## **Introduction**

Effective management of natural areas for biodiversity conservation requires knowledge about species that may be cryptic, nocturnal or occur in low numbers. Traditionally, detecting such species has been both labour-intensive and costly. The emerging technology of motion triggered cameras (camera traps) has helped overcome some of these problems, with camera trapping becoming an increasingly popular method for conducting faunal surveys (Claridge *et al.* 2010; Cutler and Swann 1999).

Despite the increasing popularity of wildlife cameras and the availability of operational specifications on the internet, there has been scant attention given to how camera type may influence survey outcomes. A small body of existing work suggests large differences in the effectiveness of alternative cameras (Hughson *et al.* 2010). For