

Wildlife by candlelight: a comparison of nocturnal observation techniques for their impact on wildlife and visitor satisfaction

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Nocturnal observation of wildlife is a highly popular tourist attraction. However, very little research exists about its impact on wildlife and thus the possible trade-off in minimizing impact and maximizing visitor satisfaction in night-time tours.

We recorded the species-abundance, observation distance and behaviour of all mammal, bird and reptile species in 144 nocturnal observation periods of 1.5 h each near a homestead in the Australian rangelands. We compared the results achieved with different illumination equipment (white vs. red vs. infrared light/night vision device), watch modes (sitting at artificial watering points vs. hiking in creek beds), observation times (starting at vs. 2 h past dusk) and wind speed. We recorded a higher abundance and species richness of the non-bat fauna and a higher bat activity while sitting at artificial watering points directly after dusk during calm nights compared to the other observation conditions. Red light elicited a similar behavioural effect as white light of the same photometric intensity and both elicited activities indicative of disturbance and avoidance. A night vision device enhanced by infrared light facilitated closer observations and viewing of species which were seen less under white or red light. In addition, fewer kangaroos and birds were vigilant or took flight, and more time was spent with maintenance behaviour and social interactions.

The results of a questionnaire-based survey on past experiences and future expectations of visitors with night-time tours of Australian wildlife were used to recommend a type of nocturnal wildlife tour that minimizes impact on wildlife and maximizes visitor satisfaction. We thus suggest conducting a tour on a calm, fair-weather day and commence it with a short creek bed hike followed by a stationary observation at a water point such as the earthen tanks found on most pastoral properties (and National Parks) in the Australian rangelands. A night vision device enhanced by infrared light in combination with a bat detector will facilitate the observations. Participants need to be educated on aversive effects on wildlife imposed by night-time tours as the majority underrated potential impacts.