Global Ecology and Conservation 20 (2019) e00769

Contents lists available at ScienceDirect

Global Ecology and Conservation

journal homepage: http://www.elsevier.com/locate/gecco

Original Research Article

Pangolins in global camera trap data: Implications for ecological monitoring

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https://doi.org/10.1016/j.gecco.2019.e00769

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ARTICLE INFO

Article history:
Received 11 June 2019
Received in revised form 30 August 2019
Accepted 31 August 2019

Keywords:
Camera trap
Detection
Occupancy modelling
Pangolin
Macroecology
Monitoring

ABSTRACT

Despite being heavily exploited, pangolins (Pholidota: Manidae) have been subject to limited research, resulting in a lack of reliable population estimates and standardised survey methods for the eight extant species. Camera trapping represents a unique opportunity for broad-scale collaborative species monitoring due to its largely non-discriminatory nature, which creates considerable volumes of data on a relatively wide range of species. This has the potential to shed light on the ecology of rare, cryptic and understudied taxa, with implications for conservation decision-making. We undertook a global analysis of available pangolin data from camera trapping studies across their range in Africa and Asia. Our aims were (1) to assess the utility of existing camera trapping efforts as a method for monitoring pangolin populations, and (2) to gain insights into the distribution and ecology of pangolins. We analysed data collated from 103 camera trap surveys undertaken across 22 countries that fell within the range of seven of the eight pangolin species, which yielded more than half a million trap nights and 888 pangolin encounters. We ran occupancy analyses on three species (Sunda pangolin *Manis javanica*, white-bellied pangolin *Phataginus tricuspis* and giant pangolin *Smutsia gigantea*). Detection probabilities varied with forest cover and levels of human influence for *P. tricuspis*, but