Received: 16 November 2023 | Revised: 26 September 2023 | Accepted: 30 January 2024

DOI: 10.1002/ecy.4299

DATA PAPER

ECOLOGY
ECOLOGICAL SOCIETY OF AMERICA

CamTrapAsia: A dataset of tropical forest vertebrate communities from 239 camera trapping studies

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Funding information
Nanyang Technological University; GBIF: Biodiversity Information Fund for Asia, Grant/Award Number: BIFA6_005; Australian Research Council, Grant/Award Number: DE210101440; National Geographic Society, Grant/Award Number: 9384-13; Smithsonian Institution ForestGEO program; University of

Abstract

Information on tropical Asian vertebrates has traditionally been sparse, particularly when it comes to cryptic species inhabiting the dense forests of the region. Vertebrate populations are declining globally due to land-use change and hunting, the latter frequently referred as "defaunation." This is especially true in tropical Asia where there is extensive land-use change and high human densities. Robust monitoring requires that large volumes of vertebrate population data be made available for use by the scientific and applied communities. Camera traps have emerged as an effective, non-invasive, widespread, and

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Queensland Centre for Biodiversity and Conservation Science

Handling Editor: Miguel Acevedo

common approach to surveying vertebrates in their natural habitats. However, camera-derived datasets remain scattered across a wide array of sources, including published scientific literature, gray literature, and unpublished works, making it challenging for researchers to harness the full potential of cameras for ecology, conservation, and management. In response, we collated and standardized observations from 239 camera trap studies conducted in tropical Asia. There were 278,260 independent records of 371 distinct species, comprising 232 mammals, 132 birds, and seven reptiles. The total trapping effort accumulated in this data paper consisted of 876,606 trap nights, distributed among Indonesia, Singapore, Malaysia, Bhutan, Thailand, Myanmar, Cambodia, Laos, Vietnam, Nepal, and far eastern India. The relatively standardized deployment methods in the region provide a consistent, reliable, and rich count data set relative to other large-scale pressence-only data sets, such as the Global Biodiversity Information Facility (GBIF) or citizen science repositories (e.g., iNaturalist), and is thus most similar to eBird. To facilitate the use of these data, we also provide mammalian species trait information and 13 environmental covariates calculated at three spatial scales around the camera survey centroids (within 10-, 20-, and 30-km buffers). We will update the dataset to include broader coverage of temperate Asia and add newer surveys and covariates as they become available. This dataset unlocks immense opportunities for single-species ecological or conservation studies as well as applied ecology, community ecology, and macroecology investigations. The data are fully available to the public for utilization and research. Please cite this data paper when utilizing the data.

KEYWORDS

abundance, animal, biodiversity, bird, community, count, distribution, mammal, occurrence, richness, tropical forest, vertebrate

ACKNOWLEDGMENT

Open access publishing facilitated by The University of Queensland, as part of the Wiley - The University of Queensland agreement via the Council of Australian University Librarians.

CONFLICT OF INTEREST STATEMENT

The authors declare no conflicts of interest.

DATA AVAILABILITY STATEMENT

Data and code are available as Supporting Information (Data S1) and are available in Zenodo at https://doi.org/10.5281/zenodo.10780971.

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SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.

How to cite this article: Mendes, Calebe P., Wido R. Albert, Zachary Amir, Marc Ancrenaz, Eric Ash, Badrul Azhar, Henry Bernard, et al. 2024. "CamTrapAsia: A Dataset of Tropical Forest Vertebrate Communities from 239 Camera Trapping Studies." *Ecology* 105(6): e4299. https://doi.org/10.1002/ecy.4299