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

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 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remain scattered across a wide array of sources, including published scientific literature, gray literature, and unpublished works, making it challenging for researchers to harness the full potential of cameras for ecology, conservation, and management.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.