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(reference pending)

**Abstract**

Unsustainable hunting and habitat loss have led to widespread mammal population declines in Southeast Asia, and evidence-based conservation is needed to prevent further declines. Robust monitoring of population trends is a key component of evidence-based approaches. We conducted a landscape-scale systematic camera-trapping survey in Nakai - Nam Theun National Park, located within the Annamites region in Laos, with the objective of establishing a population baseline that can be used for long-term monitoring for ground-dwelling mammals. We analyzed camera-trapping data within a multi-species Royle–Nichols occupancy framework to estimate occupancy and species richness within three management zones. We used anthropogenic and ecological covariates to understand the factors influencing species occurrence in the study site. In total, we detected 40 terrestrial mammals over 20 794 camera-trap days, including five Annamite endemics and 18 threatened species, of which 26 had sufficient detections to be included in the multi-species occupancy analysis. We found that overall species richness increased with remoteness and elevation. Mean ± SD predicted species richness in the three management zones was 14.6 ± 1.55 (Zone 1-Thong Khacheng), 13.18 ± 1.64 (Zone 2-Thong Kouang), 11.84 ± 1.15 (Zone 3-Nam Chae), with an average of 13.26 ± 2.03. Our study highlights the importance of Nakai - Nam Theun National Park as a priority area for biodiversity conservation in the Annamites, and demonstrates the utility of using camera-trapping and multi-species occupancy modeling approaches to establish robust baselines for the monitoring of mammal communities in tropical protected areas.

**Methodology**

We analyzed systematic landscape-scale camera-trapping data collected from Nakai - Nam Theun National Park in Laos within a multi-species Royle-Nichols occupancy framework. We used package camtrapR to estimate occupancy, species richness and Percentage of Area Occupied (PAO).

**Data**

Data are available from the authors upon request. Please refer to multi\_species\_model.R for more information.

**Scripts**

multi\_species\_model.R: fit the multi-species Royle-Nichols occupancy model in camtrapR and estimate occupancy, species richness and PAO.