Distribution, Abundance, and Human Perceptions of *Trachypithecus auratus* (VU) and *Macaca fascicularis* (EN) on Bali and Lombok

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Summary

Indonesia is one of the most biologically diverse countries globally containing both the Sundaland and Wallacea biodiversity hotspots. Home to 12 % of the world's mammals, Indonesia comes third in primate diversity with 65 species. However, anthropogenic activities such as deforestation threaten 85 % of Indonesia's primate species, with habitat loss due to agriculture being a key driver. In an effort to curb deforestation, community forests have been established across the country, allowing local communities to maintain parts of forests for agricultural use while preserving biodiversity. Yet, in these areas, human-wildlife conflict is common as wild animals, especially primates, exploit crops in forest habitats, sometimes impacting human livelihoods.

Our research focused on the only two primate species inhabiting Bali and Lombok, where more community forests have been established in the last couple of decades. One was the long-tailed macaque (*Macaca fascicularis*) that is listed as Endangered on the IUCN Red List and spread over several Asian countries. The other was the ebony langur (*Trachypithecus auratus*) (Figure 1), a Vulnerable species endemic to the Indonesian Islands of Java, Bali, and Lombok.

Figure 1. Adult and infant ebony langur (*Trachypithecus auratus*) captured by Lilli Stenger in Tetebatu, Lombok.

The objective of our study was to assess the distribution of these primates and explore human perceptions towards them in community forests in West Bali and across Lombok. From May to July 2024, we conducted primate surveys and interviews with local farmers in Bali and Lombok for 10 weeks. We collaborated with students from the University of Warmadewa and independent local researchers, who assisted with translations and fieldwork. In total, we conducted 106 interviews– 50 in four locations in Bali and 56 respondents in 7 locations in Lombok (Figure 2). Additionally, we conducted primate surveys in two areas of West Bali where interviews were held and 20 locations across Lombok.

To gather insights into human-primate interactions, our interviews focused on local perceptions of these primates and the mitigation measures employed to address crop damage caused by them. Farmers were asked to describe their experiences with primates, the extent of crop damage, and the strategies they used to manage primate crop damage. We then analysed these responses to highlight differences between the two islands and identify potential non-lethal mitigation strategies that could be shared across communities.

Figure 1. Interview in progress outside of Aik Berik community forest in Lombok.

For primate surveys, we used the reconnaissance method to cover as much ground as possible within the span of ten weeks to identify populations of ebony langurs and long-tailed macaques in different areas on Lombok and in West Bali. We walked a total of 220.2 km and encountered 24 groups of ebony langurs as well as 61 groups of long-tailed macaques, identified their group sizes and collected information about their behaviour and the sites and habitats where we encountered them (Figure 3). By analysing the collected data, we gained new insights into the socioecology of ebony langurs and identified areas where further conservation measures would best contribute to the conservation of primate populations on Lombok.

Through the interviews, we identified unique anthropogenic threats that differ between the two islands. Cultural factors played a significant role in shaping human perceptions and actions towards primates with greater tolerance recorded on Bali than Lombok. Notably, lethal mitigation measures were only utilised by farmers in Lombok and primarily for long-tailed macaques, necessitating conservation intervention with a focus on mitigating primate crop damage and improving human-perceptions of primates.

Our final results were reported in our master's dissertations and four papers are now in preparation for publication in scientific journals. Additionally, we are writing a report of our findings for local researchers and communities, sharing mitigation strategies cited as effective by respondents we interviewed across all communities involved in the study. We hope that our research findings can contribute to the future protection of ebony langurs and long-tailed macaques in Bali and Lombok by providing new information necessary for threat mitigation and protection of the species and by engaging local communities in research.

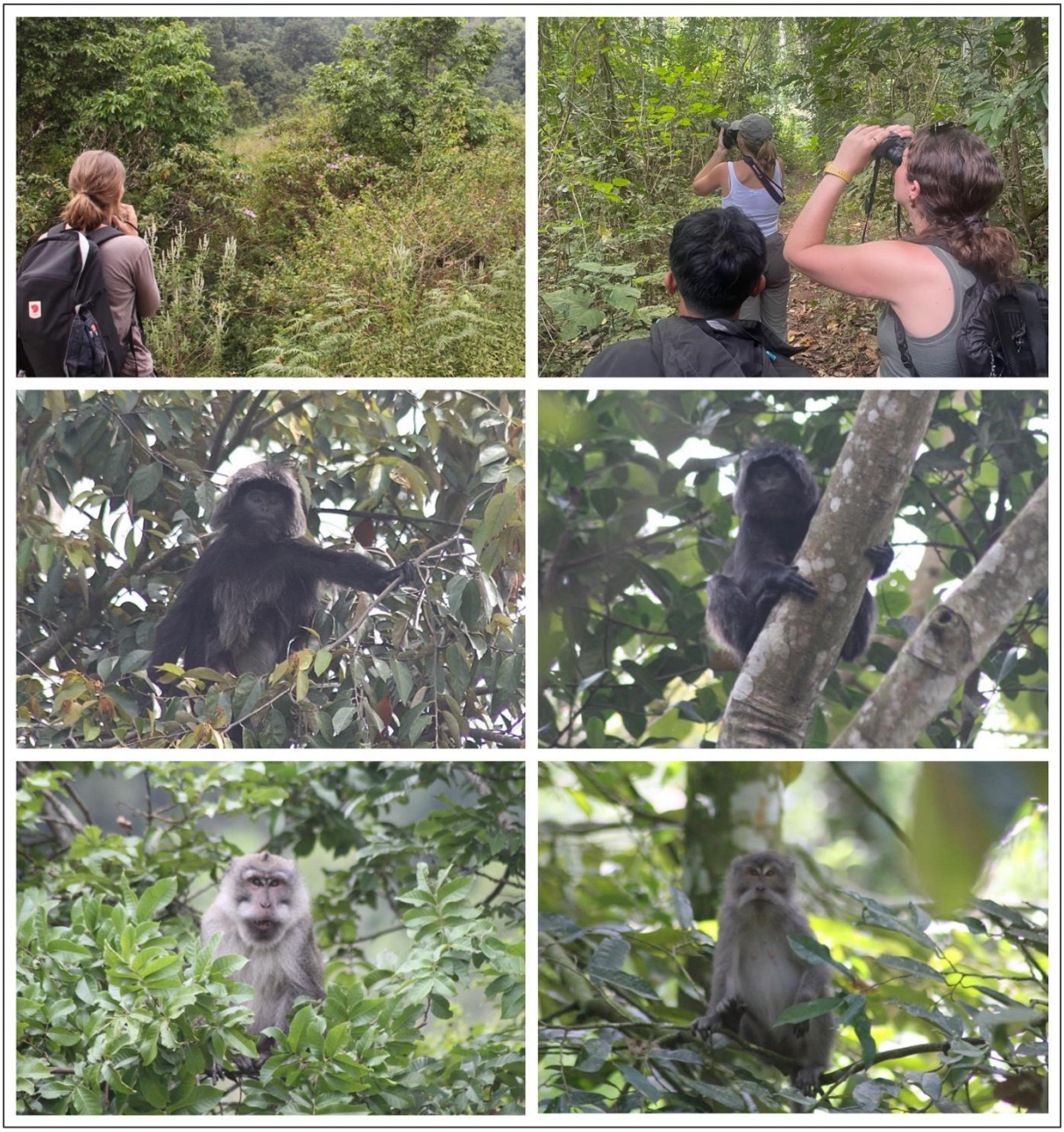

Figure 2. Primate surveys in Bali and Lombok (Top) and the encountered species: *Trachypithceus auratus* (Middle) and *Macaca fascicularis* (Bottom).