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**Estimating the Greenhouse Gas Emissions of a Typical Wildlife Safari Tour:
A Case Study from Yala National Park in the Dry Zone of Sri Lanka**

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Abstract

Tourists are increasingly becoming environmentally conscious, driven by growing awareness of climate change and the environmental impact of tourism. This shift has led to a growing preference for low-carbon tourism options. Many travelers now seek destinations and experiences that prioritize renewable energy, eco-friendly transportation, and minimal waste generation. Wildlife tourism is a key component in Sri Lanka's tourism mix. With Sri Lanka's tourism sector experiencing a significant resurgence in 2025, low-carbon wildlife tourism represents a sustainable approach to experiencing nature, while opening new opportunities. This study attempts to understand the GHG emission dynamics in a wildlife tourism setting with special reference to safari tours to identify decarbonizing opportunities. We estimated the carbon footprint of a typical safari tour at Yala National Park; one of the highly visited National Parks in Sri Lanka, using a combination of primary and secondary data. We surveyed 50 safari jeep drivers to gather emission-related details of vehicles/jeeps used for safari tours as well as tour routes, duration and passenger numbers. For this study, following the guidelines in ISO 14067:2018, the boundary of a safari tour was set from the point of entry to the point of exit through the gate of the Yala National Park. We used DEFRA/BEIS emission factors and IPCC guidelines for calculations. Secondary data such as monthly visitor numbers and numbers of vehicles entered the park were gathered from Department of Wildlife Conservation records from June 2023 to June 2024. Results suggest that a typical safari tour in Yala NP generates 24.7 tCO₂e emissions. The average number of persons per safari jeep is 5, hence this translates to 4.94 tCO₂e per tourist for a safari tour. We further analyzed the emissions associated with the hypothetical scenario of safari tour operation with 8 persons per jeep as a low carbon option. Under this scenario, the per tourist emission is 3 tCO₂e for a safari tour. This option can achieve 202,007.5 tCO₂e potential emission reductions per year. Overall, this study's findings provide important insights to the GHG emission profile of a wildlife tourism destination and support informed policy decisions to transform NPs to low-carbon tourism destinations.

Keywords: *Sustainable tourism, GHG emissions, Wildlife tourism, Low-carbon tourism, Yala NP*