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Impact of Religious Pilgrimages on National Parks: A Case Study of Waste Management in Yala National Park, Sri Lanka

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Abstract

Yala National Park, located in southeastern Sri Lanka, is the country's second-largest and most visited national park. The annual padha yathra pilgrimage involves approximately 30,000 devotees traveling on foot through wilderness areas, including parts of Yala. This pilgrimage, while spiritually significant, presents notable environmental challenges due to anthropogenic activities such as improper waste disposal, deforestation, campfire and man-made sacred sites. This study aims to quantify the distribution and composition of disposal debris in the Yala Block II. Five surveys were conducted, by the Young Zoologists' Association of Sri Lanka in collaboration with the Department of Wildlife Conservation, between 15th to 17th September, 2024. Sampling sites were selected based on the locations where pilgrims set up temporary camps. Study was carried out in three transects: Lin Thuna (T_1), Menik River (T_2), and Warahana (T_3), each with a dimension of 1000 m in length and 50 m in width, covering an area of 150000 m^2. A total of 205.485 kg of waste was collected, with the contributions of 84.985 kg (T_1), 56.136 kg (T_2), and 64.364 kg (T_3) distributed across the three transects, respectively. A total of 45 volunteers systematically collected all debris by walking along the transects, ensuring a thorough coverage of the sampling sites. The debris was classified into eleven categories, with an average debris density of 1.367 g/m^2. Polyethylene terephthalate (PET) was the largest component, accounting for 23.60 % (48.495 kg) of the total weight, followed by polypropylene (PP) at 19.62 % (40.315 kg) accounting for the second largest, and glass at 18.14 % (37.275 kg) accounting for the third. Other categories included polyethylene (PE) at 9.65 % (19.822 kg), clothing at 7.53 % (15.475 kg), paper at 6.48 % (13.315 kg), metal at 5.58 % (11.475 kg), rubber at 3.99 % (8.209 kg), rigifoam at 2.21 % (4.551 kg), polyvinyl chloride (PVC) at 1.68 % (3.460 kg), and unknown materials at 1.51 % (3.093 kg). Based on these findings, the pilgrimage has been identified as a significant source of debris transport into Yala Block II. Single-use plastics, which significantly contribute to environmental pollution, require a reduction or ban in the national park. This can be achieved through collaboration with stakeholders, legislation, effective implementation, visitor inspections, fines, and adherence to waste management policies. Regular cleanup programs and local awareness campaigns, including engagement of communities and religious leaders, are recommended to change pilgrims' attitudes towards waste management.

Keywords: *Yala National Park, Padha yathra, Pollution monitoring, Polythene clean-up*