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EFFECTS OF VEHICLE DISTURBANCE ON TETRAPOD VERTEBRATES WITHIN THE HORTON PLAINS NATIONAL PARK

D.M.T. DHANANJANI¹, K.M.T. KALHARI¹ and W.A.D. MAHAULPATHA*¹

¹*Department of Zoology, University of Sri Jayewardenepura, Sri Lanka*

*mahaulpatha@sjp.ac.lk**

ABSTRACT

Effects of vehicle related disturbance on tetrapod vertebrates were studied within Horton Plains National Park (HPNP) for a period of one year from December 2017 to November 2018. The main objective of the study was the quantification of vehicle related disturbance within the park. Three main habitats were identified as cloud forests, aquatic habitats and grasslands and 100 meter fixed length line transects were marked along the roads in each habitat type. Anthropogenic activities were quantified under the categories; road kills, photography, animal feeding, trampling, vehicle noise level and vehicle speed. Amphibians and reptile road kills were higher compared to other tetrapod road kills during vacation periods. Photography and animal feeding were the most prominent disturbance types recorded in roads of aquatic habitats. Animal feeding and photography were recorded in lower percentages at the cloud forest when compared with other habitat types. Highest average percentage of disturbances was trampling in the grasslands beside the road. Behavioral response of species to vehicle disturbances included avoidance, habituation and attraction. When the vehicle noise range was from (63 ± 2.11) dB to (69 ± 2.11) dB, habituation behavior was displayed. When the vehicle noise range increased to the range of (70 ± 4.71) dB to (88 ± 4.71) dB, avoidance behavior was displayed. When the speed of the vehicles was in the range of (30 ± 5.01) to (45 ± 5.01) kmh⁻¹ avoidance behavior was observed. When the speed of the vehicles was in the range of (11 ± 6.07) to (29 ± 6.07) kmh⁻¹ they generally displayed habituation behavior. Results of the present study indicate that vehicle disturbance course interferences to the natural behavior of tetrapod vertebrates within HPNP. Therefore, it is advisable to educate the visitors to be vigilant when traversing the roads. Putting up sign boards to educate the visitors and not allowing vehicles with altered silences to enter the park are suggested. Furthermore, excessive speed can be detrimental to the tetrapods and speed limits should be introduced inside the Park. The results of this study can be used to integrate with the future visitor and park management practices.

KEYWORDS: Vehicle disturbance, HPNP, Behavioral response, Tetrapod vertebrates, Park management