

34th AUSTRALASIAN WILDLIFE MANAGEMENT SOCIETY ANNUAL CONFERENCE

7-9 December 2021

DISCLAIMER

This volume is a pre-conference compilation of abstracts. The contents have not been peerreviewed and abstracts have been printed as received from submitting authors except for minor editing. In many cases the contents contain preliminary results only. Any advice provided in this publication is intended as a source of information only. Please check with the authors before using information. The Australasian Wildlife Management Society does not guarantee that the publication is without flaw of any kind or is wholly appropriate for your purpose and therefore disclaims liability for any error, loss or other consequence which may arise from persons relying on any information in the publication.

For information about the Australasian Wildlife Management Society see https://awms.org.au

Proceedings Production: Australasian Wildlife Management Society

PHYSIOLOGICAL STRESS RESPONSE OF ASIAN ELEPHANTS (*ELEPHAS MAXIMUS*) TO AVERSIVE STIMULI FROM AN ELECTRONIC TRAINING COLLAR

Surendranie Cabral de Mel, S. Seneweera, R. K. de Mel, R. Bandaranayake, A. Dangolla, D. K. Weerakoon, T. Maraseni, B. L. Allen

University of Southern Queensland

surendranie.cabral@gmail.com

Electric fencing is used to constrain the movements of Asian elephants, but has shortcomings such as regular fence breaching, high costs of maintenance, and not permitting dynamic changes to fenced locations. Animal-borne warning collars, used commercially on livestock and pets to create virtual fences, have the potential to revolutionise the management of elephants in similar ways. However, the welfare impact of their use must first be understood. We studied captive Asian elephants to determine their physiological stress response to training collars typically used for dogs. This collar, which delivers mild electric stimuli at various strengths, was tested (one stimulus per minute during two x ten min testing periods) on four captive elephants at a confined location. Fresh faecal samples were collected from the elephants on six days prior to experiment (for baseline data), three consecutive days while wearing the dummy collar (for the effect of the presence of the collar), and for three to six days post experiment. Cortisol (stress hormone) levels (ng/g of wet faeces) in faecal samples were determined using an enzyme immuno-assay. The cortisol level in samples collected 48 hrs post experiment was high (3.47 ± 1.31 ng/g) compared to the baseline level (2.20 ± 0.81 ng/g) but returned to baseline levels on the following day. This indicates that electric stimuli from training collars will generate only an acute stress response, with minimal lasting impacts on the animal. These results imply that training collars could provide elephants with the intended aversive stimulus without creating longer-term stress responses.