

PRELIMINARY STUDY ON IMPACT OF HERD SIZE ON ANTIPREDATOR VIGILANCE OF SPOTTED DEER (*Axis axis*) AT WILPATTU NATIONAL PARK, SRI LANKA

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Several studies across the globe have shown that predators control prey animals not only by direct killing, but also by creating a landscape of fear, the spatial variation in a prey animal's perception of predation risk. Various animals show different strategies to offset the perception of predation risk in landscape of fear. Herding is also one method used by different animals, such as ungulates. This aspect is essential in managing predator and prey species within protected areas. In the present study, how the vigilance behavior of spotted deer (*Axis axis*) changes with respect to the herd size was examined. The study was conducted in May and June 2025, in Wilpattu National Park, Sri Lanka. Twenty focal animals of *Axis axis* were sampled during this study (male-6, female-14). Vigilance behavior of one animal was studied between 2 – 5 min. The number of animals in the herd of the focal animal and the proportion of time spent by the focal animal on antipredator vigilance behavior, *i.e.*, raised head posture above the horizontal line with its ears in an upright position were recorded. A Pearson correlation test was conducted to assess the relationship between the herd size and vigilance behavior. Mean herd size observed was 8.66 ± 2.18 individuals per herd. According to the results, there is a strong negative correlation between *Axis axis* herd size and antipredator vigilance (Pearson correlation = -0.499 , $p = 0.025$). This shows that the herd size has a strong impact on vigilance behavior of axis deer and when the herd size increases axis deer becomes less vigilant. These findings suggest that *Axis axis* exhibit reduced antipredator fear responses when occurring in large herds. Therefore, it can be identified that large herds support *Axis axis* to offset the fear towards predators and increase the proportion time spent on fitness enhancing activities such as foraging.

Financial assistance from Postgraduate Institute of Science, University of Peradeniya (Grant No. PGIS/2024/03) is acknowledged.

Keywords: Antipredator vigilance, Focal animal sampling, Herding, Predation, Ungulates