

First record of the Large-spotted Civet, *Viverra megaspila* (Blyth, 1862) in Kaeng Krachan National Park, Thailand, confirmed by camera trap

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ABSTRACT

Large-spotted Civet, *Viverra megaspila* (Blyth, 1862), is an endangered medium-sized carnivore. It has been reported for the first time in Kaeng Krachan National Park, Thailand. It is one of the least known species with only handful records from Thailand. It was previously recorded from Khao Ang Rue Nai Wildlife Sanctuary and Khao Yai National Park, Thailand. The individual was identified from the photographic evidence collected from the camera trap on 11 March 2023, at an elevation of 720 masl. This finding has provided a crucial information for the conservation of this species and for the National Park management.

Keywords: Camera-trapping, Large-spotted Civet, Kaeng Krachan National Park.

INTRODUCTION

The Large-spotted Civet *Viverra megaspila* is a medium-sized carnivore species that belongs to the family Viverridae. This species is widely distributed in Southeast Asia *i.e.*, Myanmar, Laos, Cambodia, Vietnam, Thailand and Malaysia, and southern China (Timmins *et al.*, 2016). The species is mainly a lowland species, frequently found in deciduous and evergreen forests below 500 meters above sea level (masl) (Chutipong *et al.*, 2014). This species has been recorded mainly in protected areas of northeastern, western and southern Thailand such as Khao Yai National Park (NP), Sakaerat Biosphere Reserve, Khao Ang

Rue Nai Wildlife Sanctuary (WS), Thap Lan NP, Ta Phraya NP, Huai Samong proposed dam area, Huai Kha Khaeng WS, Thung Yai Naresuan WS, Thong Pha Phum District's Ban Huai Sua in Kanchanaburi Province, Salakpra WS, Kui Buri NP, and Ranong Province (Lynam *et al.*, 2005; Chutipong *et al.*, 2014; Sukmasuang *et al.*, 2020). The species resides in habitats ranging from deciduous to evergreen forests and few records exist in agricultural areas (Chutipong *et al.*, 2014). It is listed as an Endangered species on the IUCN Red List of Threatened Species due to habitat loss, fragmentation, and hunting pressure (Timmins *et al.*, 2016). Out of the ten viverrid species found in Thailand (DNPWC, 2022), Large-spotted Civet's ecology and distribution remain poorly understood due to its elusive nature and the lack of systematic surveys (Wearn *et al.*, 2013).

Camera-trapping has become an increasingly popular method for studying the distribution and ecology of elusive species (Meek *et al.*, 2014). It has been used to study a wide range of wildlife species, including carnivores, in various habitats (Meek *et al.*, 2014). These remotely triggered cameras can capture image and videos of wildlife without disturbing them (Nichols *et al.*, 2011).

Our aim was to determine if the Large-spotted Civet was present in the Kaeng Krachan National Park. It is known for its high biodiversity and habitat for several threatened species, including Asian elephant *Elephas maximus*, Indochinese tiger *Panthera tigris*, and Malayan sun bear *Helarctos malayanus*. Furthermore, our study aimed to provide information on the Large-spotted Civet's habitat preferences. Our findings confirm the presence of Large-spotted Civet in Kaeng Krachan National Park, Thailand. This information is crucial for the conservation of this species and for the park's ecosystem management.

MATERIALS AND METHODS

Kaeng Krachan National Park is a protected area located in western Thailand, covering an approximately 2,915 square kilometers, at altitudes ranging from 100 to 1,513 masl. In this study, we used camera-trapping method (method involving use of remotely controlled cameras) to investigate the presence of wild animals in Kaeng Krachan National Park, Thailand. Eight camera traps were strategically positioned with a separation of 500–1000 meters either along animal trails or close to water sources at elevation ranges between 655–936 masl from 18 February to 11 March 2022.

RESULTS AND DISCUSSION

A total of 22 camera trap-nights of surveys were conducted in Kaeng Krachan National Park, Thailand where the presence of the Large-spotted Civet was detected at an elevation of 720 masl with coordinates of 12° 50' 19" N 99° 19' 59" E (Fig. 1). Previous study by Jenks *et al.* (2010) reported the presence of the Large-spotted Civet in Khao Ang Rue Nai WS and Khao Yai NP, Thailand. In Khao Ang Rue Nai Wildlife Sanctuary, the species was found at

an elevation range of 460–470 masl, while in Khao Yai National Park, it was found at an elevation range of 30–120 masl.

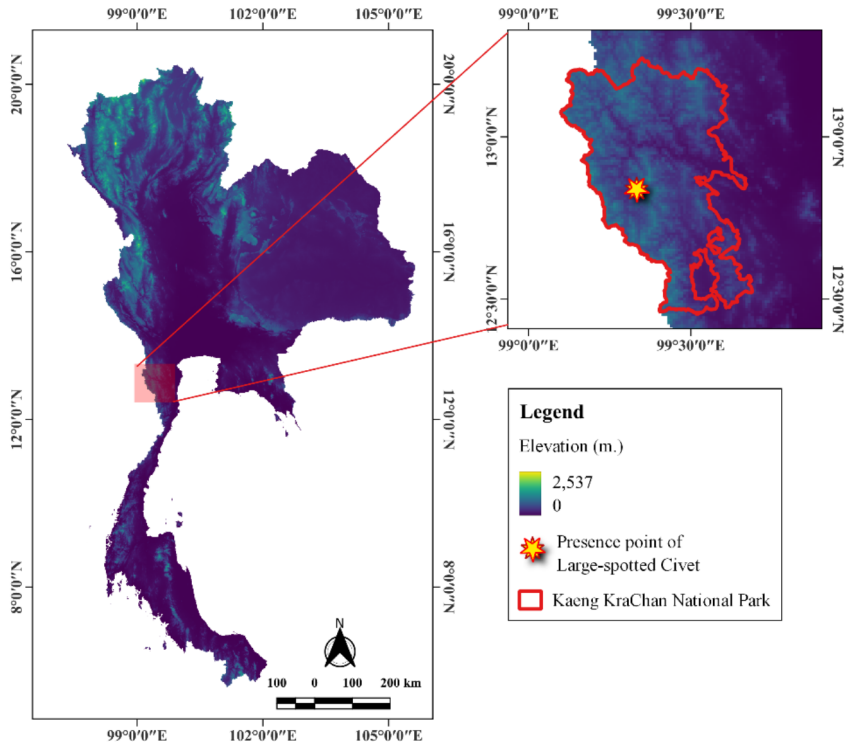


Figure 1. Map of Kaeng Krachan National Park showing the location of the Large-spotted Civet detection obtained from the camera trap indicating the highest elevation presence point record of this species in Thailand.

Our study detected the presence of the Large-spotted Civet in a dry evergreen forest, which is consistent with previous findings of the species in Cambodia (Gray and Phan, 2011; Holden and Neang, 2009), and Myanmar (Zaw *et al.*, 2008). While observations made by Austin and Tewes (1999) in Khao Yai NP reported a sighting of the species at an altitude of 750 meters, there was no substantial evidence to support it. One record by direct sighting of the species in Thung Yai Naresuan WS was at 700 masl (Chutipong *et al.*, 2014). Likewise, Robertson (2007) reported a sighting in Vietnam at an altitude of 1,800 meters, but this claim lacked conclusive evidence. Our study represents a new elevation record for the species in Thailand, expanding our understanding of the species' elevational range in the region. The Large-spotted Civet was found in a dry evergreen forest habitat (Figure 2), which is a unique and threatened habitat type in Southeast Asia. Dry evergreen forests have been heavily impacted by deforestation and conversion to agriculture and are considered one of the most endangered forest types in the region (Sodhi *et al.*, 2004). The presence of the Large-spotted

Civet in this habitat highlights the importance of preserving these forests for the conservation of rare and threatened species.



Figure 2. A photo captured by a camera trap showing a Large-spotted Civet (*Viverra megaspila*) in its habitat of the dry evergreen forest in Kaeng Krachan National Park, Thailand (Captured on March 11, 2023).

CONCLUSION

The photograph captured by a camera trap in the dry evergreen forest at an elevation of 720 masl of the Large-spotted Civet in Kaeng Krachan National Park provides important new information on the distribution and habitat preference of this rare and elusive carnivore in Southeast Asia. This finding highlights the importance of protected areas for the conservation of rare and threatened species and underscores the need for further research on the species' ecology and population status.

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