Malays. Appl. Biol. (2018) 47(1): 139–144

INFLUENCES OF HUMAN ACTIVITIES ON MALAY CIVET'S (*Viverra tangalunga*) OCCUPANCY IN SARAWAK

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Accepted 27 February 2018, Published online 31 March 2018

ABSTRACT

Malay Civet, *Viverra tangalunga* is one of the most commonly recorded carnivores by camera trapping surveys. This species occupies a diverse range of habitat types, therefore, the IUCN Red List classifies this species as Least Concern. Primarily a ground-dwelling species that has a wide distribution in Borneo, the Malay Civet enables a progressed perspective in understanding the effects of human activities towards a highly adaptable species. In this study, six protected areas that were categorized as low, medium and high volume of human activities were compared in relation to the intensity of human activities that corresponds to Malay Civet's occupancy. Camera traps were placed in six selected protected areas, however the results showed extreme fluctuations between both protected areas under the high classifications of human activities as Gunung Gading National Park (GGNP) has high detection rate of Malay Civet whereas none were detected in Sarawak National Park (SNP). This suggests that high human activities may have influenced the Malay Civet's activities in a protected area, other factors such as habitat preferences and geographical distribution may have higher influence on Malay Civet's occupancy and dispersal in Sarawak.

Key words: Carnivore, disturbance, human activities, protected areas, *Viverra tangalunga*

INTRODUCTION

Sarawak, particularly recognized as the "Land of the Hornbills" and situated in the island of Borneo is the largest state in Malaysia, which encompasses a total landmass of 124,449.51 km^2 (Sarawak Government, 2016). However, Gaveau *et al*. (2016) reported that in 2015, intact forest areas plunged to 1,756,476ha in comparison to logged forests with 5,080,871 ha. Massive demands for agricultural production and land resources has caused increased depletion of virgin forests in Borneo with most landmasses converted into plantations since the early 1970s (Gaveau *et al*., 2014). In 2015, total logged forests in Borneo have accumulated to 16,802,893ha contrasting with intact forests area available of 20,531,822ha. However, this showed significant drop of forested area since 1973 with initial area assessed of 55,836,571ha (Gaveau *et al*., 2016). Approximately 57-60% of forest conversion in Malaysian Borneo is caused by rapid conversion of which largely due to oil palm plantations (*Elaeis guineensis*) yet lesser areas included *Acacia* (*Acacia* sp.) and rubber tree (*Hevea brasiliensis*) (Gaveau *et al*., 2014, 2016). This hence pressurizes the rise of protected areas gazettement numbers in the state in order to thwart the rapid shrinking of remained forested landscape (Mathai *et al*., 2010).

Subsequently, these protected areas were promoted as tourism attractions in improving socio-economic growths in the country along with engaging the public for conservation and maintenance support (Huhtala, 2007; Wouters, 2011). In 2016, protected areas in Sarawak alone generated approximately 5.7 million Ringgit Malaysia of revenue collection thus signifies the importance of protected areas not only for conserving biodiversity yet also for the nation's development (Forest Department Sarawak, 2017).

In order to understand the ability of these protected areas in withholding and conserving species alongside anthropogenic activities, camera traps were set in selected protected areas focusing on the 'Least Concern', widely distributed, the

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