BAT ECOTOURISM POTENTIAL AT WIND CAVE NATURE RESERVE, SARAWAK THROUGH BAT CONSERVATION STUDY

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ABSTRACT

The study conducts roost site mapping, roost sites preferences, bat assemblage and bat acoustic call at the Wind Cave Nature Reserve (WCNR) from 2013 to 2015. The area lack information on bats and the existing information has not been updated for quite some time. The study utilizes the non-consumptive method that uses observation, data logger and the wildlife acoustic song meter to collect data. The data obtained are important as baseline data for future management and conservation of the bats species at the WCNR. This information also provides additional interesting information to tourists. This paper is a collection of the ecological studies of cave-dwelling bats that have been conducted at the WCNR. The findings from the study such as species list; and a map that show the location of the bats and their roost sites preferences can help increase awareness towards the conservation of bats at WCNR to promote better ecotourism benefit.

Keywords: Wind Cave Nature Reserve, roost site mapping, echolocation, roost site preferences and bat assemblage.

1. Introduction

Bats are distinguished from other mammal by their wing ability to conduct true flight. They are the second largest order in the class of Mammalia after Rodentia in term of biodiversity (Corbet & Hill, 1992; Jones et al., 2002). It has a wide distribution across the world due to its flight capability. Apart from that, its diverse feeding, roosting habits, social behavior and reproductive strategies also contribute to its broad distribution (Amsyari, 2014).

Cave ecosystem is known to support colonial species that choose their roosting site based on the ability of the selected roosting site to hold large number of individuals. A total of 54% of bats in Borneo are cave dwellers and these species use caves as their main or occasional roosting sites (Payne et al., 1985; Rahman et al., 2011). Fruit bats play an important role as pollinators, as well as providing guano that becomes a source of energy for the cave ecosystem. Insectivorous bats also inhabit caves and feeds on many of the insects that are harmful to crops.

Malaysia has a total landmass of 329,847 square kilometers, a population of 25 million and it is divided into two regions, which are the West Malaysia (peninsular) and East Malaysia (Borneo). Malaysia has the potential of becoming the top ecotourism destination as it is one of the world's 12 mega diversity. In the Borneo region, the state of Sarawak has 30 national parks, 4 wildlife sanctuaries and 10 nature reserves. These protected areas cover a total area of 837,553.80 ha (land area and water body). Currently, there are 15 totally protected areas including WCNR that is opened to the public and it is one of the major tourist attraction that keeps visitors coming back to the state.

The main attraction at the WC is the large colony of fruit bats, *Penthetor lucasi,* which is the dominant species roosting in the cave. Thousands of *P. lucasi* can be easily seen and identified using reflected lights on its conspicuous eyes. Bat diversity gradually changes as it goes deeper inside the cave. The WC supports a high diversity of bat species. However, the WCNR is often crowded with visitors during peak season such as public holiday and weekends. It also receives many local and foreign tourists who are bats and cave enthusiast. Their presence threaten the bats existence and habitat. Therefore, the objective of this paper is to obtain data that will be used to create conservation awareness on bats by providing additional information to tourists. Through the effort, tourists can learn a lot more about the ecology of the bats and give them more appreciation.