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THE BATS OF NIAH NATIONAL PARK, SARAWAK

Leslie S. Hall, Greg Richards and M.T. Abdullah

INTRODUCTION

Niah National Park is a 3,140 hectare area of sub-coastal lowland mixed dipterocarp forest located 60 km southeast of Miri, Sarawak. More than half the park area is covered by a limestone outcrop, Bukit Subis, which rises over 300 m above the surrounding plain. The vegetation on the limestone is mixed dipterocarp forest while the surrounding flat country is covered by tall mixed dipterocarp forest growing on alluvium and peat. There are extensive areas surrounding the park that have been cleared and planted with Oil palm (*Elaeis guineensis*). The limestone contains a number of caves, the largest and most well known being Niah Cave, which has been developed as the principal tourist attraction at the park (Meridith et al, 1992; Hazelbroek and Morshidi, 2000). The history of exploration of Niah Cave has been recorded by Harrison (1959) and its subsequent importance as an archaeological site has been discussed by Harrison (1972). Niah Cave consists of about 3.5 km of explored passages with six main entrances. Passages are typically large and measure 50 m wide and 30 m high. There are several large chambers, 100 m wide and 60 m high (Wilford, 1964). Bats have occupied Niah Cave for a considerable time and have caused noticeable erosion in parts of the cave (Harrison and Medway, 1959). Medway (1959) recorded six species of bats inhabiting the cave and gave details on their number and roost sites. Bat remains have been identified in the archaeological excavations by Aldridge and Cranbrook (1963) and Cranbrook (1966). Harrison (1966) lists bats caught in and around Niah Cave during a survey in 1965 and 1966.

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Niah Cave has supported a bird-nest harvesting industry for some considerable time as well as being a source of guano which comes from both swiftlets and bats (Harrisson, 1958; Cranbrook, 1984; Leh and Hall, 1996). Up to 20 camps of bird-nest collectors can be found inside the cave during the nest-collecting seasons in May-June and October-November. Due to a decline in the number of swiftlets at Niah (Cranbrook, 1984), a management plan for their nest collection was recently implemented which allows two years of collecting, followed by one year for recovery.

The purpose of the present study was to examine the diversity of bats in Niah National Park, with particular emphasis on Niah Cave. Relevant literature and the collections of the Sarawak Museum, Kuching and the old Raffles Museum Collection (now in the Zoological Reference Collection) at Singapore University, were searched for bat specimens from Niah.

Comparisons are made with the earlier observations of Medway (1959) and Harrisson (1966), and Good (1991) who listed 25 bat species for Niah National Park.

METHODS

Field trips were made to Niah National Park in July 1988 (8 days), January 1989 (5 days), October 1992 (11 days), December 1997 (2 days) and January 2001 (2 days). Bats were caught in mistnets, bat traps and by using a hand net at roost sites in caves. Several species were captured fortuitously by hand at their daytime roost site. Figure 1 shows the location of mistnet and bat trapping sites and other locations mentioned in the text. Site 1 was on the bank of Sungai Niah at the National Park Headquarters where the vegetation has been highly modified and contained ornamental as well as fruit trees. Site 2 was across the river from the National Park Headquarters and was located in tall mixed dipterocarp forest. The understorey at Site 2 varied

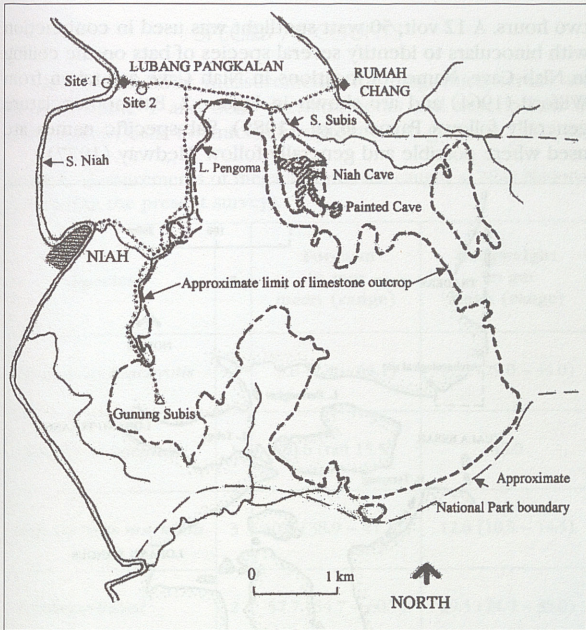


Fig. 1: Shows the location of mistnet and bat trapping sites and other locations mentioned in the text.

from open to dense and swampy with pandanus and vines. Captured bats were measured, weighed, photographed and their ultrasonic calls recorded using a bat detector (Ultrasound Advice, Model S25). Calls were stored on a modified cassette recorder (Aiwa) and later analysed using a PC computer and Anabat (De Oliveira, 1998). Recordings were made while the bats were hand-held and while flying in a 10 m square room. Several species were recorded during free flight. Bats were released back to the wild at their point of capture usually within