

BAT DIVERSITY IN KOLEJ UNIVERSITI SAINS DAN  
TEKNOLOGI MALAYSIA (KUSTEM)

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2005

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**BAT DIVERSITY IN KOLEJ UNIVERSITI SAINS DAN TEKNOLOGI MALAYSIA  
(KUSTEM)**

**By**

**Widad binti Fadhlullah**

**Research Report submitted in partial fulfillment of  
the requirements for the degree of  
Bachelor of Applied Science (Conservation and Management of Biodiversity)**

**Department of Biological Sciences  
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**JABATAN SAINS BIOLOGI  
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**PENGAKUAN DAN PENGESAHAN LAPORAN  
PROJEK PENYELIDIKAN I DAN II**

Adalah ini diakui dan disahkan bahawa laporan penyelidikan bertajuk: **Bat Diversity in Kolej Universiti Sains dan Teknologi Malaysia (KUSTEM)** oleh **Widad bt Fadhlullah** (No. Matrik: UK6819) telah diperiksa dan semua pembetulan yang disarankan telah dilakukan. Laporan ini dikemukakan kepada Jabatan Sains Biologi sebagai memenuhi sebahagian daripada keperluan memperoleh ijazah Sarjana Muda Sains Gunaan (Pemuliharaan dan Pengurusan Biodiversiti), Fakulti Sains dan Teknologi, Kolej Universiti Sains dan Teknologi Malaysia.

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## LIST OF ABBREVIATIONS/SYMBOLS

| SYMBOLS | MEANING                        |
|---------|--------------------------------|
| °       | degree                         |
| %       | percentage                     |
| no.     | number                         |
| BCI     | Bat Conservation International |

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## ABSTRACT

This study was conducted on species diversity of bats in Kolej Universiti Sains dan Teknologi Malaysia (KUSTEM). The objective of this study is to examine diversity of bat species in KUSTEM area for conservation purpose. Bats were sampled in 30 days within six months, starting from July until December 2004. Ten mist nets were used as the capturing device. Species identification was based on the forearm measurement, weight, sex, maturity status and their reproduction. Bats were released after identification. A total of 99 individual bats were captured, comprising of two families and four species. Three species were frugivorous bats, *Cynopterus brachyotis*, *Cynopterus horsfieldii* and *Eonycteris major* from the family Pteropodidae. One insectivorous species, *Kerivoula papillosa* was captured from the family Vespertilionidae. *Cynopterus brachyotis* is the highest captured individual and species, representing 71.7% of total capture. Family Pteropodidae is the most dominant family with three species (75.0%) and 96 individuals (97.0%). 6.1% of recaptures were recorded. Shannon-Weiner diversity index is 0.8569 while Simpson index is 0.4504. Overall, the species diversity of bats in KUSTEM is low due to the capture device limitations, duration of study, climatic factor and anthropogenic conditions.



KAJIAN KE ATAS KEPELBAGAIAN SPESIES KELAWAR DI KOLEJ  
UNIVERSITI SAINS DAN TEKNOLOGI MALAYSIA (KUSTEM)

ABSTRAK

Kajian telah dijalankan bagi mengkaji kepelbagaian spesies kelawar yang terdapat di Kolej Universiti Sains dan Teknologi Malaysia (KUSTEM). Objektif kajian adalah untuk merekodkan kepelbagaian spesies kelawar di KUSTEM bagi tujuan pemuliharaan spesies ini. Kelawar telah disampel selama 30 hari dalam tempoh enam bulan, bermula dari bulan Julai sehingga bulan Disember 2004. Kaedah penangkapan menggunakan sebanyak 10 jaring kabus. Proses pengecaman spesies dilakukan berdasarkan ukuran lengan (dari siku ke bawah), berat, jantina, status kematangan dan peringkat pembiakan kelawar. Kelawar yang ditangkap dilepaskan semula selepas pengecaman. Sejumlah 99 ekor kelawar telah ditangkap, terdiri daripada dua famili dan empat spesies. Tiga spesies dari famili Pteropodidae, kelawar pemakan buah iaitu *Cynopterus brachyotis*, *Cynopterus horsfieldii* dan *Eonycteris major*. Satu spesies kelawar pemakan serangga telah ditangkap, *Kerivoula papillosa* dari famili Vespertillionidae. Dalam kajian ini, *Cynopterus brachyotis* merupakan spesies dominan dengan tangkapan tertinggi (71.7%) manakala famili Pteropodidae adalah famili dominan dengan tiga spesies (75.0%) dan 96 ekor (97.0%). Peratus penangkapan semula ialah 6.1%. Indeks kepelbagaian iaitu Shannon-Weiner dan Simpson, masing-masing merekodkan 0.8569 dan 0.4504. Secara keseluruhan, kepelbagaian spesies kelawar di KUSTEM adalah rendah disebabkan oleh had keberkesanan alat penangkapan, tempoh kajian, iklim dan gangguan manusia.