THE ABUNDANCE AND DIVERSITY OF BUTTERFLY COMMUNITIES (INSECTA LEPIDOPTERA) IN SUNGAI TERSAT, KUALA TERENGGANU, TERENGGANU

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FAKULTI SAINS DAN TEKNOLOGI
UNIVERSITI MALAYSIA TERENGGANU

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THE ABUNDANCE AND DIVERSITY OF BUTTERFLY COMMUNITIES (INSECTA: LEPIDOPTERA) IN SUNGAI TERSAT, HULU TERENGGANU, TERENGGANU

By

Siti Badariah Binti Jemain

Research Report submitted in partial fulfillment of
the requirements for the degree of
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Adalah ini diakui dan disahkan bahawa laporan penyelidikan bertajuk: THE ABUNDANCE AND DIVERSITY OF BUTTERFLY (INSECTA: LEPIDOPTERA) IN SUNGAI TERSAT, HULU TERENGGANU, TERENGGANU oleh Siti Badariah Jemain, no. matrik: UK9965 telah diperiksa dan semua pembetulan yang disarankan telah dilakukan. Laporan ini dikemukakan kepada Jabatan Sains Biologi sebagai memenuhi sebahagian daripada keperluan memperolehi Ijazah Sarjana Muda Sains Gunaan (Pemuliharaan & Pengurusan Biodiversiti), Fakulti Sains dan Teknologi, Universiti Malaysia Terengganu.

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LIST OF ABBREVIATIONS

S1	-	Station 1
S2	-	Station 2
S3	-	Station 3
km	-	kilometer
GPS	-	Ground Positioning System
UMT	-	Universiti Malaysia Terengganu
MBU	-	Makmal Biologi Umum
ANOVA	-	Analysis of variance
SPSS	-	Statistical Package for Social Science
Spp	-	Species
TM	-	Thematic Mapper
NDVI	-	Normalized Different Vegetation Index

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ABSTRACT

Butterfly has been identified as important ecological indicator organisms for assessing biodiversity and for monitoring ecosystem responses to environment. This study was conducted to determine the abundance and diversity of butterfly communities and to investigate the interaction between the butterfly species with microhabitats preference in Sungai Tersat, Hulu Terengganu. It was carried out within four months, from August until November 2006. Three stations were selected and butterflies were captured randomly by using insect net. A total of 110 butterflies comprising of 40 species from five families were recorded. The most dominant family with the highest number of individuals was Pieridae (53 individuals). However, Nymphalidae contributed the highest number of species (20 species) at all stations. *Leptosia nina* was the most dominant species collected (25.45%), followed by *Eurema lacteola* (10.91%) and *Ypthima baldus* (8.18%). *Leptosia nina* was mostly occurred in riparian area and they were feeble in flight. Riparian area was microhabitat preferred by most of the butterflies. There was strongly significant correlation between relative humidity to the assemblage of this community. The capture rate varied within sampling months due to climate and seasonal changes. High capture yielded in riparian area where offered heterogeneity of vegetation sites. Less number of individuals was captured in this study site due to human activity such as agriculture and small scale farms. However, in consideration of potential bias and weakness of insect net, it is suggested further sampling with proper condition include a wide variety of techniques to gain a better insight to the butterfly communities along this river.

KELIMPAHAN DAN KEPELBAGAIAN KOMUNITI KUPU-KUPU (ORDER: LEPIDOPTERA) DI SUNGAI TERSAT, HULU TERENGGANU, TERENGGANU

ABSTRAK

Kupu-kupu telah dikenalpasti sebagai organisma penunjuk ekologikal untuk menilai biodiversiti dan untuk mengawasi tindak balas ekosistem terhadap alam sekitar. Kajian ini telah dijalankan untuk menentukan kelimpahan dan kepelbagaian komuniti kupu-kupu dan untuk menyiasat interaksi di antara spesies kupu-kupu dengan mikrohabitat pilihan di Sungai Tersat, Hulu Terengganu. Ia dijalankan selama empat bulan bermula dari Ogos sehingga November 2006. Tiga stesen telah dipilih dan kupu-kupu ditangkap secara rawak dengan menggunakan jaring serangga. Sebanyak 110 ekor kupu-kupu yang terdiri daripada 40 spesies daripada lima famili telah direkodkan. Famili paling dominan dengan bilangan individu tertinggi adalah Pieridae (53 individu). Walau bagaimanapun, Nymphalidae menyumbang bilangan spesies tertinggi (20 spesies) di setiap stesen. *Leptosia nina* merupakan spesies dominan yang didapati (25.45%), diikuti oleh *Eurema lacteola* (10.91%), dan *Ypthima baldus* (8.18%). *Leptosia nina* kebanyakannya terdapat di kawasan riparian dan daya terbang mereka adalah lemah. Kawasan riparian adalah mikrohabitat yang dipilih oleh kebanyakan kupu-kupu. Terdapat korelasi signifikan yang kuat di antara kelembapan relatif terhadap perkumpulan komuniti ini. Kadar tangkapan berbeza pada setiap bulan di sebabkan oleh perubahan musim dan iklim. Tangkapan yang tinggi diperolehi di kawasan riparian di mana menawarkan pelbagai tapak vegetasi. Kekurangan bilangan individu yang ditangkap di kawasan kajian ini adalah di sebabkan oleh aktiviti manusia seperti agrikultur dan penternakan kecil-kecilan. Namun, disebabkan persampelan dengan jaring serangga mempunyai ralat dan kelemahan, kajian lanjut perlu dijalankan dalam keadaan cuaca yang lebih sesuai termasuk pelbagai teknik untuk mendapatkan gambaran yang lebih baik terhadap komuniti rama-rama di sepanjang sungai ini.