ACKNOWLEDGEMENTS

Alhamdulillah, praise to Allah s.w.t for giving me this wonderful opportunity and strength to complete such a meaningful journey of my life. I feel grateful for the love, spirit, trust and encouragement giving by peoples surrounding me until the completion of my study.

First of all, my gratitude goes out to Department of Higher Education for their financial support of my study through Fundamental Research Grant Scheme (FRGS). I would like to extend my gratitude to University of Malaya especially Faculty of Sciences for giving me the opportunity and scholarship to pursue my study. Thank you to Selangor Forestry Department and Negeri Sembilan Forestry Department for their cooperation and guidance during my study.

A huge appreciation goes out to my supervisor, Associate Professor Dr. Rosli bin Ramli for his willingness, guidance, knowledge and support throughout this journey. Thank you for trusting me and never give up on me until the end of my study. Also thank you to Dean of Faculty of Sciences, Professor Dato' Dr. Mohd Sofian bin Azirun for sharing his knowledge and experiences during my study. Thank you also to Head of Department, Institute of Biological Sciences, Professor Dr. Rosli bin Hashim for his guidance and support, and allowed me to stay in Pusat Pengajian Luar Universiti Malaya (PPLUM) during my duration of study.

I also dedicated this appreciation to committed staffs in Institute of Biological Sciences; Mr. Muhaiyidin, Mr. Fadzlee, Mr. Ngadiran, Hj. Mokhtar, Mr. Ismeail, Mr. Anuar, Mr. Izuwan, Mr. Ismaili, Mr. Salleh and Mr. Rosli Idris for their willingness and strong

enthusiasm in helping me collecting data until the end of my research. I would like to thank staffs of PPLUM; Mr. Mat Uda, Hj. Karim, Mr. Sharani and Mr. Marisi for their effort and courage in helping me throughout my sampling. Big thanks to all drivers of ISB (Mr. Azhar, Mr. Farizwan, Mr. Fauzi, Mr. Zaidee, and Mr. Nizam) whom are very committed and dedicated doing their job to ensure that my research can be done in respective place and time.

Most important, my deepest appreciation goes out to my beloved family especially my parents and Zulhilmi, for their support, encouragement and prayers in helping me going through the hardship of my academic dream. Thank you for your never ending trust, patience and spirit that you gave me. Last but not least, thank you to my supportive friends for whom always filled my journey with passion, humor and positive vibes.

Thank you.

ABSRACT

Community structure of understorey birds can be influenced by habitat structure, microclimate and food resources. Heavy utilization of natural resources in tropical forest for economic purposes has become one of major threat to tropical forest birds. A comparative study on understorey birds inhabiting different habitats of lowland forest was conducted in Ulu Gombak Forest Reserve (UGFR), Selangor and Triang Forest Reserve (TFR), Negeri Sembilan. Mist-netting method was applied to gather information on understorey bird's assemblages inhabiting logged forests (LF) and Virgin Jungle Reserve (VJRs) of the two lowland forests. The effect of seasonal variation such as rainfall and migratory season on understorey birds composition was also studied. A total of 2,370 birds of 120 species were recorded in both study areas after 48 samplings. VJRs were highly diversified compared to LF with domination of primary forest birds such as babblers (Timaliidae) and flycatchers (Muscicapidae). However, increasing number of secondary forest bird such as Little spiderhunter (*Arachnothera longirostra*) in VJRs raised question on the quality of the reserves. Presence of primary forest birds in logged forests indicating the process of habitat recovery. The results showed that diversity of understorey birds was not influenced by rainfall. Presence of migratory species within the study areas provided evidence of being suitable stopover sites. The information gathered from this work is hoped to support efforts in formulating forest management practices and conservation strategies for wildlife in general and specifically understorey avifauna.

ABSTRAK

Struktur komuniti burung bawah kanopi dipengaruhi oleh struktur habitat, mikroiklim dan sumber makanan. Ekploitasi sumber semulajadi di hutan tropika untuk tujuan ekonomi telah menjadi satu ancaman terhadap burung hutan tropika. Satu kajian mengenai burung bawah kanopi di hutan tanah pamah yang mempunyai habitat berlainan telah dijalankan di Hutan Simpan Ulu Gombak, Selangor (UGFR) dan Hutan Simpan Triang, Negeri Sembilan (TFR). Teknik tangkapan menggunakan jaring kabut telah digunakan untuk mengumpul maklumat mengenai kelimpahan burung di hutan yang telah dibalak dan hutan dara di dua hutan tanah pamah. Kesan variasi musim seperti hujan dan musim penghijrahan ke atas komposisi burung bawah kanopi turut dikaji. Sebanyak 2,370 burung daripada 120 spesies telah ditangkap di kedua-dua kawasan kajian selepas 48 pensampelan. Kelimpahan burung adalah tinggi di hutan dara berbanding hutan yang telah dibalak dan didominasi oleh burung hutan dara seperti burung rimba (Timaliidae) dan burung sambar (Muscicapidae). Walau bagaimanapun, peningkatan bilangan burung spesis hutan sekunder seperti Kelicap Jantung Kecil (*Arachnothera longirostra*) di hutan dara menimbulkan persoalan mengenai kualiti hutan tersebut. Kehadiran burung hutan dara di hutan yang telah dibalak menunjukkan habitat tersebut dalam proses pemulihan. Keputusan kajian menunjukkan kelimpahan burung bawah kanopi tidak dipengaruhi oleh faktor hujan. Kehadiran burung hijrah di dalam kawasan menunjukkan bukti bahawa kawasan kajian berupaya menyediakan tempat persinggahan yang sesuai. Maklumat yang diperolehi melalui kajian ini diharap dapat menyokong usaha dalam merekabentuk strategi pengurusan hutan dan pemuliharaan hidupan liar secara amnya dan khususnya untuk burung bawah kanopi.

TABLE OF CONTENTS

CHAPTER 3 RESULTS

LIST OF FIGURES

LIST OF TABLES