Appendix A: **List of non-volant small mammals caught in the different habitat types and the conservation status for each species. RML = Red List Status of Mammals for Peninsular Malaysia. IUCN = International Union for Conservation of Nature. EN = Endangered, VU = Vulnerable, NT = Near Threatened, LC = Least concern, DD = Data deficiency, Empty box = Data has not yet been assessed.**

Order	Family	Species	Code	Forested habitat			Oil palm plantation			Conservation status	
				Adjacent	Intermediate	Interior	Young	Mature	Old	RLM	IUCN
Rodentia	Muridae	*Rattus tiomanicus*	Rati	•	•	•	•	•	•	LC	LC
		Rattus muelleri	Ramu	•	•	•				LC	
		Rattus exulans	Raex	•	•				•	LC	LC
		Maxomys surifer	Masu	•	•	•			•	LC	LC
		Maxomys rajah	Mara	•	•	•				LC	VU
		Maxomys whiteheadi	Mawh	•	•	•				LC	VU
		Leopaldamys sabanus	Lesa	•	•	•				LC	
		Pithecheir parvus	Pipa	•						LC	DD
		Niviventer cremoriventer	Nicr	•	•	•				LC	VU
		Mus musculus	Mumu	•						LC	LC
		Berylmys bowersi	Bebo		•					EN	LC
		Chiropodomys gliroides	Chgl	•						LC	LC
	Sciuridae	*Callosciurus caniceps*	Caca					•		LC	LC
		Calloscirus notatus	Cano	•	•	•				LC	
		Calloscirus nigrovittatus	Cani	•	•					LC	
		Rhinosciurus laticaudatus	Rhla	•	•					LC	NT
		Sundascirus lowii	Sulo	•		•				LC	
		Sundascirus tenuis	Sute	•	•					LC	
		Sundascirus hippurus	Suhi	•						LC	
		Lariscus insignis	Lain	•	•					LC	LC
Scandentia	Tupaiidae	*Tupaia glis*	Tugl	•	•	•	•	•		LC	LC
Insectivora	Erinaceidae	*Echinosorex gymnurus*	Ecgy	•	•					VU	

Appendix B: **List of volant small mammals caught in the different habitat types and the conservation status for each species. RML = Red List Status of Mammals for Peninsular Malaysia. IUCN = International Union for Conservation of Nature. VU = Vulnerable, NT = Near Threatened, LC = Least concern, DD = Data deficiency, Empty box = Data has not yet been assessed.**

Family	Species	Code	Forested habitat			Oil palm plantation			Conservation status	
			Adjacent	Intermediate	Interior	Young	Mature	Old	RML	IUCN
Pteropodidae	*Cynopterus brachyotis*	Cybr		•	•	•	•	•	LC	LC
	Cynopterus horsfieldi	Cyho		•	•	•	•	•	LC	LC
	Megarops ecaudatus	Meec		•					LC	
	Rousettus amplexicaudatus	Roam						•	LC	
	Balionycteris maculata	Bama	•	•	•			•	LC	LC
	Eonycteris spelaea	Eosp				•	•		LC	LC
	Macroglossus sobrinus	Maso				•			LC	LC
Rhinolophidae	*Rhinolophus acuminatus*	Rhac	•				•	•	LC	LC
	Rhinolophus sedulus	Rhse	•	•	•				LC	NT
	Rhinolophus trifoliatus	Rhtr	•	•	•			•	LC	LC
	Rhinolophus lepidus	Rhle			•	•	•		LC	LC
	Rhinolophus affinis	Rhaf	•	•		•	•	•	LC	LC
	Rhinolophus luctus	Rhlu		•					LC	LC
	Rhinolophus stheno	Rhst	•						LC	LC
Hipposideridae	*Hipposideros bicolor*	Hibi	•	•	•	•			LC	LC
	Hipposideros cervinus	Hice	•	•	•	•	•	•	LC	LC
	Hipposideros diadema	Hidi	•	•	•		•	•	LC	LC
	Hipposideros larvatus	Hila	•	•		•			LC	LC
	Hipposideros ridleyi	Hiri		•					LC	VU
	Hipposideros galeritus	Higa			•				LC	LC

Appendix B continued.

Family	Species	Code	Forested habitat			Oil palm plantation			Conservation status	
			Adjacent	Intermediate	Interior	Young	Mature	Old	RML	IUCN
Vespertilionidae	*Kerivoula intermedia*	Kein	•	•					VU	NT
	Kerivoula hardwickii	Keha	•	•	•				LC	LC
	Kerivoula papillosa	Kepa	•	•	•				LC	LC
	Kerivoula minuta	Kemi	•	•	•			•	LC	NT
	Kerivoula pellucida	Kepe	•	•	•				LC	NT
	Scotophilus kuhlii	Scku				•	•	•	LC	LC
	Murina cylotic	Mucy	•	•	•			•	LC	
	Murina aenea	Muae	•						LC	VU
	Murina suilla	Musu	•	•				•	LC	LC
	Pipistrellus tenuis	Pite			•		•		LC	LC
	Phoniscus atrox	Phat	•	•					VU	NT
	Glishropus tylopus	Glty		•					LC	
	Hesperoptenus blanfordi	Hebl		•				•	VU	LC
	Tylonycteris robustula	Tyro	•						LC	LC
	Myotis ridleyi	Myri						•	LC	NT
Megadermatidae	*Megaderma spasma*	Mesp		•					LC	LC

Appendix C: **Percentage of capture success of non-volant small mammals for each habitat types in study site.**

Species	Forest habitat			Oil palm plantation		
	Adjacent	Intermediate	Interior	Young	Mature	Old
Berylmys bowersi	0	1	0	0	0	0
Calloscirus nigrovittatus	1	1	0	0	0	0
Calloscirus notatus	3	1	2	0	0	0
Callosciurus caniceps	0	0	0	0	1	0
Chiropodomys gliroides	1	0	0	0	0	0
Echinosorex gymnurus	3	6	0	0	0	0
Lariscus insignis	11	7	0	0	0	0
Leopaldamys sabanus	33	14	2	0	0	0
Maxomys rajah	52	31	9	0	0	0
Maxomys surifer	19	12	18	0	0	1
Maxomys whiteheadi	21	11	3	0	0	0
Mus musculus	1	0	0	0	0	0
Niviventer cremoriventer	9	11	6	0	0	0
Pithecheir parvus	1	0	0	0	0	0
Rattus exulans	1	2	0	0	0	1
Rattus muelleri	1	2	7	0	0	0
Rattus tiomanicus	36	53	5	211	157	232
Rhinosciurus laticaudatus	3	1	0	0	0	0
Sundascirus hippurus	2	0	0	0	0	0
Sundascirus lowii	7	0	1	0	0	0
Sundascirus tenuis	12	9	0	0	0	0
Tupaia glis	60	21	4	1	4	0
Total captured	277	183	57	212	162	234
Number of trap night	1800	1800	1800	1800	1800	1800
Percentage of capture success	15.39	10.17	3.17	11.78	9	13

Appendix D: **Percentage of capture success of volant small mammals for each habitat types.**

Species	Forest habitat			Oil palm plantation		
	Adjacent	Intermediate	Interior	Young	Mature	Old
Balionycteris maculata	7	2	3	0	0	8
Cynopterus brachyotis	0	4	5	21	19	15
Cynopterus horsfieldi	0	1	1	42	18	4
Eonycteris spelaea	0	0	0	5	1	0
Glishropus tylopus	0	10	0	0	0	0
Hesperoptenus blanfordi	0	2	0	0	0	1
Hipposideros bicolor	7	26	7	1	0	0
Hipposideros cervinus	12	11	8	4	1	4
Hipposideros diadema	2	4	8	0	2	1
Hipposideros galeritus	0	0	1	0	0	0
Hipposideros larvatus	4	1	0	5	0	0
Hipposideros ridleyi	0	6	0	0	0	0
Kerivoula hardwickii	10	6	3	0	0	0
Kerivoula intermedia	5	9	0	0	0	0
Kerivoula minuta	1	3	13	0	0	2
Kerivoula papillosa	4	6	5	0	0	0
Kerivoula pellucida	9	8	4	0	0	0
Macroglossus sobrinus	0	0	0	1	0	0
Megaderma spasma	0	2	0	0	0	0
Megarops ecaudatus	0	1	0	0	0	0
Murina aenea	1	0	0	0	0	0
Murina cylotic peninsularis	5	13	7	0	0	2
Murina suilla	6	1	0	0	0	2
Myotis ridleyi	0	0	0	0	0	2
Phoniscus atrox	1	2	0	0	0	0
Pipistrellus tenuis	0	0	2	0	1	0
Rhinolophus acuminatus	1	0	0	0	1	2
Rhinolophus affinis	5	1	0	8	4	1
Rhinolophus lepidus	0	0	1	2	17	0
Rhinolophus luctus	0	1	0	0	0	0
Rhinolophus sedulus	5	1	1	0	0	0
Rhinolophus stheno	1	0	0	0	0	0
Rhinolophus trifoliatus	9	20	6	0	0	1
Rousetttus amplexicaudatus	0	0	0	0	0	1
Scotophilus kuhlii	0	0	0	1	12	2
Tylonycteris robustula	1	0	0	0	0	0
Total captured	96	141	75	90	76	48
Number of trap hours	720	720	720	720	720	720
Percentage of capture success	13.33	19.58	10.42	12.5	10.56	6.67

Appendix E: **Species Richness Estimators. Definitions of variables of the species richness estimators (Cowell & Coddington, 1994)**

Sest	Estimated species richness, where est is replaced in the formula by the name of the estimator.
Sobs	Total number of species observed in all samples pooled
Srare	Number of rare species (each with 10 or fewer individuals) when all samples are pooled
Sabund	Number of abundant species (each with more than 10 individuals) when all samples pooled
Sinfr	Number of infrequent species (each found in 10 or fewer samples)
Sfreq	Number of frequent species (each found in more than 10 samples)
m	Total number of samples
Minfr	Number of smaples that have at least one infrequent species
Fi	Number of species that have exactly j samples (Q1 is the frequency of unique, Q2 the frequency of duplicates).
Qj	Number of species that occur in exactly j samples (Q1 is the frequency of unique, Q2 the frequency of duplicates).
Pk	Proportion of samples that contain species k
Nrare	Total number of individuals in rare species
Ninfr	Total number of incidences (occurrences) of infrequent species
Cice	Sample incidence coverage estimator
γ ^{2}ice	Estimated coefficient of variation of the Qi's for infrequent species

Five different methods were used to calculate total species in the different study plots. All formulae are from Cowell & Coddington (1994), where more details are given for the different estimators.

1. Chao2:

An incidence-based estimator of species richness.

$$S_{Chao2} = S_{obs} + \frac{Q1^2}{2Q_2}$$

2. Jack1:

Second-order jackknife estimator of species richness (incidence-based).

$$S_{jack1} = S_{obs} + Q1 \left[\frac{m-1}{m} \right]$$

3. Jack2:

Second-order jackknife estimator of species richness (incidence-based).

$$Sjack2 = Sobs + \left[\frac{Q1(2m-3)}{m} \right] - \left[\frac{Q2(m-2)2}{m(m-1)} \right]$$

4. Bootstrap:

Bootstrap estimator of species richness (incidence-based).

$$S_{boot} = S_{obs} + \sum_{k=1}^{S_{obs}} (1 - p_k)^m$$

5. Michaelis Menten Mean (MMMean):

Asymptotic model for species accumulation, estimating Smax and B from a set of values for S(n) as a function of n:

$$S(n) = \frac{S_{max}}{B + n}$$

Appendix F: **List of publication and paper presented.**

Wilson JJ, Sing KW, Halim MRA, Ramli R, Hashim R, Sofian-Azirun M. Utility of DNA barcoding for rapid and accurate assessment of bat diversity in Malaysia in the absence of formally described species. *Genetics and Molecular Research* 13(1): 920-925 (2014). (*ISI-Cited Publication*)

Rasul, A. H. and Ramli, R. (2014). Non-volant small mammals communities in the oil palm plantation and adjacent forested area of Sungai Tekam, Pahang. In *Book of Abstract of 18th Biological Sciences Graduate Congress*, 6-8 January 2014, University Malaya, Kuala Lumpur.