

REPORT ON SMALL MAMMALS FROM LANJAK ENTIMAU WILDLIFE SANCTUARY

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ABSTRACT

A survey was conducted at Lanjak Entimau Wildlife Sanctuary (LEWS) from 13th to 26th June 2008 to document as well as to determine the species richness and relative abundance of small mammals. In average, 10 mist nets, six four-bank harp traps, 10 pit fall traps and 100 cage traps were deployed. Sampling was conducted at two different sites within the sanctuary: Sungai Bloh (Bloh) and Sungai Menyarin (Menyarin) trail. A total of 77 specimens from 21 species of nine families of small mammals representing four orders: Chiroptera, Rodentia, Scandentia and Soricomorpha were captured from 12 nights of sampling effort. *Balionycteris maculata* and *Niviventer rapit* were recorded as the most abundant species in both sites. Ten new geographic records were added for *Hipposideros cervinus*, *H. cineraceus*, *Rhinolophus luctus*, *Kerivoula hardwickii*, *K. intermedia*, *Myotis muricola*, *M. ridleyi*, *Arielulus cuprosus*, *Tupaia minor* and *Suncus etruscus* at LEWS. Current study does not provide similar survey result to the previous study, which may be due to differences in sampling seasons, baits used, and the exact sampling site. We have provided detailed exact sampling sites geographic coordinate and sampling techniques to allow future sampling to replicate our survey to compare and discuss the diversity in LEWS over time.

INTRODUCTION

Lanjak Entimau Wildlife Sanctuary (LEWS) is situated at southwestern of Sarawak (Lat 1° 37' N, Long 112° 11'E). This area is rich with flora and fauna with approximately of 168,758 ha; excluding the proposed extensions of 18,414 ha (Figure 1). It was initially proposed as wildlife sanctuary in 1982 and then gazette in year 1983. Wildlife sanctuaries are totally protected areas where it were design mainly for conservation and biodiversity related research purposes.

As part of the Scientific Expedition in LEWS, this study was conducted from 13th June until 26th June 2008. The objectives of this survey are to document inventory data as well as to determine the species richness and relative abundance of small mammals in LEWS. Small mammals from LEWS have been only surveyed or at least documented by Han (2000) and Kavanagh (1982).

MATERIALS & METHODS

Sampling Sites
 10 mist nets, 6 harp traps, 10 pit fall traps & 100 cage traps were used for a total of 12 nights (6 at each site: Sg. Menyarin & Sg. Bloh)

Field Methodology

Bats
 Mist-nets were placed across streams, trails & between small cliffs. Canopy nets were deployed across river & the size were adjusted by joining several nets. Harp traps were deployed across streams or between openings of two trees along the trail.

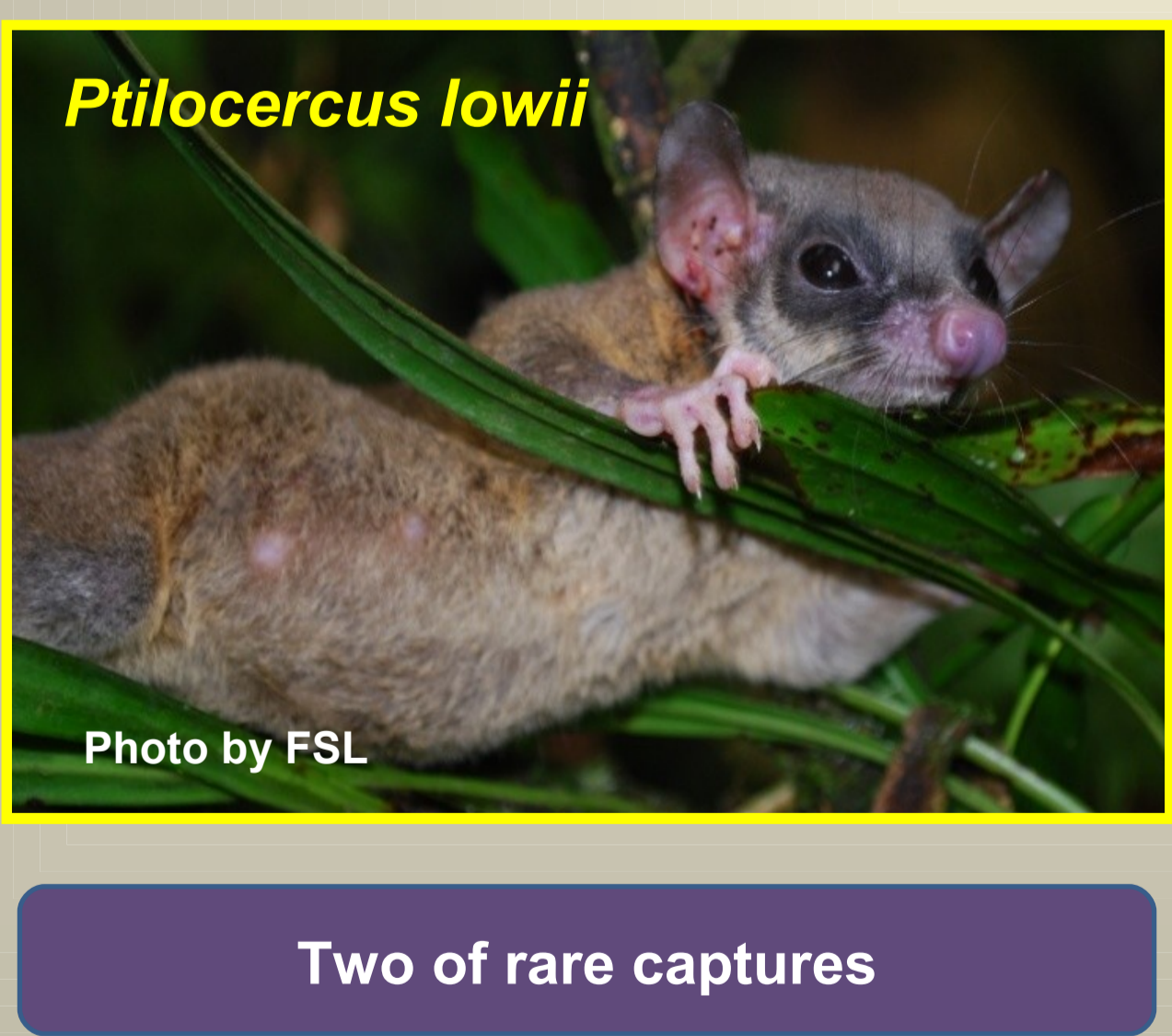
Rodents, Shrews & Squirrels
 Cage traps were placed along the trail with the approximate distance of five meters. Banana, oil palm and salted fish were used as baits. Pit fall traps were set with about two feet of depth

Specimen

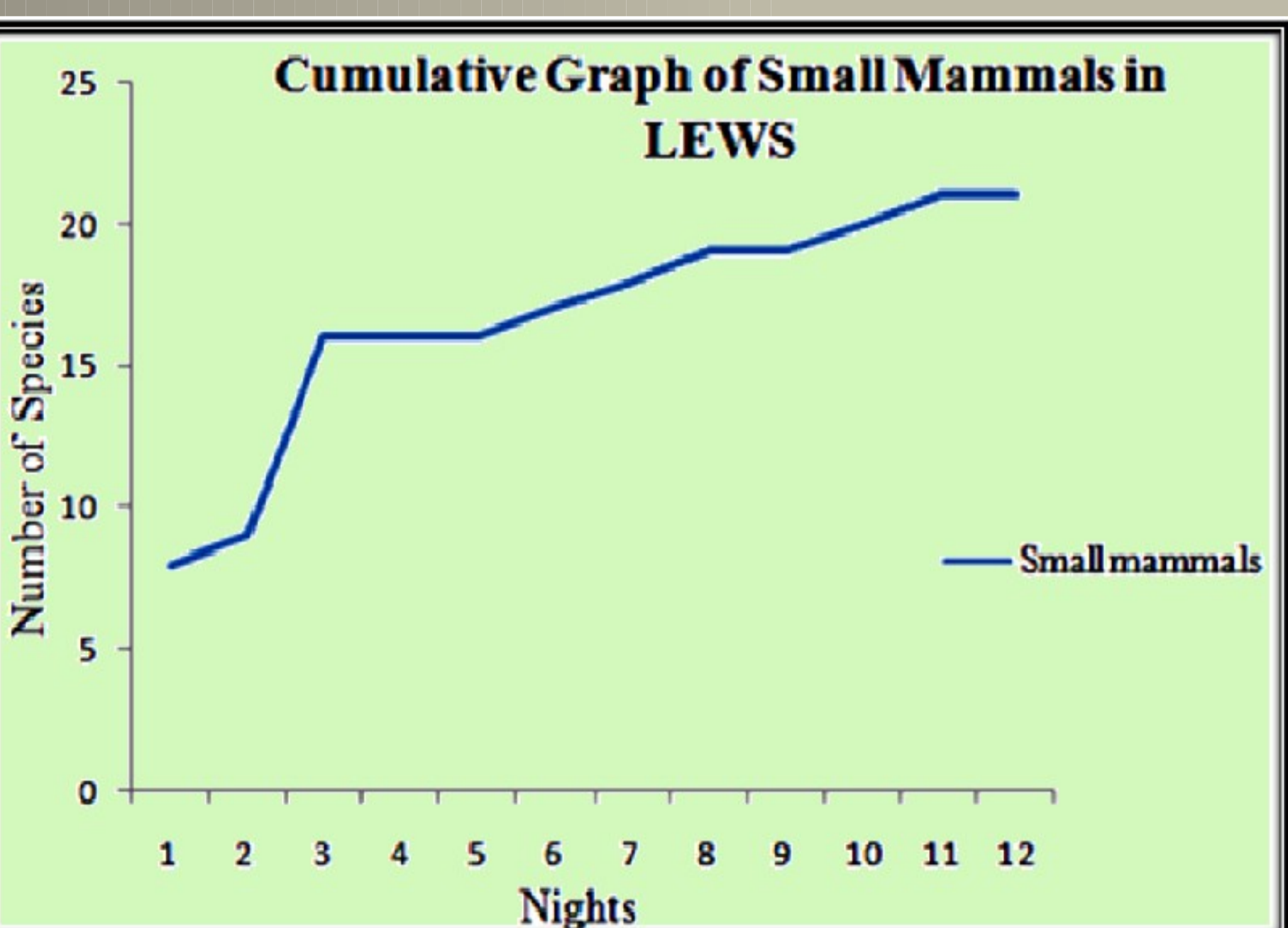
Identification
 Followed Payne *et al.* (2005). Three individuals per species were taken as voucher specimens.

Preservation
 Muscle tissues, liver, & blood collected. Specimens prepared as skin, skull or in fluid preservative (ethanol)

Samples were used for systematic studies and ready for other zoonotic disease related studies



Two of rare captures



SURVEY

- ❖ 77 individuals of small mammals successfully recorded, comprising from four orders which are Chiroptera, Rodentia and Scandentia, Soricomorpha.
- ❖ The probability of additional new species to be recorded is possible as the graph has not reached the asymptote point.
- ❖ Inclusion of new sampling site and trapping night may be useful.

New Locality Records For LEWS



All of the photos presented here were taken in the field at LEWS except for *Rhinolophus luctus* which was substitute with a photo taken at Kubah NP. *Kerivoula hardwickii* were photograph but escaped soon after that. Photos by FSL

Table 1: Species list of small mammals collected at LEWS from Bloh and Menyarin trail

ORDER	Species	Individuals	Remarks	Relative Abundance (%)	
				Menyarin	Bloh
CHIROPTERA					
Pteropodidae	<i>Balionycteris maculata</i>	16	Abundant	21.7	19.4
	<i>Cynopterus brachyotis</i>	10	Abundant	15.2	9.7
	<i>Macroglossus minimus</i>	12	Abundant	17.4	12.9
	<i>Penthetor lucasi</i>	2		2.2	3.2
	<i>Hipposideros cervinus</i>	4	New locality record	0.0	12.9
Hipposideridae	<i>Hipposideros cineraceus</i>	2	New locality record	4.3	0.0
	<i>Rhinolophus luctus</i>	1	New locality record	0.0	3.2
Rhinolophidae	<i>Rhinolophus luctus</i>	1	New locality record	0.0	3.2
	<i>Rhinolophus trifoliatu</i>	7		6.5	12.9
Vespertilionidae	<i>Arielulus cuprosus</i>	1	New locality record	2.2	0.0
	<i>Kerivoula hardwickii</i>	1	Escaped/New locality record	2.2	0.0
	<i>Kerivoula intermedia</i>	6	New locality record	8.7	6.5
	<i>Myotis muricola</i>	1	New locality record	2.2	0.0
	<i>Myotis ridleyi</i>	2	New locality record	2.2	3.2
RODENTIA					
Muridae	<i>Maxomys surifer</i>	1		2.2	0.0
	<i>Maxomys whiteheadi</i>	2		0.0	6.5
	<i>Niviventer rapit</i>	3		2.2	6.5
	<i>Sundamys muelleri</i>	1		0.0	3.2
Sciuridae	<i>Lariscus insignis</i>	1		2.2	0.0
SCANDENTIA					
Tupaiaidae	<i>Tupaia minor</i>	2	New locality record	4.3	0.0
Ptilocercidae	<i>Ptilocercus lowii</i>	1		2.2	0.0
SORICOMORPHA					
Soricidae	<i>Suncus etruscus</i>	1	New locality record	2.2	0.0
Total individual		77			
Total species		21			
Total family		9			

SPECIES COMPARISON

- ❖ Sungai Menyarin (17 species) recorded higher species diversity compared to Sungai Bloh (12 species).
- ❖ 11 species of bats was recorded in this study Soepadmo and Chai (2000) recorded 13 species. *C. brachyotis*, *M. minimus* and *B. maculata* was the most abundant bats
- ❖ Although *Cheiromeles torquatus* (Naked bat) was reported to be abundant at Sungai Joh-Bloh (Han, 2000), our study do not record single individual at similar site.
- ❖ Only 7 species of 29 species of rodents that was previously documented in LEWS was collected in this study. *Niviventer rapit* is the most abundant rodent species.

CONCLUSIONS

From our findings, volant small mammals show a good level of species richness with new locality records reported for LEWS whereas for non-volant small mammals further survey need to be conducted to obtain optimal results of species richness. The small mammals of LEWS is still being preserved and conserved indicating that LEWS provide them a continuous suitable habitat and sufficient food resources.

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