Quarter Update (3rd Quarter, 2024)

The adequacy of sampling effort for the camera trapping surveys conducted at the five study sites were assessed using two methods. Firstly, a species accumulation curve was created by plotting detection frequencies of recorded species against the number of camera trap nights, with adequate sampling effort emphasized when the curve approached an asymptote or plateau. Secondly, the ratio of recorded species number to the mean values of four incidence-based species richness estimators (ICE, CHAO2, JACK1, and Bootstrap) was verified and expressed in percentage (%), where a ratio of 80.0 % or higher was deemed ample. Analysis of the processed camera trap data revealed that the species accumulation curve was nearing asymptote (Number of recorded species = 27; Trap nights = 4,047) **(See Picture 1).** Furthermore, the mean values of the four species richness estimators were validated at 28.09 for the camera trapping survey (ICE = 27.55; CHAO2 = 29.00; JACK1 = 29.00; Bootstrap = 28.09), hence highlighting that the sampling effort was 95.04 % adequate. These outcomes suggest that the study successfully detected and recorded the majority of terrestrial mammals found along and around human pathways at the five selected study sites in Western Sabah, with only one species miss-detected.
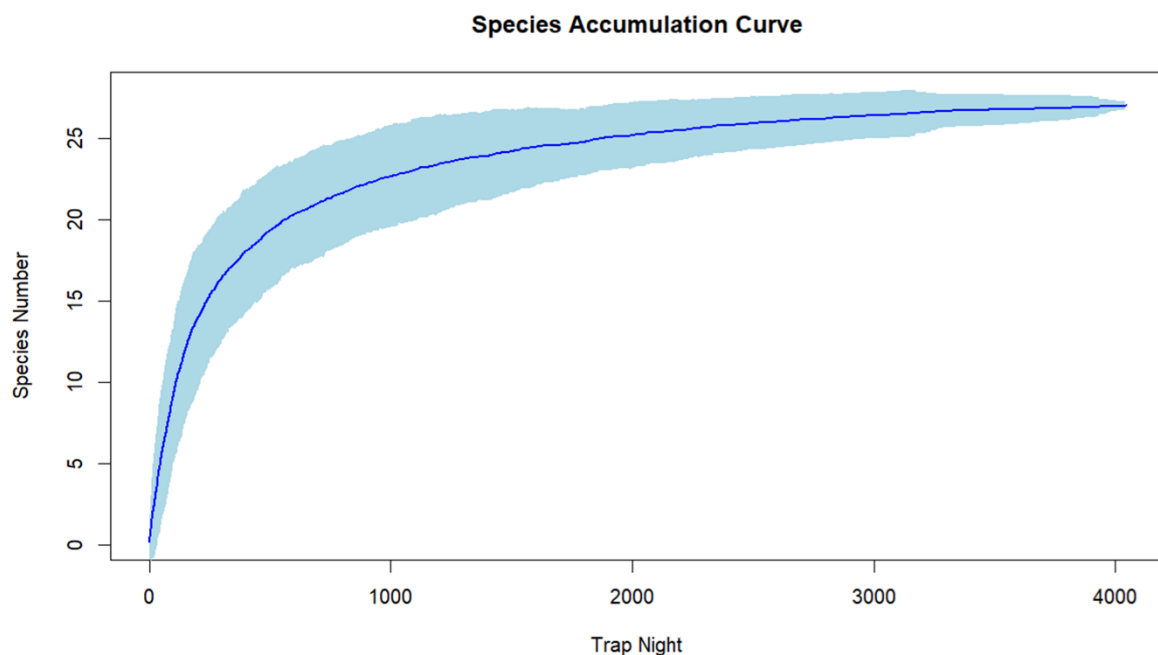
Picture 1. Species accumulation curves showing the recorded species number against the number of trap night for the camera trapping surveys conducted at the five study sites in Western Sabah, Malaysia Borneo

Furthermore, the detection rate of a specific terrestrial mammal species across the five study sites over the sampling period was estimated as the relative abundance index (RAI), which represented the number of independent sightings of a species per 100 trap nights (100TN^{-1}). Subsequently, a species rank abundance curve was created from the processed camera trap data, to verify the ranking of each recorded species at the five study sites, based on their respective RAI values **(See Table 1).** The resulting curve denoted that different terrestrial mammal species varied in their rates of utilizing human pathways and their nearby regions (RAI) across the five study sites in Western Sabah **(See Picture 2).** Since this study focused on mammalian detection rates rather than mammalian abundances, and focused specifically upon human pathways and adjacent areas rather than the entire study sites, a high detection rate within the given sampling areas did not necessarily emphasize a high local abundance of a particular species throughout the whole study site.

Table 1. Relative abundance index and ranking for the 27 terrestrial mammal species observed along and around human pathways at the five study sites in Western Sabah

Species (Common Name)	Rank	RAI	Species (Common Name)	Rank	RAI
Long-tailed Porcupine	1	2.3587	Sunda Pangolin	15	0.3686
Southern Pig-tailed Macaque	2	1.5725	Moonrat	16	0.3440
Mousedeer	3	1.2776	Slender Treeshrew	17	0.2703
Long-tailed Macaque	4	1.2039	Sabah Giant Rat	18	0.1720
Northern Long-footed Treeshrew	5	1.0811	Yellow-throated Marten	19	0.1229
Plantain Squirrel	6	1.0074	Small-toothed Palm Civet	20	0.0983
Sunda Stink Badger	7	0.8108	Collared Mongoose	21	0.0737
Leopard Cat	8	0.6388	Bornean Yellow Muntjac	22	0.0737
Southern Red Muntjac	9	0.6143	Smooth-coated Otter	23	0.0737
Malay Civet	10	0.5897	Thick-spined Porcupine	24	0.0737
Whitehead's Sundaic Maxomys	11	0.5160	Bearded Pig	25	0.0491
Common Palm Civet	12	0.4668	Banded Civet	26	0.0246
Prevost's Squirrel	13	0.4668	Red Giant Flying Squirrel	27	0.0246
Large Treeshrew	14	0.4668	-	-	-

*Note: RAI = Relative Abundance Index (100TN^{-1})

Among the 27 observed terrestrial mammal species, the Long-tailed Porcupine (*Trichys fasciculata*) was verified as the most frequently detected species (RAI = 2.359 100TN^{-1}), followed by the Southern Pig-tailed Macaque (*Macaca nemestrina*: RAI = 1.573 100TN^{-1}), the Mousedeer (*Tragulus* spp.: RAI = 1.278 100TN^{-1}), and the Long-tailed Macaque (*M. fascicularis*: RAI = 1.204 100TN^{-1}), thereby making them the top four most frequently detected species across all five study sites in this study. This result indicated that these four species were sighted once every 42.4 to 83.1 nights of camera trapping. On the contrary, the Bearded Pig (*Sus barbatus*: RAI = 0.0491 100TN^{-1}), Red Giant Flying Squirrel (*Petaurista petaurista*: RAI = 0.0246 100TN^{-1}), and the Banded Civet (*Hemigalus derbyanus*: RAI = 0.0246 100TN^{-1}) were the three least regularly recorded species, since they were observed once every 2,036.7 to 4,065.0 nights of camera trapping across all five study sites in Western Sabah.
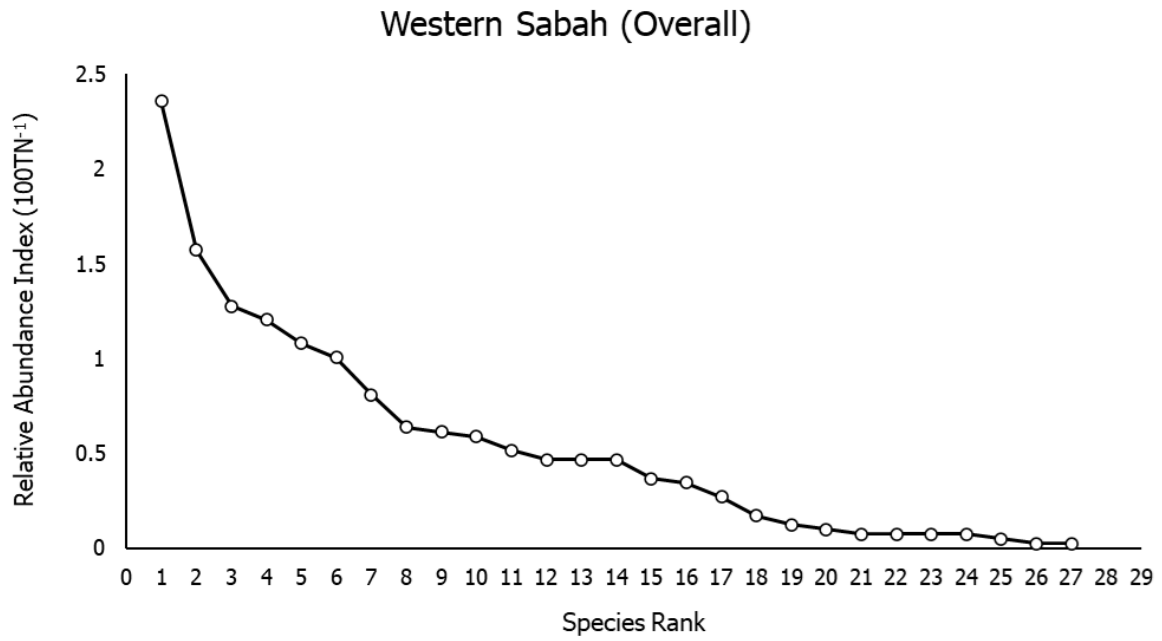
Picture 2. Species rank abundance curve for the 27 terrestrial mammal species found along and around human pathways, sorted by their respective relative abundance index values in descending order, across the five study sites in Western Sabah