WILDLIFE MONITORING USING CAMERA TRAPPING AT SALT LICK AREAS IN ULU MUDA FOREST RESERVE, KEDAH

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Introduction

1. Camera trapping is advantageous in obtaining images of wildlife species for detection and monitoring since it records automatically with minimal human interaction.
2. The technologies expand with motion-detection function to capture any movement of object or species pass by the camera for identification compare to the conventional method of detection and monitoring using footprint, dung, scent, sound and other indirect signs.
3. PERHILITAN have deployed camera traps at salt lick areas in Ulu Muda Forest Reserve (UMFR) Kedah in two programmes. First programme was conducted at artificial salt lick namely Jenut Kalir, Jenut Che Song, Jenut Buluh, Jenut Akar from September 2017 until May 2018. Second programme ran from Mac until May 2021 at Jenut Jawa, a natural salt lick.
4. High frequency of image captured at salt lick compare on the track.

Materials and Methods

Figure 2: Deploying camera trap

1. Camera trap use was Reconyxx HC 500
2. Three camera traps were stolen
3. Camera traps image were analysed using *Renamer* and *Microsoft Excel*
4. Camera trap Coordinate were recorded by *Garmin GPS 62sc* and uploaded to *Basecamp* software.
5. Spatial data was processed through *Arc GIS 10.8* using several layers.

Results
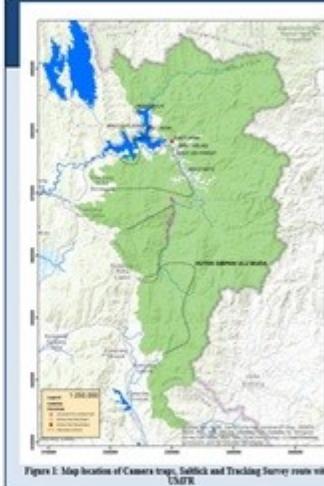
Figure 1: Map location of Camera traps, Saltlick and Tracking Survey route within UMFR

Table 1: Number of camera trap images captured

NO	SPECIES	JENUT KALIR, JENUT CHE SONG, JENUT BULUH, JENUT AKAR 13/9/2017 – 16/5/2018	JENUT JAWA 17/3/2021 – 28/5/2021
		CAPTURED IMAGES	
1	Cathoecerus spp	1	-
2	Elephas maximus	28	4477
3	Hystrix brachyura	5	-
4	Lariscus perspicillatus	-	2
5	Macaca fascicularis	37	-
6	Macaca nemestrina	15	-
7	Manis javanica	1	-
8	Muntiacus muntjak	9	5
9	Rollulus rouloul	1	-
10	Rusa unicolor	5	1044
11	Sus scrofa	187	9
12	Tapirus indicus	4	244
13	Tragulus javanicus	1	-
14	Trachypithecus spp	2	-
15	Varanus salvator	-	9
	TOTAL	296	5710

Graph 1: Graph of camera trap images captured
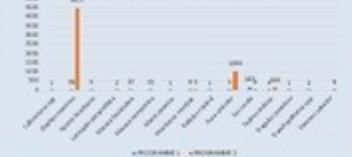
Table 2: Species recorded in several programmes within UMFR

PROGRAMME		PERHILITAN PROGRAMME 2	PERHILITAN PROGRAMME 1	ULU MUDA SCIENTIFIC EXPEDITION	PERHILITAN WILDLIFE INVENTORY
LOCATION		JENUT JAWA	JENUT KALIR, JENUT CHE SONG, JENUT BULUH, JENUT AKAR	18 km2 (refer map)	tracking (refer map)
CAPTURED DATE		17/3/2021 – 28/5/2021	13/9/2017 – 16/5/2018	27/10/2003 – 8/1/2004	8/2/1993 – 16/3/1993
METHOD		CAMERA TRAPPING			INDIRECT SIGHTING
NO	SPECIES				
1	Atherurus macrourus	-	-	✓	-
2	Bos gaurus	-	-	-	✓
3	Cathoecerus spp	-	✓	-	-
4	Capricornis sumatrensis	-	-	-	✓
5	Elephas maximus	✓	✓	✓	✓
6	Felis temminckii	-	-	✓	-
7	Helarctos malayanus	-	-	-	✓
8	Hylobates agilis	-	-	-	✓
9	Hylobates lar	-	-	-	✓
10	Hystrix brachyura	-	✓	✓	-
11	Lariscus perspicillatus	✓	-	-	-
12	Macaca fascicularis	-	✓	-	-
13	Macaca nemestrina	-	✓	✓	✓
14	Manis javanica	-	✓	✓	-
15	Muntiacus muntjak	✓	✓	✓	✓
16	Neofelis nebulosa	-	-	-	✓
17	Panthera pardus	-	-	-	✓
18	Panthera tigris	-	-	-	✓
19	Paradoxurus hermaphroditus	-	-	✓	-
20	Presbytis melalophos	-	-	-	✓
21	Presbytis obscura	-	-	-	✓
22	Prionailurus bengalensis	-	-	✓	-
23	Rollulus rouloul	✓	✓	-	-
24	Rusa unicolor	✓	✓	✓	✓
25	Sus scrofa	✓	✓	✓	✓
26	Tapirus indicus	✓	✓	✓	✓
27	Tragulus javanicus	-	✓	✓	-
28	Trachypithecus obscurus	-	-	-	✓
29	Varanus salvator	✓	-	-	-
	TOTAL	7	13	13	17

CONCLUSION

1. Five species namely *Elephas maximus, Muntiacus muntjac, Rusa unicolor, Sus scrofa* and *Tapirus indicus* captured and recorded in all programmes from the total of 29 species.
2. Continuous monitoring programme is crucial as the number of species recorded decreasing year by year.
3. *Sus scrofa* is the highest captured images in Programme 1 while *Elephas maximus* is the highest on Programme 2.
4. PERHILITAN currently working on environmental DNA (eDNA) and invertebrate DNA (iDNA) programme to collect water and leeches sample to support in wildlife monitoring.

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