First record of flat-headed cat (*Prionailurus planiceps*) in Tasek Bera, Malaysia

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Introduction

The flat-headed cat (*Prionailurus planiceps)* is found roaming from southern Thailand, West Malaysia, Sumatra and Borneo (Bezuijen, 2000, 2003; Cheyne et al., 2009; Malim and Yasuma, 2000; Meijard et al., 2005; Mohamed et al., 2009; Traeholt, 2001; Traeholt and Lim, 1999; Yasuda et al., 2007). Although there exists few reliable sources are available on the species historical and current distribution it was listed as Endangered on the IUCN Red List (IUCN, 2015).

It is a unique species with distinctly elongated, flattened head and small, rounded ears that makes this unusual member of the cat family (Muul and Lim, 1970) (Fig. 1). Like its bigger cousin, the fishing cat (*Prionailurus viverrinus*), it is well adapted to a semi-aquatic lifestyle, where they are reported to feed mainly on fish and amphibians (Lim and Rahman, 1961; Rasmussen, 2014; Traeholt and Idris, 2011).

In Peninsular Malaysia flat-headed cats have been recorded from Selangor peat swamp forest, Pulau Kukup, Johor (unpubl. Johor National Parks), Pahang peat swamp forest, Sg. Pulai Forest Reserve, and Krau Wildlife Reserve (Chow, 2010; Traeholt and Lim, 1999; Wilting et al, 2009). A road killed flat-headed cat was also recorded on the main highway between Karak and Temerloh, Pahang (unpubl. data) and another road kill was recorded outside Kuantan (Kalim et al., 2011).

In 1994, Tasek Bera was declared as Malaysia's first of six Ramsar sites. Whereas the total Ramsar area covers 31,255 hectares, approx. 6,800 hectares constitute freshwater wetland, of which the majority is (approx. 80%) is peat swamp forest. Today, approx. 2000 indigenous Semelai people inhabits the area. The lake and forest environment are now greatly disturbed by shifting cultivation, illegal logging and excessive human resources exploitation (fishing, harvest of non-timber forest products, tourism).

This study presents the first picture recorded of flat-headed cat using camera trap in Tasek Bera Malaysia.

Figure 1. Captive flat-headed Cat in Sg. Dusun Conservation Centre, Selangor, Malaysia.

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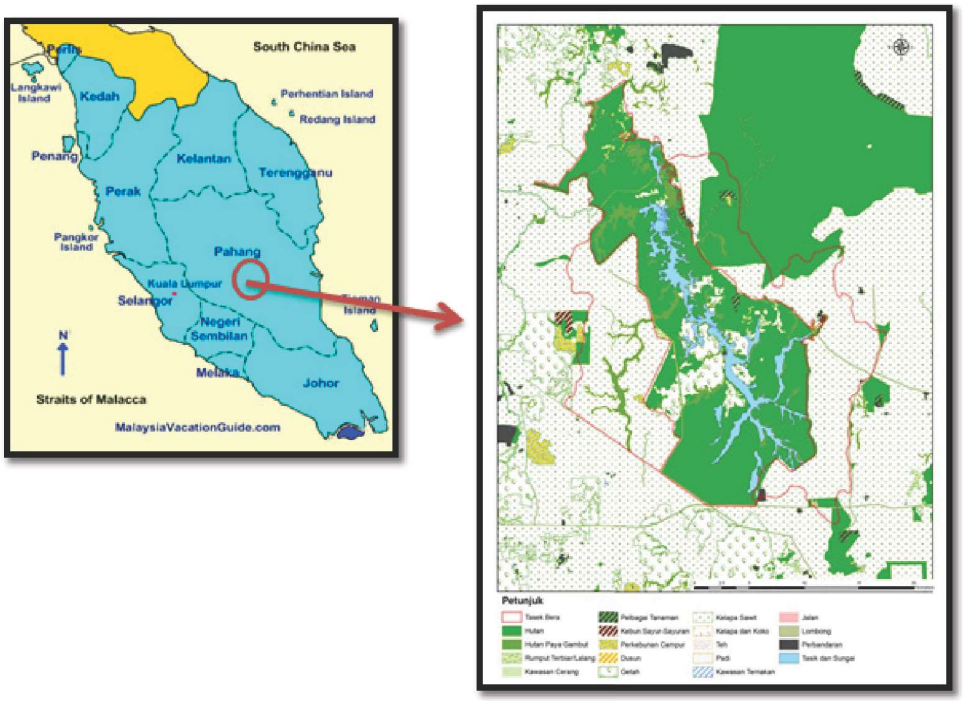

Figure 2. Tasek Bera study site is accessible from the East-West highway, linking Kuala Lumpur with Kuantan in the state of Pahang.

Methods

Study site

The camera trap study was undertaken in Tasek Bera Ramsar site at 3˚5'N, 102˚38'E in the Malaysian state of Pahang (Fig. 2)

A total of 20 camera traps (Scoutguard 550-V, 560-P) were deployed at 5 different locations. Cameras were set at a height of 40-50 cm above the ground in areas with low risk of flooding and where we presumed was a good flat-headed cat prey base. All cameras were set on dual recording i.e. both video and still pictures. The cameras were active 24/7 for a period of 103 days. Videos and pictures were sorted and analysed using a ReNamer software described by Sanderson and Trolle (2005).

Results and Discussion

A total of 1800 camera-trap-nights yielded 1277 videos and 5282 nominally independent pictures. This revealed 40 vertebrates species (Tab.1), including flat-headed cat. The most commonly photographed species was wild pigs (107) followed by Argus pheasant (66) and red jungle fowl (32).We recorded a total of six (6) pictures of flat-headed cat. The flat-headed cat detection at 06:22hrs on the 10th of June, 2014, and at 06:21hrs on the 19th July, 2014, was from same trap-location in lowland dipterocarp forest (Fig.3). One flat-headed cat record was located approx. 1.5km from an oil palm plantation, lending credibility to previous but rare accounts of the species near plantations (Khan, 1986). It may also be a result of the ongoing habitat loss that forces the species into exploring new potential habitats. Apart from the human disturbance factor, oil palm plantations may indeed offer adequate habitat for flat-headed cats. The many shallow streams and canals provide prime habitat for certain fish and amphibians, the main prey of this illusive species.

Fundamental threats to the long-term survival of the species continue to be associated with the loss and fragmentation of peat forest, wetlands and wet lowland forest. To date, however a greater understanding of the distribution and ecology is needed in the short-term to inform longer-term conservation actions and mitigate site-specific threats.

Table 1: List of vertebrate species recorded in the study.

Scientific Name	Common Name	No. photos
Sus scrofa	Wild pig	107
Argusianus argus	Great argus pheasant	66
Gallus gallus	Red jungle fowl	32
Tupaia glis	Common tree shrew	21
Macaca fascicularis	Long-tailed macaque	19
Chalchophaps indica	Emerald dove	16
Macaca nemestrina	Pig-tailed macaque	12
Rattus sp.	Rat sp.	12
Varanus salvator	Water monitor lizard	12
Lariscus insignis	Three-striped ground squirrel	8
Leopoldamys sabanus	Long-tailed giant rat	7
Tragulus kanchil	Lesser mouse-deer	7
Tragulus napu	Greater mouse-deer	5
Herpestes brachyurus	Short-tailed mongoose	4
Hystrix brachyura	Malayan porcupine	4
Callosciurus notatus	Plantain squirrel	4
Helarctos malayanus	Sun bear	4
Muntiacus muntjak	Barking deer	3
Paradoxurus hermaphroditus	Asian palm civet	3
Prionailurus bengalensis	Leopard cat	3
Prionailurus planiceps	Flat-headed cat	2
Trachypithecus obscurus	Spectacled leaf monkey	2
Gallus gallus domesticus	Domestic chicken	2
Viverra tangalunga	Malay civet	2
Polyplectron malacense	Malayan peacock-pheasant	1
Accipiter trivirgatus	Crested Goshawk	1
Echinosorex gymnurus	Moonrat	1
Prionodon linsang	Banded linsang	1
Lophura erythrophthalma	Crestless fireback	1
Stachyris nigricollis	Black-throated babbler	1
Centropus sinensis	Greater coucal	1
Tapirus indicus	Malayan Tapir	1
Artictis binturong	Bear cat	1
Manis javanica	Malayan pangolin	1
Copsychus malabaricus	White-rumped Shama	1
Muscicapidae sp	Flycatcher sp.	1
Lutra sp.	Otter sp.	1
Copsychus saularis	Oriental Magpie Robin	1
Picidae sp.	Woodpecker sp.	1
	Total	**372**

Figure 3. A flat-headed cat (red circle) was recorded twice at the same location 39 days apart. It appeared to be foraging and is likely the same individual.

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