



# First photographic evidence of Asian Golden Cat *Catopuma temminckii* (Vigors and Horsfield, 1827) from Neora valley National Park, Central Himalayas, India

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## Abstract

The Asiatic golden cat *Catopuma temminckii* also known as the Temminck's cat is a medium-sized wild cat distributed throughout South Asia. Asian Golden Cat is currently listed as Near Threatened in the IUCN Red List, and also listed in the Appendix I by CITES and Scheduled I in the Wildlife (Protection) Act, 1972 as the current population has been found to be declining due to habitat loss and poaching. It is a shy and elusive mammal, and very little information is available on its range, habitat and behaviour. The present study was conducted during the month of February and March 2017 as part of the Biodiversity assessment in the Indian Himalayan landscape through long-term monitoring protocol under the National Mission on Himalayan Studies, funded by the Ministry of Environment, Forest and Climate Change, Govt. of India. During the fieldwork in Neora Valley National Park, camera traps were deployed to record presence of mammals and ground birds. An Asian Golden Cat (*Catopuma temminckii* Vigors and Horsfield, 1827) was photo-captured in a single camera trap deployed in a trail in Thosum Beat of the Neora Valley National Park. The camera trap photograph confirmed the Asiatic Golden cat, presence in the National Park, and therefore, a long-term study in its probable habitats in South Asia may reveal its distribution, population status and ecology which will help towards long-term conservation of this species.

**Keywords:** Camera Trap, Darjeeling, Small Cat, Temperate Upper Hill Forest

Asian Golden Cat or Temminck's Cat is a medium-sized felid distributed in South-East Asia and one among the 15 felid species found in India (Lyngdoh *et al.*, 2011; Menon, 2014; Gouda *et al.*, 2016; Bashir *et al.*, 2011; Dhendup, 2016). Despite of the knowledge gap on estimated population and density of this species across its geographical range, Asian Golden Cat is currently listed as Near Threatened in the IUCN Red List and listed in Appendix I by CITES as the current population is dwindling (McCarthy *et al.*, 2015; Dhendup, 2016). It is also included under the Scheduled I in the Wildlife (Protection) Act, 1972 (Anonymous, 1972). Asian Golden Cat is a poorly studied species both in wild and captivity. Much of the information on various ecological aspects including habits ecology, social structure, and breeding behaviour is not known (Olsen, 2012).

Generally, the Asian golden cat looks similar to *Puma concolor* of America. They usually have an unmarked golden brown coat. Two distinctive mustache-like white stripes on the face and longitudinal markings on the forehead are present. The tail is long and not bushy (Menon, 2014; Grewal and Chakravarty, 2017). Asian Golden Cat shows various pelages in coat colour. There are four morphs that are known to science till date, such as common or normal, grey, melanistic and spotted (McCarthy *et al.*, 2015; Dhendup, 2016). These pelage formations are considered to be local adaptations due to its diverse habitat use (Allen *et al.*, 2011). Among these pelages, golden cats with melanistic pelages have been found to be occurring in the sub-alpine and alpine habitats of Central Himalayas in India (Bashir *et al.*, 2011). The spotted pelages have been recorded from habitats viz.

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dry deciduous forests, tropical savannas, grasslands etc. (Jutzeler *et al.*, 2010).

## Study Area and Methods

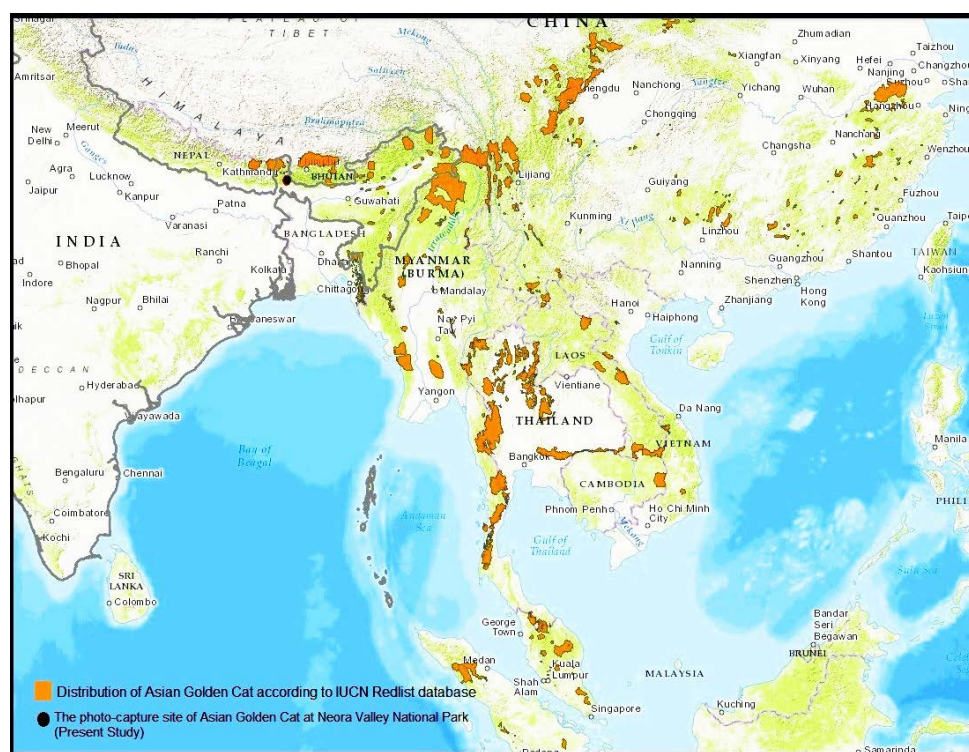
The Neora Valley National Park is situated in the recently declared Kalimpong district in the State of West Bengal, India (Figure 1). The total area of the park is 88 km<sup>2</sup> (N26°52' - N27°07' & E88°45' - E88°50'; altitudinal range 183 to 3200 m) (Mallick 2010) and comes under the biogeographic zone 2C of the Central Himalayas, India (Rodgers *et al.* 1988; 2000). The park has three forest types along its altitudinal gradient, viz. a) Tropical lower hill forest, b) Subtropical middle hill forest and c) Temperate upper hill forest.

The present study was conducted during the month of February and March 2017 as a part of the project Biodiversity assessment in the Indian Himalayan landscape through long term monitoring protocol under the National Mission on Himalayan Studies of the Ministry of Environment, Forest and Climate Change, Govt. of India. During the field work at Neora Valley National

Park, camera traps (Cuddeback: X-Change Color, Model - 1279) were deployed to record the evidence of various species of mammals and ground birds in Neora Valley National Park. The forest type at the location where the camera trap was set had Sub-tropical Middle Hill Forest with dense canopies. Dominant tree species are *Castanopsis tribuloides*, *C. indica*, *Quercus* sp, *Sabia* sp etc. The traps at each location were set for 3 consecutive nights.

## Results and Discussion

Camera traps were placed at various locations inside the National Park on rotation basis to photo captures various animals present. An Asian Golden Cat was photo-captured in a single camera trap deployed in a trail in Thosum Beat inside the National Park (Mouchaki to Bhote Trail; N27° 02.139' and E088° 46.730'; Elevation – 1501m) on 28<sup>th</sup> February, 2017 at 8:53 am (Figure 2). The photo-captured species was identified as an Asian Golden Cat-Normal Pelage (*Catopuma temminckii* Vigors and Horsfield, 1827) following Menon 2014, based on the characters depicted in the photo.



**Figure 1.** The distribution of Asian Golden Cat according to the IUCN Redlist database and the photo-capture site of the species from the present study at Neora Valley National Park, West Bengal, India.



**Figure 2.** Camera Trap photograph of Asian golden cat (*Catopuma temminckii* Vigors & Horsfield, 1827) captured in Neora Valley National Park, West Bengal, India.

According to IUCN Red list, current distribution of the Asian Golden Cat is only from Arunachal Pradesh, Assam, and Sikkim of India (McCarthy *et al.*, 2015) and the State of West Bengal including the Neora Valley National Park is outside the distribution range of the species. However, distribution of Asian Golden Cat in the Darjeeling district (Gray, 1863) of Northern regions of West Bengal State is reported in the records of Zoological Survey of India (State Fauna Series, Series 13, Part -1), but no photographic evidence is supported in the literature. De *et al.*, (2006) have also recorded this species from Arunachal Pradesh, Assam, Mizoram, Nagaland, Tripura, West Bengal and Sikkim of India based on secondary sources of information i.e., pugmarks and interview of the local forest inhabitants. Therefore, the distribution map of IUCN Red list has not showed the distribution of the study species in the Neora Valley National Park in West Bengal may be due to lack of proper evidence. Nevertheless, this species has been previously reported from the forests of Arunachal Pradesh (Datta *et al.*, 2008, Lyngdoh *et al.*, 2011), Sikkim (Biswas and Ghose, 1982; Bashir *et al.*, 2011), Assam (Choudhury, 2007) and Mizoram (Gouda *et al.*, 2016) and also recorded from the neighbour country of Bhutan (Wang, 2007; Jigme, 2011; Tempa *et al.*, 2011; 2013; Thinley *et al.*, 2015) and Nepal (Ghimirey and Pal, 2009). The present report confirms the presence of Asian Golden Cat in the Neora Valley National park of West Bengal for the first time with a photographic evidence. More study is certainly required

in the Neora Valley National Park including surrounding Himalayan hills in West Bengal for better understanding of the distribution of this species and their habitat requirements.

Asian Golden Cat is known to be active during mid-morning and late evening. Some studies define Asian golden cat as both crepuscular and diurnal (Grassman *et al.*, 2005; Jigme, 2011; Thinley *et al.*, 2015; Vernes *et al.*, 2015; Dhendup, 2016). This felid species has been found to inhabit a wide range of habitats and their occurrence is not related with seasonality (Thinley *et al.*, 2015). Moreover, all the morphs of this species has been found to occur at different altitudes as well as in different vegetation types, with the exception of Bhutan, where all the morphs were recorded from the same locality (Dhendup, 2016).

Through the recent molecular studies, it is suggested, that two sub-species of Asian golden cat occurs due to geographical separation (Luo *et al.*, 2014; Patel *et al.* 2016). Indo-Chinese Population of Asian Golden Cats has been found to be different from the Malaysian/Sumatran population, however, due to lack of further scientific knowledge, the Indian population of the *Catopuma temminckii* has not been found to be different from the Chinese populations (Luo *et al.*, 2014; Patel *et al.*, 2016). Earlier, sub species of Asian Golden Cat has also been classified based on its pelage (Wilson and Reeder, 2005). Molecular studies on the taxonomy of Asian Golden Cat have however found only two sub species to be existing (Table 1).

**Table 1.** Distribution of the subspecies of Asian Golden Cat, after (Patel *et al.*, 2016)

Sl No	Genus	Species	Sub Species	Countries
1	<i>Catopuma</i>	<i>temminckii</i>	<i>moormensis</i>	North-East India, Nepal, Tibet, China, Myanmar, Lao, Cambodia, and Thailand
2	<i>Catopuma</i>	<i>temminckii</i>	<i>temminckii</i>	Peninsular Malaysia and Sumatra

Since the present record is based only on photographic evidence, the identification is, therefore, restricted only to its species level. More studies using molecular DNA based tools are needed to confirm the sub species of the Asian Golden Cat in the Neora Valley National Park. Asian golden cat is chiefly a forest dependent species (McCarthy *et al.*, 2015) and threatened due to habitat loss (Holden, 2001) and illegal poaching for its meat, pelt and body parts which are used for Chinese traditional medicine (Myers, 2016). Since there is no specific study conducted on Asian golden cat in Indian Sub-continent, no information is available on its population status, density and other ecological aspects. An immense knowledge gap exists even on the range of this species. A detailed and long-term study in its probable habitats

in South Asia may reveal its actual occurrence and distribution.

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