NOTES ON NATURAL HISTORY

The First Record of Melanistic Leopard in Udanti-Sitanadi Tiger Reserve, Chhattisgarh, India

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Study Area: Udanti Sitanadi Tiger Reserve, Chhattisgarh, India...

Coordinated: 82°30'E; 20°15'N

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Introduction:

The Indian leopard, *Panthera pardus fusca* is mostly found in India, Nepal, Bhutan including in some parts of Pakistan and Bangladesh (Stein *et al.*, 2016; Kabir *et al.*, 2017). Except for the mangrove forests, it inhabits tropical rain forests, dry deciduous forests, temperate forests and northern coniferous forests (Nowell & Jackson, 1996). Leopard and human conflict issue have been seen to increase in the recent years (Constant *et al.*, 2015; Partasasmita *et al.*, 2016). It is only due to their loss in habitat resultant the unavailability of wild prey for them. Our domestic animals like goat, cow, pigs, and dogs attracted Leopard towards our settlement. However, time to time India's Forest Department is installing traps wherever the human-leopard conflicts are feeling to be increased. In addition to it continuous monitoring of the carnivores in forest areas by various means gives us the information about their occurrences and behaviours. Advance techniques in the field of wildlife science increase the scope in this regard too. Camera trapping is one of the most potent technique to sensor the animals as well as to know their behaviours (Ancorenaz *et al.*, 2012).

Melanistic leopards are commonly called black panthers, this terminology also refers to melanistic jaguars (*Panthera onca*). However, jaguars are more dangerous than leopard how far its conflict with the human and its domestic animals is concerned (Zimmermann *et al.*, 2005; Neto *et al.*, 2011; Moyer & Shebell, 2014). Indeed a process of pseudo-melanism (abundism) is also seen in leopards (Gamble & Griffiths, 2004). Melanism is more common in denser and humid forests as compared to dry forests. It provides an additional advantage of being camouflaged with the darker environment. Melanism is a development of dark-colored pigment "Melanin" in the skin or its appendages. The degree of Melanism also varies between different melanistic individuals from jet black colour to light black colour where rosettes are also visible.

Our sighting records:

Udanti-Sitanadi Tiger Reserve is constituted in 1842.54 km² area of Gariyaband and Dhamtari Districts of State Chhattisgarh. It is well known for the Asiatic wild Buffalo *Bubalis arnee* (Kotwal *et al.*, 2002). Forest type of the area consists of Tropical Dry Peninsular Sal forests and Southern Tropical Dry Deciduous Mixed forests. The topography of the area is mixed with hill ranges and intercepted strips of plains. The Tiger Reserve is adjacent to proposed Sunabeda Tiger Reserve of Odisha state in the eastern side and forms Udanti-Sitanadi-Sunabeda Landscape. In the western side, the tiger reserve is having a significant connectivity with Kanker and North Kondagaon Forest Divisions which extends further up to Indravati Tiger Reserve in Bastar regions. In North, it connects with Dhamtari and Gariyaband Forest Divisions and though fragmented but further connects to Barnawapara Wildlife Sanctuary in Mahasamund Districts. This Connectivity has a good future if the entire tiger landscape complex (Chhattisgarh-Odisha Tiger Conservation Unit) can be taken under significant wildlife conservation efforts.

Under the Phase-IV Tiger Monitoring Programme in Udanti-Sitanadi Tiger Reserve between December 2016 and April 2017, a systematic 2 km x 2 km grid based camera trapping study was conducted covering 588 km² area. The entire study area was divided into three study blocks and camera trapping was conducted in 53.51 and 43 grid-cells (2km x 2km) in three blocks respectively in three ranges of Udanti Sitanadi Tiger Reserves i.e. Kulhadighat, North Udanti, and South Udanti. Though the camera trapping exercise was aimed to estimate the tiger *Panthera tigris* and its co-predators populations in the study area, mostly the cameras were installed in the trails used by the large carnivore species. However, the entire study area was studied through intensive camera trapping covering 147 selected trap sites spread from forest plains to hilly terrain along the busy animal trails, nullahs, rocky and sandy stream beds (Fig.-1a,b,c). The locations of the melanistic

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Figure- 1: a) Map showing sampling area for Camera trapping; b) Grid wise installation of camera traps in Block 1.; c) Captured location of Melanistic Leopard

leopard were recorded and mapped over Udanti Sitanadi Tiger Reserve.

Camera trap session was started from Dec 2016 and continued until April 2017. Each block was sampled for at least 30 days. Thus the total sampling efforts were 3379 trap nights. During the study period, the general leopards were captured in the camera from all the sampling blocks of winter and summer. Fortunately, a single Melanistic leopard was also captured from ID-123 from the first Block (Plate-1 a,b) and which has been for the first time seen in the Central india region. Although the numbers of captures were very low to infer on their temporal activity pattern, but most of the captures were recorded from early morning. However, a same type of report is also available from Dandeli-anshi of Karnatak, India. (www.conservationindia.org/gallery/camera-traps-black-leopards-in-dandeli-anshi)

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Plate-1a,b: *Panthera pardus fusca*