CHITAL

Photographic evidence of *Axis axis* after two decades in Manas National Park, Assam, India

Recent photograph of Chital from Manas National Park, India shows a picture of adult with a sub adult

IUCN Red List: Least Concern (Duckworth et al. 2015)

Mammalia
[Class of Mammals]

Cetartiodactyla
[Order of even-toed ungulates and cetaceans]

Cervidae
[Family of Deers]

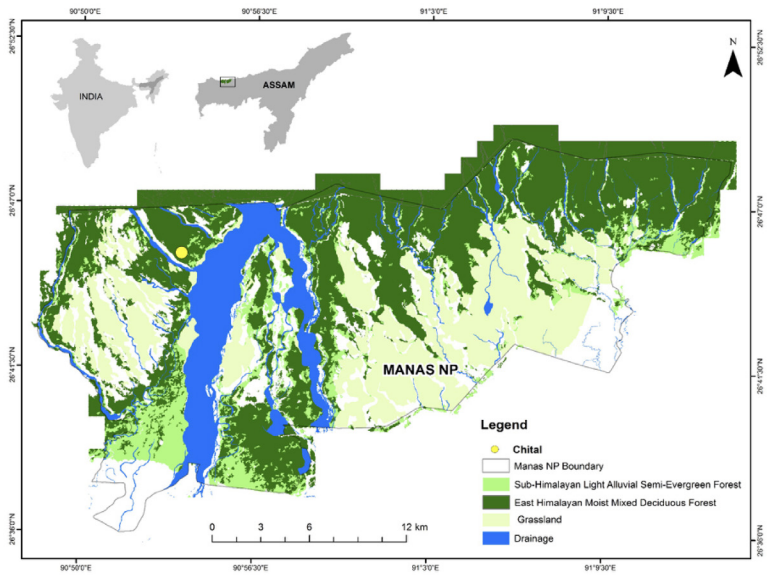
Axis axis
[Chital]

Species described by Erxleben in 1777

Ungulates are primary consumers as they play an important role in the sustenance of higher trophic levels in an ecosystem and form the major bulk of prey base for large carnivores and also serve as important regulators of ecosystem at different spatial and temporal scales (Schaller 1967; Johnsingh 1983; Karanth & Sunquist 1995; Ramakrishnan et al. 1999; Biswas & Sankar 2002). The bulk of wild ungulate density in Indian forests is contributed by *Axis axis* (Khan 1995; Sankar 1994; Bagchi et al. 2003). The species act as ecosystem engineers or keystone herbivore which determines large carnivore density, community and structure in most of the habitat within its distribution limit (McShea & Rappole 1992; Stromayer & Warren 1997). The Chital is also a major prey for large and iconic predators like the tiger, leopard and dhole (Pocock 1941; Schaller 1967).

The Chital also known as Spotted Deer or Axis Deer is native to India, Nepal, Bhutan, Bangladesh and Sri Lanka (Grubb et al. 2005). The western boundary of the species is formed by drier forests of Gujarat (e.g., Sasan Gir) and Rajasthan (e.g., Sariska, Ranthambhore and Keoladeo Ghana) (Sankhala 1964). In the east, occurs in the Sunderbans of West Bengal and Bangladesh, in western Assam (Golapara and Kamrup districts as far east as the Dhunsiri River in Darrang District) and the forested valleys of Bhutan bellow 1,100m (Blanford 1898; Seidensticker 1976).

Global Distribution :
Native: Bangladesh, Bhutan, India, Nepal, Sri Lanka. Introduced: Andaman Islands in India, Argentina, Armenia, Australia, Brazil, Croatia, Moldova, Pakistan, Papua New Guinea, Ukraine, United States (California, Florida, Hawaiian Is., Texas), Uruguay (Duckworth et al. 2015)



Recent photograph of Chital from Manas National Park, India shows a picture of adult with a sub adult

In Bhutan, Chital is confined to Phibsoo Wildlife Sanctuary close to the West Bengal and Assam border (Gee 1964). It occurs sporadically throughout the peninsular plateau in the forests with low rainfall and below an altitude of 950m (Fletcher 1911). Sri Lanka is the southern limit, where it occurs while the bhabar-terai belt among the foothills of the Himalaya in India and Nepal forms the Northern limit (Gee 1964; Schaller 1967). It mainly inhabits moist and dry deciduous forest areas (De & Spillet 1966; Sharatchandra & Gadgil 1975; Ables 1974; Mishra 1982). The species is considered as Least Concern according to IUCN Red List of Threatened Species and listed under schedule III of the Indian Wildlife (Protection) Act, 1972.

In India, the species is widely distributed across the country; however, there is lack of information available so far for the Chital presence in northeastern region. Camera traps (n=213) were deployed systematically in a 1X1 sq.km. grid for studying the ecology of clouded leopard at Manas National Park. The present communication reports first ever scientific evidence of Chital on 17 June 2017 at 04:47hr. The similar reports have been made recently by the Forest Department. Interestingly, there was no documentary evidence of the Chital for last two decades (Assam Forest Department pers. comm.). The Manas National Park is located at the foothills of the Bhutan Himalayas in the Bhabar area of western Assam (26.7460^{0}N & 91.0203^{0}E). The forest type where the species captured

through camera-trap was moist deciduous forest dominated by *Albizia procera*, *Terminalia bellirica* and *Bombax ceiba*. During the entire duration of camera trapping from April 2017 to January 2018, the authors managed to photograph the species only once.

Manas experienced a fifteen year-long ethnic and political conflict starting in the mid-1980s that disrupted ongoing conservation and management activities until fledgling peace was restored in 2003 (Goswami & Ganesh 2014). During the conflict, forest personnel abandoned the area, anti-poaching camps were destroyed, and arms meant for enforcing park protection were stolen and used by anti-government forces in their violent struggle (Goswami & Ganesh 2014). The violence that followed caused large scale damages to Manas and left the park vulnerable to logging, local hunting, and poaching of rhino, tiger, elephant and other herbivore animals, causing habitat degradation and rapid loss of wildlife (Hussain 1989; Rahmani et al. 1989; George 1994; Sarma et al. 2008). Prior to the conflict, Manas harbored good populations of tiger, rhino and other herbivorous species (Deb 1991). Conservation programmes such as rehabilitation of rhino and elephants were initiated by NGOs and state government (Berman et al. 2014). It might be possible that Chital population could have wiped out during the conflict. But due to different conservation programmes and stabilization of habitat, the presence of Chital have been reported after two decades. The revelation of Chital presence from the Manas National Park opens up scope for further studies and surfaces the need for conservation efforts and awareness to be focused on Panbari and adjoining ranges where efforts of its protection have to be strengthened further.

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