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First Record of Four-horned antelope (*Tetracerus quadricornis*) in Satkosia Tiger Reserve, Odisha, India

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ABSTRACT

Four-horned antelopes, commonly known as Chowsingha, are unique mammals. Unfortunately the reports on its distribution pattern and habitat preferences are still scanty from Odisha. The present study is an attempt to fill up such gaps of this animal in Mahanadi Wildlife Sanctuary of Satkosia Tiger Reserve, Odisha, India. Survey results revealed that Chowsingha is sighted in Satkosia Tiger Reserve during 2017. The relationship between the observed distribution pattern, preferred habitats and ecological boundaries of the Tiger Reserve have been tried to correlate in the present study.

INTRODUCTION

Being the only bovid with four horns, four – horned antelope (*Tetracerus quadricornis*), commonly known as Chowsingha, is a unique mammals, reveals distinct sexual dimorphism. *Tetracerus quadricornis* is

endemic to the peninsular India and Indus divisions of the Indian sub-region of the Asian Indo-Malayan Region and occurs only in India and Nepal (Prater 1971; Rice 1991) and listed in the vulnerable category of

IUCN. It is an herbivore and weighs between 15 to 25kg (Menon 2003; Sharma et al. 2009; Leslie & Sharma 2009; Krishna et al. 2009; Swamy 2010). *T. quadricornis* is one of the most diminutive, non-congener members of the order Artiodactyla, family Bovidae, subfamily Bovinae and tribe Boselaphinae. It is a sexually dimorphic boselaphid and generally males are recognized by the presence of two anterior and two posterior smooth and sharp horns pointing slightly backwards. It prefers a dry deciduous forested habitat and hilly terrain and is secretive and has been little studied (Leslie & Sharma 2009). Several environmental, anthropogenic and ecological variables were believed to govern the spatial and distribution of the *T. quadricornis* with in a tropical dry deciduous forest. *T. quadricornis* is found in undulating terrain, distribution is limited by water and within well-wooded forest patches (Brander 1923; Prater 1980; Rahmani 2001).

STUDY AREA

Satkosia Tiger Reserve comprises of two adjoining sanctuaries of central Odisha, namely Satkosia Gorge Sanctuary and Baisipalli Sanctuary. The geographical coordinates within which the core is located are 20° 25' 12" N 84° 40' 20" E to 20° 45' 36" N 85° 05' 24" E. Satkosia Tiger Reserve is one of the best deciduous ecosystems which represent a diverse floral and faunal extravaganza. Satkosia is the meeting point of two bio-geographic regions of India; the Deccan Peninsula and the Eastern Ghats, contributing immense biodiversity. The Satkosia Tiger Reserve was notified by Government of Odisha in 2007. The reserve has an area of 964 sq km with 524 sq km as core area. The area is also a part of the Mahanadi Elephant Reserve.

The Northern part of the reserve along the Mahanadi river bed is under the jurisdiction of Satkosia Wildlife Division, Anugul while the Southern part is under Mahanadi Wildlife Division at Nayagarh District, Odisha. The Satkosia gorge is the natural habitat of the two endangered species of gharial and mugger.

METHODOLOGY

The success of camera –trapping depends on the selection of ideal locations to deploy the camera traps so as to maximize the number of captures. Prior to camera placement, survey were done along the forest paths, animal trails, dried stream beds etc, to record carnivore presence through indirect signs (pug marks, tracks, scat, scrapes, scent deposits and kills). Potential locations of camera trap stations were then mapped using ArcGIS 9.3. During the exercise cameras were deployed a sampling grid of 4.0 sqkm (2.0x2.0km) for camera trapping; pairs of Cuddy back 1''. Camera traps were placed opposite to each other so as to capture photograph of both sides of a passing animals. The camera trapping exercise lasted from April to June 2017 for a period of 90 days. The cameras were active for 24h periods each defined as one sampling occasion. Each camera was assigned a unique identifications number, Date, time and camera ID was recorded for a every capture. The locations of each photo-capture of Chowsingha was recorded and mapped to understand their geographic distribution in the study area (Figure 1; Table 1).

RESULTS

Total 11 numbers of photos were captured from Kusanga Range under Mahanadi Wildlife Division during the camera trap exercise. All the Photos were from three

different grid locations. This is first photographic record of Four-horned antelope (*Tetracerus quadricornis*) from Satkosia Tiger Reserve. It is believed that *T. quadricornis* (Figure 2) has traditionally occurred in Mahanadi WL forest division but sightings have escaped due to proper identification. From a distance clear identification of Chousingha from muntjac (*Muntiacus muntjak*) and Hog Deer (*Axis porcinus*) may be confusing (Nowak 1991). *T. quadricornis* is differentiated from Nilgai on the basis of its smaller size and height and the presence of four horns (Leslie & Sharma 2009). It differs in its body posture from Muntjac and Hog Deer. The Species is also considered to be abundant in central India.

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Table 1: Territorial Range of *T. quadricornis* in Study areas

Range	GPS location	Camera-id	No of Image Captured
Kusanga	20° 34' 35.9" 84° 46' 51.2"	05	03
	20° 34' 28.8" 84° 46' 52.7"	03	07
	20° 34' 35.9" 84° 46' 51.2"	01	01

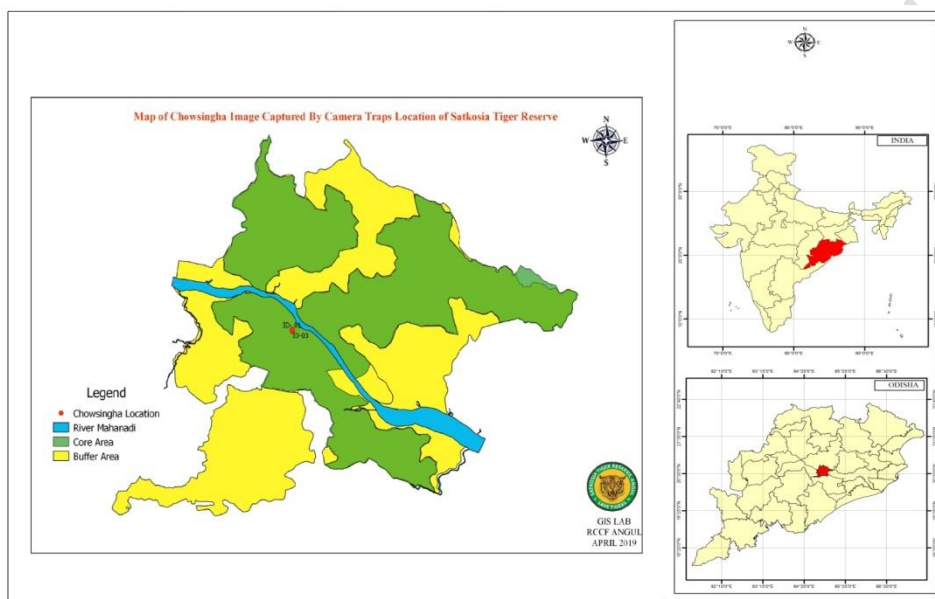


Figure 1: Study area & Captured location of Chowsingha

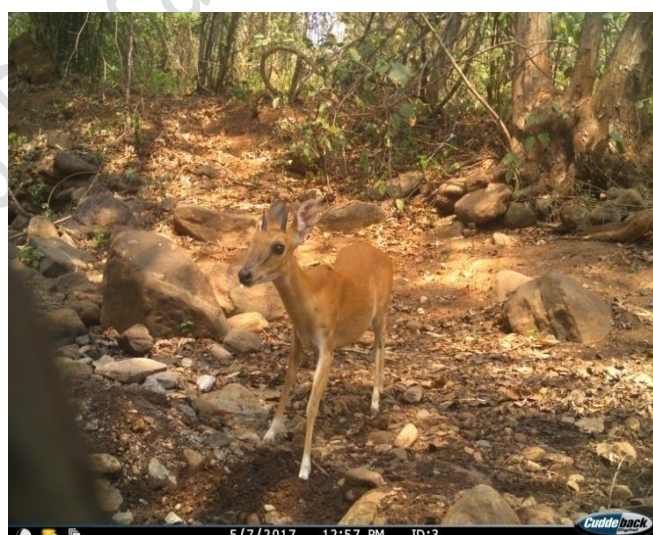


Figure 2: *T. quadricornis* Captured through Camera trapping methods in study areas