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## Rare photo capture of Indian Gazelle (*Gazella bennettii* Skyees 1831) through trap camera in Kuno wildlife sanctuary, north western Madhya Pradesh, central India

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### Abstract

An intensive carnivore survey and deployment of camera trap for photo capture of tiger, leopard and other predators was conducted for a period of 8 months in Kuno wildlife sanctuary, Madhya Pradesh, in Central India. The ultimate camera trap results so many gathered data on every ungulate prey base including Chinkara and other ungulate species. It confirms the prey base diversity in the central zone of India. Being a diurnal species the Chinkara, it is difficult to come in photo capture at night time, however the animals came in photo capture during 24 hour operated cameras in day times.

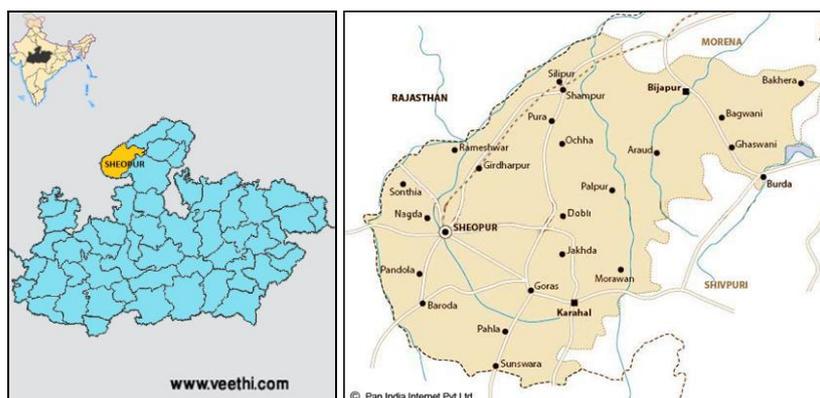
**Keywords:** Kuno wildlife sanctuary camera trap, photo capture, tiger, leopard, Chinkara

### Introduction

A 6 months camera trap study was carried out in Kuno Wildlife Sanctuary having an area of about 344.686 sq km. It is located between latitudes of 25°30'N to 25°53' N and longitudes of 77°07' E to 77°28' E in Sheopur district in Madhya Pradesh in India. A perennial river Kuno bisects the sanctuary in the middle and flows in south eastern direction. The forest in Kuno Wildlife Sanctuary falls under the Northern Tropical Dry Deciduous Forest and is dominated by Khair (*Acacia catechu*), Kardhai (*Anogeissus pendula*), Dhow (*Anogeissus latifolia*), Salai (*Boswellia serrata*) and Gunja (*Lannea coromandelica*). The sanctuary also supports large varieties of both herbivore and carnivore species. The camera trap also records photo capture of herbivores like Chital, Chinkara, Sambar, Blackbuck, Nilgai, and Languar, etc in the sanctuary. The carnivorous species reported in trap camera are includes Jackal, Bear, Leopard, Wolf, Stripped hyaena, Jungle Cat, etc. Results and Discussion

### Materials and Methods

A set of 30 pair of Camera trap (Make- Deer Cam) units were deployed in 2km to 2km grid area location, another 4 pairs kept as standby in ready for instant putting off camera in case of failure and technical defects in camera traps sessions. The camera was deployed continuously in sampling area for 4 months of dry periods from October 2006 to February 2007. The Chinkara population is contiguous with that of Kuno, Sheopur (Morena) and Shivpuri districts in Madhya Pradesh with adjoining Rajasthan state.



**Fig 1:** Maps of Sheopur district showing Kuno and Palpur location of forests in north western M.P.

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### Results and Discussion

Repeated consecutive camera trap session for more than 6 months of period was carried out to confirm any migratory tiger movement from nearest Ranthombore tiger reserve through Keoladevi wildlife sanctuary to southern part of the Kuno wildlife sanctuary. But the long term study reveals that no resident or migratory tiger was found in the sanctuary.

Only three separate photo captures of Chinkara was achieved in two camera trap positions in Sasaipura- Kuno fort forest road close to south bank of Kuna river. Out of the camera photos dung pellets are identified in the survey transects and other movement in the sanctuary. Direct sighting was one achieved by me during a transect survey and it was difficulty to take photo graph in auto focus deer camera spared in hand with swift movement and scare away at first sight.

The Indian Gazelle or Chinkara is a semi-arid zone ungulate abundant in north western part of the country. They are characterized by sandy coloring and distinctive white streak on each side of the face. A full grown male measures about 65 cm at shoulder height and weighs about 23 kgs. Both male and female individuals have horns. The horns are ringed as that in blackbuck but have no spiral or twist or screw like whirl, it is almost parallel and little diverging with narrow polished tips. The horns are completely ringed in males and remained lime time with the skull bone. The horns of male appear almost straight from front view of the animal; in profile they take a slightly S shape curve. Each horn of the male has 15- 25 rings The horns average measures 25- 30 cm and rarely exceeds this length in southern India. The horns of the does usually range between 10 and 13 cm (Prater 1971) [5] A peculiar characteristic of the gazelle is that there are a tuft of hairs grown from the knees (Roberts 1977) [6]. Schaller (1975) [7] observed that the Indian gazelle usually seek shades under dense bushes during the hotter part of the day.

Groves (1985) [4] further classified the Chinkara species into 4 sub species namely a) *Gazelle bennetti*, b) *G. b. christyl*, c) *G. b. fusciformis*, d) *G. b.* sub species undescribed in 1985 is latter it described as *G. b. salinarum* (2003)

The conservation status of Chinkara or Indian gazelle (*Gazella bennettii* Skyes, 1831) is listed in Red Data Book of IUCN (International Union for Conservation of Nature and Natural resources.) as lower risk species, under CITES (Convention on International Trade for Endangered Species of wild flora and fauna), it is not categorized and Unlisted. It is classified in Schedule I of Wildlife (Protection) Act 1972.

Ellerman and Morrison Scott (1951) [2] have described the distribution of the Indian Gazelle *Gazella bennettii* (skyes) from Morococo, Algeria, Westrn Tunisia through the Arabian

Peninsula and the Desrt areas of eastern Iran to the Indian Subcontinent. The Chinkara is presently Distributed in the plains and low hills of western and central India, extending southwards to the little south of Krishna River. It is found in Pakistan, in the middle eastern countries of northern Africa. The Chinkara is an adaptable animal found in salt range in Pakistan, Punjab, and altitude of 1500m elevations of hilly and rocky plateaus (Roberts 1977) [6] The blackbuck and Chinkara of Rajasthan also ingest considerable quantities of soil while feeding on ground flora (Goyal and Bhora 1983) [3].

The Chinkara is found in almost every type of eco- systems in western Rajasthan. Interestingly, the Chinkara rarely shares the same habitat as the blackbuck. It has versatility of niche occupation starting from hilly and humid area like Jaisamand (Rajasthan) Kuna (Madhya Pradesh and arid interdunal valleys of western Rajasthan (100-150 mm rainfall area). The sex ratio of Indian Gazelles was female biased. the overall adult male to female ratio is 1:1.5, sub adult male to female ratio is 1:1.9. the juvenile to adult female is 1: 4.3 in semi-arid regions of Thar desert of Rajasthan (Dokia 2000).

### Conservation

The Bishnoi community villages of Rajasthan has been traditionally protected Chinkara and blackbuck from poaching, predation and natural calamity, but there is reversible sentiment due to hostile conditions due to crop damage and changed land use pattern affects its ecology (Dokia, 2000). The Kuno wildlife sanctuary itself provide legal and ecological protection to propagate and survival of this species within the sanctuary. The peripheral areas have scattered population of blackbuck and Chinkara in scrub and pasture areas. Still the conservation is good as inside the sanctuary.

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