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First Photographic Record Of Eurasian Otter (*Lutra Lutra*) From Kanha National Park (M.P.) India

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Abstract: ***The Eurasian otter Lutra lutra is listed as near Threatened as per the IUCN Red List (Roos et al., 2015). The species shows a wide spread distribution from Europe, Nepal, Sri lanka, Northern Africa and South East Asia. Eurasian otters have been recorded from Himalayan foothills and the Southern Western Ghats. We report photographic evidence of presence of Eurasian otter (Lutra lutra) from camera trap images taken in the Kanha National park of Madhya Pradesh. Photographic evidence of this species of Kanha National Park is a significant observation.***

Keywords: Eurasian otter, Kanha National Park, Camera trap

I. INTRODUCTION

Otters form a well- marked group of species within the mammalian family Mustelidae, which also includes weasels, badgers, ferrets and mink. They are superbly adapted to a semi-aquatic life, with well developed webbed feet and a strong tapering tail that helps in propulsion (Johnsingh and Manjrekar, 2013).

Otters play an important role in the aquatic ecosystem as top carnivore, thus influence the function of the ecosystem. Often considered as an indicator species of the fresh water ecosystem or fluvial ecosystem, they provide information about overall health of the aquatic ecosystem. The Eurasian otter has a wide distribution covering Europe, Africa and Asia (Roos et *al*., 2015, Jim*, et. al*., 1998). In India, Eurasian otter is distributed from the foothills of Himalayas to Sikkim and Assam in Northeast (Prater 1948; Hussain, 1999). Presence of the species has also been recorded in Southern and Central India (Joshi *et al*., 2016 and Jena *et al*., 2016, Johnsingh and Manjrekar, 2013).

Kanha National Park is one of the richest wildlife diversity areas in India. The Kanha landscape chronicles a glorious history of wildlife conservation, and area is very rich in biodiversity. Besides a viable population of tigers, till few years back it was the only habitat with world population of the hard ground barasingha; a wide spectrum of plant and animal species add to the significance of this landscape.

In this paper we report the presence of Eurasian otter from the Kanha National Park based on photographic evidence from camera traps placed in the Bhaisanghat Range of Kanha National Park in the State of Madhya Pradesh, India. As per the existing knowledge, this is the first ever photographic record of live individuals of the species from Kanha National Park.

II. MATERIALS AND METHODS

STUDY AREA

KanhaNationl Park, is a part of Deccan peninsula – Central High land Biogeographic Zone (Rodgers and Panwar 1988;Negi and Sukla 2011), spread across Mandla and Balaghat districts of Madhya Pradesh (MP)-covers an area of around940 sq.km. The park area comprises mosaic of meadow and forest in the plaines, extensive grasslands on the plateaus and forest on the rolling hills (Kanoje, 2006). According to Campion and Seth (1968), the forest type of Kanha National Park mainly consists of moist peninsular Sal forest:(forest type 3C/C2a), Southern tropical moist deciduous forest:(forest type 3A/C2a) and Southern tropical dry mixed deciduous forest (forest type 5A/C3). The forest is typicaly represented and dominated by *Shorearobusta, Terminalia chebula*, *Terminalia tomentosa*and Bamboo mixed forest etc.

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Kanha National Park having 6 ranges, Bhaisanghat Range is one of them. The Bhaisanghat range with an area of 17311.9 ha.is organized in 5 circles and 23 beats for proper management of the area. It is located in the Balaghat district of Madhya Pradesh in Central India (Negi and Sukla., 2011).

METHOD

While camera trapping for carnivores in the Kanha Tiger Reserve, otter footprints and spraints were recorded along rivers/ streams in the year 2014-2015.Unable to distinguish between species, based only on the spraints and footprints, we decided to place camera traps in an attempt to photo-capture otters. A grid of 2x2 km was selected for placing the camera traps. These traps were left for 25-30 days for logistical reasons; minimizing the effort of camera removal, the duration was kept the same as that for carnivores. Camera traps were deployed at 72 trapping sites (Fig: 1). GPS coordinates were taken for plotting on the map. The otter species photographed were identified based on field guides (Pocock, 1939; Menon, 2003; Hunter, 2011).

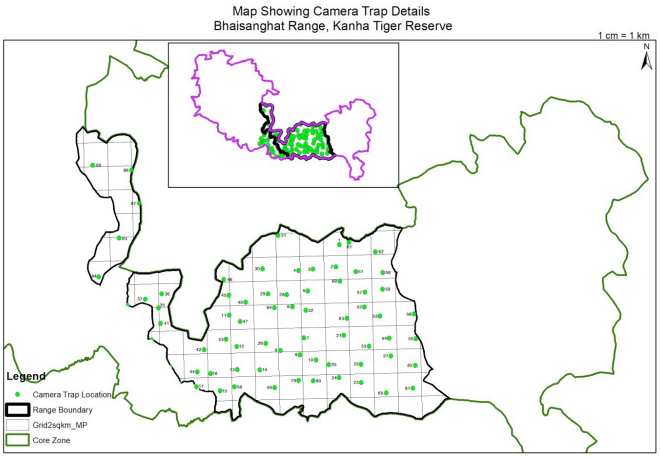

Figure 1: Map showing camera trap points of Bhaisanghat Range, Kanha National Park.

III. RESULT AND DISCUSSION

Otter species were detected during the sampling period. Eurasian otters were photo-captured in camera traps deployed along the streams. Only one captures of Eurasian otter was obtained from a trap located in Balda beat of Bhaisanghat range. Eurasian otters were clearly distinguished based on their nostril and muzzles shape, bedraggled coat, conical tail, whiskers and overall structure.

Our photographic record of Eurasian otters from Kanha National Park extends the known geographical range of the Eurasian otter to the central India landscape and also provides the first photographic evidence of the species from Kanha National Park. In addition to our finding, presence of Eurasian otter has been reported in forest of Balaghat (Jena *et al*., 2016) and Satpura Tiger Reserve (Negi *et al*.,2016).All the three sites are a part of Central India Landscape and extend the range of Eurasian otter beyond the region earlier believed to be its earlier reported home range by Loy (2018).We wish to highlight that this is an important finding for the region .It strengthens the need for more systematic efforts to document mammalian biodiversity in remote region of this area. It may be worthwhile attempting multi-temporal approach as it has been done for the same species in Italy (Teresa et al., 2014) to identify some other potential area in Central Indian Landscape and follow it up with camera traps to develop data base on the species.

The Eurasian otter has been listed in Appendix I of CITES and near threatened as per IUCN Red list, due to decline i population. In many areas the information on distribution as well population status is lacking. Research on factors affecting its survival as well as awareness campaigns among communities may help achieving long term survival of the species.

Most otter occurrence studies carried out in India have been based on skin samples obtained from field (Pocock, 1939) and indirect evidences especially based on detection of spraints and footprints (Conroy *et al*., 1998;Perinchery *et al*., 2011; Nawab and Hussain,2012; Prakash *et al*., 2012).However, species that are difficult to distinguish based on indirect evidences need validation with certainty (Conroy *et al*., 1998).It is clear that the currently known geographical distribution of otters, especially in Kanha National Park landscape ,is due to the lack of adequate sampling coverage. The new evidence shows that there is a high likelihood of other river systems in the area supporting otter populations.

Plate 1: Camera trap photographs of the Eurasian Otter from the Kanha National Park

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