R E P O R T

PHOTOGRAPHIC RECORDS OF EURASIAN OTTER *Lutra lutra* FROM THE CENTRAL INDIAN LANDSCAPE

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(Received 16th June 2016, accepted 24th October 2016)

Abstract: The Eurasian otter *Lutra lutra* is listed as one of the three otter species found in India, while clear photographic evidence of the species has been wanting even from the reported locations such as from the Himalayan foothills and the southern Western Ghats. We report photographic evidence of presence of *Lutra lutra* from camera-trap images taken in the Satpura Tiger Reserve in the state of Madhya Pradesh. This finding extends the known geographical range of the Eurasian otter to central India.

Keywords: Camera traps, Central India, Eurasian otter, *Lutra lutra,* range extension, Satpura Tiger Reserve

Citation: **Joshi, AS, Tumsare, VM, Nagar, AK, Mishra, AK and Pariwakam, MP (2016).** Photographic Records of Eurasian Otter Lutra lutra from the Central Indian Landscape. *IUCN Otter Spec. Group Bull*. **33** (1): 73 - 78

INTRODUCTION

Three species of otters, namely, the smooth-coated otter *Lutrogale perspicillata* I. Geoffroy Saint-Hilaire, 1826, Asian small-clawed otter *Aonyx cinereus* Illiger, 1815, and the Eurasian otter *Lutra lutra* Linnaeus, 1758 have been reported to occur in the Indian subcontinent (Pocock, 1939). Of these, the smooth-coated otter is the most widely distributed in India, with several well-documented records. However, the Asian small-clawed otter and the Eurasian otter seem to be patchily distributed; found only in the Himalayan foothills in northern India and the southern Western Ghats (Pocock, 1949; Hussain and Choudhury, 1977; Prater, 1980; Foster-Turley and Santiapillai, 1990). Mohapatra et al. (2014) confirmed the presence of the Asian small-clawed otter from the Eastern Ghats (Odisha). Except for the smooth-coated otter, there was no evidence until recently for the other two species from central India (Fig. 1). The presence of the Eurasian Otter in India, however, is not yet known from any confirmed photographic evidence till date. Despite indirect evidence (mainly from tracks) from the Himalayan region, there is no report of the species occurring in central India (Hussain, 1999).

The Eurasian otter *Lutra lutra* has a wide distribution covering Europe, Africa and Asia. The species is listed as Near Threatened as per the IUCN Red List (Roos et al., 2015). Throughout its range this species has likely gone extinct from many regions or has been reduced to small isolated populations. Except for Europe, data on population status and distribution of Eurasian otters from the rest of its range are lacking (Chanin, 2003).

In India, the Eurasian otter is known to be a species found in cold mountain streams and rivers. In the Himalayas, during summer the species is believed to move upstream and is recorded up to 3663 m above sea level (Pocock, 1939; Prater, 1980). In this paper we report the presence of Eurasian otter from the central Indian landscape based on photographic evidence from camera traps placed within the Satpura Tiger Reserve area in the state of Madhya Pradesh. As per the existing knowledge, this is likely the first ever photographic record of live individuals of the species from India.

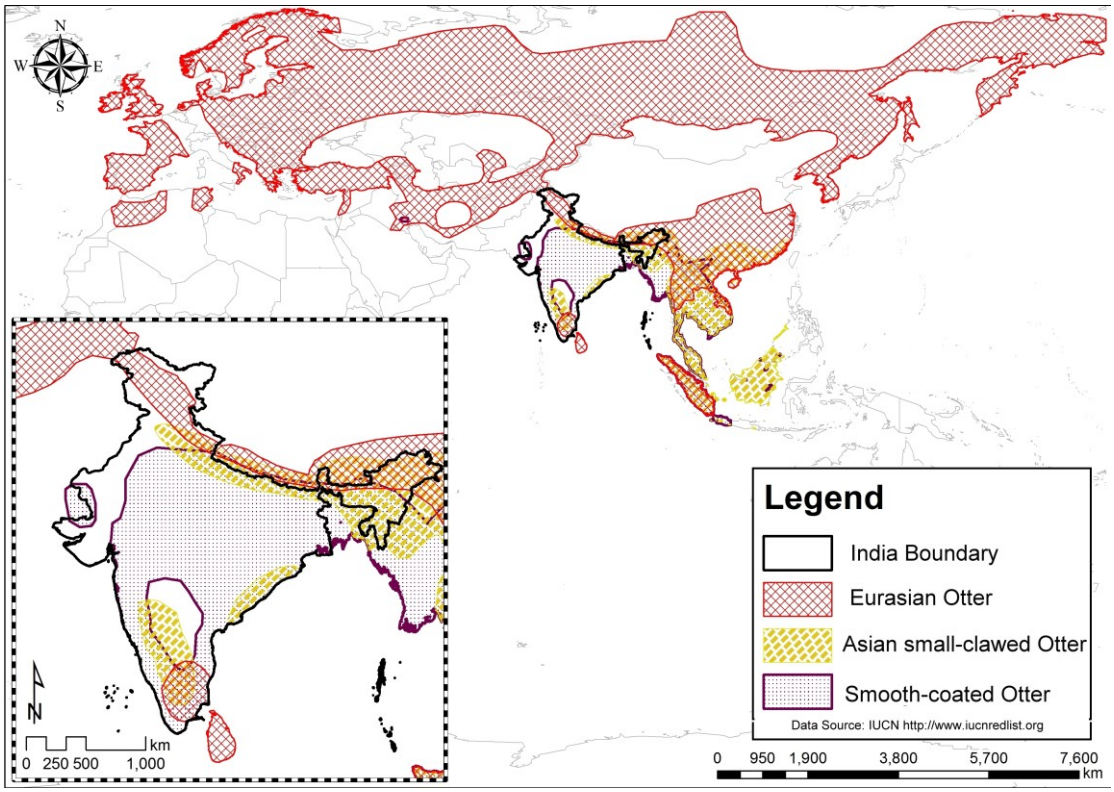

Figure 1. Global distribution of the Eurasian Otter, Smooth-coated Otter, and Asian Small-clawed Otter according to IUCN Red List www.iucnredlist.org. Note that the Eurasian Otter is not shown from the central Indian landscape.

STUDY AREA

The Satpura Tiger Reserve (22°29N, 78°14'E) in the state of Madhya Pradesh is a part of the Satpura hill ranges of central India. Several major rivers originate from the Satpura hill ranges and many of them emerge from the Satpura Tiger Reserve (STR) region. Satpura is one of the most rugged terrains in central India; with steep mountains and deep gorges, and is among the less explored regions in the country for biodiversity. The elevation range of the Satpuda hills is from 250 m to 1354 m, the highest peak being Dhupgarh at 1354 m. The average rainfall in the area is 1979.5 mm/yr (maximum 2122 mm and minimum 1302.2 mm) and temperatures range from 8.9 degrees Celsius in winter to 42.1 degrees Celsius in the summer period (Indian Meteorological Department). The forest type in STR is mostly dry deciduous, with evergreen and mixed riparian forest stretches along the perennial streams. The study was conducted from November 2015 to January 2016.

METHODS

While camera-trapping for tigers *Panthera tigris tigris* in the Satpura hill ranges, otter footprints and spraints were recorded along rivers/streams in December 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. Rock boulders with spraints, sandy banks along the streams/rivers and slopes near deep pools in flowing streams were selected for placing the camera traps. The camera traps (Panthera V5 & V6) were left for 25-30 days for logistical reasons; minimising the effort of camera removal, the duration was kept the same as that for tigers. Camera traps were deployed at 21 trapping sites. GPS locations of the traps and sightings were plotted on a map. The otter species photographed were identified based on field guides (Pocock, 1939; Menon, 2003; Hunter, 2011) and through consultation with otter experts in the IUCN Otter Specialist Group (Will Duckworth and Nisarg Prakash).

RESULTS

Two otter species were detected during the sampling period. Smooth-coated otters were photo-captured at three trapping locations along the forest roads which were setup for sampling tigers. Eurasian otters were photo-captured in camera traps deployed along the hill streams. A total of nine captures of Eurasian otters were obtained from 3 trap locations. Smooth coated otters were camera trapped in lowland areas at altitudes ranging from 300 to 480 m while the Eurasian otters were camera trapped at altitudes ranging from 550 to 700 m (Fig. 2). Eurasian otters were clearly distinguished from smooth-coated otters based on their nostril and muzzle shape, bedraggled coat, conical tail, whiskers, and overall stature (Fig. 3).

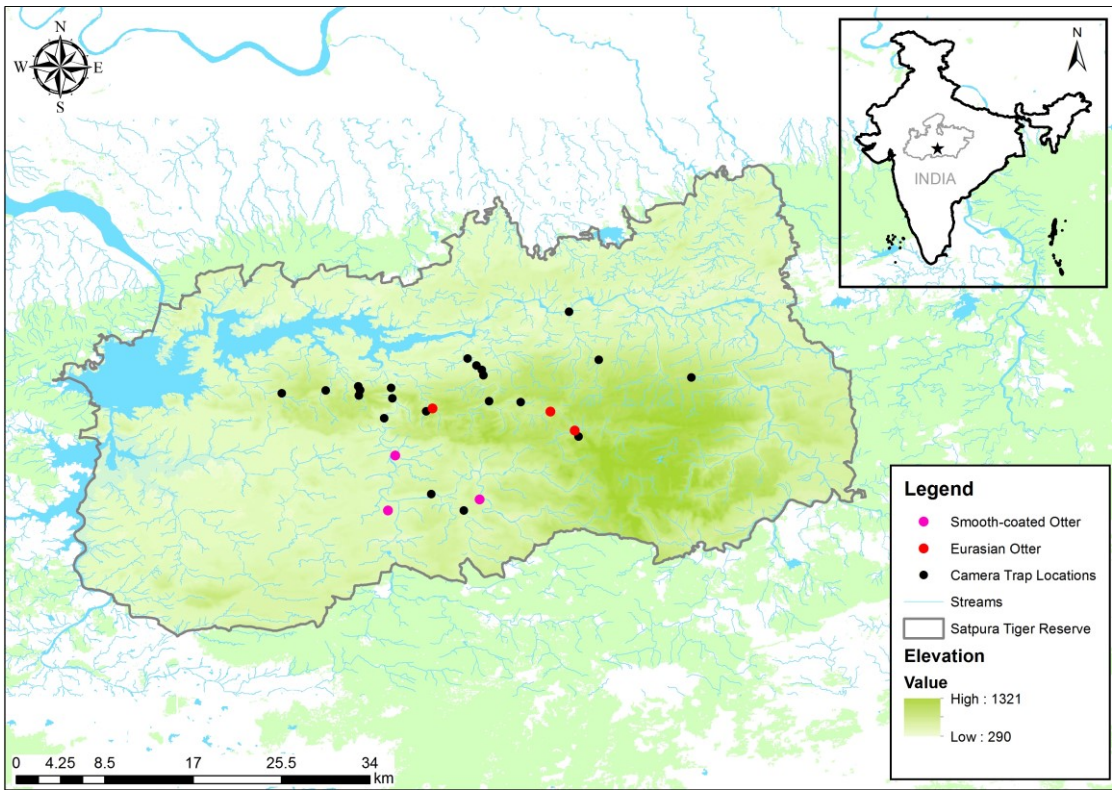

Figure 2. Occurrence locations of Eurasian Otter (red points) and Smooth-coated Otter (pink points) in the Satpura Tiger Reserve. The Eurasian Otter occurred at higher elevations (>550 m) and the Smooth-coated Otter occurred at low-elevation areas (<500 m).

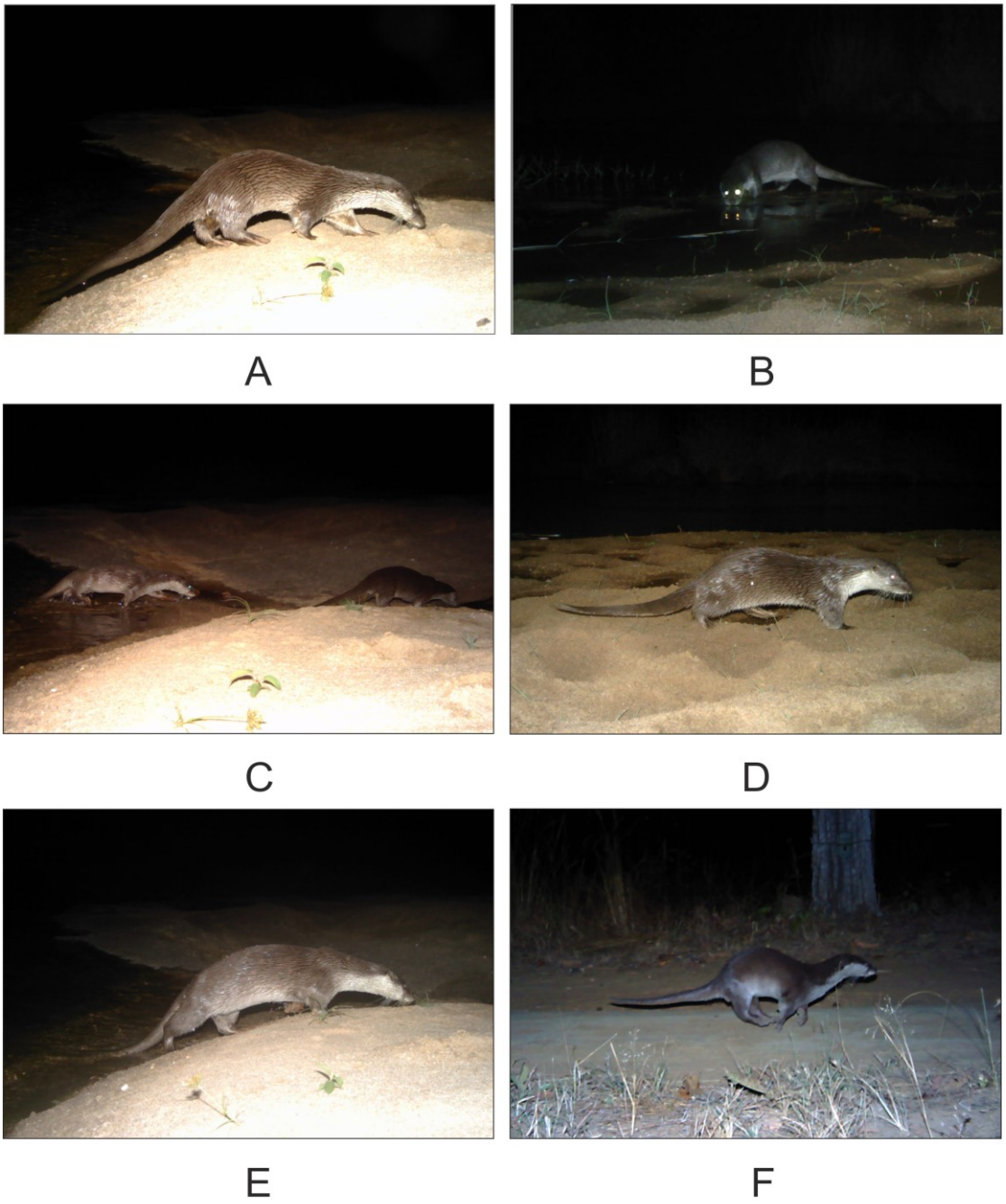

Figure 3. Camera trap photographs of the Eurasian Otter (images A to E) and the Smooth-coated Otter (image F) from the Satpura Tiger Reserve. Note the conical tail, bedraggled coat, wider muzzle and nostrils of the Eurasian Otter, as against the smoother appearance and the stouter musculature of the Smooth-coated Otter.

DISCUSSION

Our photographic record of Eurasian otters from the Satpura Tiger Reserve extends the known geographical range of the Eurasian otter to the central Indian landscape and also provides the first photographic evidence of the species from India till date. We wish to highlight that this is a crucial finding for the region and strongly emphasizes on the need for more systematic efforts to document mammalian biodiversity in remote regions of central India. Often, camera-trapping coverage for large carnivores (e.g. tigers) might lead to limited coverage of habitats where otters

occur (pers. obs.). With greater coverage and more targeted, systematic sampling of riparian habitats in forested hill regions, a better picture of otter distribution can emerge.

Most otter occurrence studies carried out in India have been based 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 the Central Indian landscape and the drier regions of the peninsula, is due to the lack of adequate sampling coverage. Our new evidence shows that there is a high likelihood of other river systems supporting otter populations in the central Indian landscape. Further genetic and morphological studies are also needed to ascertain the sub-species status of the Eurasian otter population in the central Indian region. Currently, the south Indian subspecies *Lutra lutra nair* (Prater, 1980) and the northern range limit for the species needs to be ascertained, or the possibility of a separate central Indian subspecies needs to be investigated.

Acknowledgements - We are thankful to the Madhya Pradesh Forest Department for providing necessary permits for carrying this research. We thank S. Khan, N.S. Alawa, and B. Rajput for sharing valuable information on streams of STR and supporting the fieldwork. We are grateful to Panthera, USAID and HT Parekh Foundation for supporting this research, and to Wildlife Conservation Trust for institutional support. We thank Vishal Bansod, Advait Keole, Aniket Sayam, Subbaiah K., Ankur Kali, Rakesh Ahuja and Rajesh Bhendarkar for helping with the camera trapping exercise. We are grateful to Nachiket Kelkar, Nisarg Prakash, Will Duckworth, and Robert Timmins for helping with the species identification and insights on the status of otters in the CIL.

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RÉSUMÉ

ENREGISTREMENTS PHOTOGRAPHIQUES DE LOUTRE D'EUROPE *Lutra lutra* PROVENANT DU CENTRE DE L'INDE

La loutre européenne *Lutra lutra* est répertoriée comme l'une des trois espèces de loutres trouvée en Inde, même si des preuves photographiques claires de cette espèce ont été nécessaires pour des emplacements listés tels que les contreforts de l'Himalaya et le sud des Ghats occidentaux. Nous avons donc rapporté des preuves photographiques de la présence de *Lutra lutra* grâce aux images prises par des caméras cachées dans la réserve de tigres du Parc national de Satpura dans l'état de Madhya Pradesh. Cette découverte étend la zone géographique connue de la loutre européenne en Inde centrale.

RESUMEN

REGISTROS FOTOGRÁFICOS DE LA NUTRIA EURASIÁTICA *Lutra lutra*, DEL PAISAJE DE INDIA CENTRAL

La nutria eurasiática *Lutra lutra* está listada como una de las tres especies de nutria que se encuentran en la India, pero al mismo tiempo no ha habido clara evidencia fotográfica de esta especie inclusive en las localidades reportadas -tales como el pie de los Himalayas, y los Ghats sudoccidentales. Informamos de evidencias fotográficas de la presencia de *Lutra lutra* a partir de imágenes de cámaras-trampa tomadas en la Reserva de Tigres Satpura, en el estado de Madhya Pradesh. Este hallazgo extiende el rango geográfico conocido de la nutria eurasiática, a India Central.