

## OBSERVATION

### FIRST PHOTOGRAPHIC RECORDS OF SMOOTH-COATED OTTER (*Lutrogale perspicillata*) IN JHARSUGUDA FOREST DIVISION, ODISHA, INDIA

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**Abstract:** The smooth-coated otter is an IUCN-Vulnerable species as a result of habitat loss and poaching. We deployed 15 camera traps, in two phases, in Jharsuguda Forest Division, on 8<sup>th</sup> June and 5<sup>th</sup> August 2022, with a total sampling effort of 750 trap days. Out of 1682 camera trap photographs, one photograph capture of smooth-coated otter was recorded, where there had previously been no smooth-coated otter records. This study presents a novel record of Smooth-coated otter *Lutrogale perspicillata* in Jharsuguda Forest Division, Odisha, India.

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**Keywords:** Smooth-coated otter, camera trapping, Jharsuguda Forest Division, Odisha, India

## INTRODUCTION

The smooth-coated otter (*Lutrogale perspicillata*, Geoffroy), a medium sized otter weighing between 7 and 11 kg (Prater, 2005) is distributed throughout southern Asia from Indonesia, through southeast Asia, and westwards through southern China,

Pakistan and India, with an isolated population in Iraq (Pocock, 1941; Hussain, 1993; de Silva et al., 2015). In India, it is continuously distributed from the foothills of Himalayas southward to southern India occurring in major rivers and coastal areas (Prater, 2005; Hussain, 1993). Smooth-coated otter is a semi-aquatic social carnivore depending on wetland habitats and vulnerable to loss and degradation of habitat, since wetlands are currently among the most threatened and vanishing ecosystems worldwide (Davidson, 2014). Poaching for pelts, and retaliatory killing as a result of otter-human conflicts, are also threatening the survival of this species across its distribution range (de Silva et al., 2015). Therefore, it has been categorized as 'Vulnerable' in the IUCN Red List of Threatened Species (de Silva et al., 2015) and legally protected under Schedule-I of the Indian Wildlife (Protection) Act, 1972.

Out of thirteen extant species of otters found worldwide, India is home to three species, namely the Asian Small-Clawed Otter (*Aonyx cinereus*), the Smooth-Coated Otter (*Lutrogale perspicillata*) and the Eurasian Otter, *Lutra lutra* (Hussain, 1999). In India, the Asian Small-Clawed Otter is found from the Himalayan foothills of Himachal Pradesh to West Bengal, Northeast India, as well as in southern Indian hill ranges of Karnataka, Tamil Nadu and Kerala (Pocock, 1941; Hussain et al., 2011) and eastern India of Odisha (Mohapatra et al., 2014). The Smooth-Coated Otter is distributed throughout India from the Himalayas southwards, and has been reported from the north Indian states of Himachal Pradesh, Punjab, plains of Uttar Pradesh, Madhya Pradesh, Rajasthan, Bihar, in the central Indian plateau of Madhya Pradesh, Maharashtra, Goa, Andhra Pradesh, in the east and northeast in Odisha, West Bengal, Assam through Burma, in the south in Karnataka, Kerala, and Tamil Nadu (Prater, 1971; Hussain, 1999).

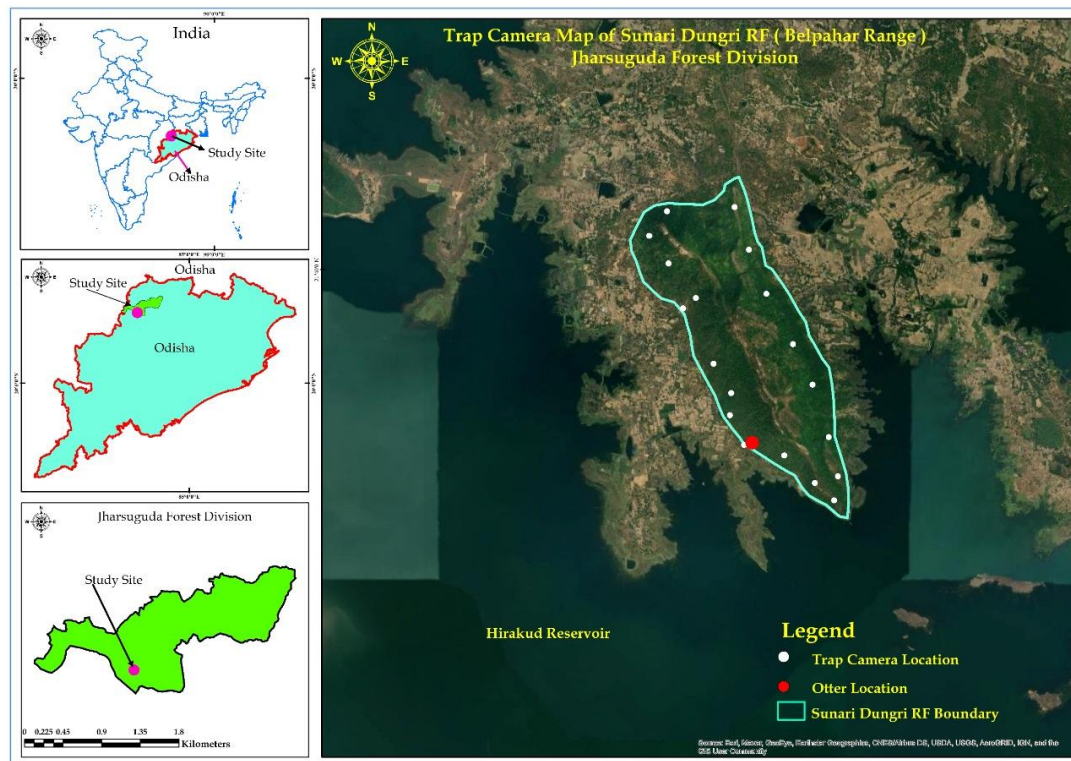
In Odisha, all three species of otters have previously been reported (Acharjyo, 1999; Mohapatra et al., 2014; Palei et al., 2021; Palei et al., 2022). The Smooth-Coated Otter's distribution covers most parts of the Odisha, like Bhitarkanika Wildlife Sanctuary and Chilika Wildlife Sanctuary (Palei et al., 2020; Adhya and Dey, 2020). Here we provide the first record of the Smooth-Coated Otter in Jharsuguda Forest Division, western Odisha.

## STUDY AREA

The Jharsuguda Forest Division is situated at Latitude 21.57°N to 22.01°N and longitude 83.42°E to 84.38°E. The Division is the northwestern part of the state of Odisha. The forest reserve is located in the southern part of the Jharsuguda Forest Division (Fig. 1) with an area of 392.71 ha (Sunari Dungri Reserve Forest). The mean daily temperature of winter ranges from 10 °C to 13 °C and that of summer from 30 °C to 47 °C. There are three distinct seasons: Summer - March to June, Rainy - July to October, and winter - November to February.

The rainfall of the Sanctuary and the nearby areas varies from 1000 mm to 1700mm. Due to good rainfall in the Division area, moist peninsular high-level Sal and moist mixed deciduous forests are found. Most local people in the RF are villagers, and their activities inside the forest are grazing livestock, and collection of forest products (e.g. fodder for livestock, non-timber). The Division is dominated by Northern Tropical Dry Deciduous Forest, Dry Peninsular Sal Forests and Northern Dry Mixed Deciduous Forests. (Champion and Seth, 1968). The Reserve Forest contain forest of good quality, with *Terminalia tomentosa*, *Anogeissus latifolia*, *Pterocarpus marsupium*, *Diospyros melanoxylon*, *Adina cordifolia*, *Terminalia chebula*, *terminalia bellerica*, *lagerstroemia parviflora*, *Buchanania lanzyn*, *Lanniacoromandelica* and *Dalbergia latifolia* etc. The common plants are *Emblica officinalis*, *Cassia fistula*, *Morinda*

*tinctoria*, *Antidesma species*, and *Randia species*. The undergrowth in these forests is a mixture of *Flemingiachappar*, *Indigofera pulchela*, *Wordfordia fruticosa*, *Desmodium species*, and *Strobilanthes species*. The common climbers are *Bauhinia vahlii* and *Smilax species*, while *Combretum decandrum* occurs in valleys and ravines.



**Figure 1.** Study area showing locations of camera traps in the Jharsuguda Forest Division, Jharsuguda.

## METHODOLOGY

Camera trap surveys were carried out from 10<sup>th</sup> June 2022 to 7<sup>th</sup> July 2022. In Sunadungri reserve forest, fifteen camera trap stations were established in the study area. We selected the most suitable camera trap locations, along animal trails, forest roads and near creeks, based on preliminary sign surveys. At each camera trap station, a pair of automated motion-triggered digital camera-traps (Cuddeback Model C1; Non Typical, Inc., Green Bay, WI) were placed on either sides of the location, strapped to trees, facing each other, around 45-50 cm above the ground, using no lure or bait. All cameras were operational 24 hours per day, and programmed to delay sequential photographs by 30 s recording time. Cameras were checked every week to replace the batteries and memory cards and to ensure their proper functioning. Total sampling effort was calculated as the sum of the effective days across all stations where both cameras were functioning (Boitani and Powell, 2012). Each photograph was manually checked to identify the species. Date, time, and temperature were noted for each identified species. We considered photos separated by at least 30 minutes as independent events (Ohashi et al., 2013; Guo et al. 2017).

## RESULTS

From 10<sup>th</sup> June 2022 to 7<sup>th</sup> July 2022, we had fifteen locations covering an area of 392.71sq km<sup>2</sup> in the Sunaridungri Reserve Forest in Jharsuguda Forest Division (Fig. 2), a total effort of 450 trap nights, capturing thirteen mammal species, including Smooth-Coated Otter. The Smooth-Coated Otter was first recorded in a camera trap on

13<sup>th</sup> August 2022 (Fig. 3) in Sunadungri Reserve Forest. This is the first record of this species in Jharsuguda Forest Division.



**Figure 2.** Camera traps installed in Sunaridongri Reserve Forest, Jharsuguda Forest Division



**Figure 3.** Smooth-coated otter documented by camera traps in Sunaridongri Reserve Forest Jharsuguda Forest Division

In addition to Smooth coated otters, the other mammalian species recorded during the camera trap survey were leopard (*Panthera pardus*), rusty spotted cat (*Prionailurus rubiginosus*), jungle cat (*Felis chaus*), striped hyena (*Hyaena hyaena*), golden jackal (*Canis aureus*), Indian fox (*Vulpes bengalensis*), sloth bear (*Melursus ursinus*), honey badger (*Mellivera capensis*), barking deer (*Muntiacus muntjak*), wild pig (*Sus scrofa*), four-horned antelope (*Tertracerus quadricornis*), and hanuman langur (*Semnopithecus entellus*).

## DISCUSSION

As far as we are aware, this is the first photographic record from a camera trap of the smooth-coated otter (*Lutrogale perspicillata*) in Jharsuguda Forest Division. To our surprise, only one image of a single individual was captured during the whole camera trap survey. The camera trap was installed adjacent to the Hirakud Reservoir. The smooth-coated otter's distribution covers most eastern parts of Odisha, including Bhitarkanika Wildlife Sanctuary and Chilika Wildlife Sanctuary (Palei et al., 2020; Adhya and Dey, 2020). The distribution of smooth coated otters in western Odisha seems very scanty. No further camera trap captures or indirect signs were recorded in western Odisha. Our study should be considered only as preliminary results, however. It represents an important contribution towards increasing our knowledge of the Smooth-coated otter. Further detailed research should, therefore, be focused on the otter in the study area in order to have better understanding of the ecology of the species. This information will help generate a more effective conservation and management of the species.

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## RESUME

### PREMIERS ENREGISTREMENTS PHOTOGRAPHIQUES DE LA LOUTRE À PELAGE LISSE (*Lutrogale perspicillata*) DANS LA DIVISION FORESTIÈRE DE JHARSUGUDA, A ODISHA, EN INDE

La loutre à pelage lisse est une espèce vulnérable selon l’UICN en raison de la perte d’habitat et du braconnage. Nous avons déployé 15 pièges photographiques en deux phases dans la division forestière de Jharsuguda, les 8 juin et 5 août 2022, avec un effort d’échantillonnage total de 750 jours de piégeage. Sur 1.682 photos de pièges photographiques, nous avons enregistré une capture photographique de loutre à pelage lisse dans la division forestière de Jharsuguda, alors qu’auparavant, il n’y avait aucun enregistrement de loutre à pelage lisse dans cette division. Cette étude présente la première observation de loutre à pelage lisse *Lutrogale perspicillata* dans la division forestière de Jharsuguda, à Odisha, en Inde.

## RESUMEN

### PRIMEROS REGISTROS FOTOGRÁFICOS DE NUTRIA LISA (*Lutrogale perspicillata*) EN LA DIVISIÓN FORESTAL JHARSUGUDA, ODISHA, INDIA

La nutria lisa es una especie Vulnerable (UICN) como resultado de la pérdida de hábitat y la caza ilegal. Desplegamos 15 cámaras-trampa en dos fases (8 de Junio y 5 de Agosto de 2022) en la División Forestal Jharsuguda, con un esfuerzo muestral de 750 días-trampa. De un total de 1.682 fotografías, fue registrada una captura fotográfica de una nutria lisa en la División Forestal Jharsuguda, pero no había registros previos de nutria lisa en ésta División. Este estudio presenta el primer registro de nutria lisa *Lutrogale perspicillata* en la División Forestal Jharsuguda, Odisha, India.

## ସାରାଂଶ

ଝାରସୁଗୁଡ଼ା ବନଖଣ୍ଡରେ ନରମ ଆବରଣ ବିଶିଷ୍ଟ (ସ୍ତୁଥ୍ କୋଚେଡ) ଓଧ (*Lutrogale perspicillata*) ର ସର୍ବକାଳୀନ ପ୍ରଥମ ଫୋଟୋଗ୍ରାଫିକ ରେକର୍ଡ, ଓଡିଶା, ଭାରତ ।

ବାସନ୍ତ ଋତୁ ଏବଂ ଶିକାର କାରଣରୁ ନରମ ଆବରଣ ବିଶିଷ୍ଟ (ସ୍ତୁଥ୍ କୋଚେଡ) ଓଧ ଆଇୟୁସିଏନ୍-ବିପଦପ୍ରବଣ ପ୍ରାଣୀ ଭାବେ ପରିଗଣିତ । ଝାରସୁଗୁଡ଼ା ବନଖଣ୍ଡରେ ଦୁଇଗୋଟି ପର୍ଯ୍ୟାୟରେ ଆମେ ୮ ଜୁନ ଏବଂ ୫ ଅଗଷ୍ଟ ୨୦୨୨ ରିଖରେ ୧୫ ଗୋଟି କ୍ୟାମେରା ଗ୍ରାପ ନିୟୋଜନ କରିଥିଲୁ ଯେଉଁଥିରେ ମୋଟ ୭୫୦ ଗ୍ରାପ ଦିନର ନମୁନା ସଂଗ୍ରହ ପ୍ରୟାସ କରାଯାଇଥିଲା । ମୋଟ ୧୬୮୨ଟି କ୍ୟାମେରା ଗ୍ରାପ ଫୋଟୋ ମଧ୍ୟରୁ ଗୋଟିଏ ଫୋଟୋ ନରମ ଆବରଣ ବିଶିଷ୍ଟ (ସ୍ତୁଥ୍ କୋଚେଡ) ଓଧ ଝାରସୁଗୁଡ଼ା ବନଖଣ୍ଡରୁ ରେକର୍ଡ କରାଯାଇଥିଲା; କିନ୍ତୁ ପୂର୍ବରୁ ଝାରସୁଗୁଡ଼ା ବନଖଣ୍ଡରୁ ନରମ ଆବରଣ ବିଶିଷ୍ଟ (ସ୍ତୁଥ୍ କୋଚେଡ) ଓଧ ଉପସ୍ଥିତିର କୌଣସି ରେକର୍ଡ ଉପଲବ୍ଧ ନଥିଲା । ଏହି ଅଧ୍ୟୟନ ଝାରସୁଗୁଡ଼ା ବନଖଣ୍ଡ, ଓଡିଶା, ଭାରତରେ ନରମ ଆବରଣ ବିଶିଷ୍ଟ (ସ୍ତୁଥ୍ କୋଚେଡ) ଓଧ (*Lutrogale perspicillata*) ର ସର୍ବକାଳୀନ ପ୍ରଥମ ରେକର୍ଡ ଉପସ୍ଥାପନ କରୁଅଛି ।