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Cover: *Saproamanita praeclara*: Sporocarp in habitat © Kantharaja. R.

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NOTE

First photographic record of the presence of Smooth-coated Otter *Lutrogale perspicillata* in Ghaghra River, India

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Growing human populations and high resource dependency have led to depletion of ecosystems in rivers and wetlands (Moser et al. 1996; Prigent et al. 2012). Depleted resources and disturbed habitat have made dependent species such as otters increasingly vulnerable (de Silva et al. 2015; Wright et al. 2015). Shy by nature (Gupta et al. 2020), a declining trend has been observed due to anthropogenic pressures (Roos et al. 2015), loss of habitat, exploitation (de Silva et al. 2015; Wright et al. 2015) and poaching (Savage & Shrestha 2018). Otters have, thus, become very rare.

Otters are fish-eating, semi-aquatic carnivora of the order Mustelidae (Pardini 1998). Three species occur in the Indian sub-continent: Eurasian Otter *Lutra lutra*, Smooth-coated Otter *Lutrogale perspicillata*, and Asian Small-clawed Otter *Aonyx cinereus*. The Ganga River basin is home to all three species (Chanda 1991). The Smooth-coated Otter is categorized as 'Vulnerable' in the IUCN Red List (Khoo et al. 2021), and is protected under Schedule II of the Indian Wildlife (Protection) Act, 1972. There have been very few studies on the Smooth-coated Otter in India (Hussain & Choudhury 1997).

The Smooth-coated Otter occurs southwards across the Himalaya. Beyond the Indian subcontinent, its range extends across Myanmar, Laos, Vietnam, Kampuchea, South-Western China, Malaysia, Brunei, and Indonesia with the lone presence of *Lutra perspicillata maxwelli* in southern Iraq marshlands (Macdonald et al. 1986; Hussain & Choudhury 1997).

Despite the wide distribution of Smooth-coated Otters (Hussain & Choudhury 1997), no recorded information was available on their occurrence from the main stem Ghaghra River. Historically, lack of a detailed ecological assessment in Ghaghra River from origin to its confluence with the Ganga has resulted in this knowledge gap. The present sightings are the first photographic records of Smooth-coated Otters from the Ghaghra, a major transboundary tributary of the Ganga.

During the rapid ecological assessment undertaken by the Wildlife Institute of India (WII) in 2019–2020

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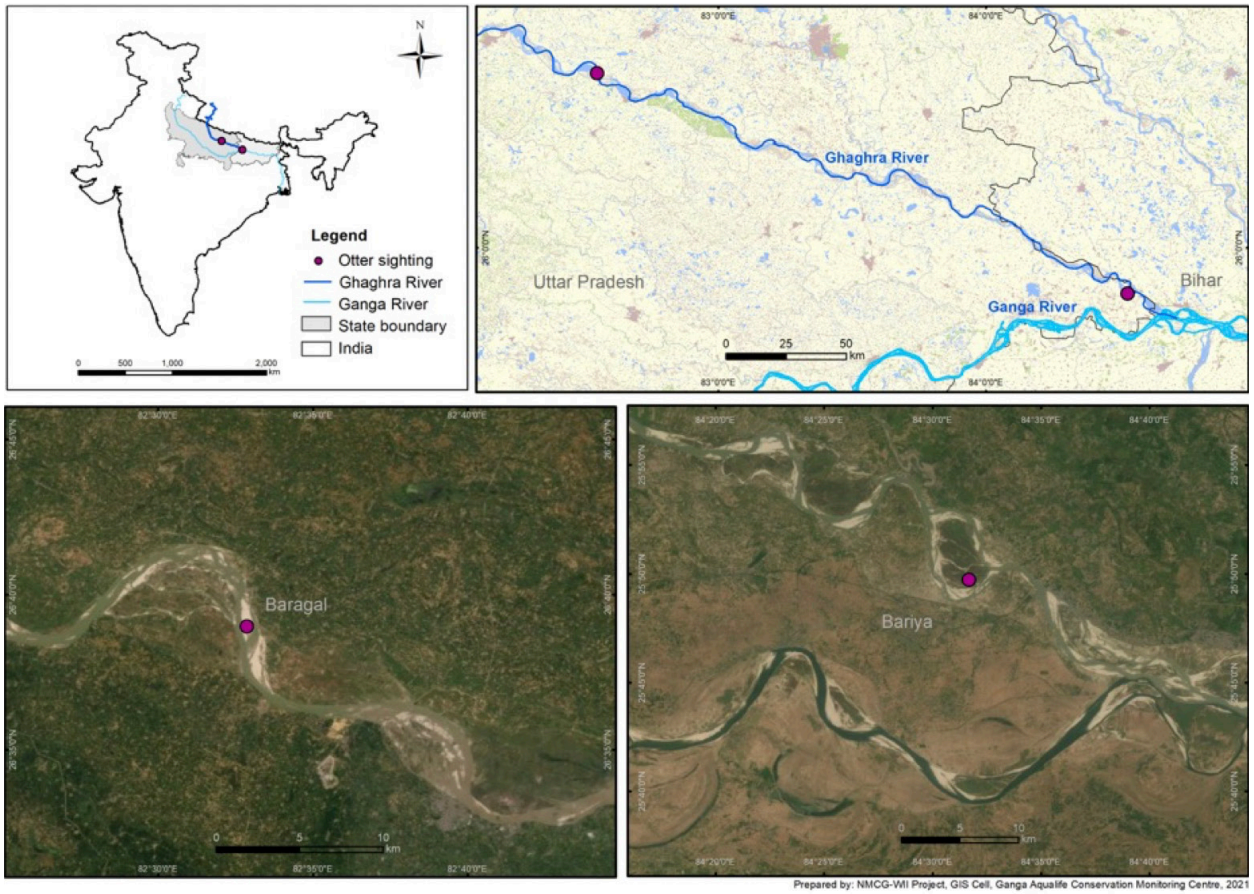

Figure 1. Locations of smooth-coated otter sighted in Ghaghra river during ecological survey 2019–2020.

Table 1. Details of observation site of smooth-coated otter in Ghaghra River sighted during the post-monsoon ecological assessment.

Date	Coordinates	Habitat characteristics	No of Individuals sighted	Record details	Anthropogenic activities	Remarks
17/12/2020	26.649^{0}N 82.547^{0}E	Sandbank with high slopes, water depth range 1.7 to 2.6 m and channel width 380 m.	1	Direct sighting	Riverbed agriculture	Swimming in the river
21/12/2020	25.828^{0}N 84.528^{0}E	High sandbank in close vicinity of tall grasses, water depth range 2 to 3.5 m and channel width 310 m.	1	Direct sighting	Riverbed agriculture	Swimming in the river

under the project "Planning and Management for Aquatic Species Conservation and Maintenance of Ecosystem Services in the Ganga River Basin for a Clean Ganga" funded by the National Mission for Clean Ganga (NMCG), Ministry of Jal Shakti, Government of India, two direct sightings of smooth-coated otter were recorded from two different locations in lower stretch of Ghaghra River.

The first sighting was recorded on 17 December 2020 at 1230 h IST in the waters of Ghaghra River near Bhatia village of Basti district in Uttar Pradesh (26.649°N 82.547°E) during the boat survey (Figure 1). The moment was captured through Panasonic DMC-FZ1000- Lumix digital camera. The animal was observed for a couple of hours while it was searching for food along the bank. Its length was around 1 m with smooth and sleek fur (Image 1). The colour was dark brown on the upper side, and undersides were lighter as stated by Gray (1865).

Small eyes & ear, whitish-coloured upper lip (Image 2) and heavier teeth (Image 3) were observed (Tate 1947). The tail of the animal was flattened dorsoventrally at the tip (Image 4) (Hwang & Larivière 2005). Rhinarium was naked and dark situated anteriorly with a barely convex dorsal border (Image 5), the typical features of a Smooth-coated Otter (Harrison, 1968).

The landscape featured river islands, high sandbanks,

Image 1–8. 1—Smooth-coated otter, *Lutrogale perspicillata* in Ghaghra river | 2—Small eyes, ears and whitish upper lip of the species | 3—Heavier teeth | 4—Flattened tail at the tip | 5—Barely convex shaped naked and dark rhinarium | 6—A view of landscape dominated by high sand bank and *Saccharum* spp. where the species was sighted | 7—Impressions of pugmarks of smooth-coated otter on the sandbank | 8—Body rubbing behaviour of the species.
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thick riparian vegetation dominated by Saccharum spp. on both banks of the river (Image 6). The elevated banks in the stretch are prone to erosion with the continuous flowing waters of the Ghaghra River. The water depth at the point ranged 1.7–2.6 m, and the channel width was 380 m.

The second sighting was recorded on 21 December 2020 at 1447 h IST near Raja Tengaraha village in Ballia district of Uttar Pradesh (25.828°N 84.528°E). This was approximately 250 km downstream from the first sighting. The channel depth at sight ranged 2–3.5 m, and the channel width was 310 m; there were high sandbanks on both sides of the river with riparian vegetation dominated by *Saccharum* spp. Here, the otter was sighted swimming in the river near the bank, and later it moved to the sandbanks (Image 7), where it rubbed itself (Image 8) for a while; before jumping back into the water.

Otters lead an amphibious life, which gives them the advantage of disappearing into the wide riverine landscapes and enhances their role in many ecological processes pertaining to the flood plains (Khan et al. 2014). Smooth-coated Otters thus play a critical role in maintaining balance of freshwater ecosystems (Sivasothi 1995; Acharya & Lamsal 2010; Gupta et al. 2016). The otter populations are declining in their ranges due to habitat loss and poaching activities (Hussain 1999; Nawab 2007, 2009; Nawab & Gautam 2008). The situation gets grave as their population is mostly fragmented and sighted in close proximity to protected areas like Corbett Tiger Reserve (Hussain 1993).

Even though the Smooth-coated Otter is distributed throughout the country, there have been very few sighting records from India with occasional notes on their occurrence from different parts of the country (Hinton & Fry 1923; Pocock 1940; Chitampalli 1979). The present sighting gives hope to the survival of this shrinking population. As the Smooth-coated Otter is a threatened species, this can be an opportunity for in-depth study of the population that will further aid in developing conservation measures in the area; far from any protected area (Gupta et al. 2015). Further, regular monitoring of this landscape coupled with community engagement programmes will aid in generating a database on the population status of the species. Detailed studies will assist in taking ahead the research work initiated in the year 1988 by the Wildlife Institute of India under the project in National Chambal Sanctuary (NCS), to study the ecology of the Smooth-coated Otters, one of the top carnivores of the freshwater ecosystem (Gupta et al. 2016).

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