Building evidence for conservation globally

Journal of Threatened Taxa

10.11609/jott.2026.18.3.28455-28606
www.threatenedtaxa.org

26 March 2026 (Online & Print)
18(3): 28455-28606
ISSN 0974-7907 (Online)
ISSN 0974-7893 (Print)

Open Access

40 zoo reach Zoo Outreach Organisation Years

ISSN 0974-7907 (Online); ISSN 0974-7893 (Print)

Publisher
Wildlife Information Liaison Development Society
www.wild.zooreach.org

Host
Zoo Outreach Organization
www.zooreach.org

Srivari Illam, No. 61, Karthik Nagar, 10th Street, Saravanampatti, Coimbatore, Tamil Nadu 641035, India
Registered Office: 3A2 Varadarajulu Nagar, FCI Road, Ganapathy, Coimbatore, Tamil Nadu 641006, India
Ph: +91 9385339863 | www.threatenedtaxa.org
Email: sanjay@threatenedtaxa.org

For Focus, Scope, Aims, and Policies, visit https://threatenedtaxa.org/index.php/JoTT/aims_scope
For Article Submission Guidelines, visit https://threatenedtaxa.org/index.php/JoTT/about/submissions
For Policies against Scientific Misconduct, visit https://threatenedtaxa.org/index.php/JoTT/policies_various

continued on the back inside cover

Cover: Digital illustration of Smooth-coated Otter *Lutrogale perspicillata* by Dupati Poojitha. Reference from the picture taken by Rana & Sugandhi.

Journal of Threatened Taxa | www.threatenedtaxa.org | 26 March 2026 | 18(3): 28573–28577

ISSN 0974-7907 (Online) | ISSN 0974-7893 (Print)

https://doi.org/10.11609/jott.10367.18.3.28573-28577

#10367 | Received 07 January 2026 | Final received 18 February 2026 | Finally accepted 09 March 2026

OPEN ACCESS

SHORT COMMUNICATION

First photographic record of Smooth-coated Otter *Lutrogale perspicillata* from the canals in Upper Ganga Ramsar Site, Uttar Pradesh, India

Aftab Alam Usmani [1], Pichaimuthu Gangaiamaran [2], Ruchi Badola [3] & Syed Ainul Hussain [4]

[1–3] Wildlife Institute of India, Chandrabani, Dehradun, Uttarakhand 248001, India.

[4] Centre for Biodiversity and Sustainability Science, Plot No. 40, Doon Officers Enclave, Chandrabani, Dehradun, Uttarakhand 248002, India.

[1] aftab.a.usmani@gmail.com (corresponding author), [2] bnhsgangai@gmail.com, [3] ruchi@wii.gov.in, [4] ainul.hussain@gmail.com

Abstract: Smooth-coated Otter *Lutrogale perspicillata* is one of the three species of otters found in India. Photographs from the Lower Ganga Canal confirmed the presence of the species in the Ganga River in January of 2021 and 2023. This is the first confirmed record of a Smooth-coated Otter from the canal network of the middle stretch of the Ganga River. This observation indicates the rich aquatic and riparian habitat of the Ganga River, associated canal network along the Upper Ganga River Ramsar Site that needs to be conserved on priority.

Keywords: Biodiversity, Carnivora, conservation, distribution, Mammalia, Mustelidae, Narora Barrage.

Otters are semi-aquatic mammals of the family Mustelidae (Hung & Law 2016). Three species of otters are reported from the Indian subcontinent—Asian Small-clawed Otter *Aonyx cinereus*, Smooth-coated Otter *Lutrogale perspicillata*, and Eurasian Otter *Lutra lutra* (Hussain 1993; Khoo et al. 2021). Otters, as a top predator of their ecosystems, are highly vulnerable to human-induced changes in the ecosystem (Peterson & Schulte 2016). The Smooth-coated Otter is an elusive and amphibious carnivore species (Hussain 1993). It has a widespread distribution range in India owing to its diverse habitat choices, ranging from forested rivers and freshwater wetlands to mangroves (Hussain & Choudhury 1995, 1997). The population of Smooth-coated Otters is believed to have declined significantly in the past three decades owing to the intentional killing by fishermen, habitat loss, and destruction (Nawab & Hussain 2012). Although otters exhibit a higher tolerance towards human presence, they continue to experience conflict with humans over fish resources and are subject to indiscriminate killing (Shariff 1984; Foster-Turley 1992). As a result, the species is listed as 'Vulnerable' in the IUCN Red List of Species and Appendix I of CITES (Hussain & Choudhury 1997; Nawab & Hussain 2012; Peterson & Schulte 2016; Khoo et al. 2021). Despite the alarming rate of population declines, the information about otters' occurrence in India remains sparse and not well-documented (Hussain & Choudhury 1997; Khoo et al. 2021).

Presently, otter distribution is fragmented into small populations across its range (Hussain 1999). Most of the sighting records in the upper gangetic plains are confined to the Terai Region of Uttarakhand, Uttar Pradesh, Bihar, and Nepal (Hussain 2002; Nawab & Hussain 2012; Gupta et al. 2020; Basak et al. 2021). Beyond the Terai Region, scattered populations of Smooth-coated Otters have been reported from the Ganga River in State Wildlife

Editor: Bhargavi Srinivasulu, Zoo Outreach Organisation, Hyderabad, India. **Date of publication:** 26 March 2026 (online & print)

Citation: Usmani, A.A., P. Gangaiamaran, R. Badola & S.A. Hussain (2026). First photographic record of Smooth-coated Otter *Lutrogale perspicillata* from the canals in Upper Ganga Ramsar Site, Uttar Pradesh, India. *Journal of Threatened Taxa* 18(3): 28573–28577. https://doi.org/10.11609/jott.10367.18.3.28573-28577

Funding: The National Mission for Clean Ganga, Ministry of Jal Shakti, Government of India.

Competing interests: The authors declare no competing interests.

Acknowledgements: We would like to acknowledge the National Mission for Clean Ganga (NMCG) and the Ministry of Jal Shakti for funding the present study. We are grateful to the chief wildlife warden and other forest officials of the Uttar Pradesh Forest Department for providing the necessary permissions and support to undertake the ecological assessment of the Ganga River. We acknowledge the support provided by officials of Narora Atomic Power Station (NAPS) and the Nuclear Power Corporation of India (NPCIL).

Barasingha Sanctuary (formerly Hastinapur Wildlife Sanctuary), Ghaghara, Girwa, Babai, Rapti, Chambal rivers and streams of Son River in India and the Narayani River in Nepal (Hussain 1993; Acharya 1998; Khan et al. 2014; Rathar et al. 2019; Bashyal & Yadav 2020; Gawan et al. 2022; Acharya et al. 2023).

Materials and Methods

The survey was conducted along the banks of the Ganga River between Brijghat and Narora (Image 1). The grassland patches and riparian areas along the Ganga River were surveyed to assess the presence of Smooth-coated Otter. The stretch of the Ganga River between Brijghat and Narora is designated as the Upper Ganga River Ramsar Site (Ramsar site no. 1574). The river stretch has fragmented grassland patches along the banks and on islands. The major vegetation of these grassland patches includes *Typha* sp., *Phragmites* sp., and *Sachharum* sp. This stretch of the river is inhabited by the Gangetic Dolphin *Platanista gangetica*, 76 species of waterbirds, Gharial *Gavialis gangeticus*, Mugger *Crocodylus palustris*, and six species of turtles (WII-GACMC 2018; Usmani et al. 2025). The major terrestrial species include Sambar *Rusa unicolour*, Hog Deer *Axis porcinus,* Chital *Axis axis*, and Leopard *Panthera pardus* (Usmani 2010).

Previous studies and surveys of otters in Uttar Pradesh were restricted to the State Wildlife Barasingha Sanctuary, and no rigorous attempt was made to understand the status of otters in further downstream areas. As a part of the long-term study to document the biodiversity of the Ganga River and its tributaries, we conducted boat-based visual encounter surveys to collect information on the presence of otters. Along with the field information, secondary information on the presence of the otter was gathered from locals, especially farmers and fishermen. Photographs of species and their pugmarks were shown for identification. Google Earth images were used to identify the potential habitat along the Ganga River. Each patch of potential habitat

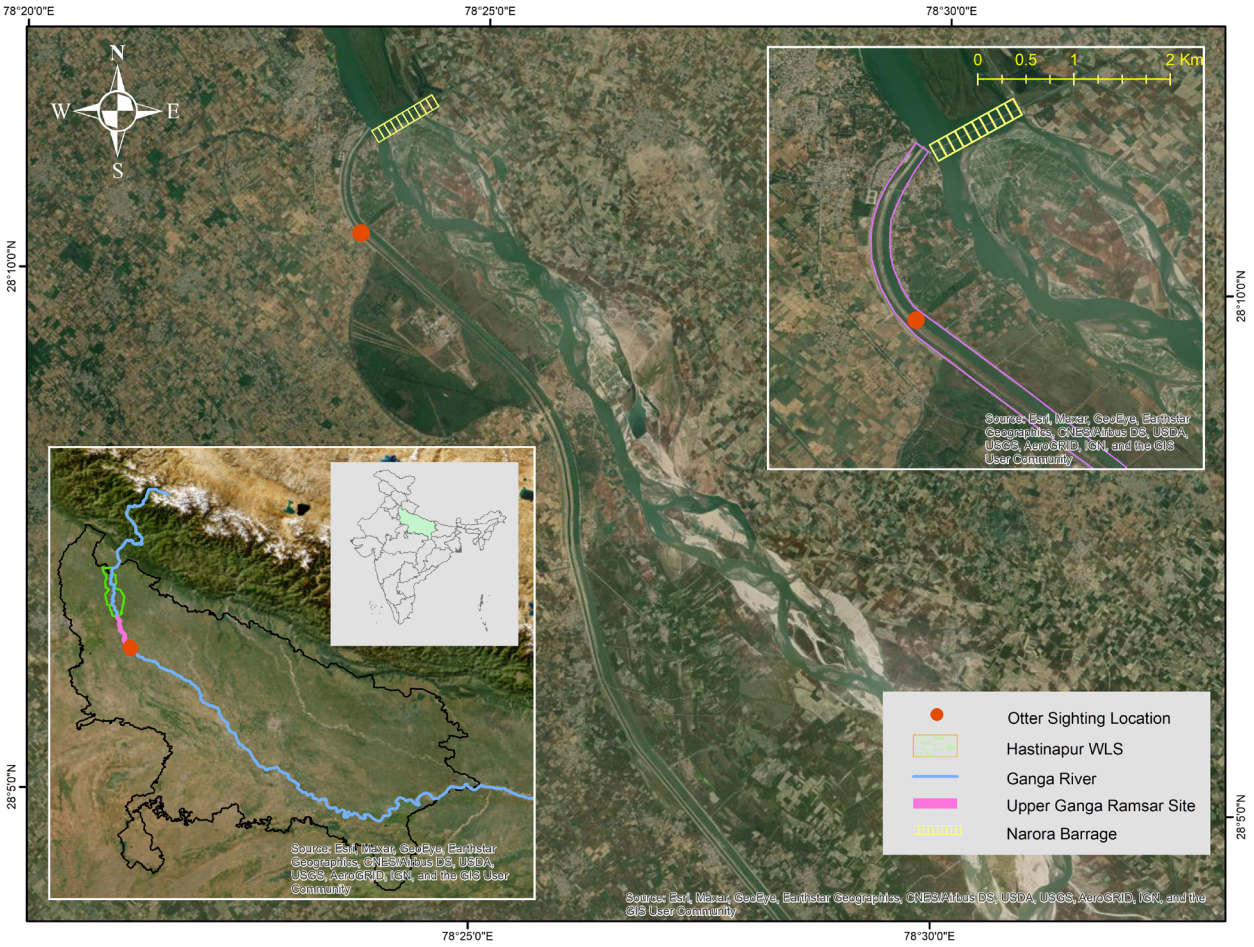

Image 1. The location of Smooth-coated Otter sighting near the Narora Barrage.

Image 2–4. Smooth-coated Otter seen in January 2023. © Aftab Alam Usmani.

was extensively surveyed both by walking and using a boat for otters. The entire surveyed area was outside the protected area.

Results

An adult otter individual was seen on the afternoon of 16 January 2023 in the concretized section of the Lower Ganga Canal approximately 1 km from the Lower Ganga Barrage at Narora, District Bulandshahr, Uttar Pradesh (28.174^0 N, 78.393^0 E) (Image 1). The otter was seen crossing the canal and moving towards the Ganga river (Images 2–4). Another individual was sighted fishing in the canal on 5 January 2021 (Images 5 & 6), approximately 100 m away from the previous observation (28.175^0 N, 78.393^0 E). The Lower Ganga Canal supports a rich diversity of fish species (n = 15) that constitutes the primary prey base for otters, and its densely vegetated banks provide suitable shelter and resting sites for the otters (Nawab & Hussain 2012).

Discussion

Anecdotal sightings of otters have been reported from the Ganga River in Haridwar, Uttarakhand. Indirect evidence of Smooth-coated Otters was also recorded from the State Wildlife Barasingha Sanctuary (Bashir et al. 2012; Khan et al. 2014). Studies conducted thereafter assumed the otter to be locally extirpated in the Ganga River downstream of State Wildlife Barasingha Sanctuary to Kanpur Barrage (Rao 2001). However, recent sightings of smooth-coated otters in 2021 and 2023 have proved the presence of the species in the irrigation canal network in the area.

The stretch of the Ganga River around Narora has abundant sandy banks with gradual slopes and vegetation cover, which provides a good habitat for smooth-coated otters. The sites are suitable due to low disturbances,

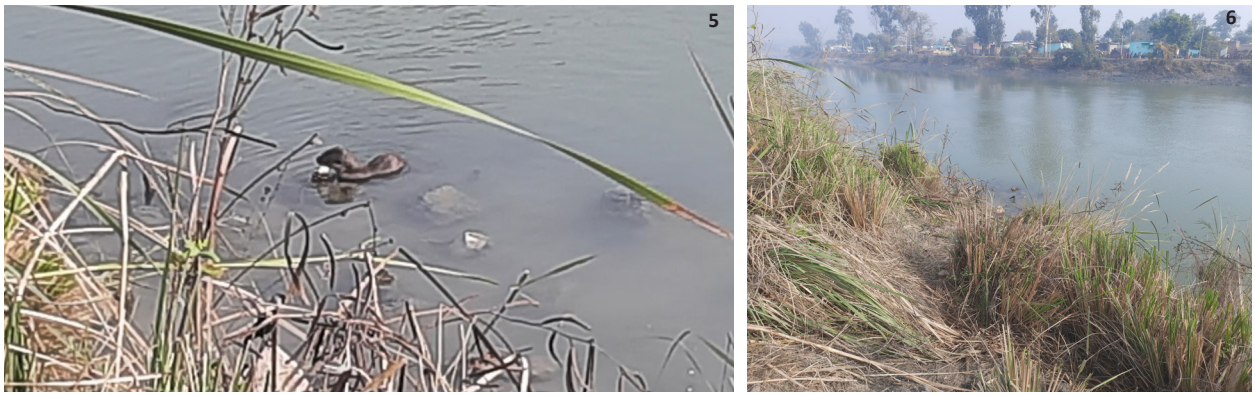

Image 5–6. Smooth-coated Otter seen in January 2021. © Aftab Alam Usmani.

abundant prey base, and banks with densely covered vegetation (Stephen et al. 2022; Gwachha et al. 2023; Moun et al. 2024). These factors have contributed to the survival of the Smooth-coated Otters in this area. The stretch falls near the exclusion zone of the Narora Atomic Power Plant (NAPS), which is characterised by dense vegetation cover, low human disturbances, and a high prey base. The area is surrounded by agricultural landscapes with interspersed, densely populated villages and towns with a population density of 836 individuals/km^2 (GUP 2021). The canal and the Ganga River in this area are extensively exploited for fishing using gill nets and cast nets. The common fish fauna of the area includes *Labeo rohita*, *Labeo catla*, *Sperata seenghala, Puntius sophore*, *Bagarius bagarius,* and *Wallago attu*.

Intensive fishing, uncontrolled burning, occasional sand mining, conversion of grass patches into croplands along the Ganga River and canal, and intentional killing of otters by the fisherman community, are the major threats to the otter in the area (Nawab & Hussain 2012; WII-GACMC 2018). Habitat loss and degradation by the construction of dams and barrages may further accelerate the extinction threat of declining otter populations (Nawab 2007). Fragmented habitat patches might not be sufficient to shelter a functional social otter group or breeding otters with poor dispersal ability (Collinge 1996; Lambeck 1997).

The Ganga River and associated aquatic habitat in this area also face a wide range of disturbances, including occasional cases of poaching, uncontrolled burning, agricultural encroachment, intensive grazing, and unsustainable vegetation extraction (Hussain & Choudhury 1997; Nawab & Hussain 2012; Peterson & Schulte 2016; Khoo et al. 2021). The otter population in this area is highly vulnerable to these stressors, and conservation interventions are required for the long-term survival of otters in the region between Narora and Kanpur. Further, efforts to engage local communities are essential for the conservation and long-term service of the species. The Upper Ganga Canal provides stable aquatic habitat with dense riparian vegetation on the banks, supporting diverse fish assemblages. Water availability fluctuates seasonally based on the irrigation schedule, with reduced flows during non-cropping periods limiting habitat extent. Major threats to the canal include intensive fishing and the introduction of invasive species.

References

Acharya, P.M. (1998). *Otter action plan: The country report Nepal*. A report submitted to the Otter Specialist Group, IUCN – The World Conservation Union, 11 pp.

Acharya, P.M., P. Lamsal, S. Rajbhandari, H. Lama, B. Lama, M. Pathak & M. Niraula (2010). *Status of otter distribution in Narayani River, Chitwan National Park, Nepal*. A first phase research report submitted to the Rufford Foundation, UK.

Acharya, P.M., P. Thainiramit, K. Techato, S. Baral, N. Rimal, M. Savage & D. Neupane (2023). Predicting the distribution and habitat suitability of the Smooth-coated Otter *Lutrogale perspicillata* in lowland Nepal. *Global Ecology and Conservation* 46: e02578. https://doi.org/10.1016/j.gecco.2023.e02578

Basak, S., B. Pandav, J.A. Johnson & S.A. Hussain (2021). Resource utilisation by smooth-coated otters in the rivers of Himalayan foothills in Uttarakhand, India. *Global Ecology and Conservation* 32: e01896. https://doi.org/10.1016/j.gecco.2021.e01896

Bashir, T., S.K. Behera, A. Khan & P. Gautam (2012). An inventory of mammals, birds and reptiles along a section of the river and banks of upper Ganges, India. *Journal of Threatened Taxa* 4(9): 2900–2910. https://doi.org/10.11609/JoTT.o2692.2900-10

Bashyal, A. & B.P. Yadav (2020). Opportunistic Smooth-coated Otter (*Lutrogale perspicillata*) sightings record in Bardia National Park of Nepal. *IUCN Otter Specialist Group Bulletin* 37(2): 120–126.

Collinge, S.K. (1996). Ecological consequences of habitat fragmentation: Implications of landscape architecture and planning. *Landscape and Urban Planning* 36(1): 59–77. https://doi.org/10.1016/S0169-2046(96)00308-2

Foster-Turley, P.A. (1992). Conservation aspects of the ecology of Asian small-clawed and smooth otters on the Malay Peninsula. *IUCN Otter Specialist Group Bulletin* 7: 26–29.

Gawan, S., A.K. Panda & A.M. Rawat (2022). First photographic record of the presence of Smooth-coated Otter (*Lutrogale perspicillata*) in Ghaghra River, India. *Journal of Threatened Taxa* 14(4): 20930–20934. https://doi.org/10.11609/jott.7594.14.4.20930-20934

GUP (2021). *Government of Uttar Pradesh: Statistical Diary: Uttar Pradesh 2021*. Economics and Statistics Division, State Planning Institute, Planning Department, Uttar Pradesh, India. Available online at: https://updes.up.nic.in/esd/reports/diary%20eng%202021_merged.pdf

Gupta, N., V. Tiwari, M. Everard, M. Savage, S.A. Hussain, M.A. Chadwick & V.K. Belwal (2020). Assessing the distribution pattern of otters in four rivers of the Indian Himalayan biodiversity hotspot. *Aquatic Conservation: Marine and Freshwater Ecosystems* 30(3): 601–610. https://doi.org/10.1002/aqc.3283

Gwachha, S., M. Koirala & P.M. Shrestha (2023). Habitat status of the Smooth-coated Otter (*Lutrogale perspicillata*) in Geruwa-Khaurahi River, Bardia National Park, Nepal. *Nepal Journal of Environmental Science* 11(2): 23–33

Hung, N. & C.J. Law (2016). *Lutra lutra* (Carnivora: Mustelidae). *Mammalian Species* 48(940): 109–122. https://doi.org/10.1093/mspecies/sew006

Hussain, S.A. (1993). *Aspects of the ecology of smooth-coated otters Lutra perspicillata in National Chambal Sanctuary* (Unpublished PhD Thesis). Centre for Wildlife and Ornithology, Aligarh Muslim University, Aligarh, India.

Hussain, S.A. (2002). Conservation status of otters in the Tarai and Lower Himalayas of Uttar Pradesh, India, pp. 131–142. In: Dulfer, R., J. Conroy, J. Nel & A. Gutleb (eds.). *Otter Conservation – An Example for a Sustainable Use of Wetlands*. *IUCN Otter Specialist Group Bulletin* 19, Trebon, Czech Republic, 396 pp.

Hussain, S.A. & B.C. Choudhury (1995). Seasonal movement, home range and habitat use by smooth-coated otters (*Lutra perspicillata*) in National Chambal Sanctuary, India, pp. 45–55. In: Proceedings of VI International Otter Colloquium, Pietermaritzburg, South Africa, 146 pp.

Hussain, S.A. & B.C. Choudhury (1997). Distribution and status of the Smooth-coated Otter (*Lutra perspicillata*) in National Chambal Sanctuary, India. *Biological Conservation* 80(2): 199–206. https://doi.org/10.1016/S0006-3207(96)00052-2

Hussain, S.A. & R.K. Singh (1999). *Ecological Survey of the National Chambal Sanctuary to Assess the Need for Desiltation.* Study report. Wildlife Institute of India, Dehra Dun, India, 121 pp.

Khan, M.S., N.K. Dimri, A. Nawab, O. Ilyas & P. Gautam (2014). Habitat use pattern and conservation status of smooth-coated otters (*Lutrogale perspicillata*) in the Upper Ganges Basin, India. *Animal Biodiversity and Conservation* 37(1): 69–76. https://doi.org/10.32800/abc.2014.37.0069

Khoo, M., S. Basak, N. Sivasothi, P.K. de Silva & I.R. Lubis (2021). *Lutrogale perspicillata*. *The IUCN Red List of Threatened Species 2021:* e.T12427A164579961. https://doi.org/10.2305/IUCN.UK.2021-3.RLTS.T12427A164579961.en

Lambeck, R.J. (1997). Focal species: A multi-species umbrella for nature conservation. *Conservation Biology* 11(4): 849–856. https://doi.org/10.1046/j.1523-1739.1997.96319.x

Moun, A., P.R. Kumar, M.M. Priya, T. Ramesh & R. Kalle (2024). Multi-scale habitat influences sprainting and group size of a freshwater-obligate Smooth-coated Otter (*Lutrogale perspicillata*) in Tungabhadra Otter Conservation Reserve, India. *Ecological Processes* 13(1): 12. https://doi.org/10.1186/s13717-024-00492-x

Nawab, A. (2007). *Ecology of otters in Corbett Tiger Reserve, Uttarakhand, India*. PhD Thesis. Forest Research Institute, Dehradun, India, 174 pp.

Nawab, A. & S.A. Hussain (2012). Factors affecting the occurrence of Smooth-coated Otter (*Lutrogale perspicillata*) in aquatic systems of the Upper Gangetic Plains, India. *Aquatic Conservation: Marine and Freshwater Ecosystems* 22(5): 616–625. https://doi.org/10.1002/aqc.2249

Peterson, E.K. & B.A. Schulte (2016). Impacts of pollutants on beavers and otters with implications for ecosystem ramifications. *Journal of Contemporary Water Research & Education* 157(1): 33–45. https://doi.org/10.1111/j.1936-704X.2016.03218.x

Rao, R.J. (2001). Biological resources of the Ganga River, India. *Hydrobiologia* 458(1): 159–168. https://doi.org/10.1023/A:1013138801994

Rather, T.A., S. Tajdar, S. Kumar & J.A. Khan (2019). First photographic record of Smooth-coated Otter (*Lutrogale perspicillata*) in Bandhavgarh Tiger Reserve, Madhya Pradesh, India. *IUCN Otter Specialist Group Bulletin* 36(2): 93–97.

Shariff, S.M. (1984). Some observations on otters at Kuala Gula, Perak and National Park, Pahang. *Journal of Wildlife and Parks (Malaysia)* 4: 20–24.

Usmani, A.A. (2010). Some Ecological Studies of Gharial (*Gavialis gangeticus*) in Hastinapur Wildlife Sanctuary (Unpublished M.Sc. Dissertation). Department of Wildlife Sciences, Aligarh Muslim University, Aligarh, India, 40 pp.

Usmani, A.A., P. Gangaiamaran, V.B. Mathur, R. Badola & S.A. Hussain (2025). An annotated checklist of aquatic avifauna in the human-dominated middle stretch of the Ganga River. *Check List* **21**(3): 596–617. https://doi.org/10.15560/21.3.596

WII-GACMC (2018). *Macro fauna of Ganga River: Status and conservation of select species*. Ganga Aqualife Conservation Monitoring Centre, Wildlife Institute of India, Dehra Dun, India, 151 pp.

Journal of Threatened Taxa is indexed/abstracted in Bibliography of Systematic Mycology, Biological Abstracts, BIOSIS Previews, CAB Abstracts, EBSCO, Google Scholar, Index Copernicus, Index Fungorum, JournalSeek, National Academy of Agricultural Sciences, NewJour, OCLC WorldCat, SCOPUS, Stanford University Libraries, Virtual Library of Biology, Zoological Records.

NAAS rating (India) 5.64

Print copies of the Journal are available at cost. Write to:
The Managing Editor, JoTT,
c/o Wildlife Information Liaison Development Society,
3A2 Varadarajulu Nagar, FCI Road, Ganapathy, Coimbatore,
Tamil Nadu 641006, India
ravi@threatenedtaxa.org & ravi@zooreach.org

Journal of Threatened Taxa

www.threatenedtaxa.org

ISSN 0974-7907 (Online) | ISSN 0974-7893 (Print)

March 2026 | Vol. 18 | No. 3 | Pages: 28455–28606
Date of Publication: 26 March 2026 (Online & Print)
DOI: 10.11609/jott.2026.18.3.28455-28606

Publisher & Host

WILD zoOreach
Zoo Outreach Organisation

Threatened Taxa