



First Documented Record of the Spotted Northern Indian Flap-shelled Turtle, *Lissemys punctata andersoni* (Webb 1980), from Aligarh District, Uttar Pradesh, India

Umar Mushtaq, Syed Basit Mian, Mohsin Ahmad, and Kaleem Ahmed

Department of Wildlife Sciences, Aligarh Muslim University, Aligarh, Uttar Pradesh–202002, India (kahmed.wl@amu.ac.in [corresponding author])

The Indian Flap-shelled Turtle (*Lissemys punctata*) (Trionychidae) is distributed throughout Bangladesh, India, Myanmar, Nepal, and Pakistan (Bhupathy et al. 2014), and an introduced population exists in the Andaman and Nicobar Islands (Lever 2003). Three currently recognized subspecies (*L. p. punctata*, *L. p. vitata*, *L. p. andersoni*) occupy a variety of natural aquatic systems such as rivers, streams, reservoirs, marshes, ponds, lakes, salt marshes, and rice fields, but also occur in human-modified systems that include irrigation canals, tanks, gutters, drainage systems, and canals in urban areas (Das 1991; Moll and Moll 2004; Shah and Tiwari 2004; Hossain et al. 2008). The species is listed in Appendix II of CITES (2025), Schedule I of the Wildlife (Protection) Amendment Act, 2022 (Ministry of Law and Justice 2022), and as Vulnerable (VU) on the IUCN Red List (Rahman et al. 2021), largely due to its exploitation for food and medicinal products (Saha 1986; Choudhury and

Bhupathy 1993; Choudhury et al. 2000; Krishnakumar et al. 2009; Bhupathy et al. 2014; Mendiratta et al. 2017). The Spotted Northern Indian Flap-shelled Turtle (*L. p. andersoni*) occurs in Pakistan, northern India, and southern Nepal, east into Bangladesh within the Indus and Ganges-Brahmaputra drainage systems, and also is found in northwestern coastal Myanmar (Bhupathy et al. 2014).

At 1403 h on 1 June 2025, we observed one adult and six juvenile *L. p. andersoni* in a 3-m wide drainage canal adjacent to Sir Zia-ud-din Hall, Aligarh Muslim University, Uttar Pradesh (Fig. 1). The weather was cloudy and the ambient temperature was ~36 °C. Twelve additional individuals were observed in other accessible locations of the drainage canal on the next day. Despite the visibly degraded water quality, the turtles were swimming actively in the canal, feeding and frequently raising their heads above the surface. The canal was severely polluted with anthropogenic wastes including poly-

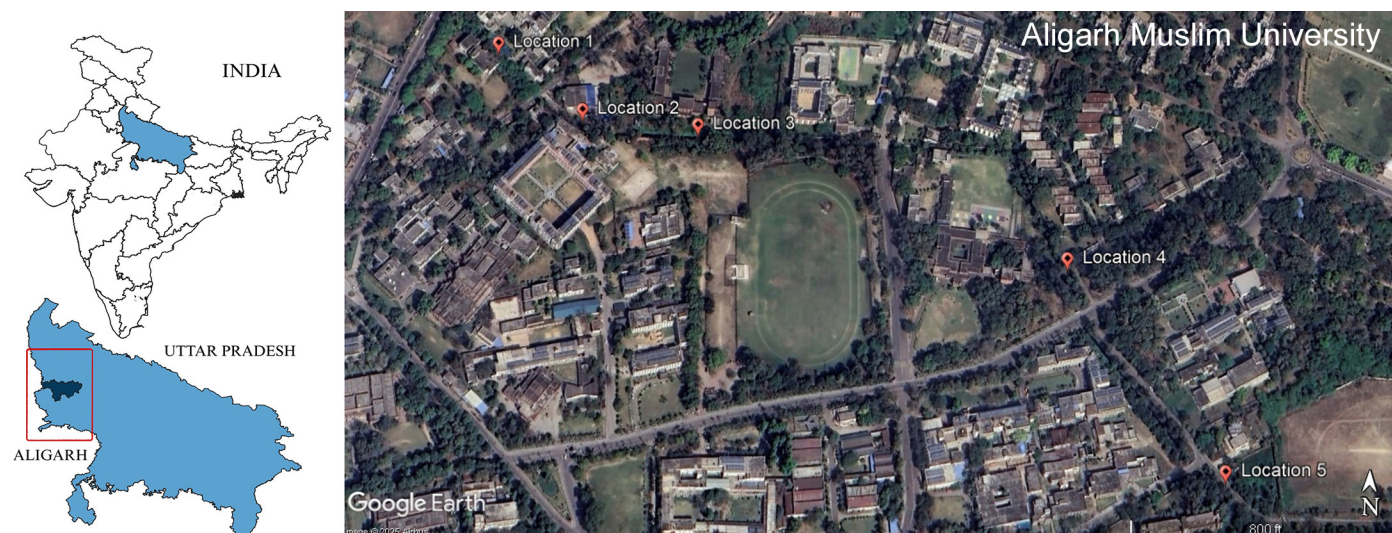


Figure 1. Map showing the location of sightings of Spotted Northern Indian Flap-shelled Turtles (*Lissemys punctata andersoni*) on the Aligarh Muslim University campus, Uttar Pradesh, India.

these bags, plastic wrappers, plastic and glass bottles, as well as organic debris like silt, dead leaves, twigs, and broken branches (Fig. 2). Vegetation at the site was comprised of *Eucalyptus* spp., *Phoenix dactylifera*, *Azadirachta indica*, *Alstonia scholaris*, *Dalbergia sissoo*, *Pongamia pinnata*, and *Vachellia nilotica*. This is the first record of the species from Aligarh District. We identified the turtles based on descriptions in Smith (1931), Hanfee (1999), Kästle et al. (2013), and Bhupathy et al. (2014). Juveniles had olive-green carapaces and soft body parts, with yellow blotches and hieroglyphs on carapaces and heads and necks, whereas blotches were absent on carapaces of adults (Figs. 3–4). The identity of the species was confirmed by Prof. Satish Kumar and Dr. Shah Hussain.

These observations of *L. p. andersoni* confirm the presence of a small but potentially breeding population in the urban drainage system of Aligarh Muslim University. Although the canal itself is not directly connected to any river, it is part of a large network of interconnected drainage and irrigation canals in Aligarh District. This network is linked to Upper Ganga Canal, which originates at Haridwar, Uttarakhand, and is connected to the River Kali via the Kharz Nahar. The River Kali flows through Aligarh and ultimately joins the Ganga in Kannauj District, Uttar Pradesh (Khan and Khan 2019). The presence of multiple juveniles suggests that at least one adult



Figure 3. A Spotted Northern Indian Flap-shelled Turtle (*Lissemys punctata andersoni*) from the Aligarh Muslim University campus, Uttar Pradesh, India. Photograph by Umar Mushtaq.



Figure 2. Habitat of Spotted Northern Indian Flap-shelled Turtles (*Lissemys punctata andersoni*) on the Aligarh Muslim University campus, Uttar Pradesh, India. Photograph by Umar Mushtaq.

female is nesting in the area, raising the possibility that the species might have become established via natural dispersal within the interconnected canal system. The closest known population of *L. p. andersoni* occurs at the River Ganga (Rahman et al. 2021) and the Narora (Ramsar Site), Bulandshahar District, Uttar Pradesh, which is ~50 km from the newly documented site. Given the hydrological connectivity between the Aligarh Canal network, River Kali, and ultimately the Ganga, the observed individuals likely represent a naturally occurring population, highlighting the role of urban waterways as potential habitats and breeding sites for freshwater turtles, even when severely degraded. The sighting also speaks to an urgent need for intensive and long-term monitoring to safeguard this population. The drainage canal flowing across the university campus should be cleaned regularly and dumping of anthropogenic waste like plastic and polythene must be prohibited. With proper management and conservation initiatives, conserving the species in the area might be possible.

The lack of baseline data on herpetofaunal diversity in Aligarh District limits effective conservation planning, and the absence of a standardized checklist for the region reflects this knowledge gap. Dedicated surveys of drainage canals (including those on the AMU campus), the Upper Ganga



Figure 4. A Spotted Northern Indian Flap-shelled Turtle (*Lissemys punctata andersoni*) on the Aligarh Muslim University campus, Uttar Pradesh, India, showing frontal (left), dorsal (center), and ventral (right) views. Photographs by Umar Mushtaq.

Canal, other irrigation canals, the River Kali, and the Shekha Bird Sanctuary (Ramsar Site) of Aligarh District must be prioritized to accurately assess the extent of the species' distribution and potential threats. The region likely supports a greater herpetofaunal diversity than currently recognized. The documentation of *L. p. andersoni* in this urban habitat also speaks to the possibility of uncovering other previously unreported reptilian species in the area and the ecological and conservation value of such habitats.

Acknowledgements

We thank Prof. Satish Kumar (Chairperson), Department of Wildlife Sciences, Aligarh Muslim University; and Dr. Shah Hussain (Wildlife Ecologist), University of Delhi, for assisting us in identifying the turtles.

Literature Cited

- Bhupathy, S., R.G. Webb, and P. Praschag. 2014. *Lissemys punctata* (Bonnaterre, 1789) – Indian Flapshell Turtle. *Chelonian Research Monographs* 5: 1–12. <https://doi.org/10.3854/crm.5.076.punctata.v1.2014>.
- Choudhury, B.C. and S. Bhupathy. 1993. *Turtle Trade in India: A Study of Tortoises and Freshwater Turtles*. World Wildlife Fund-India (prepared by TRAFFIC-India), New Delhi, India.
- Choudhury, B.C., S. Bhupathy, and F. Hanfee. 2000. Status information on the tortoises and freshwater turtles of India. In: P.P. van Dijk, B.L. Stuart, and A.G.J. Rhodin (eds.), *Asian Turtle Trade: Proceedings of a Workshop on Conservation and Trade of Freshwater Turtles and Tortoises in Asia*. *Chelonian Research Monographs* 2: 86–94.
- CITES (Convention on International Trade in Endangered Species of Wild Fauna and Flora). 2025. Appendices I, II and III valid from 7 February 2025. <<https://cites.org/eng/app/appendices.php>>.
- Das, I. 1991. *Colour Guide to the Turtles and Tortoises of the Indian Subcontinent*. R&A Publishing Ltd., Portishead, UK.
- Hanfee, F. 1999. *Trade in Freshwater Turtles and Tortoises in India: A Study of the Illegal Trade*. TRAFFIC India/WWF-India, New Delhi, India.
- Hossain, M.L., S.U. Sarker, and N. J. Sarker. 2008. Ecology of spotted flapshell turtle, *Lissemys punctata* (Lacepède, 1788) in Bangladesh. *Ecoprint* 15: 59–67. <https://doi.org/10.3126/eco.v15i0.1943>.
- Kästle, W., K.R. Rai, and H.H. Schleich. 2013. *Amphibians and Reptiles of Nepal*. ARCO-Nepal e.V., München, Germany.
- Khan, H.H., and A. Khan. 2019. Groundwater-surface water interaction along river Kali, near Aligarh, India. *Hydro Research* 2: 119–128. <https://doi.org/10.1016/j.hydres.2019.12.001>.
- Krishnakumar, K., R. Raghavan, and B. Pereira. 2009. Protected on papers, hunted in wetlands: Exploitation and trade of freshwater turtles (*Melanochelys trijuga coronata* and *Lissemys punctata punctata*) in Punnamada, Kerala, India. *Tropical Conservation Science* 2: 363–373. <https://doi.org/10.1177/194008290900200306>.
- Lever, C. 2003. *Naturalized Reptiles and Amphibians of the World*. Oxford University Press, New York, New York, USA.
- Mendiratta, U., V. Sheel, and S. Singh. 2017. Enforcement seizures reveal large-scale illegal trade in India's tortoises and freshwater turtles. *Biological Conservation* 207: 100–105. <https://doi.org/10.1016/j.biocon.2017.01.023>.
- Ministry of Law and Justice. 2022. The Wild Life (Protection) Amendment Act, 2022. No. 18 of 2022. *The Gazette of India* CG-DL-E-20122022-241252, New Delhi, India.
- Moll, D. and E.O. Moll. 2004. *The Ecology, Exploitation and Conservation of River Turtles*. Oxford University Press, New York, New York, USA.
- Rahman, S., M.F. Ahmed, B.C. Choudhury, P. Praschag, and S. Singh. 2021. *Lissemys punctata*. *The IUCN Red List of Threatened Species* 2021: e.T123802477A3008930. <https://doi.org/10.2305/IUCN.UK.2021-1.RLTS.T123802477A3008930.en>.
- Saha, B.K. 1986. Exploitation of reptiles and amphibians in the Sunderbans, West Bengal. *Hamadryad* 11(1–2): 36.
- Shah, K.B. and S. Tiwari. 2004. *Herpetofauna of Nepal: A Conservation Companion*. IUCN Nepal, Kathmandu, Nepal.
- Smith, M.A. 1931. *The Fauna of British India, including Ceylon and Burma. Reptilia and Amphibia. Vol. I–Loricata, Testudines*. Taylor and Francis, London, UK.