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Title First Record of *Indotestudo elongata* (Elongated Tortoise) from the Damdama Area, Haryana, Aravalli Region

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Elongated tortoise (*Indotestudo elongata*) (Blyth, 1854), is a medium-sized tortoise characterized by a yellowish-brown or olive carapace and plastron, often with black blotches on each scute (Smith, 1931; Taylor, 1970; Das, 2010). The carapace is dorsally flattened, broadest at the rear, and features a large recurved caudal scute (Boulenger, 1889). The elongated plastron has a distinct posterior notch (Bourret, 1941; Das, 2010). The head, covered in symmetrically arranged scales, is yellow with a hooked upper jaw (Gray, 1870; Auliya, 2007). The forelimbs have large, overlapping scales, and the tail ends in a claw-like tubercle (Boulenger, 1889; Smith, 1931). The species is broadly distributed across northern and northeastern India, Bangladesh, Nepal, Bhutan, Thailand, Vietnam, Cambodia, Laos, and Malaysia. *Indotestudo elongata* primarily inhabits tropical and subtropical forests, where it occupies leaf-littered undergrowth and rocky clearings, often favouring humid and shaded microhabitats (Ihlow et al. 2016). In India, it is reported from the foothills of the Himalayas, the northeastern hill forests, including Tripura, Mizoram, Manipur, Assam, Arunachal Pradesh, West Bengal, Uttarakhand, parts of Uttar Pradesh, Bihar, and the Chota Nagpur Plateau (Smith 1931; Jayaram 1949; Frazier 1992; Das 1995(a), 1998; Khan et al., 2020;). The elongated tortoise is listed as critically endangered on the IUCN Red List due to habitat destruction, illegal wildlife trade, and hunting pressures across its range (Rahman et al., 2019; Khan et al., 2020). Historical accounts suggest that humans have long used *I. elongata* as a food source, with tortoise remains found in Pleistocene-era human shelters (Mudar & Anderson, 2007). In Burma, locals even trained dogs to locate these tortoises, reflecting deep-rooted traditional knowledge of the species' behavior and habitat (Blyth, 1854; Theobald, 1868). In recent decades, human exploitation of *I. elongata* for food and traditional medicine has increased significantly (Aryal et al., 2025). Tortoises are captured opportunistically during farming or forest resource extraction (Platt et al., 2001; Pawar & Choudhury, 2000). The species is collected for local use and international wildlife trade (Compton, 2000; Das et al., 2015).

On 24th August 2024, the single sighting of *I. elongata* occurred at 9:30 a.m., during a routine camera trap monitoring in the Damdama Aravallis area in Gurugram district in Haryana. The survey was conducted as part of an ongoing research fellowship program in the Aravalli range. The Damdama Aravallis area where the tortoise was observed was previously degraded due to illegal mining, and is now undergoing rejuvenation as the remaining root stocks of native trees and shrubs are helping the forest recover. This area is part of a larger stretch of over 200 sq. km of open land, which is one of the few remaining forested areas near Delhi. The site connects Mangar Bani and Asola Wildlife Sanctuary in the north through Rojka and Kot, serving as a leopard corridor between the Sariska Tiger Reserve in Rajasthan and the Asola Wildlife Sanctuary in Delhi (Habib et al., 2017). The area has suffered extensive degradation due to overgrazing and fuelwood collection, and is largely covered by the invasive species *Prosopis juliflora*. However, some native species, such as *Acacia senegal* and *Anogeisius pendula*, are still thriving in certain pockets. There is also a notable presence of shrub species like *Ziziphus nummularia* and *Capparis sepiaria*, which provide fodder and habitat for wild animals in the area. The area hosts a rich biodiversity, including a variety of vegetation, mammals, birds, insects, and reptiles. The area has been subject to rapid urbanization and habitat fragmentation, making biodiversity assessments crucial for conservation planning. That has added to real estate pressure and increased the clearing of vegetation and construction. Today, this stretch of the Aravalli Hills is struggling to accommodate growing cities.

The tortoise was observed in a rocky scrubland habitat of the Damdama hill, approximately 2.5 km from Damdama Lake, with the nearest water body (Baladas temple pond) being 500 m away. However, a seasonal water body was present in the radius of 50 m from sighting site. The previous record shows that the species range is in Kaleshar Wildlife Sanctuary in the

foothills of the Himalayas in the Shivalik Range in Haryana, which is 291 km away from the present location (Rahman et al., 2019). However, there have been no previous reports of the species in the semi-arid Aravalli region of Haryana, where scrub forests, grasslands, and rocky terrain primarily characterize ecosystems.

The Aravalli Range, one of the oldest mountain systems in the world, runs across northern and western India a semi-arid region dominated by dry deciduous forests, scrublands, and rocky outcrops. The region experiences extreme climatic conditions, with hot summers and mild winters, receiving annual rainfall between 600–800 mm. The sighting shows contradiction with old studies. Annual precipitation, isothermality, and elevation are key predictors for the distribution of this species (Khan et al., 2020).

The tortoise was spotted during the early morning hours, a time when the temperature was relatively cool, which may have influenced its activity. Swindells and Brown (1964) reported that the species can endure air temperatures up to 48 °C. According to Das (1985) and Eberling (2001), *I. elongata* salivates on its head and front limbs for cooling when exposed to high temperatures. However, elongated tortoises seem to avoid temperature extremes, when possible, through daily and seasonal activity patterns.

We have recorded only a single individual thus far. Further confirmation on its population status would depend on finding additional individuals from the area. If successful, this discovery could extend the known range of the species, typically associated with tropical and subtropical forests, into the semi-arid landscapes of northern India. The discovery of *I. elongata* in the Aravalli region represents a significant range extension for the species. This finding suggests that the species may exhibit more adaptability to semi-arid environments than previously documented. Given the threatened status of *I. elongata*, the presence of this species in the Damdama area also underscores the importance of protecting this habitat. The Aravalli range, already under threat from urbanization and deforestation, could play a crucial role in sustaining isolated populations of rare species like the elongated tortoise. Furthermore, herpetological surveys in the region are essential to determine the presence of more individuals and to assess the species' population size and habitat preferences in this semi-arid landscape. Conservation measures, including habitat protection and management, are vital to ensure the long-term survival of the species in the region.

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Figure 1. *Indotestudo elongata* (Elongated Tortoise) individual photographed from the Aravalli hills, Haryana, India.

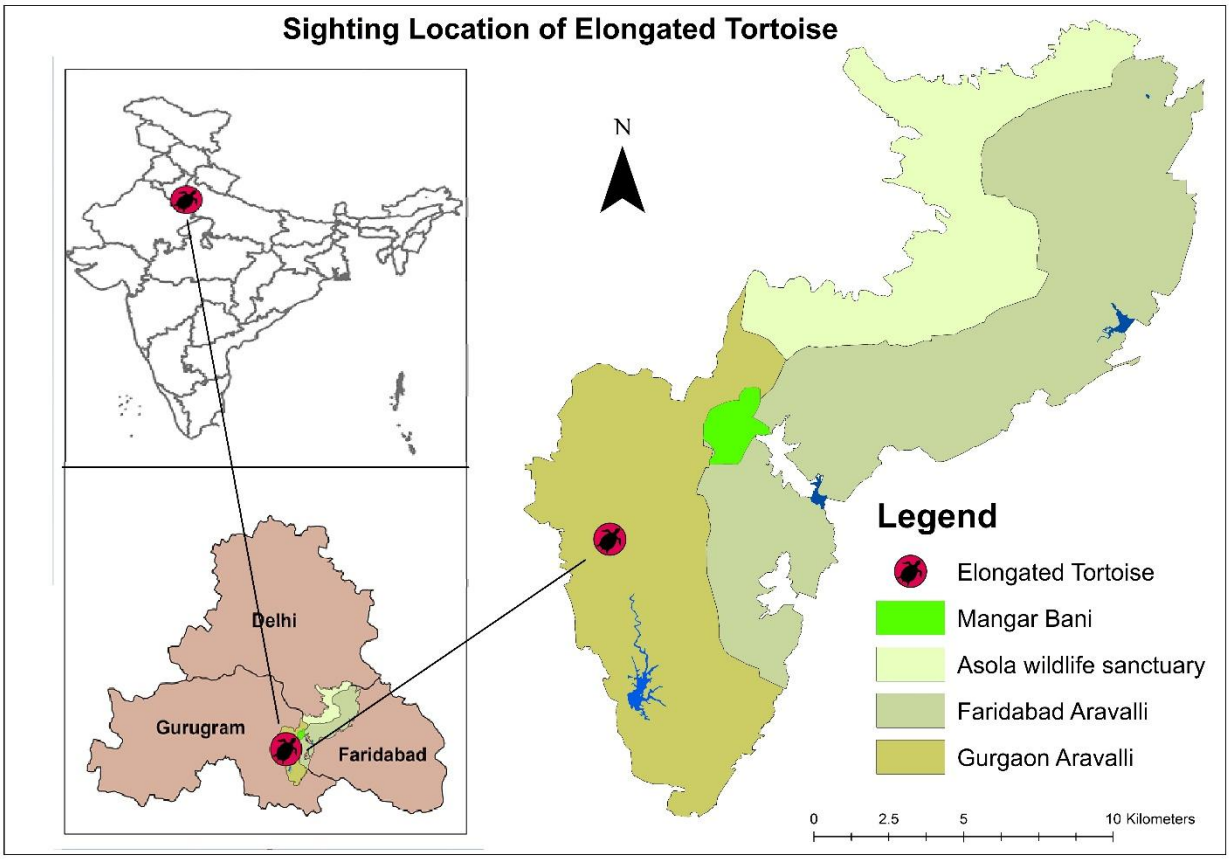

Figure 2. Maps showing the location of *Indotestudo elongata* sighting in the Aravalli landscape:

(a) Map of India showing the sighting location (red circle) in southern Haryana; (b) Distribution map showing the sighting location in Damdama with reference to nearby protected areas — Mangar Bani, Asola Wildlife Sanctuary, Faridabad Aravalli, and

Gurugram Aravalli; (c) Detailed regional map highlighting the exact sighting location of *Indotestudo elongata* in Aravalli hill in Damdama village, Haryana.