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Communicating science for conservation

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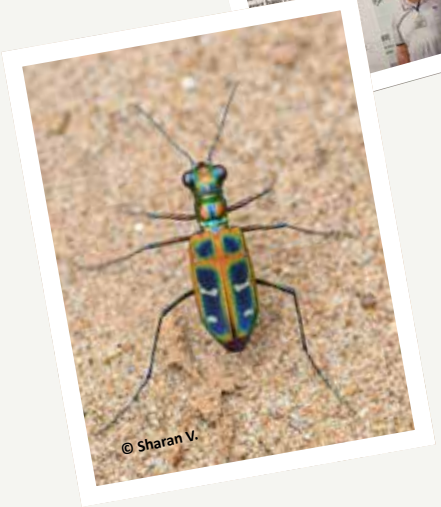
Cover photo: Painted Stork (© A. Lakshmikanthan)


Celebrating tigers with six legs

The World Tiger Beetle Day, celebrated on November 11, hopes to nurture, conserve, and build respect for this lesser-known group of colourful insects



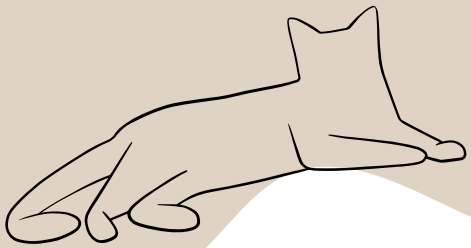
Status of the Tigers of the Beetle world...

first update

Tiger beetles are charismatic predatory invertebrates found in all regions of the world except for the polar areas. Within India, there are approximately 243 species, found in habitats as diverse as tropical forests to dry sandy plains. Many species are especially limited to the Western Ghats mountains and the northeastern region of India. Little is known about the conservation status of tiger beetles globally, despite their recognition as valuable indicator species for evaluating the status of their habitats and the associated invertebrate communities. Following an expert evaluation workshop held in Coimbatore, hosted by Zooreach, all the nationally endemic tiger beetles (those limited to India only) have been examined to better understand their national and global conservation status. Of the 124 endemic species, the first 74 Indian tiger beetles, have now been published on the IUCN Red List of Threatened Species™. Of the species published, 52 are not considered to be threatened - which is good news for Indian biodiversity conservation; too little is known about eight species to determine if they are threatened; but worryingly, 14 are categorized as being seriously threatened in India. Although more details on the wider conservation picture for the endemic tiger beetles of India is expected to be presented in Zoo's Print in 2025, there is certainly a need to initiate direct conservation actions for the species already accepted as being highly threatened by IUCN. Conservation measures will be different for each individual species, and it may be that a dedicated action plan is needed for this interesting and useful group of insects.

Neil Cox, IUCN

Towards a Future for Small Wild Cats in Assam: Species Management Planning



In a collaborative effort to safeguard the future of India's lesser-known but ecologically critical small wild cats, a six-day intensive Species Management Planning workshop was conducted, bringing together forest department officials, researchers, conservation practitioners, and students. The workshop focused on six elusive felids—the Marbled Cat Pardofelis marmorata, Leopard Cat Prionailurus bengalensis, Clouded Leopard Neofelis nebulosa, Asiatic Golden Cat Catopuma temminckii, Jungle Cat Felis chaus, and Fishing Cat Prionailurus viverrinus. Utilizing tools and methodologies developed by the IUCN Conservation Planning Specialist Group (CPSG), the workshop aimed to catalyze science-based, participatory planning for the conservation of these fascinating lesser-known carnivores. The workshop was hosted by Aaranyak, supported by the Assam State Forest Department under the Assam Project on Forest & Biodiversity Conservation, funded by Agence Francaise de Development, and facilitated by Dr Sanjay Molur of Zoo Outreach Organisation / Conservation Planning Specialist Group South Asia.

After an introduction to carnivores, wild cats and a detailed introduction to the six species of small wild cats (including distribution, possible abundance for some species and global scale threats based on IUCN Red List assessments) the workshop began with a visioning exercise designed to coalesce diverse perspectives into a unified conservation goal. This opening session emphasized the importance of aligning individual and institutional efforts with a long-term vision that is both aspirational and achievable. Participants collectively envisioned a future where viable populations of all six small wild cat species thrive across their natural habitats in India, supported by robust ecosystems, informed management, and active community stewardship. This shared vision served as the guiding framework for all subsequent discussions and planning exercises.

The visioning process also involved identifying key values associated with small wild cats, including their roles as indicators of forest health, contributors to ecological balance through rodent control, and their cultural significance in local traditions. By centering these values, the group was able to articulate a vision that acknowledged not only biological needs but also social and economic dimensions of conservation.

The first three days of the workshop focused on landscape-level threats affecting the habitats of all six species. Through a series of participatory mapping exercises and facilitated discussions, participants assessed habitat degradation across different biogeographic zones.

Forest loss due to infrastructure development, encroachment, monoculture plantations, and resource extraction emerged as common threats. Specific attention was paid to the fragmentation of wetland habitats affecting the fishing cat, and the degradation of dense evergreen forests impacting marbled cats and clouded leopards.

Forest department officials provided valuable insights into ongoing management interventions, such as burning of grasslands, afforestation programs, and human-wildlife conflict mitigation measures. However, many of these efforts focused on larger mammals and lacked small cat species-specific focus due to limited ecological data. The workshop highlighted the need for incorporating fine-scale species occurrence data into habitat restoration plans and management zoning.

Participants also reviewed policy-level challenges, such as lack of legal protection for key habitats outside protected areas, and limited integration of wild cat conservation

in forest working plans. The need for cross-sectoral collaboration between researchers, forest department officials both higher-up and on-ground was emphasized.

The remaining three days of the workshop shifted focus to species-specific threats and conservation strategies. The participants were divided into working groups with each group focused on 1 or 2 species based on the habitat occupied by the species. Each group identified critical gaps in knowledge, specific anthropogenic pressures, and potential conservation levers based on existing information and on-ground experience.

The forest-dependent species were recognized as facing high risk from habitat loss in the Eastern Himalaya and northeastern India. Their arboreal habits and elusive nature make them poorly studied. The group discussed initiating detailed studies, along with preserving contiguous forest tracts. Also, the need for ecological and behavioral research was recognized. Workshop participants emphasized the need for standardizing identification protocols and building regional databases to track sightings and genetic lineages. Some of the species are more widely distributed, yet suffer from road mortality, poisoning, and persecution due to poultry depredation. Suggested actions included community awareness programs, inclusion of all stakeholder groups such as communities, managers, and researchers into their conservation actions. Species found in wetlands and mangrove ecosystems, such as the Fishing Cat & Marbled Cat were recognized as highly vulnerable to wetland drainage and encroachment. Conservation measures discussed included mainstreaming wetland protection, promoting wetland conservation, and exploring community-led wetland monitoring.

The workshop concluded with a reflection session in which participants expressed renewed commitment to small wild cat conservation and emphasized the importance of continued collaboration. A roadmap was proposed to formalize species-specific working groups, facilitate knowledge exchange, and develop a centralized database for wild cat research and conservation. By integrating scientific evidence, and strategic planning tools, the workshop successfully laid the groundwork for coordinated action toward safeguarding Assam's small wild cats. The developed species management plan will outline conservation targets, responsible agencies, timelines, and potential partnerships.

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Ecological Observation

SURVIVING IN A BROKEN HABITAT

In 2023, mapping firefly populations outside the forest areas in Valparai, we noticed synchronous fireflies in the patch forests amidst tea plantations. The biggest reasons for firefly decline across the world are habitat loss, light pollution, and use of pesticides and this location had all three of them. It's incredible how these remnants of a once large population find home in these patch forests.

Recorded by Mathi Thumilan and Sriram Murali of Wild and Dark Earth, an NGO that conserves nocturnal habitats in India.
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Cycle of Life

In 2023 at the Anamalai Tiger Reserve, after a night of spectacular synchronous displays, we were looking for any firefly activity (eggs, dead fireflies, etc.) the next day. We found this female firefly that appeared dead, with ants consuming it. We were surprised to see that it was still reaching for its egg with its ovipositor. It's incredible it was still trying to care for its offspring when half of its body was gone. When the egg was too far, it stopped reaching for it.

Bushmeat consumption: A legal and ecological perspective on biodiversity threats

The consumption of bushmeat, which refers to the hunting of wild animals for food, poses a significant threat to global biodiversity. While deeply ingrained in cultural traditions and subsistence practices, the unsustainable exploitation of wildlife for bushmeat has led to extensive ecological disruptions, sharp declines in vulnerable species, and an increased risk of zoonotic disease outbreaks (Fa et al. 2002). In regions such as Africa, Asia, and Latin America, bushmeat remains a crucial source of protein and income for local populations; however, excessive hunting practices have severe ecological consequences (Wilkie et al. 2005). In India, unsustainable hunting in the north-east has resulted in the drastic depletion of various species that play a crucial role in maintaining ecosystem stability (Bhupathy et al. 2013). Similarly, central Africa faces escalating challenges, where high demand for bushmeat fuels illegal hunting and trade networks, contributing to severe biodiversity loss and increasing the risks of disease transmission, such as Ebola outbreaks (van Vliet & Mbazza 2011).

While the trade in bushmeat involves the hunting and consumption of wild animals for food, the trade in animal parts is typically driven by commercial incentives, such as luxury goods, traditional medicine, or ornaments. Although interconnected under the broader umbrella of wildlife exploitation, bushmeat consumption is often subsistence-based or culturally rooted, whereas the animal parts trade operates through organized trafficking networks. This distinction is critical, as bushmeat may sometimes serve as a by-product of trophy hunting or animal part extraction, making it a subsidiary or secondary element of a more lucrative trade (Nasi et al. 2011). Although international regulatory frameworks like the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) aim to mitigate this issue, enforcement remains a major obstacle due to corruption, governance challenges, and socio-cultural resistance (Challender et al. 2015). This article examines the legal and ecological dimensions of bushmeat consumption through case studies from northeast India and central Africa. It underscores the necessity for integrated conservation strategies to address this pressing global issue.

Northeastern India-the mounting pressure on wildlife

Northeastern India is a biodiversity hotspot, home to various ecosystems and ethnic communities that have historically relied on bushmeat for subsistence and cultural practices. However, the unsustainable scale of hunting has resulted in devastating biodiversity losses. Bhupathy et al. (2013) reported that in Nagaland alone, approximately 16,000 wild birds and mammals in addition to 29,000 amphibians and 95,000 molluscs are sold in local markets annually. Species such as the Barking Deer, Wild Boar, and Hoolock Gibbon face severe population declines due to excessive hunting.

Hilaluddin & Ghose (2005) documented that in Arunachal Pradesh, wildlife biomass extraction rates surpass natural regeneration capacities, endangering species such as the Asiatic Black Bear and the Clouded Leopard. Traditionally, certain tribal customs, such as the hunting taboos practiced by the Idu Mishmi tribe (Nijhawan & Mihu 2020), have served as informal conservation mechanisms. However, growing urban demand and weakening adherence to traditional regulations have intensified the pressures on local wildlife populations. While traditional bushmeat consumption is often tied to cultural practices, non-traditional buyers in urban markets are increasingly driving illegal trade, highlighting a shift from cultural to commercial exploitation (Ripple et al. 2016).

Efforts to curb bushmeat hunting in the region are hampered by several challenges, including the difficult terrain, socio-political complexities, and inadequate enforcement of the Wildlife Protection Act of 1972. To address this, conservation strategies must incorporate alternative livelihood opportunities and community-driven conservation initiatives. Balancing ecological preservation with the cultural heritage of indigenous communities remains a critical aspect of sustainable conservation efforts.

Central Africa-the escalating bush-meat crisis

The bushmeat trade in central Africa represents a severe threat to biodiversity, with an estimated 1.3 million metric tons of wildlife harvested annually from the Congo Basin (Fa et al. 2002). This rampant exploitation imperils iconic species such as gorillas, forest elephants, and chimpanzees, whose populations have plummeted due to excessive hunting. Wilkie et al. (2005) reported that in rural Gabon, bushmeat constitutes more than 50% of the local population's animal protein intake, underscoring its role in food security.

The illegal bushmeat trade is further exacerbated by rising urban demand and lucrative black-market networks. Luiselli et al. (2020) documented a 20% rise in bushmeat consumption in urban centres across western Africa between 2005 and 2015. Notably, urban consumers often prefer larger mammals, which are more vulnerable to extinction due to slow reproductive rates. Overexploitation disrupts forest ecosystems, leading to long-term environmental imbalances and an increased risk of zoonotic disease spillovers, such as Ebola.

Conservation organizations, including the World Wildlife Fund (WWF) and the Wildlife Conservation Society (WCS), have been working to mitigate this crisis by promoting alternative protein sources and sustainable hunting practices. However, enforcing conservation laws such as CITES remains a significant challenge due to political instability, corruption, and the vast, remote nature of central Africa's forests. Addressing these issues requires a multi-faceted strategy that integrates poverty alleviation, governance reforms, and community-driven conservation efforts.

This comparison highlights the varying wildlife trade dynamics, ecological consequences, legal barriers,

Comparative analysis of bushmeat consumption in northeast India and central Africa

Feature	Northeastern India	Central Africa
Primary drivers	Cultural traditions, urban market demand, lack of alternative livelihoods	Commercial trade, urban and international demand, poverty, weak governance
Key species affected	Barking Deer, Wild Boar, primates, antelopes, and other mammals	Gorillas, Chimpanzees, antelopes, and other large mammals
Ecological impacts	Population declines, ecosystem imbalances, biodiversity loss	Severe large mammal depletion, ecosystem disruptions, increased zoonotic disease risks
Legal frameworks	Wildlife Protection Act of 1972 (challenging enforcement)	CITES, national laws (weak enforcement due to instability)
Key challenges	Remote locations, weak enforcement, cultural significance of hunting	Political instability, corruption, vast territories, high trade volume
Zoonotic disease risk	Lower but still present	High, with Ebola and other documented outbreaks
Cultural significance	Deep-rooted in ethnic traditions	Historically subsistence-driven but increasingly commercialized

Source: Adapted from Warnock 2013; Ripple et al. 2016.

and socio-economic factors influencing bushmeat consumption in these two regions.

Conclusion

Bushmeat consumption represents a complex global challenge with profound ecological, legal, and public health implications. As demonstrated through the case studies of northeastern India and central Africa, the underlying drivers of this crisis differ across regions, yet the overarching threat remains the same—unsustainable wildlife exploitation.

In India, the intersection of cultural traditions, increasing urban market demands, and limited economic alternatives have intensified hunting pressures, leading to biodiversity losses. In central Africa, the large-scale commercialization of bushmeat, fuelled by both local and international markets, has significantly contributed to species depletion and heightened risks of zoonotic disease transmission.

Addressing the bushmeat crisis requires a holistic approach that integrates ecological conservation, socioeconomic development, and legal enforcement. Strengthening regulatory mechanisms, promoting sustainable livelihood alternatives, and raising awareness about the ecological ramifications of bushmeat hunting are vital steps in this direction. Promoting plant-based proteins and sustainable farming can reduce bushmeat consumption, but success depends on cultural acceptance and economic feasibility (van Vliet & Mbazza 2011). Case studies show insect farming in Congo improved food security (van Huis et al. 2013). Sustainability requires local engagement, funding, and policy support, contributing to biodiversity and global sustainability goals.

As highlighted by Sanderson et al. (2002), achieving a balance between biodiversity conservation and human socio-economic needs is a formidable challenge. Existing legal frameworks, including CITES and national wildlife protection laws, often face substantial enforcement barriers due to corruption, resource constraints, and logistical difficulties. Therefore, a combination of international cooperation and community-led conservation initiatives is imperative to mitigating the adverse impacts of bushmeat consumption and ensuring the long-term preservation of global biodiversity.

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#183
21 May 2025

Observations on cats and crows attacking free-ranging snakes near homesteads in Chennai

Pet and feral animals, such as dogs *Canis familiaris*, cats *Felis catus* and crows (*Corvus* spp.) appear to be under-documented threats to urban wildlife (Legge et al. 2020; Benmazouz et al. 2021). Domestic animals, both pets and feral ones, are skilled hunters by instinct and often prey on a wide variety of animals, including birds, small mammals, reptiles, and insects (Twardek et al. 2017). Such animals could become harmful to urban wildlife as they often lack natural controls like predators or disease, leading to overpopulation and resource competition (Jarvis 2020). This short communication records observations on housecats predating and common crows *C. splendens* attacking free-ranging snakes, observed in human settlements nestled within a green patch in Chennai, Tamil Nadu, India.

Case 1, Slender Wolf Snake *Lycodon fasciolatus*: On 17 July 2019 at 2103 h, in railway quarters at Ayanavaram (13.101° N, 80.229° E), an adult house cat was found mauling a Slender Wolf Snake. The snake was about 50 cm long, suggesting it to be an adult. The cat was seen mauling the wolf snake on its body and tail region. There were bruises all over the body of the snake as well as rip marks on the tail region. When the cat saw human movement in the area, it left the snake. The house cat had hunted the snake in the night and it had left it in the backyard in a place where there is a tank with a water source. The cat had repeatedly bit the snake's body (forebody and midbody) and the tail region of the snake.

Case 2, Rat Snake *Ptyas mucosa*: On 17 December 2020 at 1020 h in the same locality as above, two kittens were seen biting and attacking a baby rat snake. The snake was 50 cm long, indicating it to be a young one. Near a playground with many people, suddenly we saw the two kittens keenly looking at the fence. Within a minute, they lunged at the fence base, bit and pulled out a baby rat snake bringing it to the middle of the garden. They then bit, chewed the snake, severing it into pieces, in the midst of the on-lookers. Then, both the cats started to feed on the baby rat snake, taking turns, consuming bits and pieces of it.

Figure 1. (clockwise from top left): (a) dead wolf snake (*Lycodon fasciolatus)* bitten and killed by a cat, (b) dead rat snake (*Ptays mucosa*) being chewed on by a kitten, (c) injured, live trinket snake (*Coelognathus helena*) arched up in defence against crows. Photos: (a, b): Faustina Roberts, (c) S.R. Ganesh

Case 3, Trinket Snake *Coelognathus helena*: On 12 May 2023 at 0800 h, in Perambur Carriage Works (13.107°N, 80.235°E), a cauldron of Common Crows (n = 3) and Mynas *Acridotheris tristis* (n = 8) were seen surrounding and attacking a Trinket Snake. The snake was about 100 cm long suggesting it to be an adult. The snake and the surrounding birds were all seen just next to the railway line track and the adjacent vegetation belts, bordering the buildings further behind. The trinket snake reared up, puffing itself and arching its forebody and lunged at the birds. The birds pecked the snake with their beaks in its trunk and tail. There appeared to be bruises on the mid body and the tail of the trinket snake. Then owing to an approaching train both the birds and the snake rushed away.

The Ayanavaram Railway Quarters where cases 1 and 2 were noted, is about one km southwest of Perambur Carriage Works Railway Station where case 3 was noted. Both the places nestle in the joint office complex, a well-vegetated green belt within the otherwise built-up part of the city. The region falling under Anna Nagar Zone of Greater Chennai Corporation has 20.58% green cover extending to 5.28 km^2. This green patch seems to harbour a few snake species as evidenced by our observations.

However, as can be expected, snakes, though managing to somehow persist here, face threats in terms of pets and anthropophilic animals like cats and crows that are not otherwise a natural part of the ecosystem, but are present due to human interference. Presence of Trinket Snake

Coelognathus helena within Perambur though noted before was a specimen in the Madras Government Museum, which in all probabilities is an historical specimen (Ganesh & Asokan 2010). Its continued presence in the heart of the city even now is quite noteworthy in itself. It appeared that the cats easily attacked, bit, killed and probably consumed these snakes.

All the three snake species involved in the cases reported are non-venomous (Whitaker & Captain 2004). Thus, they pose no serious retaliation threat for the adult cat and even the kittens or the birds. Also, the Slender Wolf Snake *Lycodon fasciolatus* and the Rat Snake *Ptyas mucosa* are nocturnal and diurnal, respectively, indicating that observation timings when the cats were hunting the snakes coincide with their active time periods. While cats were seen preying on the snakes, the crows were seen confronting and harassing the trinket snake, with no feeding cues. Within Indian cities, the impact of housecat proliferation and range expansion on small wildlife and herpetofauna in particular should be investigated in greater detail (Biswas et al. 2024). While these feral and pet animals kill and eat pest organisms near households, they also hunt and feed on wildlife, depleting their populations too (Biswas et al. 2024).

Literature mentions of both wild and anthropophilic bird species as being involved in confrontations with free-ranging snakes in India. These reports include babblers *Argya striata* confrontations with Striped Keelback *Amphiesma stolatum* and Trinket Snakes (Johnsingh et al. 1982; Devasahayam & Devasahayam 1991; Raina & Pampaniya 2022). As for the crows , in the nearby island of Sri Lanka, they have been reported (Karunarathna & Amarasinghe 2008; Chandrasiri et al. 2017) to be predators of some Dragon Lizards *Ceratophora, Cophotis, Calotes nigrilabris* that are montane, wet-zone endemic specialists. While Home et al. (2018) elaborated on the same issue with domestic dogs, similar studies on cats in India are still wanting and are avenues for fresh research.

We have sighted even venomous snakes such as the Spectacled Cobra *Naja naja* in the same place, but these were the snakes confronted by feral/pet animals, as far as we have observed. Better restraint by owners (in case of pets) and shooing away the animals involved (in case of ferals) before physical contact or damage to any, may diffuse diffuse such situations. It is hoped that our observations add up to this nascent area of research in India.

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Observation on the breeding of Painted Stork in a restored urban wetland in Chennai

The Adyar Eco Park (Tholkappia Poonga) restoration transformed a degraded urban wetland into a thriving ecological sanctuary. The project successfully eradicated invasive species like *Prosopis juliflora*, revived native tropical dry evergreen forest (TDEF) vegetation, and enhanced biodiversity. The return of migratory birds, butterflies, and other wildlife signifies the ecosystem's recovery. Today, the park stands as a model for urban wetland restoration and environmental education.

Located in the southern part of Chennai (13.0033° N, 80.2553° E), Adyar Eco Park spans 358 acres along the Adyar River, extending from the river mouth to the creek. This diverse, restored landscape supports a rich variety of flora and fauna. The park features mangroves and mangrove associates thriving in the brackish waters of the Adyar estuary, while freshwater vegetation flourishes in less saline areas. The TDEF habitat along the creek further enhances biodiversity.

Notable species found here include the Painted Stork *Mycteria leucocephala* and the vulnerable Spot-billed Pelican *Pelecanus philippensis*, both flagship species for wetland conservation. The park plays a crucial role in preserving urban ecosystems, serving as a sanctuary for numerous species and acting as a vital green lung for Chennai.

Observations on Painted Stork breeding

The Painted Stork *Mycteria leucocephala* is characterized by its rose-pink tail feathers and is one of the most abundant Asian storks. However, wetland drainage, pollution, and shrinking water bodies are observed to be major threats for this species. Although the Painted Stork is not commonly seen in this wetland habitat, about 10–15 individuals have become permanent residents of Adyar Eco Park. During our observation period, two nests were spotted on Arjun trees *Terminalia arjuna* at a height of 5 m. One nest contained two chicks, first observed on 18 and 23 of February 2020.

The second nest was under incubation on 27 February 2020, but was abandoned during the first week of March 2020 due to frequent disturbances by crows.

Of the two chicks hatched in the first nest. The second chick, which hatched on 23 February, was noticeably weaker than the first. Unfortunately, this chick fell prey to a Jungle Crow. This is the first documented breeding record of Painted Storks in Adyar Eco Park following its ecological restoration, marking a significant milestone as these threatened birds utilize the restored habitats for both foraging and breeding.

In southern India, the Painted Stork's breeding season typically begins in late November and lasts until March (Urfi 1993, 1997; Urfi et al. 2007). These birds are known for their colonial nesting behavior (Urif 1993). However, our observations at Adyar Eco Park indicate

that *Mycteria leucocephala* can also build independent nests, possibly due to the lack of tall canopy trees within the park.

Moses (2015) observed a colonial nesting site of Painted Storks at Vembanad Lake in Kerala, where the birds were nesting on almond or Badam trees *Terminalia catappa*. These trees were located in a marshy area, surrounded by tall grass and bushy shrubs, providing an ideal environment for the storks. Adyar Eco Park's presence of water, abundant vegetation, and suitable nesting trees after restoration likely

contributed to the success of this colonial nesting site. The storks' choice of *Terminalia arjuna* tree, which offers ample support and height, reflects their preference for elevated, secure locations to protect their nests from predators and disturbances. This observation emphasizes the importance of such habitats in supporting the breeding success of colonial waterbirds like the Painted Stork.

The young storks were observed to be grayish-black in colour, with black beaks and white legs. The mother cared for the chicks, feeding them

Observation on the growth of young Painted Stork at Adyar Eco Park, Chennai, Tamil Nadu

Date	Observation	Remarks
18 February 2020 29 February 2020	Two nests were observed. One nest with two chicks	12 days old.
31 March 2020	Of the two chicks one was weaker. Nutrition deficiency could be the reason	43 days old.
30 April 2020	The weaker chick predated by Jungle Crow on 25 April 2020	73 days old.
31 May 2020	Foraging with the help of mother	104 days old.
30 June 2020	Foraging lonely as well as with flock sighted in phase II	134 days old.
25 July 2020	Foraging with flock	159 days old.
31 August 2020	Foraging lonely as well as with flock	Probably moved elsewhere.

for up to 70–80 days. By mid-May 2020, the juveniles began foraging alongside their parents and later with the flock. The last sighting of the juvenile birds occurred on 25 July 2020 (159 days after hatching).

Exactly after a year in July 2021, four sub-adult Painted Storks were sighted in Adyar Eco Park, indicating successful breeding and return of the juveniles. This observation marks the first authentic breeding record of Painted Storks in the Adyar region and highlights the ecological significance of Adyar Eco Park as a breeding ground in restored urban wetland habitat.

The occurrence of breeding of Painted Storks in Adyar Eco Park is a significant conservation milestone, especially following the park's ecological restoration. Despite the challenges posed by the lack of tall canopy trees and predation by crows, the successful hatching and growth of chicks underscore the park's importance as a breeding site. Continued monitoring and habitat management will be crucial to support the breeding success of this wetland species in the future.

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Breeding migrant Yellow-legged Buttonquail spotted at Udhagamandalam, Tamil Nadu

Female *Turnix tanki* found at the Ooty Municipal Market. ©Kesavan Rishi.

The Yellow-legged Buttonquail Turnix tanki Blyth, 1843 is a small quail growing to a length of 15–18 cm (6 to 7 in), the females being slightly larger and more brightly coloured than the males. The adult male Yellow-legged Buttonquail has a black crown bordered with buff and sometimes a buff streak in the centre. Its head is buff with black-tipped feathers, the throat is pale buff, deepening to reddish-buff at the breast edges, and turning white under the tail.

The breast sides have black spots. Its back and tail are greyish-brown with reddish and dark markings, and the wings are blackish-brown with buff edges. The beak is dull yellow, the eyes are whitish, and the legs and feet are deep yellow. The adult female is richer in colour, with a broad reddish-brown collar on the neck, lighter spotting on the back, and brighter yellow beak and legs. In non-breeding season, the female's plumage becomes greyer. Juveniles resemble males but have duller colours and finer speckling (McGowan & Madge 2010). Turnix tanki visits the northern and central subcontinent during summer and extends to regions like Pakistan (Sind and Punjab) and northwestern India (Baker 1928). It resides in southwestern Gujarat, extending through the Gangetic plain and Nepal Terai, and also has a potential extension eastward to Bihar, Odisha, and the Nicobar Islands (Ali & Ripley 1980).

They migrate to the majority of the Indian Peninsula, the Assam Valley, lower parts of the Assam Hills, and the Andamans in winter and they primarily inhabit areas below 1,200 m but can be

found sometimes at altitudes of up to 2,000 m (Ali & Ripley 1980; Rathod 2023). Cultivation areas, grasslands, bamboo forests, scrublands, and other open habitats, often in disturbed environments are the areas where they are often found (Rathod 2023). March to November the breeding occurs with nests consisting of scantily lined scrapes partially covered by bent-over grass stems or other vegetation. The responsibility of taking care of the eggs and the young is done by the males (Rathod 2023).

On 12 October 2024, a pet shop owner in Udhagamandalam Municipal Market contacted us about a quail species they unexpectedly encountered in their shop. The bird had accidentally entered the premises, and the shop owner, thinking it might be rare, captured it. They recalled a previous awareness session we conducted on the importance of proper licensing for handling endangered or non-native species.

This session was held after an earlier intervention, when we found the shop selling Java Sparrows, an invasive species banned in the U.S. since the late 1960s and still illegal in California due to agricultural risks (Department of Fish and Wildlife 2021). With this background, the shop owner took a cautious approach and contacted us to ensure the quail was handled properly. Upon inspection, we identified the bird as a female Yellow-legged Buttonquail.

This unusual sighting prompted us to investigate further, as records of T. tanki at higher altitudes are rare. Using GBIF data, we analyzed its distribution to gain a better understanding of its presence in elevated regions (Cornell Lab of Ornithology 2021). The data reveals that the species reaches some of its highest recorded altitudes in southern India: 1,880 m in Idukki District, Kerala (Robson 1984), 1,190 m in Chamrajnagar District, Karnataka (Jacob 2013), and 1,170 m in Coimbatore District, Tamil Nadu (Raghunathan 2014). Additionally, Chandrakala et al. (2021) reported sightings in the Indian Himalayan region, while Rathod (2023) documented its presence in Gujarat. Globally, Turnix tanki has been observed at even greater elevations, exceeding 4,000 m in Sichuan and Qinghai Provinces, China (Artuso 2005; Pepper 2013; Eaton 2014).

The presence of T. tanki in the Nilgiris is notable, as the species is rarely reported in the area. Its presence during October suggests its potential resilience in breeding time. Observing *T. tanki* in this region provides valuable insights into its distribution and highlights the need for focused conservation efforts to protect the species and its habitat in the Nilgiris. After the rescue, the species was released near a dense habitat, where it quickly flew toward the woods.

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First ever record of Amur Falcon from the Union territory of Puducherry, India

A rare sighting of the Amur Falcon *Falco amurensis* has been recorded in Puducherry, marking a significant milestone as one of the few documented occurrences of this migratory bird of prey along the southeastern coast of the Indian peninsula. Typically found in the northeastern areas of the Indian subcontinent, with occasional sightings in parts of peninsular India, the presence of the Amur Falcon in Puducherry is considered unusual. Documenting such sightings is crucial for enhancing our understanding of the migratory patterns of these predatory birds.

Amur Falcon (♀), Puducherry, India. © B. Vigneshwaran.

The Amur Falcon, scientifically known as *Falco amurensis* or the Eastern Red-Footed Falcon, is a bird of prey approximately the size of a pigeon, predominantly observed as a transit migrant to the Indian Subcontinent (Ali & Ripley 1987). According to Rasmussen & Anderson (2012), their migratory route encompasses the central and eastern Himalaya, the southern Assam highlands, and the peninsula during the fall season. These falcons undertake long-distance and trans-equatorial migrations, covering nearly 4,000 km over the Indian Ocean between southwestern India and tropical eastern Africa, making it the longest over-water journey recorded for any raptor, often conducting nocturnal flights (Bildstein & Zalles 2005). Due to their adeptness in detecting monsoon tailwinds, Amur Falcons typically reach eastern Africa late in autumn (Ash & Atkins 2009), with migrants arriving at their wintering grounds in southern Africa around November–December and departing in early May (Mendelsohn 1997). Classified as "elliptical migrants," they follow a return route primarily overland, north, and west of their southbound journey (Kerlinger 1989). Observations of migrants in Ethiopia during late November and early December suggest that the overland transit at higher latitudes may be more consistent than previously assumed (Clement & Holman 2001). The Amur Falcon has been documented in various locations, including Nellore and east Godavari in Andhra Pradesh, and Madurai, Nagapattinam,

Location of Amur Falcon spotted.
Area of the field: 19,325 m²Google Earth image

Tirunelveli, Thoothukudi, and Kanniyakumari in Tamil Nadu as well as in Sri Lanka. These observations contribute to our understanding of the migratory patterns and distribution of this fascinating species across the Indian Subcontinent.

A birding trip in and around Puducherry's lakes has been scheduled on 5 November 2020 as a part of the Salim Ali Bird Count. Six wetlands were visited. Towards the end of our birding trip, we observed a bird the size of a feral Pigeon perched on a electricity wire in an open field along the side of the East Coast Road at "11.913°N, 79.809°E" while returning from the Chinnaveerampattinam Estuary. The nearest water bodies include Velrampet Lake which is located at 1.15 km, Chinnaveerampattinam Estuary at 4.32 km and Bay of Bengal at 2.27 km.

Upon closer examination, the bird was identified as an adult female (♀) Amur Falcon *Falco amurensis* perched on a wire on 5 November 2020, at 0847 h. A Nikon Coolpix P900 camera was used to capture the bird (Dutta 2016). Multiple sightings of the Amur Falcon have been reported in Tamil Nadu's neighbouring areas, with three sightings recorded in Chennai on 5 and 17 December 2020, following observations in Puducherry (Frederick 2020; Krishnamoorthy 2020). The sighting and photograph of an Amur Falcon near Kodiakkarai by Subhiksha Lakshmi Maxima, a researcher from the BNHS, have been published.

The rare sighting in Puducherry may be attributed to changes in wind patterns caused by the Nivar and Burevi cyclones, leading to altered migration routes. This sighting marks the first-ever record of the Amur Falcon in the Union Territory of Puducherry. Despite no previous reports of this species in Puducherry, this sighting underscores the significance of documenting rare occurrences. The first recorded sighting of the Amur Falcon in Puducherry highlights the importance of ongoing bird population monitoring for understanding migratory patterns and conservation efforts.

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A note on sightings of Common Merganser, an overlooked migrating species in National Chambal Sanctuary, India

Common Merganser in National Chambal Sanctuary. © R.K. Sharma

The wetland bird Goosander, also called the sawbills, fish-ducks, and Common Merganser *Mergus merganser* is a winter visitor to western India. Bharos et al. (2022) have reviewed the occurrence of Merganser in India from 1877 onwards and mentioned that its occurrence records are from Uttar Pradesh, Maharashtra (Mumbai), Madhya Pradesh (Raipur District), and river Mahanadi in the states of Chhattisgarh and Odisha.

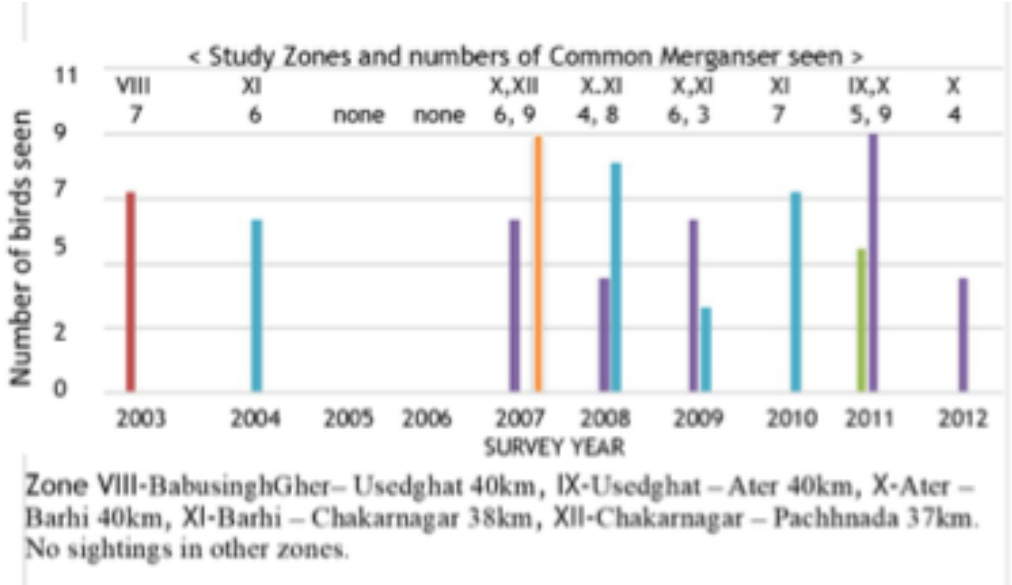
The Common Merganser, which is a diving duck, was overlooked or slipped off from specific accounting in our first survey report from NCS (Sharma & Singh 1986). In the Son River, located north-east in Sidhi District, Madhya Pradesh, the duck has been sighted in 1996 (Sharma & Sharma 1997) and 2019 (Sharma & Kumar 2019) in the downstream of Jogdah Ghat (24.514^0 N, 82.143^0 E) up to Deora. Rahmani & Islam (2008) reported the sighting of five Common Merganser in the year 2000 and three in 2001, in river Chambal. In NCS, we could take note of the presence of Common Merganser only from the annual surveys of 2003 onwards.

We have summarised our data on the status of Common Merganser *Mergus merganser* in the National Chambal Sanctuary (NCS). The standardized intensive annual survey methodology started since 1983–84 was adopted to assess the population status and

distribution of Common Merganser (CM). The study area of 435 km in river Chambal was divided into twelve zones of NCS. The total number of Common Mergansers sighted during the annual survey from 2003–2012 was 74.

Of the total, 83.78% counts were made in the study zones X, XI & XII. These zones stretch over 115 km and occur on the downstream, closure to the confluence of Chambal with Yamuna River. This is a stretch of deep river, and other large birds are also seen in this zone. Common Merganser in NCS is an additional species covered in our bird studies, that has been benefitting from gharial conservation in Chambal. Regular and thorough survey for the species in the state of Madhya Pradesh and other Indian states south of its latitude-longitude is expected to render a clear understanding on migration dynamics of Common Merganser.

Map of National Chambal Sanctuary showing study zones starting with zone I- Pali to zone XII- Chakarnagar



Zone-wise counts of Common Merganser in National Chambal Sanctuary during 2003-2012.

Zone-wise occurance of Common Merganser in National Chambal Sanctuary

Study Zones	Area(km strech)	Numbers of Merganser counted
Zone I	Pali-Rameshwar(22)	No Confirmed sighting(1983-2002)
Zone II	Rameshwar-Khirkhiri(15)	No Confirmed sighting(1983-2002)
Zone III	Khirkhiri-Baroli(20)	No Confirmed sighting(1983-2002)
Zone IV	Baroli-Atar(48)	No Confirmed sighting(1983-2002)
Zone V	Atar-Sarsaini(65)	No Confirmed sighting(1983-2002)
Zone VI	Sarsaini-Rajghat(35)	No Confirmed sighting(1983-2002)
Zone VII	Rajghat-Babusingh Gher(35)	No Confirmed sighting(1983-2002)
Zone VIII	Babusingh Gher-Usedghat(40)	7 in Year 2003
Zone IX	Usedghat-Ater(40)	5 in Year 2011
Zone X	Ater-Barhi(40)	29 in Years 2007 (6), 2008 (4), 2009 (6), 2010 (0), 2011 (9),2012 (4)
Zone XI	Barhi-Chakarnagar(38)	24 in Years 2004 (6), 2008 (8), 2009 (3), 2010 (7), 2011 (0), 2012 (0)
Zone XII	Chakarnagar-Pachhnda(37)	9 in Year 2007
All Zones	Total(435 km)	2003:7, 2004:6, 2007:15, 2008:12, 2009:9, 2010:7, 2011:14 and 2012:4

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A note on freshwater molluscs of Hamirsar Lake, Gujarat, India

Molluscs contribute the second most species-rich phylum in the world after the arthropods, contributing around 1,20,000 living species (Prié 2019). Molluscs are widely used as model organisms in science, and their research has led to many discoveries in evolutionary biology (Haszprunar & Wanninger 2012). Freshwater molluscs, including species of snails and bivalves, are crucial for nutrient cycling and water filtration in aquatic ecosystems (Pyron & Brown 2014). They contribute to the decomposition of organic matter and help maintain water quality by filtering out particulate matter and pollutants. Furthermore, these organisms provide essential food resources for fish, birds, and mammals, linking aquatic and terrestrial food chains (Varis 2024).

Freshwater molluscs are of particular interest due to their ecological significance and the unique challenges they face (John & Gautam 2021). Globally, about 7,000 described species of freshwater molluscs are found (Abbot 1989; Strong et al. 2008). In India around 214 species of freshwater molluscs were documented (Tripathy et al. 2024).

Bhuj, the capital town of Kachchh District in Gujarat State in India has a historical lake known as Hamirsar Lake, a 450-year-old heritage having egglike structure located in the centre of the Bhuj city. This lake is named after the King Jadeja ruler Rao Hamirji. The main lake is spread over an area of 28 ha (Gupte 2014) has a beautiful mid-lake garden and lower Hamirsar called Chattardi Lake which is spread over 15 ha. The lake was designed in such a manner that during the rainy season, the water of the entire city flows into the lake and the lake completely gets filled with water. In very good rainfall years, the lake gets overflown and the extra water of the lake moves to nearby area called 'Dhobi Ghats' (Verma et al. 2010). The maximum water spread is seen in the monsoon period and if there is good rainfall, the lake can hold up to about 68.75 lakh gallons of water (Gupte & Solanki 2015).

The survey was carried out at different parts of Hamirsar Lake from June to August 2024. The visual search survey method was used for the collection of molluscan species from the lake. Species were collected from the bank of the lake, under rock/cemented surface, and from wetland vegetation. At least one living individual or dead shell of each species was collected as a voucher specimen and was brought either in wet or dry conditions. The living shells were collected and narcotised, thoroughly washed to remove mucous, and then treated with ascending grades of spirit (20%, 40%, 60%) and finally preserved in 70% ethyl alcohol (Ramakrishna & Dey 2007). The identification was done using Ramakrishna & Dey (2007).

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A total of 53 molluscan specimens were collected from different locations of the Hamirsar Lake, which reveals the presence of six species (five species of gastropods and one species of bivalvia) belonging to four families and six genera have been recorded from the field surveys. Among the collections, the families Viviparidae and Thiaridae were found to be dominant with two species each in gastropods.

In contrast, a single bivalve species Lamellidens marginalis of the family Unionidae was recorded from this survey. The species Indoplanorbis exustus, Filopaludina bengalensis, Tarebia lineata, and Lamellidens marginalis are commonly abundant in sampling sites, whereas Idiopoma dissimilis and Melanoides tuberculata are occasionally found. All these species are under the 'Least Concern' (LC) category of the IUCN Red List of Threatened Species.

The freshwater ecosystems support innumerable organisms for survival and completion of their lifecycle. Globally, the freshwater ecosystem supports around 1,28,449 species, of which India represents approximately 9,456 species (Chandra et al. 2017). The freshwater ecosystems in India harbour a rich diversity of molluscs, around 214 species are recorded from different waterbodies (Tripathy et al. 2024).

Hamirsar Lake is a man-made lake situated within the Indian desert biogeographic zone (Rodgers & Panwar 1988) to support local biodiversity and also groundwater recharge for the city. Thus, this study is the first report on the freshwater molluscs in Hamirsar Lake.

There is evidence that numerous pressures are endangering India's freshwater biological resources (Chandra et al. 2017). During the current survey, recreational activities and run-off of garbage from nearby areas are the major anthropogenic activities that may threaten the lake ecosystem and wetland species. Also, can directly impact on molluscan species.

Common name	Scientific name	IUCN Red List status	Figure
Common Banded Pond Snail	*Filopaludina bengalensis* (Lamarck, 1822)	LC	A
Pond Snail	*Idiopoma dissimilis* (O.F. Müller, 1774)	LC	B
Ram'shorn Snail	*Indoplanorbis exustus* (Deshayes, 1834)	LC	C
Spiky Tower Snail	*Tarebia lineata* (Gray, 1828)	LC	D
Red-rim Melania	*Melanoides tuberculata* (Müller, 1774)	LC	E
Freshwater Mussel	*Lamellidens marginalis* (Lamarck, 1819)	LC	F

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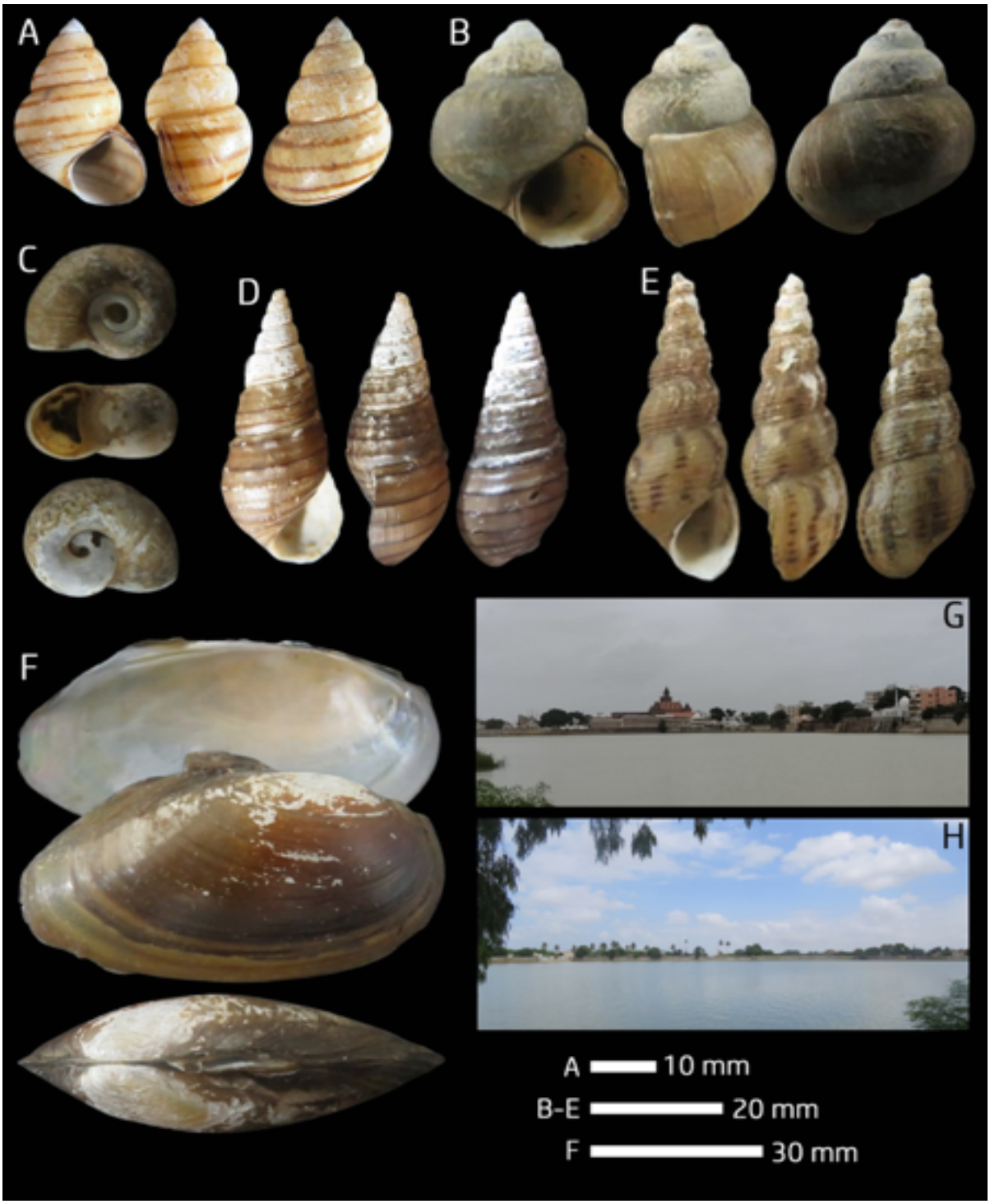

Freshwater Mollusca (A–F) See Table. & Hamirsar Lake (G–H).

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RESPONSE Dated 18 June 2025

Correspondence regarding Black-necked Grebe first sighting report from Chhattisgarh

Citation:Jageshwar, V., & S. Damre, D. Verma, A.M.K. Bharos & S. Pandey (2025). First sighting report of Black-necked Grebe (Podiceps nigricollis) from Chhattisgarh.Bird-o-soar #284, In: Zoo's Print 40(5): 12–13.

Query from Avinash Bhoi avibhoi@gmail.com:

Please issue a clarification regarding the article on Black-necked Grebe first sighting in Chhattisgarh, as it was first sighted on 14 December 2024 by Mr. Lokesh Sharan, and an article was already published in other journals/ newspapers. The Zoo's Print article authors sighted it on 20th December 2024. Please seek clarification from them as it undermines your journal's credibility and issue a clarification in the magazine/journal itself so that people of India believe in your future articles.

We are ready to provide further details. The Hitavada article states it was recorded on 14 December 2024, and Mr. Lokesh Sharan's Facebook post also supports this (Facebook doesn't allow posting in the past). Your article states the authors recorded it on 20th December. I request the journal to verify before publishing and obtain a declaration from authors that no competing interests exist, as Mr. Lokesh Sharan and Mr. Pratik Thakur have declared.

The species was reported earlier and an article is already published in another journal at: https://mbimph.com/index.php/UPJOZ/article/view/4832

Please publish a small note/correction in the next edition regarding this error so that original credit goes to Mr. Lokesh Sharan and Mr. Pratik Thakur.

REPLY Dated 29 May 2025

The facts in the matter are as follows:

Lokesh Sharan and Prateek Thakur observed the Black-necked Grebe at Kopra dam on **14 December 2024**. They submitted their article to UPJOZ on 25 December 2024, which was accepted on 26 February 2025 and published on 28 February 2025, reporting the species as the first sighting record.

Subsequently, on **20 December 2024**, our team led by Shirish Damre observed it at Kopra Dam (22.06°N, 82.058°E, alt. c. 210 m asl), Bilaspur district, and photographed it. Based on our observations and after verification of its distribution and identification confirmation, an article was prepared and submitted to Zoo's Print on 10 January 2025, which was acknowledged with MS–BoS-284 and published on 21 May 2025.

Others also visited this wetland and photographed the species on 21st and 22nd December 2024.

In light of the above facts, it is justified to give credit to Lokesh Sharan and Prateek Thakur for the first report of the species, who also managed to get it published before us, about which we were unaware.

Our record may be treated as a subsequent follow-up, and appropriate corrections should be made in the paper. The correction needed will be in the Caption: **"OUR FIRST SIGHTING REPORT..."** and in the conclusion: **"The sighting of Black-necked Grebe in Chhattisgarh is a rare sighting and is our first record for the state."**

Had we known about their sighting and publication, we would have withheld our paper.

We regret the inconvenience caused.

A.M.K. BHAROS & other authors
Dated: 29 May 2025

Announcing ‘Tiger Beetle Quest 2025’! - JOIN THE WEBINAR to know more

Have you ever seen a beetle that runs like lightning and shines like a gem?
Get ready to spot, snap, and share some of the coolest beetles in India – the tiger beetles!

We’re inviting nature lovers, photographers, students, hikers, and bug-nerds of all kinds to join the Tiger Beetle Quest 2025 — a fun citizen science event to map tiger beetles across India.

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https://meet.google.com/miy-jynm-ahg

Read the full FAQ & How-to guide:
https://docs.google.com/document/d/1BW0CY59D9rNZ5yKNpRoMBGS5R7n_7d_eYRAV_m2J76U/

Join the iNaturalist project: https://www.inaturalist.org/projects/tiger-beetle-quest-2025

Questions or just curious?
Hop into our chat group here: **https://chat.whatsapp.com/L6P6PyyRIn91S98s5h3lxd**

Let’s put tiger beetles on the map! Join the chase, join the ques!

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We welcome articles from the conservation community of all SAARC countries, including Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan, Sri Lanka and other tropical countries if relevant to SAARC countries' problems and potential.

Type — Articles of semi-scientific or technical nature. News, notes, announcements of interest to conservation community and personal opinion pieces.

Feature articles — articles of a conjectural nature — opinions, theoretical, subjective.

Case reports: case studies or notes, short factual reports and descriptions.

News and announcements — short items of news or announcements of interest to zoo and wildlife community

Cartoons, puzzles, crossword and stories

Subject matter: Captive breeding, (wild) animal husbandry and management, wildlife management, field notes, conservation biology, population dynamics, population genetics, conservation education and interpretation, wild animal welfare, conservation of flora, natural history and history of zoos. Articles on rare breeds of domestic animals are also considered.

Source: Zoos, breeding facilities, holding facilities, rescue centres, research institutes, wildlife departments, wildlife protected areas, bioparks, conservation centres, botanic gardens, museums, universities, etc. Individuals interested in conservation with information and opinions to share can submit articles ZOOS' PRINT magazine.

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Articles which should contain citations should follow this guideline: a bibliography organized alphabetically and containing all details referred in the following style: surname, initial(s), year, title of the article,name of journal, volume, number, pages.

E**ditorial details**
Articles will be edited without consultation unless previously requested by the authors in writing. Authors should inform editors if the article has been published or submitted elsewhere for publication.

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ICCB
JUNE 15-20 2025

Dr Sanjay Molur

Excutive Director
Zoo Outreach Organisation

SCB Global Distinguished Service Award 2025

at ICCB 2025, Brisbane/Meanjin

We are happy to announce, Dr. Sanjay Molur, Executive Director of Zoo Outreach Organisation, has been awarded with the Distinguished Service Award by the Society for Conservation Biology at ICCB 2025 in Brisbane, Australia!

A tireless force behind global conservation efforts for 30+ years, Sanjay has conserved ecosystems, shaped global guidelines, and inspired & empowered generations.

From Coimbatore to the world, his work continues to protect and restore biodiversity where it's needed most.

A proud moment for Zoo Outreach Organisation and the global conservation community!

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