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Notes on the breeding of Besra *Tachyspiza virgata* from South Gujarat

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Introduction

The breeding ecology of the Besra (*Tachyspiza virgata*), also known as the Besra Sparrowhawk, remains poorly documented in India. Formerly classified under the genus *Accipiter* as *Accipiter virgatus*, recent molecular phylogenetic analyses have led to significant taxonomic revisions. A comprehensive study published in 2024 demonstrated that the genus *Accipiter* was polyphyletic, comprising species not derived from a single common ancestor (Catanach et al. 2024; Gill et al., 2024; Mindell et al., 2018). Hence, *Accipiter* was split into six genera to resolve this and ensure monophyletic groupings. As a result, the genus *Tachyspiza*, initially introduced by Johann Jakob Kaup in 1844, was resurrected to accommodate *T. virgata* and 26 other species formerly placed within *Accipiter*.

The Besra is considered to be a Schedule I species under the Indian Wildlife Protection Act 1972, according to a high legal status. However, it is a 'Least Concern' species according to the IUCN Red List 2010 (BirdLife International, 2016).

The Besra is a small forest-dwelling raptor that inhabits a wide range of habitats, including moist deciduous forests, evergreen montane forests, secondary growth, plantations, mangroves, and pine forests (Naoroji, 2006). It is a resident species across much of India, extending into Sri Lanka and southeastern Asia (Clark & Marks, 2024). There are three subspecies of Besra occurring in India; the nominate *T. v. besra* occurs from Gujarat, south to Kerala, and locally in the C Indian Highlands and the E Ghats (Praveen 2025). In Gujarat, the species is considered an uncommon and possibly locally migratory resident, primarily occurring in well-wooded regions (Ganpule et al., 2022).

Historical observations of the Besra in Gujarat include an early record from Kachchh (Butler, 1875), a straggler collected in Bhavnagar (Dharmakumarsinhji, 1956), and a specimen from the Dangs (Shull, 1956). In more recent years, an adult with a bulbul kill was reported from Porbandar (Zala, 2018), and there are records of juvenile and adult individuals from Polo Forest (Khadakkar et al., 2016), an adult male with a Yellow-footed

Green Pigeon *Treron phaeocephala* prey at Vansda National Park (Patel, 2017), an adult female from Shoolpaneshwar Wildlife Sanctuary (Munshi, 2019), adults from Girnar Wildlife Sanctuary (Doshi, 2019 & 2021), and another adult female from Vansda National Park (Mishra, 2022).

Despite its broad geographic distribution across Asia, detailed information on the Besra's breeding ecology remains scarce in western India. In this study, we report the first documented nesting record of Besra from Kumkotar Forest in South Gujarat. These observations provide valuable information on the species' reproductive behaviour, parental care, and nest defence, contributing to our understanding of the ecology of this elusive raptor in the region. Khadakkar et al. (2016) had reported fledged juveniles, but direct evidence of nesting was not obtained at that time.

Generally, the Besra prefers relatively moist deciduous and evergreen montane forests. It breeds between March and June, nesting primarily in trees. The species produces a single clutch annually, typically laying three to five eggs. It exhibits moderate sexual dimorphism, with the female being noticeably larger and bulkier than the male. The smaller, more agile male is usually responsible for delivering prey during the breeding season, while the female is often observed at the nest or feeding the chicks. The size difference is evident when the pair is seen together, with the female appearing visibly larger (Dharmakumarsinhji, 1956; Naoroji, 2006; Grimmett et al., 2011).

There is some published literature on the Besra from other parts of the globe, especially regarding its food habits (Huang et al., 2008; Dhamorikar et al., 2020), including a high-altitude breeding record (Hackett, 1998). However, there is little information on the Besra population in India; only limited details are available regarding its breeding ecology (Dharmakumarsinhji 1956; Ali & Ripley 1983; Grimmett et al. 2011; Naoroji, 2006; Somasundaram & Vijayan, 2008).

In this study, we document the feeding behaviour, chick development, and defensive responses of a breeding pair of

Besra....

Besra, along with details of prey delivery to the chicks, based on continuous observations over a 26-day period. Upon closer, this was confirmed to be the first-ever recorded nesting of the Besra in Gujarat. [Fig. 1].



Figure 1: The female Besra perched nearest to the nest
(Photo credit: Dharmesh B Patel)

Study Area

The study was conducted in Kumkotar Forest in South Gujarat. This area represents a moist mixed deciduous forest type. The nearest human habitation is Kumkotar village (Tehsil-Mahuva, Surat District, Gujarat), approximately five kilometres from the study site. The observation site lacked large trees, except for a few tall Teak (*Tectona grandis*), reaching 30–35 meters, within a one-kilometre radius. The entire area is a forested landscape interspersed with small patches of shrub-dominated habitats. The vegetation is characterised by the occasional presence of Teak, with dominant top-canopy species including Sadad (*Terminalia crenulata*), Safed Shiris (*Albizia odoratissima*), Sisam (*Dalbergia latifolia*), Haldu (*Adina cordifolia*), Kalam (*Mitragyna parviflora*), Biyo (*Pterocarpus marsupium*), Jambu (*Syzygium cumini*), Mahuda (*Madhuca indica*), Amla (*Emblica officinalis*), Dhaman (*Grewia tiliaefolia*), Timru (*Diospyros melanoxylon*), Katus Bamboo (*Bambusa arundinacea*), and Manvel Bamboo (*Dendrocalamus strictus*). Based on data from the India Meteorological Department (IMD), the average annual rainfall in this region of South Gujarat is approximately 572.6 mm, with the majority of precipitation occurring during the monsoon months from June to September. The region experiences a wide range of temperatures throughout the year, varying from 8 °C in winter to 45 °C in peak summer. [Fig 2].



Figure 2: The Besra nested on a Teak
(Photo credit: Nayankumar Amratbhai Patel)

Methods and materials

Our observations were conducted meticulously between 18 June and 14 July 2024, with an emphasis on minimising disturbance to the breeding Besra pair. We followed a systematic observation schedule, dividing the day into three shifts: 06:30–09:30 hrs, 14:00–15:30 hrs, and 16:30–18:15 hrs. to ensure comprehensive data collection throughout different parts of the day. The study focused on recording parental care, feeding frequency, chick development, and threat response behaviour. Observations were carried out from a safe distance using binoculars (Nikon 8x40;10x42) and high-telephoto zoom lens cameras (Canon R6 body, Rf800mm lens; Nikon p900 point-and shoot camera; Sony a6700 body, 200-600 mm lens; Nikon z9 body, 180-600 mm lens; Canon R7 body, 150-600 mm lens), ensuring that the nesting birds were not disturbed. Nest was monitored to document prey deliveries and feeding behaviour. The primary objective was to understand the species' breeding ecology, food spectrum, prey selection, and overall feeding ecology. Camera equipment was utilised for remote monitoring to further reduce disturbance

during nesting and post-incubation. The observation team was stationed 50–70 meters from the nest, using camouflage hides to remain concealed and avoid direct interference with the breeding pair.

Throughout the study, utmost care was taken to ensure the nesting birds were not disturbed. As a result, the chicks were not physically handled. Ethical wildlife observation practices deliberately avoid measurements such as hatchling weight or other biometric data. This approach was adopted to prioritise the conservation of the species in its natural habitat and to comply with the established guidelines for research on nesting birds laid down by Barve et al. (2020).

Observations and results

On June 17, 2024, [NP] observed an adult Besra entering a nest-like structure high up in a tall, dry tree within Kumkotar Forest. The bird was seen constructing a stick nest on a teak tree. The nest was on the upper branches and oriented towards the Northeast. Details such as the nest’s height from the ground, trunk girth and height of the tree are summarised in [Table-1]. Recognising its importance, we began regular observations to track nesting behaviour, parental roles, and other breeding activities. Details are shared in [Table-2].

Table-1. Details of the Nest tree

| Parameter | Measurements |
|--|------------------------------------|
| Nesting tree | Teak (<i>Tectona grandis</i>) |
| Tree height | 20m |
| Trunk girth | 45cm |
| Height of the nest above ground | 17m |
| The diameter of the branch supporting the nest | 15cm |
| Nest orientation relative to the tree’s trunk | North-east |

On June 18, three chicks were visible in the nest, estimated to be around 7 to 9 days old, covered in soft, white down, resembling cotton balls. However, on June 23, a previously unnoticed fourth chick was identified, appearing notably smaller than the others. The parental roles were clearly defined: the male Besra was primarily responsible for hunting, bringing partially consumed prey to a nearby perch, while the female took on the crucial roles of feeding the chicks, guarding the nest, and ensuring their safety. [Fig. 3].



Figure 3: The male Besra bringing a partially consumed prey as an offering to the female (Photo credit: Mehul & Sejal Patel)

The female exhibited assertive territorial behaviour throughout the nesting period, actively defending the nest from potential threats. We recorded repeated instances of mock charges and coordinated flights by both parents to deter intruders when larger raptors such as Oriental Honey-Buzzard (*Pernis ptilorhynchus*), Jungle Owlets (*Glaucidium radiatum*), and White-eyed Buzzards (*Butastur teesa*) approached the area. During periods of heavy rain, the female demonstrated protective instincts by sitting in a hatching posture, shielding the chicks and keeping them dry.

Feeding occurred three to five times daily, with the chicks displaying gradual developmental milestones. By late June, the older chicks began developing wing feathers and practised wing-flapping exercises. [Fig. 4] By July 10, they were attempting to perch independently. Although the fourth chick initially lagged in growth, it eventually caught up, though it remained dependent on the female for feeding for a more extended period than its siblings.



Figure 4: The chicks were observed flapping their wings, as well as jumping and hopping around the nest (Photo credit: Dharmesh B Patel).

**Table-2: Daily Nesting Observations of the Besra in Kumkotar Forest, South Gujarat
(17th June – 14th July 2024)**

| Date | Observer | Time | Description |
|----------------------------|---|---|--|
| 17 th June 2024 | [NP] | 15:00 to 17:30 hrs | During an afternoon birding trip in Kumkotar Forest, [NP] observed an adult raptor entering a nest-like structure high up in a dry tree. Initially suspecting it to be a Shikra (<i>T. badia</i>) nest, he captured photographs for further verification. Upon closer inspection and discussion with fellow birders, it was confirmed as a Besra nest—the first nesting record of this species in Gujarat. |
| 18 th June 2024 | [NP], [DP], [PP] & [DP2] | 06:30 to 09:30 hrs & 15:45 to 17:45 hrs | Morning and evening observations revealed that one adult bird actively brought food to the nest. Three chicks were identified, with four feeding instances recorded during both sessions. The chicks were covered in soft, white down, resembling small cotton balls. Their beaks began taking shape, and they engaged in early wing-flapping movements. |
| 19 th June 2024 | [NP], [DP] & [PP] | 06.30 to 9.30 hrs & 16:00 to 18:00 hrs | The female brought food (unidentified passerine sp.) to the nest once in the morning and twice in the afternoon. The chicks appeared increasingly active, responding quickly to feeding attempts. The adult birds remained near the nest for extended periods [Fig 5]. |
| 20 th June 2024 | [NP] & [DP] | 06.30 to 9.30 hrs & 16:00 to 18:00 hrs | Feeding continued, with the female delivering prey early in the morning and late in the evening. The nest remained well-guarded, though no significant changes were observed in chick behaviour or physical development. |
| 21 st June 2024 | [NP], [DP] & [PP] | 16:00 to 18:00 hrs | The female was observed perching on a lower branch near the nest, preening and cleaning herself. After about 30 minutes, she returned to the nest with prey. This suggested a possible break in direct care giving, as she was seen engaging in self-maintenance behaviour before feeding the chicks. |
| 22 nd June 2024 | [NP], [DP], [PP], [MP] & Shaswat Mishra | 06.30 to 9.30 hrs | For the first time, the male was observed carrying prey in flight toward the nest. It was an Oriental Garden Lizard (<i>Calotes versicolor</i>). However, instead of directly approaching, he disappeared into the surrounding woods, leaving the prey nearby. Shortly afterwards, the female retrieved the prey and delivered it to the chicks. This indirect feeding behaviour was repeated twice within two hours [Fig 6] |
| | | 16:00 to 18:00 hrs | Notably, the chicks' development was progressing. Some black colour markings were visible under their wings, and the outer parts of their feathers began to show signs of growth. |
| 23 rd June 2024 | [NP], [DP], [PP] & [MP] | 14:00 to 18:00 hrs | On the sixth day of observation, a fourth chick was observed. It was slightly smaller than the others and had likely been overlooked due to the dominance of its larger siblings. Unlike the first three chicks, this fourth one often got pushed to the side during feeding sessions. Three feeding events were recorded during the 4-hour session, and all chicks appeared to be in good health. |
| 24 th June 2024 | [NP] | 08:00 to 9:30 hrs | The female fed the chicks twice during the observation period. The three older chicks had begun developing brown wing feathers (pin feathers), whereas the fourth chick remained predominantly white, indicating slower development. |

| | | | |
|----------------------------|-------------------|--------------------|---|
| 25th June 2024 | [DP] & [MP] | 06:30 to 08:00 hrs | The female arrived with an unidentified passerine sp. and successfully fed the chicks. However, during the second feeding attempt, the male brought prey but left the nest without delivering it due to heavy rainfall. |
| | [PP] | 16:00 to 18:00 hrs | Later in the day, the female delivered a prey item to the nest. Despite the earlier disruptions due to rain, feeding behaviour remained consistent. |
| 26th June 2024 | [MP] & [SP] | 14:00 to 16:00 hrs | All chicks were present and appeared healthy. However, during this observation window, neither adult was seen delivering prey. The absence of feeding activity was unusual but did not impact chick behaviour significantly. |
| 27th June 2024 | [DP] | 07:00 to 08:30 hrs | Physical development was becoming more apparent. Three chicks had developed brownish wing and tail feathers, their chests turned a brownish-orange hue, and their white heads now featured dark chocolate-coloured spots. Their eyes had also darkened. The male was observed perched on a branch approximately 40 meters from the nest, possibly keeping a watchful eye on the area. |
| | | 16:30 to 17:30 hrs | The female brought a partially consumed prey item to the nest, continuing regular feeding behaviour. |
| 28th June 2024 | [DP] | 16:30 to 17:30 hrs | All four chicks remained present, with the fourth chick lagging slightly in feather development. While its siblings had gained colouration on their wings, this chick's head was still predominantly white. The female provided food as usual. |
| 29 th June 2024 | [DP] | 16:30 to 17:30 hrs | The chicks were observed engaging in early flight-related behaviours. Two chicks were seen performing wing-flapping exercises, preparing for eventual fledging. At 17:15 hrs, the female delivered another meal to the nest. By this stage, the three older chicks had learned to self-feed by mimicking their mother's actions. However, the fourth chick still relied on assistance from the female. |
| 30 th June 2024 | [PP] | 15.30 to 17.30 hrs | All four chicks appeared to be well. Feeding activity was observed twice by the female. |
| 1 st July 2024 | [MP], [SP] & [PP] | 16:30 to 17:30 hrs | The female came to feed the chicks three times, each time bringing a kill. The chicks developed darker colouration on their wings and heads, and their eyes also turned dark. |
| 2 nd July 2024 | [NP] | 7.30 to 09:00 hrs | The female came once with a kill while all the chicks were in the nest. Their tails were seen developing bars. |
| 3 rd July 2024 | [SP], [MP] & [DP] | 16.30 to 17.30 hrs | Observed no feeding activity during this one hour. The chicks tried to eat leftover parts of a previous kill. One chick was on a slightly higher branch of the nesting tree. |
| 4 th July 2024 | [NP] | 7.30 to 09:00 hrs | Observed one feeding event. All chicks were in the nest. An active Indian Pitta nest was located approximately 70 meters from the nest, probably with ongoing incubation. |

Besra....

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|----------------------------|-------------------------|--------------------|--|
| 5 th July 2024 | [SP], [DP] & [DP] | 14:30 to 17:30 hrs | One chick was out of the nest, perched on a branch of the nesting tree near the nest. A Black-hooded Oriole approached and attempted to mob the chick, but the male Besra intervened to protect it. The female Besra then chased the oriole far away from the nesting area. Afterwards, the male Besra perched high on a nearby tree next to the nesting tree. The chick eventually returned to the nest and perched on a small branch nearby. No feeding activity was observed during this time. |
| 6 th July 2024 | [SP]& [MP] | 14:30 to 17:30 hrs | Upon hearing the call of the Besra, we searched along the trail near the nesting tree. The male was found perched with the half-eaten body of a small bird, possibly a bulbul or robin. He then flew into a nearby bush. Shortly afterwards, the female arrived at the nest with the same kill. |
| | [DP] | 16:30 to 17:30 hrs | Three feeding events were observed. One chick was perched on a high branch in the nesting area and was the last to come for feeding, usually arriving when a parent reached the nest. |
| 7 th July 2024 | [DP], [PP], [SP] & [MP] | 15:30 to 17:30 hrs | Three chicks were in the nest, while one chick was perched on a higher branch of a nearby tree. Upon hearing the call, we followed a trail near the nesting area and found the male perched with a kill, calling repeatedly. Shortly after, the female arrived, took the kill from the male, and flew to the nest. We were able to observe a clear exchange of the kill between the parents—something notable, as we had not seen the male feed the chicks directly during our entire period of observation. We also managed to get a good photograph of the male Besra. The kill appeared to be part of a small bird's body, including a leg. While we couldn't identify the species, its size suggested it was similar to a bulbul or robin. |
| 8 th July 2024 | [DP], [NP] & [PP] | 16:30 to 17:30 hrs | Two chicks were out of the nest, perched on a nearby tree. The female came to the nest twice with parts of a kill. The chicks outside the nest returned to the nest to feed. Two of the chicks made short flights, limited to the nesting tree, and returned after some time. |
| 9 th July 2024 | [DP] & [PP] | 16:30 to 17:30 hrs | We saw the male flying with a kill, then perching on a branch while calling vigorously. The female arrived and took the kill to the nesting tree, but the chick that left the nest first took the entire kill and fed alone. The female was perched on a nearby tree, watching us, while two chicks were out of the nest. |
| 10 th July 2024 | [NP], [VP], [DP] & [PP] | 16:30 to 17:30 hrs | Three birds were out of the nest, and one bird—probably the small chick we first saw after five days of observation—remained inside the nest. One chick was perched about 30 meters away on a low-level branch, while the other two stayed near the nesting tree. Only two birds came to the nest for feeding when the adult arrived with a kill. |
| 11 th July 2024 | [DP] & [PP] | 16:30 to 17:30 hrs | One chick was fed once at the nest by the female, while the other two were fed on branches. However, we could not take any photos because the thick canopy, which had developed during the monsoon, obstructed our view. |

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|----------------------------|-------------|--------------------|--|
| 12 th July 2024 | [DP] & [PP] | 16:30 to 17:30 hrs | Only one chick was in the nest, while two were perched on nearby trees at nest level. One chick that had left the nest was not visible in the nesting area. The chick in the nest was fed once by the female, while the other two were fed on branches. Due to the thick canopy developed during the monsoon, we were unable to capture photo evidence or observe the activity. At one point, no chicks were in the nest; two were approximately 70 meters away from the nesting tree, and one was about 30 meters away. The female was perched near the nesting tree. We did not observe any feeding activity during this time, as the chicks were flying far from the nest, possibly driven away by the parents [Fig 7]. |
| 14 th July 2024 | [DP] & [PP] | 16:30 to 17:30 hrs | No chicks were in the nest. They were calling from high in the canopy but were not visible. The Indian Pitta began feeding activity from this day. All four Besra chicks had fledged. |

We observed that both parents engaged in vocal communication through various calls, particularly noticeable during food delivery events and after feeding the chicks. These vocal interactions served a communicative function between the pair. However, due to audio recording and analysis limitations, we could not determine these calls' specific types or frequencies or their use. Identifying the prey species also proved equally challenging. On most occasions, the adults would remove feathers and decapitate the prey before arriving at the nest, making visual identification extremely difficult. With our non-intrusive approach, we avoided pursuing or disturbing the birds during feeding bouts. During our study, we documented approximately 25 to 30 feeding instances. As a result, although we captured several photographs of the adults carrying prey, many of these kills remained unidentified due to their condition. However, most appeared to be birds, with one confirmed instance of an Oriental Garden Lizard as prey. Besra is known to feed on a variety of small prey, including birds, lizards, and beetles (Davison, 1883). Somasundaram and

Vijayan (2008) reported feeding chicks with lizards and small snakes. However, in this study, small birds were the main prey items.

Bird diversity in the nesting area

The habitat surrounding the Besra nest was notably rich in avian diversity. Within 50 meters of the nest, nearby nesting activity of Brahminy Starlings (*Sturnia pagodarum*) and Indian Pittas (*Pitta brachyura*) was observed, although no direct interactions or interference between these species and the Besra were recorded. A significant highlight of the study was the first sighting of the Indian Cuckoo (*Cuculus micropterus*) for the area, adding considerable ecological value to the avian diversity of the area. During the study period, 43 bird species representing 24 families were recorded (see Table-3), including two nocturnal bird species. Additionally, three species of diurnal raptors from the family Accipitridae were observed within a one-kilometre radius of the nesting tree.

Table-3: List of bird species recorded within one kilometre of the study area

(Species marked as * are Nesting Tree Visitors, and species marked as ** are ones that directly interacted with the breeding pair of Besra)

| No | Family | Common Name of Birds | Scientific Name |
|----|---------------|----------------------------|------------------------------|
| 1 | Phasianidae | Red Spurfowl | <i>Galloperdix spadicea</i> |
| 2 | | Indian Peafowl | <i>Pavo cristatus</i> |
| 3 | Accipitridae | Shikra | <i>Tachyspiza badia</i> |
| 4 | | White-eyed Buzzard ** | <i>Butastur teesa</i> |
| 5 | | Oriental Honey-buzzard ** | <i>Pernis ptilorhynchus</i> |
| 6 | Columbidae | Spotted Dove | <i>Spilopelia chinensis</i> |
| 7 | | Yellow-legged Green Pigeon | <i>Treron phoenicopterus</i> |
| 8 | Psittaculidae | Rose-ringed Parakeet | <i>Psittacula krameri</i> |

| | | | |
|----|-------------------|---------------------------------|---------------------------------|
| 9 | Cuculidae | Asian Koel | <i>Eudynamys scolopaceus</i> |
| 10 | | Gray-bellied Cuckoo | <i>Cacomantis passerinus</i> |
| 11 | | Fork-tailed Drongo-Cuckoo | <i>Surniculus dicruroides</i> |
| 12 | | Common Hawk-Cuckoo | <i>Hierococcyx varius</i> |
| 13 | | Indian Cuckoo | <i>Cuculus micropterus</i> |
| 14 | Strigidae | Jungle Owlet** | <i>Glaucidium radiatum</i> |
| 15 | Megalaimidae | Coppersmith Barbet | <i>Psilopogon haemacephalus</i> |
| 16 | Picidae | Lesser Golden-backed Woodpecker | <i>Dinopium benghalense</i> |
| 17 | | White-naped Woodpecker * | <i>Chrysocolaptes festivus</i> |
| 18 | Pittidae | Indian Pitta | <i>Pitta brachyura</i> |
| 19 | Dicruridae | Black Drongo | <i>Dicrurus macrocercus</i> |
| 20 | | Greater Racket-tailed Drongo | <i>Dicrurus paradiseus</i> |
| 21 | | White-bellied Drongo | <i>Dicrurus caerulescens</i> |
| 22 | Oriolidae | Indian Golden Oriole | <i>Oriolus kundoo</i> |
| 23 | | Black-hooded Oriole ** | <i>Oriolus xanthornus</i> |
| 24 | Monarchidae | Indian Paradise-Flycatcher | <i>Terpsiphone paradisi</i> |
| 25 | | Black-naped Monarch | <i>Hypothymis azurea</i> |
| 26 | Corvidae | Rufous Treepie | <i>Dendrocitta vagabunda</i> |
| 27 | | Large-billed Crow | <i>Corvus macrorhynchos</i> |
| 28 | Pycnonotidae | Red-whiskered Bulbul | <i>Pycnonotus jocosus</i> |
| 28 | | Red-vented Bulbul | <i>Pycnonotus cafer</i> |
| 30 | Cisticolidae | Gray-breasted Prinia | <i>Prinia hodgsonii</i> |
| 31 | | Common Tailorbird | <i>Orthotomus sutorius</i> |
| 32 | Timaliidae | Tawny-bellied Babbler | <i>Dumetia hyperythra</i> |
| 33 | Paradoxornithidae | Yellow-eyed Babbler | <i>Chrysomma sinense</i> |
| 34 | Leiothrichidae | Jungle Babbler | <i>Argya striata</i> |
| 35 | Sturnidae | Brahminy Starling | <i>Sturnia pagodarum</i> |
| 36 | | Common Myna | <i>Acridotheres tristis</i> |
| 37 | Zosteropidae | Indian White-eye | <i>Zosterops palpebrosus</i> |
| 38 | Turdidae | Orange-headed Thrush | <i>Geokichla citrina</i> |
| 39 | Muscicapidae | Indian Robin | <i>Copsychus fulicatus</i> |
| 40 | | Oriental Magpie-Robin | <i>Copsychus saularis</i> |
| 41 | Dicaeidae | Pale-billed Flowerpecker | <i>Dicaeum erythrorhynchos</i> |
| 42 | Nectariniidae | Purple-rumped Sunbird | <i>Leptocoma zeylonica</i> |
| 43 | | Vigors's Sunbird | <i>Aethopyga vigorsii</i> |



Figure 5: An adult female Besra feeding chicks at the nest
(Photo credit: Nayankumar Amratbhai Patel)



Figure 6: An adult male Besra feeding its chicks at the nest
(Photo credit: Mehul Dhirubhai Patel)

Discussion

This study presents the first confirmed breeding record of the Besra from Gujarat, significantly contributing to the scarce literature on the species' reproductive behaviour in western India. Our systematic and minimally invasive field observations over 25 days provide detailed insights into nesting chronology, parental roles, prey delivery behaviour, chick development, and defensive behaviour against potential predators. The discovery of a fourth chick midway through the study underscores the importance of continuous monitoring in capturing the full scope of breeding activity. In a study of breeding Besra in South India, a nest with a chick was reported in May, while in another nest, the egg hatched on 10 April (Somasundaram & Vijayan, 2008). Here, the chicks were seen in mid-June and fledged in July, which is later than what has been reported in South India. The successful fledging of four chicks in this study is noteworthy; in the studies from South India, only one egg was laid in both instances (with successful fledging of a chick

both times). The nest in this study was located near the top of the tree. Nest site characteristics differ to some extent in the northern and southern races of Besra. Here, we have not done a detailed comparison between different nest sites reported in the literature and what was observed here.

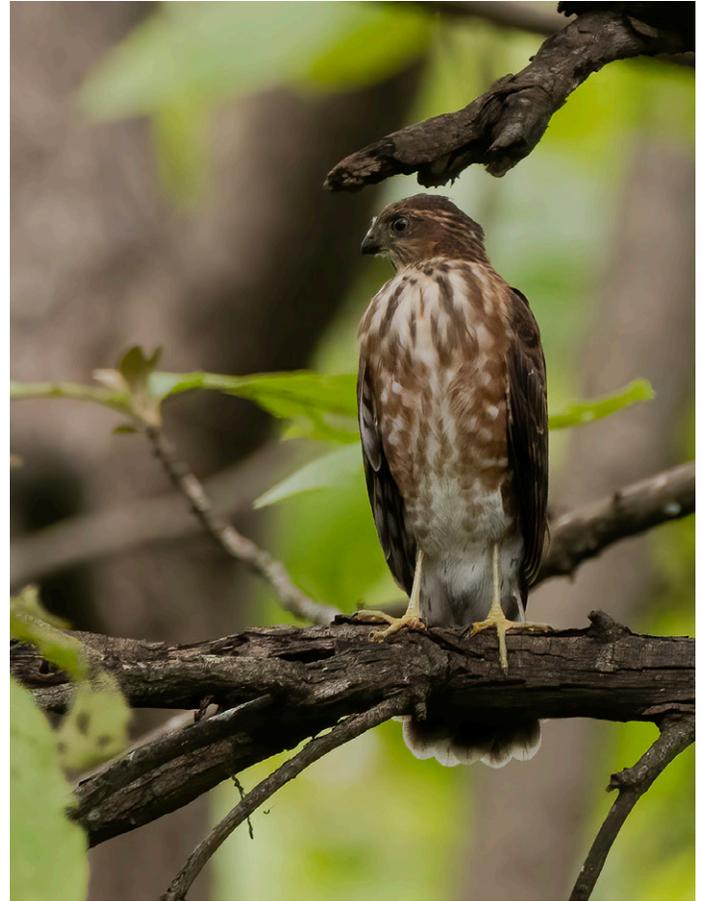


Figure 7: A juvenile Besra seen perched in the mid-canopy, showing its typical plumage that provides excellent camouflage in the forest habitat. (Photo credit: Pragnesh B Patel)

The clearly defined division of labour between the sexes, with the male primarily provisioning food and the female tending to feeding, guarding, and brooding duties, aligns with previously reported patterns in other parts of the species' range. Additionally, the female's consistent and vigorous nest defence behaviour highlights the vulnerability of forest-nesting raptors in increasingly fragmented landscapes.

Our findings reinforce the ecological value of the moist deciduous forests of South Gujarat as essential breeding habitats for forest raptors like the Besra. These observations expand the known breeding range of Besra in India, emphasising the urgent need for habitat preservation and further ecological studies across underexplored regions. We hope this note encourages more collaborative monitoring and documentation efforts to better understand this elusive

raptor species' life history and conservation needs. Although this data provides valuable initial information, it is insufficient to understand the species' breeding ecology fully. Further research is essential to assess its status, distribution, and breeding biology within our state.

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Bird's Paradise Under Threats: Blurred Future of Wetlands of Charotar Region, Gujarat, India

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Introduction

Wetlands are among the most productive life-support systems in the world and are of immense socio-economic and ecological significance to mankind. They are of critical importance to the survival of natural biodiversity and are recognised as sources, sinks, and transformers of chemical and biological matter. As many as 45 major wetlands have been identified in the State of Gujarat (by the National Wetland Inventory), of which six are in the districts of Kheda and Anand. We are monitoring most of the wetlands of Kheda and Anand districts to check out the transformations in aquatic diversity, especially two key wetland-dependent species: Indian Sarus Crane (*Grus Antigone*) and Marsh Crocodiles (*Crocodylus palustris*).

Anand and Kheda districts are collectively known as the 'Charotar Region'. The region is situated in western India and is located between two major rivers: the Mahi on the eastern side and the Vatrak, a tributary of the River Sabarmati, on the western side. The southern side is attached to the Gulf of Khambhat. Most areas of both the districts comprise plain land, almost at sea level, except for a small area of Kapadvanj, which is hilly (Parasharya et al. 2000). Anand and Kheda Districts are known as the 'Heaven of Birds' in Gujarat State because both districts support large numbers of water bodies of various sizes in Gujarat (KBAP 2024). All these waterbodies are interconnected by irrigation canal systems, especially the Mahi Irrigation Canals. Anand and Kheda districts have a total of 713 and 858 wetlands, respectively, with the geographical support of 26.39 % of wetland areas (NWA 2010). The larger area of the region has canal irrigation facilities, so irrigated farming is practised. Farmers extensively cultivate paddy due to the availability of irrigation systems in the region. Mukherjee et al. (2002a) stated that paddy fields are temporary wetlands; they provide an alternative to the natural marshland habitat of the Sarus Crane, and various large waterbodies providing roosting areas for these birds, especially Daloli, Gobrajura, Narda, Pariej, and Machhial, were found to be important sites.

However, all these water bodies support many wildlife, especially non-migratory and migratory bird species (Parasharya & Jani 2006). Thus, both districts have been declared an Important Bird Area (IBA) in India (Rahmani et al.

2016). Therefore, some of the large waterbodies are in a Top-ranked wetland from a biodiversity perspective (Mukherjee et al. 2002b), as per the national wetland prioritisation (Fig. 1), by the Salim Ali Centre for Ornithology and Natural History, SACON (Vijayan et al. 2004). However, some components of these wetlands are studied by a few researchers: Aquatic Vegetation (Patel et al. 2021), Herpetofauna (Vyas et al. 2012; Vasava et al. 2015), Spiders (Parmar & Acharya 2015), Dragonflies (Rathod et al. 2016), birds (Khacher 1996; Mukherjee et al. 2002a, 2002b, 2002c; Joshi et al 2018; Lepage 2024).

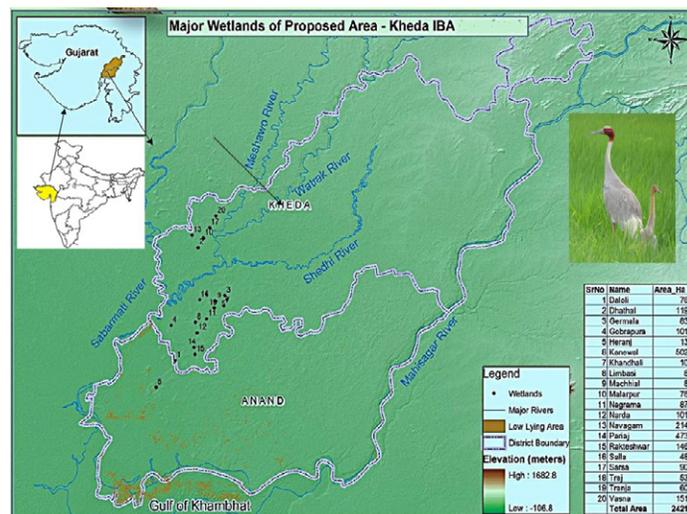


Figure 1: The map of the Charotar region shows the major wetlands of Anand and Kheda districts as proposed Important Bird Areas (IBAs) in India.

This region supports significant numbers of Indian Sarus Cranes (Fig. 2a & 2b), Indian White-rumped Vultures *Gyps bengalensis* (Fig. 3), and several wetland bird species. Indian White-rumped Vultures declined in the Anand district, which is globally critically endangered under the criteria of the IUCN Redlist and Schedule I in the Indian Wildlife (Protection) Act, 1972. The data of the annual Indian Sarus Crane Ninth Count (2023-24) mentioned that the Sarus Crane is increasing compared to the last counts. According to the UPL project, a conservation initiative by a local organisation (UPL 2024), there was a 96 % increase in sightings of Sarus and a 76% increase in reneesting, but the ground-level fact is different in the areas. However, it is observed that both globally threatened bird species, including the Indian Sarus

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Crane and the Indian White-rump Vulture, have gradually declined in the area.



Figure 2a: A large flock of Indian Sarus Crane (*Grus Antigone*) foraging in *Typha* habitat at Goprapura water body, Kheda District, Gujarat, India (Photo Credit: Raju Vyas)



Figure 2b: A group of domestic dogs is chasing Indian Saras crane (*Grus Antigone*) at a water body in Kheda, Gujarat, India. (Photo Credit: Raju Vyas)

Most of the natural wetlands of Kheda districts have been converted into paddy fields, but at the same time, thanks to canal irrigation, paddy cultivation has increased in those areas where there was no paddy cultivation earlier (Parasharya et al. 2000). There was a great positive significance and correlation between the percentage of land under paddy crop and Sarus Crane density (Parasharya et al. 2000). Thus, Sarus Crane prefers to breed in non-cultivated agricultural marshland in the paddy crop agroecosystem (Borad et al. 2001), non-availability of marshlands compels them to breed in paddy crop fields, leading to conflict between cranes and farmers. To conserve the cranes in agricultural landscapes, the uniform

distribution of such non-cultivable marshland and their maintenance would provide a near-natural habitat for the cranes. This would ensure the successful breeding of the cranes and reduce conflict with farmers (Borad et al. 2001).



Figure 3: A group of Indian White-rumped Vultures *Gyps bengalensis* roosting on a tree, at the outskirts of Sokhada, Nr. Khabhat, Anand, Gujarat, India. (Photo Credit: Raju Vyas).

Here, we present scenarios of the wetlands of Anand and Kheda Districts, Gujarat State, India, based on experience with observations from the last decade (from 2014 to 24) and a review of published literature. However, ongoing development in regions and ignorance of environmental care by locals, farmers, and government agencies would exterminate wetland ecology. Finally, it could negatively impact wetland-dependent birds and other wildlife.

Observation

Recently, we noted two unfortunate incidents in the region. The first was wetland development, which was not concerned with the subject or the ecology experts. Both incidents are related to *Typha* grass fires, burned accidents, and some offender farmers' extermination of reed habitat. Due to fires, we lost the best habitat for wetland birds and wetland-related wildlife. However, the incidence impacts are temporary or permanent, but such incidents are eye-openers.

First, the incidence occurs at Pariej Wetland (22°31'39.84"N to 22°33'47.07"N and 72°36'24.19"E to 72°37'31.73"E), which is one of the largest man-made water bodies in the Matar, Kheda district (Fig. 4). The Water and Irrigation Department of Gujarat started the development of the Pariej Wetland in the name of redevelopment, beautification, and rejuvenation in January 2024. Their work started without concern for other state forest and environmental agencies or any expert groups. The entire wetland is made of empty waters and

deeper by excavating the earth from the reservoirs (Ghai 2024). The wetland ecology and environment turn into extensive, empty (Fig. 5 & 6), dry grounds surrounding tall Typha (*Typha angustata*) vegetation made clear by excavators, machines, and bulldozers (Tatu 2024). Most living organisms disappear from the wetland due to the loss of life or migrate into nearby water bodies like wetland-dependent local birds. Also, the development contractor fired the dry, tall Typha grasses without any understanding that it was a threat to the inhabiting wildlife and ecology. The entire story was disclosed, and tragedy was revealed after a severely burned massive mugger crocodile or marsh crocodile came out from the fires (Fig. 7) on 17th June 2024, and unfortunately, it was a day for World Crocodile Day. The news was spread among wildlife enthusiasts, and volunteers from two local NGOs rushed to the site to rescue wildlife due to such pathetic news. This rescue operation is a testament to the power of community involvement in conservation at the local level. They were carried out for a four-day operation, and continued efforts were made by dozens of volunteers with the support of local foresters and forest guards level staff of the forest department. They worked tirelessly to retrieve 15 various sizes of muggers from the fires. The rescue account shows that 11 muggers were saved after treatment and released in a nearby water body at a distance of 2.5 km North, in Narda (22°35'13.72"N; 72°37'24.52"E). The remaining four sub-adults and a small number of Indian Flap-shell Turtle (*Lissemys punctata*) were lost in the fires (Vyas et al. 2024). We do not know what happened with other smaller mammals and birds, who inhabit and are a part of the home of the tall Typha grasses. There were 155 Saras counted in the last annual Indian Saras Count (2023-24). However, fire does not directly affect any of the birds; they can fly in any danger, but such fires impact the area's ecology, and it takes a long time to rebuild the ecology.

The second incident occurs in Deva village. However, this shocking tragedy is not over, and the smell of fire ashes remains in the air, unsettled. A similar incident occurred in the area within the next week, on 25th June 2024. Shocking news came that a similar Typha Reed habitat at Deva, next to Mahi irrigation canals (22°37'41.71"N; 72°44'45.48"E) had caught fire, but this time, there were no casualties except the loss of the well-known bittern habitat. This small swamp habitat is home to over two dozen mugger crocodiles and the most famous site for breeding and sightings ground for three bitterns: Cinnamon Bittern *Botaurus cinnamomeus*, Yellow Bittern *Ixobrychus sinensis* (Fig. 8), and Black Bittern *Dupetor flavicollis*. This time, farmers of nearby agricultural fields were also fired at the swamp habitat. The purpose of destroying

the swam habitat is to avoid damage in agricultural fields by birds, especially the eradicated habitat of Purple Swampphen (*Porphyrio porphyrio*), and to save the paddy (*Oryza sativa*) crops from damage by the birds.



Figure 4: The map shows the Typha grasses burning incidence site of Pariej Wetland is one of the largest man-made water bodies in the Matar, Kheda district, Gujarat, India.



Figure 5: The bulldozers and machines are making empty dry grounds at Pariej Wetland, Matar, Kheda district, Gujarat, India. (Photo Credit: Raju Vyas).



Figure 6: The bulldozers in eroding elimination of tall *Typha angustata* vegetation made clear at Pariej Wetland, Matar, Kheda district, Gujarat, India. (Photo Credit: Raju Vyas).



Figure 8: Yellow Bittern: *Ixobrychus sinensis* in *Typha* habitat at Deva, Gujarat, India. (Photo Credit: Raju Vyas).



Figure 7: A large burned Muggar (*Crocodylus palustris*) emerged from the fires of tall *Typha* (*Typha angustata*) at Pariej Wetland, Matar, Kheda district, Gujarat, India. (Photo Credit: VNC).

Discussion

Earlier, we experienced that many farmers destroyed the nests of the Indian Saras crane intensely to save the Paddy crops (Parasharya et al. 1986), and the wise authority started a compensation scheme for farmers to save the nests of the Saras. If local farmers practiced such tall grasses, *Typha* burning, or elimination from water bodies, it would be a big problem because *Typha* vegetation is an integrated part of wetland and wetland ecology. The good-sized *Typha* vegetation is present in most of the region's water bodies. Thus, we believe both incidents of eliminating *Typha* habitat from the swamps were a foul game by irresponsible humans and negligence of the local forest authority.

Several studies from abroad show that *Typha* species benefit many bird species and provide the best habitat, cover, and favourable breeding sites for certain wetland species of birds (See: Mori 2019). Beyond providing food such as seeds, leaves, tubers, and rhizomes for herbivorous waterbirds (Anderson & Smith 2000; Froneman et al. 2001). A dense *Typha* colony also provides habitat and food requirements for invertebrates and improves the viability of eggs or diapausing invertebrates, which increases invertebrate density, biomass, and diversity (Wiggins et al. 1980; Rehfish 1994). This increases food for waterbirds (Anderson & Smith 2000). Many studies have indicated that the species diversity of waterbirds increases with increasing *Typha* grass cover in wetlands. However, some studies mentioned the adverse effects of the high, dense *Typha* colony, which can limit the accessibility of wetlands and adversely affect foraging (Fujioka et al. 2001; Bancroft et al. 2002) and prey detection (White & Main 2004) by waterbirds, thus too much emergent vegetation can lead to decreased

numbers of nesting waterbirds. Hence, these plants not only can be bioindicator candidates helping to understand the ecosystem integrity of wetlands, but their physiological mechanisms of phytoremediation can help to construct a future blueprint for constructing bioindicators for wetlands.

Wetlands are one of the chief global water resources, working as nature's kidneys (Mitsch & Gosselink, 2015). They can absorb or reduce pollutants (such as metals, nutrients, urban runoffs, wastewater, or water quality parameters indicative of pollution), known as their self-purification property (Tixier et al. 2011). Thus, maintaining the integrity of wetlands is crucial to maintaining the quality of aquatic ecosystems. Still, we fail to do so here, especially after the incidence of eliminating *Typha* habitat from wetlands, even though it is listed as of national importance. The Pariej Wetland supports more than 20,000 waterbirds annually and has been identified as a potential Ramsar site (Vijayan et al.2004).



Figure 9: A flock of Common Eastern Cranes foraging in wheat crops on the outskirts of Khabhat, Anand, Gujarat, India.
(Photo Credit: Raju Vyas).

We have experienced and observed the following threats in the regions over the last decade, such as changing the attitude of farmers towards nature, especially bird fauna. Also, now they have changed farming practices (Figs. 9 & 10), especially using excess pesticides and weedicides (Vasava et al. 2021). Recent news shows that large numbers of fauna died at the holy Gomati Talaw, Dakor, Kheda, due to water contamination and being highly polluted (Anon 2024). Earlier, turtle fauna had already declined in the Gomati Talaw (Vyas 2015), and a similar case occurred at the village pond of Bakrol and Vadgam villages due to water pollution (Vasava et al. 2021). New economic development, especially expanding road and railway networks (DFC Railway corridor and Bullet Train) in the regions. As a result of infrastructure like a linear intrusion,

wildlife collisions (Fig. 11) are now increasing (See: Mistry & Parasharya 2016; Vyas et al. 2023). However, all the minor to major threats will directly or indirectly negatively impact the wetlands and their related lives. We were not denied that these statements are underestimations, but they are the tip of the iceberg. We do not know what the impacts of invasive species available at all these water bodies (examples: Red-eared Slider *Trachemys scripta elegans*; Suker-mouth Catfish *Hypostomus plecostomus*, and Water Hyacinth *Pontederia crassipes*) and their effects on native freshwater fauna. There were reports that such invasive plant species infest many waterbodies of Charotar (Fig. 12). Detailed studies are warranted on the subject, and then we can comment on its effects on our native flora and fauna.

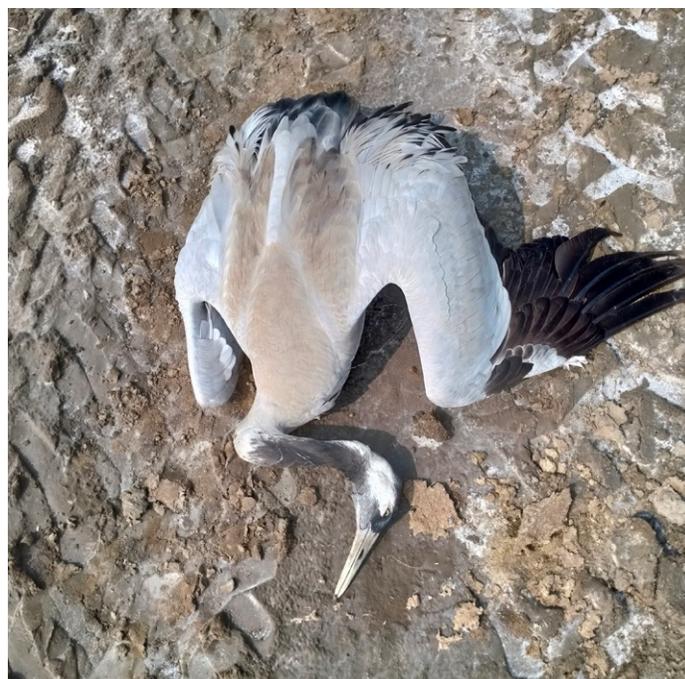


Figure 10: A dead Common Eastern Crane after eating poisonous seeds, Akhol village, Anand, Gujarat, India.
(Photo Credit: Vishal Mistry).

Unfortunately, there were no forest areas, especially in the Anand District. As per GFS (2019-20), Anand District has zero forest area, and Kheda District holds 0.61% (21.05 sq. km) of reserved forest area. Recently, it has been observed that large agricultural and revenue lands were converted into small industrial areas that have expanded. Several new industries have risen in the area due to recent government policy and the rapidly expanding railway and road networks. Thus, significant threats in the area are agricultural practices, industrialisation, urbanisation, alteration of habitat, and disturbance to the birds by farming activities. The present status of the freshwater ecosystems in the Charotar region and recent scenarios of various anthropogenic activities in areas,

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which have forced the fauna, have gradually depleted it. These changes will negatively impact wetland habitats, and we will lose the haven for birds in the future.



Figure 11 (A)

Figure 11: (A) Road traffic with killed Yellow Bittern: *Ixobrychus sinensis*; (B) a railway killed Mugger *Crocodylus palustris* on DFC Railway corridor, Nr Deva, Charotar region, Gujarat, India. (Photo Credit: Vishal Mistry).



Figure 11 (B)

Acknowledgments

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Figure 12: A water body partially covered with invasive plants, Water Hyacinth *Pontederia crassipes* provides a habitat to birds and mugger crocodiles. (Photo Credit: Raju Vyas).

Note: It is very surprising that when we were finalizing the research article at the time, we received another shocking piece of news from the area; this year, 2025-26, the state authority is planning to develop the Kanewal Water Reservoir (the larger notable water body in the area) for tourism development and rejuvenation on a similar path to Pariej Wetland without concern for ecology and wildlife habitat.

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Does falconry persist in India? Evidence from photographs of an Indian Shaheen *Falco peregrinus peregrinator* on eBird India

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While going through photographs posted on 'eBird India' to study the Peregrine Falcon (*Falco peregrinus*), I came across some photographs that immediately caught my attention. It showed an Indian Shaheen (*F. p. peregrinator*), a powerful and fast-flying bird with leather straps tied to both legs (called *jesses* and usually used in falconry). These photos were taken at Girnar Hills in Junagadh, Gujarat (Vachhani, 2018; Bagda, 2019), and this points to a serious issue: the illegal practice of falconry may still be happening in India [Figs 1]. Jesses are thin leather straps used in falconry to control and secure the bird to a perch.



Figure 1: Indian Shaheen in flight with jesses visible on both legs. (Photo Credit: Anand Vachhani).

The Indian Shaheen, a subspecies of the Peregrine Falcon, is known for its strength, speed, and exceptional hunting skills (White, 2013). In Gujarat, it is considered an uncommon to rare resident, typically found in some of the state's hilly regions.

A resident pair have been regularly observed at Girnar Hill for years (Mori & Joshi, 2017; Ganpule, 2022). Historically, during the Mughal and Rajput periods, falconry, training raptors to hunt, was common among royalty. Falconry is the art of using raptors like falcons or hawks for hunting (Gadhvi, 2023). These birds symbolised power and prestige (Dixon, 1937). However, today, keeping or training wild birds like the Indian Shaheen is illegal under the Wildlife Protection Act of 1972.

This subspecies is listed under Schedule I of the Act, which accords the highest level of legal protection. According to Section 9 of the Act, hunting, which includes capturing, trapping, or keeping such birds in captivity, is strictly prohibited unless specifically authorised for scientific or other legitimate purposes. Consequently, falconry involving wild raptors like the Indian Shaheen is not permitted. Violations of these provisions attract penalties under Section 51, including imprisonment and fines.

The jesses seen on the photographed bird suggest that it had been kept in captivity, possibly trained or held in a private collection [Figs 2]. Even though falconry has cultural importance, practising it harms wild raptor populations (Horgan, 2021).

Raptors like the Indian Shaheen are protected under Schedule I of the Wildlife Protection Act, which gives them the highest level of protection in India (MoEFCC, 2019). Still, such illegal activities continue, mainly because of a lack of awareness and poor monitoring. Capturing and keeping wild raptors can damage their populations, reduce genetic variety, and make

it harder for the birds to survive if they are released back into the wild (McClure et al., 2018; Nijman, 2010). These birds often lose their natural hunting skills and may not breed successfully after release.



Figure 2: Red arrows indicate jesses visible on both legs.
(Photo Credit: Anand Vachhani).

This documentation also raises an important issue for birdwatchers and people using citizen science platforms like 'eBird'. These platforms help collect valuable conservation data but can also reveal illegal activities. So, how should we deal with such findings? Should citizen scientists report these incidents, and if so, how can we find a mechanism to report such incidents to the proper authorities?

The conservation of raptors, or birds of prey, in India will need teamwork from researchers, forest officials, conservation groups, and even the general public. Information from platforms like 'eBird' becomes powerful when used in fieldwork and conservation action (Watson, 2018).

Interestingly, a similar case happened in Chhatrapati Shambhajnagar, Maharashtra, where another Indian Shaheen was rescued from captivity and released in Gautala Autramghat Sanctuary (WWA, 2019). This shows that illegal trade and the keeping of raptors may be more frequent than we think.

These photographs highlight an underlying message of greater importance. The complex relationship between people and wildlife in India, and the fact that the illegal practice of falconry probably continues in India. They also remind us that the unlawful practice of falconry might still be happening in secret. This shows the need for constant monitoring and solid vigilance. However, the Gujarat Forest Department has done excellent work protecting wildlife and has launched some of the country's most successful and innovative conservation efforts. Working closely with intelligence teams and agencies like the Wildlife Crime Control Bureau can help stop illegal

activities. Continued support and practical action are essential to ensure a secure future for raptors in Gujarat.

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Observation notes on the breeding of Shikra *Accipiter badius* in Kachchh

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Introduction

Shikra (*Accipiter badius*) is a common and widespread bird of prey, being the commonest resident *Accipiter* species in India (Naoroji, 2006). It is also a typical resident in most parts of Gujarat (Ganpule *et al.*, 2022). Due to its adaptability, Shikra is seen in different habitats and is a resident of towns and cities. It is also frequently seen around gardens and wooded areas around human habitation. Shikra is commonly seen in Bhuj and its surroundings.

I present some interesting observations regarding the breeding of Shikra in Bhuj.

Observations

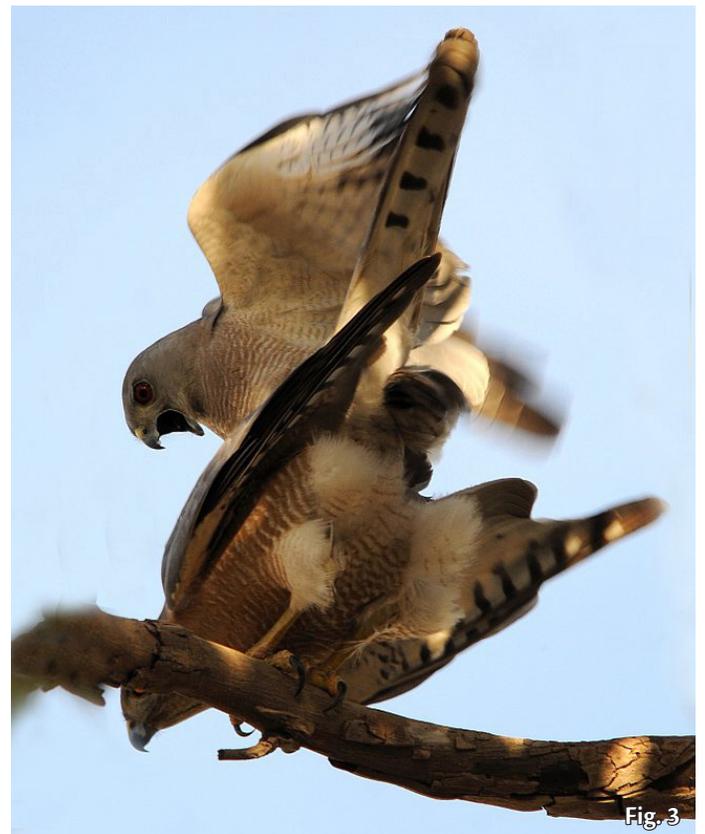
I have been observing this beautiful raptor near my home since 2006. Over the past 17 years, I have seen many interesting aspects of breeding this species and will give details of some selected events here. From the terrace of my house, many large trees are visible, three of which are frequently used by a pair of Shikra. The nest site is about 35-40 meters from my terrace, and a Neem tree (*Azadirachta indica*) and Indian Siris (*Albizia lebbek*) adjoining my terrace are used for their activities (Fig. 1). I have closely observed this raptor while on my terrace in my spare time. We hear the mating calls of the Shikra regularly from my residence from February to March.



Mating: I have observed mating in the Shikra on many occasions. I am citing two interesting observations here.

On 1 February 2021, I recorded a video of a female Shikra on the top of a leafless stem of the Neem, which was lower than I had seen. I had taken support from the parapet wall of my terrace to record the bird. I heard the beginning of a mating call from a tall *Eucalyptus sp.* on my left. The female looked towards the male bird but gave no reaction and continued to finish its prey. I had seen many mating events and knew conditions were favourable. I continued recording the female

bird, not making sudden movements, so it would not get alarmed. The female ate its prey slowly, while the mating call got progressively louder. The male came nearer to the female and flew about two feet lower. Then, after breaking its speed, it mounted the female with flapping wings while uttering mating calls. The female raised its tail, cooperating with its male. After copulating, the male stepped over the female and flew away. I could record the entire mating sequence and also observe the semen from the act. (Fig 2-3-4).



All Photos: Jaysukh Parekh



Fig. 4

In another incident in 2023, a Shikra pair was seen mating in the Neem, just about 8-10 meters away. Although it was hidden behind the foliage, I managed to get some photographs. The surprising thing about this mating act was that both birds had similar eye colour. Initially, I thought both birds were females. I took some photographs, especially post-mating, when a male stepped over the female and stood for a while. In this photo, it was clear that the mating pair had the same eye colour (Fig. 6). Earlier, I sent the images to experts in many close-up mating photos I had taken, but without the mating photo, both experts identified the bird as a female. However, after it became clear from the mating photos that the bird mounting (on top) was a male, the experts corrected the identification as a sub-adult male. In the image given here (Fig. 5), the bird on the left is a male, while the bird on the right, with a slightly raised tail, is a female. The eye colour of the male is like that of the female, and it is a sub-adult bird. Surprisingly, a sub-adult male was mating with an adult female, the first time I had observed!. Also, the female's cloaca was visible (Fig. 6). Since eye colour is essential in sexing the Shikra, I continued to photograph the sub-adult male. However, even after 70 days, there was no significant change in the eye colour of the sub-adult male.

Nest building: The nest of the Shikra in this area is usually high in trees. The nest is made of dry sticks, but wires and other artificial things are also used. The nest is an untidy-looking structure. In 2023, the nest was entirely made of sticks, while steel or metal wires were used in an earlier nest. A

comparison photo of the current nest and the previous year's nest is given here (Fig. 7).



Fig. 5



Fig. 6



Fig. 7

I had never seen Shikra collecting nesting material from the ground. They always cut dry stems directly from the tree (Fig. 8). The pair repairs the nest continuously till the fledgling of chicks. The nest made this year was about 20 meters high on an *Eucalyptus* sp. tree, a favourable height to keep watch from my terrace. In the morning, the light used to be very suitable

Shikra....

for photography. In June, once there was a windy atmosphere, and the branch carrying the nest tree was swinging excessively a to the requirement, the female continued to repair the nest. The centre of the nest is saucer-shaped and deep so that the eggs do not slip with the movement of the branch. Surprisingly, once I saw the female searching for something on the neem tree after mating. I saw it cutting a one-inch square bark piece from the dry neem stem and heading toward the nest. This must be Shikra's most minor nesting material (Fig. 9). Since this bark was cut meticulously, it was likely selected for a special purpose or like tilling a gap in the nest wall.



Hunting: The Shikra is seen in urban and rural areas. It is well known that the Shikra hunts a variety of prey. I present some observations of Shikra hunting Indian Spiny-tailed Lizards (*Saara hardwickii*).

Here in Kachchh, Spiny-tailed Lizards form colonies near villages, in open ground with very little vegetation. They make burrows near small plants so the hatchlings can be fed easily. May-June is the time for Shikra to provide food for its chicks. Burrows of lizards are full of hatchlings during this period. I have seen 8-10 hatchlings outside their burrows while the adults try to put them back into the burrows for safety. Shikra quickly hunts the young Lizards. I have seen the Shikra hunting the Spiny-tailed Lizards many times. Once, I took a photograph where the Shikra had one lizard on each leg and was trying to catch a third one! The third hatchling managed to escape but was injured (Fig. 10). It is visible in the photo towards the right of the frame.





Fig. 12



Fig. 13

Cyclone ‘Biporjoy’ and its effects: The cyclone ‘Biporjoy’ struck Kachchh in June 2023. The sub-adult male was not seen near the nest for the whole day. The wind was increasing, and there was a prediction of heavy rain and strong winds. Since there were chicks in the nest, which were less than a week old (figs 14-15), I continued to monitor the nest. The female was not seen hunting or bringing food to the nest for more than a day; indeed, the female was not ready to leave the chicks in this fast wind in the risky nest. The next day, the female left the nest briefly and went to the nearby Neem, where the male had just arrived. The male transferred a freshly killed lizard to the female; it was also a surprise that the male did not come to the nest but transferred the food 40 meters away. In this area, only one sub-adult male was seen for a long time, so there is no doubt that it was another sub-adult male. (Can it be due to sub-adult age?) The female flew back to the nest and fed the chicks. There was heavy rain and wind, and I could see from my house that the *Eucalyptus* was swaying more than 30 degrees! The female was not visible in the nest. (Fig. 16) However, after the rain and wind had stopped, I checked on the chicks and was overjoyed to see they were alive. The chicks had passed a challenging test early in their lives without their mother’s help. Nature at its best! The chicks eventually fledged.

General observations: In Shikra, eye colour is an important feature to identify male/female/juvenile and subadult. Sometimes, due to the nictitating membrane, the eye colour can appear different from the actual colour. The fledgling/

juvenile Shikra has pale blue-grey eyes, which will gradually turn yellow in adult females and orange to reddish in males. When the Shikra becomes mature (after the second year), the eyes will become yellow to orange in females and reddish in males. The older the bird, the deeper the colours. Old males (10+ years) will have eyes so profoundly red that they look deep red-brown. Since eye colour is essential in identifying the sexes, I always tried to get good photos of the birds so that the eye colour could be judged. In the photo given here (Fig. 11), a series of images illustrates the eye colour in different individuals.

Ritual/courtship display is performed late in the morning, with one bird taking off from around the nest, flying high in circles, and the partner joining it. Both birds glide high in the sky, and both birds sometimes go far away—generally, only a pair glides in the sky. Once, I saw an adult male and female active and gliding in the sky. While these two birds were gliding, he third one, an adult, joined the pair. A beautiful scene, with three Shikra flying in circles, was seen. The third bird could have been from a nearby area. These three birds were flying over me. Clicking them in a single frame was difficult, but I shared a mixed picture of all the three birds (Fig. 12). Sometimes, in courtship, a bird jumps and moves unevenly in front of its partner (Fig. 13). I have seen such behaviour many times, but could not take good photos. The courtship display of the Shikra is quite variable.

Discussion

The Shikra is a well-studied raptor, and its breeding biology is well-known (Dharmakumarsinhji 1955, Naoroji 2006, Suryawanshi 2021). My observations were not part of any detailed study and were made opportunistically. However, I was able to observe many fascinating facts of its breeding cycle in Kachchh.



Fig. 14



Fig. 15



Fig. 16

I have often observed the Shikra preying upon Spiny-tailed Lizard hatchlings. Another interesting observation was the pairing of the sub-adult male with the adult female. Naoroji (2006) has stated that this raptor starts breeding after one

year; hence, it is likely that this sub-adult male was suitable for the adult female. However, further study is required to check whether this is a frequent occurrence or if sub-adult males find it difficult to get mates. It is also interesting why the male did not go to the nest tree to transfer the lizard. The effect of the cyclone on the adult pair and the chicks was observed for the first time in this species during the nesting period. Another interesting observation is that it meticulously collects tiny, one-inch wood bark as a nesting material. The survival of the chicks during the cyclone was noteworthy and showed the resilience of the birds in adverse conditions.

Though the Shikra is well studied, many things about this species' breeding biology are still unknown. In a dry area like Kachchh, the breeding biology and food requirements may differ slightly from those of other parts of the country. It is recommended that more studies on the breeding biology of this raptor be carried out in this region.

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Regular Nesting of Asian Openbill Stork *Anastomus oscitans* at Jalalpore within Urban areas of Navsari city of Gujarat State, India

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Introduction

The Asian Openbill Stork (*Anastomus oscitans*) is a long legged large wader belonging to Ciconiidae family. It is a “Least Concerned species” according to IUCN RedList categories. The species is very rare in the Sind and Punjab regions of Pakistan, but widespread and common in India, Sri Lanka, Burma and Thailand (Ali and Ripley, 1978). It breeds in India, Pakistan, and Nepal eastward throughout Indochina and is now dispersing more widely in Southeast Asia, due to changes in climate and food availability (BirdLife International, 2024). It inhabits inland wetlands agricultural landscapes, irrigation

canals, seasonal marshes, river banks and tidal flats and feeds on molluscans, small fishes and frogs (Sundar, 2006; Sundar *et al.*, 2016). The Asian Openbill Stork breeds from April to September (Ali and Ripley, 1978). The knowledge of Asian Openbill Stork is available through the detailed studies conducted at many parts of India and Nepal, describing them inhabiting and nesting in and around wetlands, agricultural lands and urban areas (Datta and Pal, 1993; Sundar, 2006; Sundar *et al.*, 2016; Mohapatra, *et al.* 2019; Koju, *et al.* 2020). However, the species is not much studied in Gujarat. The Openbill is a common resident species in Navsari district,

however no published information from this region is there. Their nesting ecology was studied and published by the author (Vaghela Harshit, B., 2022). The study was extended for further two years to understand their regularity of nesting at the same site.

Study Area

Navsari (20.95°N 72.93°E) is located near the Purna river in South Gujarat at an elevation of 9m above sea level. It covers an area of 43.71 sq. km. Nesting colony of Asian Openbill Stork

is located at Jalalpore (20°56'46.66" N, 72°53'56.50" E), within human dominated area of Navsari city, near Udyog nagar and Navsari railway station (Fig.1). The Abrama Lake, Sultanpur wetland and Chijgam wetland are situated about 9.6 km, 13km and 16km from the nesting site. The minimum distance of nearest water body, Purna river, agricultural field and human habitation were 0.931 km, 2.05 km, 1.19 km and 68.84 m respectively.

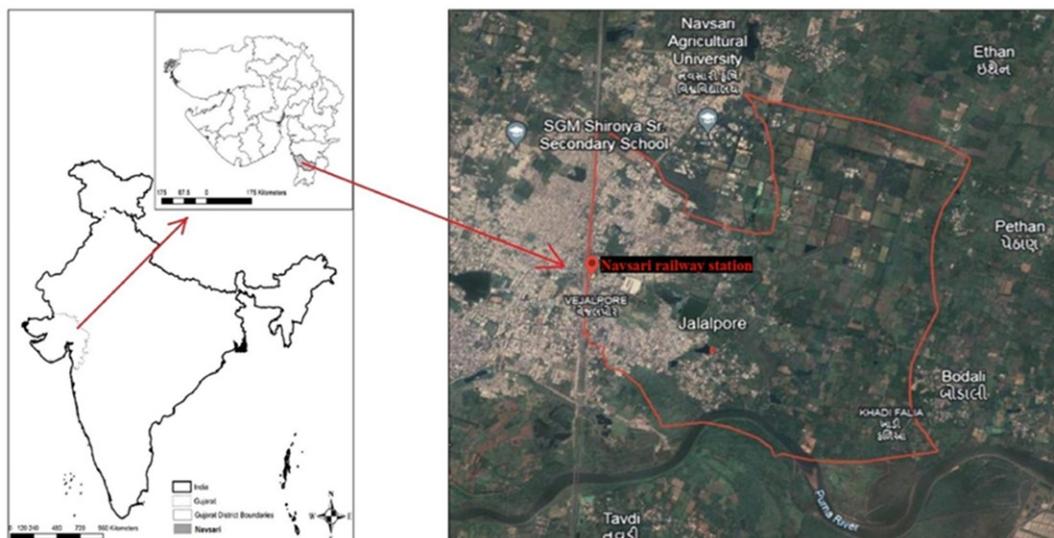


Figure 1: Location of nesting site of Asia Open-billed Stork at Jalalpore in Navsari city, Gujarat state, India.

Methodology

The Jalalpore nest site was surveyed weekly every month from April to October for five successive years viz. 2019 to 2023. The numbers of birds, nests and chicks were counted by Total Count Method using 20x50 binoculars. The tree species were identified by using scientific books. Data such as species and number of nesting trees, numbers of nest per tree and species, height of tree, height of nests, nesting material etc. was collected on the data sheets. The parameters such as height and canopy were measured by ocular estimation. Fledging success was measured by counting total numbers of chicks hatched and numbers of young ones fledged successfully from the nests. Photography and video recordings were done with by using OPPO mobile camera. Local people were asked for past history of nesting and also nesting in nearby potential sites.

Observations

The Asian Openbill Stork was found nesting in a 457m area at Jalalpore, near Navsari railway station for five successive years from 2019 to 2023. The storks nested on trees amid human habitation, within urban areas with constant vehicular and

train movements. Asking the local people revealed that the species nest at the Jabalpore site for 17 years.

The adults arrived at nesting site in months of April to June each year during the study period. The storks started building nests in mid-April and the successively arriving birds continued till June. The highest number of adult birds were recorded in 2020 (Fig.1). The number of nesting birds and active nests declined in the following two years due to pruning of a few nesting trees. Both the parents were involved in nest construction. The nests were huge made of sticks and straws, green branches and leaves of nesting trees. Periodic maintenance of nests was done by addition of fresh twigs from nesting trees. After occupying the nest, one partner always guarded the nest, while another left for collection of nesting material. Mating and egg laying were recorded immediately after the completion of nest building. The average incubation period recorded was 25-27 days. Both male and female were found incubating alternately and feeding to the young ones. The birds bred asynchronously and those initiating nest building activity late in June, left the nests by the end of October along with the young ones. Asian Openbill Stork

Asian Openbill....

goes to feeding in Purna river, agricultural field, Abrama Lake, Sultanpur wetland and Chijgam wetland.

Total 26 trees of nine species were used for situating the nests. Maximum number of nesting tree species was Asopalav (*Monoon longifolium*). However, maximum numbers of nests were recorded on a single Yellow-flame trees (*Peltophorum pterocarpum*). The maximum and minimum height of nests was 16.2m and 7.5m respectively. The height of tree and canopy varied from 10.3m to 20.2m and from 2.5m to 6.3m respectively (Table 1).

In majority of nests two chicks were observed with one and three chicks in a few nests. Total of 6253 juveniles fledged successfully. Mortality of about 1065 juveniles and chicks was reported during the five years due to natural disasters such as heavy rain with strong winds and also falling down from nest. A few still survived after falling on ground but died due to

starvation as remained unattended by the parents. Every year, a few pairs were found discarding single egg from nest.

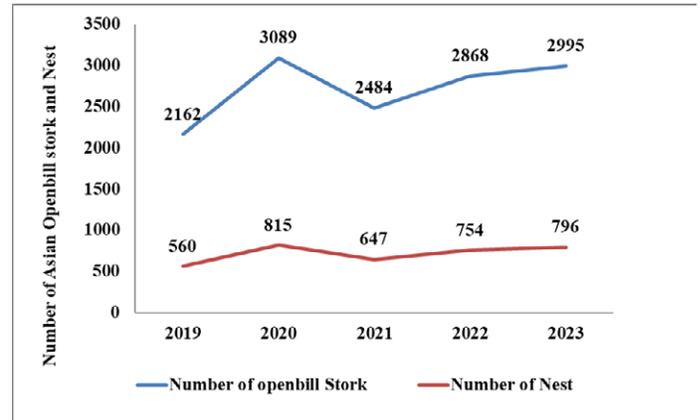


Figure 2: Number of Asian Openbill Stork including adults and juveniles and total Nests at the Jalalpore site during the peak of nesting activities

Table 1: Morphometry of Nest Trees and Nests at Jabalpore, Navsari.

| Sr. No. | Nesting Tree | Scientific Names | No. of Trees Used for Nesting | Canopy (m) | Average Tree Height(m) | Average Nest Height(m) |
|--------------|--------------|--------------------------------|-------------------------------|------------|------------------------|------------------------|
| 1. | Asopalav | <i>Monoon longifolium</i> | 6 | 03.40 | 11.16 | 10.66 |
| 2. | Mango | <i>Mangifera indica</i> | 4 | 04.70 | 13.90 | 12.20 |
| 3. | Neem | <i>Azadirachta indica</i> | 4 | 04.90 | 12.50 | 11.66 |
| 4. | Pipal | <i>Ficus religiosa</i> | 1 | 06.40 | 15.00 | 12.96 |
| 5. | Yellow flame | <i>Peltophorum pterocarpum</i> | 3 | 07.73 | 19.40 | 15.40 |
| 6. | Rain | <i>Samanea saman</i> | 1 | 06.96 | 19.66 | 16.06 |
| 7. | Jamun | <i>Syzygium cumini</i> | 2 | 05.00 | 13.43 | 09.50 |
| 8. | Bottle-brush | <i>Melaleuca citrina</i> | 1 | 03.83 | 11.43 | 08.16 |
| 9. | Almond | <i>Terminalia catappa</i> | 4 | 04.10 | 12.20 | 10.46 |
| Total | | | 26 | | | |

Discussion

The Asian Openbill Stork was found nesting for five successive years in a 457m area at Jalalpore in Navsari city. The local inquiries revealed that they were nesting at this site for 17 years. This explains the site fidelity and regular nesting of storks in Navsari, which is reported here for the first time at the same location as published in a 2022 paper (Vaghela Harshit, B., 2022). This heronry is old, regular and vast covering a small area, variety of nesting tree including uncommon trees such as almond trees. The current findings can be a pioneer study for detailed research at the same site in the future. The nesting colony was within urban area, very close to human habitation and exposed to heavy vehicular noise and air pollution. Many species of storks are recorded nesting near human habitation, waterbody and agricultural fields. It is believed to provide

protection from predation and easy access to nearby feeding grounds (Thabethe 2018, Tere 2021, Sundar et. al, 2019; Kittur and Sundar 2021). However, a detailed study is required to monitor this site and understand the factors supporting.

In the present study, the storks selected tall trees with large canopy which is matching with other regular sites in Gujarat and India. Conservation of such trees is very important to conserve the species. Cutting of trees, Falling of chicks, natural calamities and pollution were the threats identified at the nesting site. A few people from Forest Department were contacted to rescue the falling chicks during the study, however collaborative involvements of local people, researchers, government and NGOs is required to avoid mortality and conserve the species and nesting site.



Photo 1: Nesting colony of Asian Openbill Stork



Photo 2: Juvenile of Asian Openbill Stork surviving after falling on ground but remained unattended by the parents



Photo 3: Partners with 4 Juvenile from nesting on almond tree



Photo 4: Adult Asian Openbill Stork

All Photos: Harshit Vaghela



Photo 5: Asian Openbill Stork in nest (Almond Tree)

Acknowledgements

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Fifth update to the Gujarat checklist: December 2024

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This paper is the fifth update to the Gujarat checklist; the checklist was published in 2016 (Ganpule 2016), the first update in December 2017 (Ganpule 2017), the second update in March 2020 (Ganpule 2020), the third update in December 2021 (Ganpule 2021), and the fourth update in December 2022 (Ganpule 2022), which took the number of species documented within the boundaries of the state of Gujarat, along with the adjoining Union Territories of Diu & Daman, and Dadra & Nagar Haveli, to **615** until 31 December 2022; this is also the number of species included in the Gujarat field guide (Ganpule et al. 2022). This paper reviews vital records, lists recent additions to the state checklist and discusses significant sightings from the state from 1 Jan., 2023 till 31 Dec., 2024. A taxonomic update is also included in this note.

The records of the following species have been reviewed:

Eastern Buzzard (*Buteo japonicus*): A recent paper confirmed the occurrence of the Himalayan Buzzard (*Buteo refectus*) in Gujarat (Ganpule 2023). An unanswered question remains whether these buzzards seen in peninsular India are Himalayan Buzzards or the long-distance migrant Eastern

Buzzards. The Himalayan Buzzard was considered sedentary in the Himalayas with only altitudinal movements, while the Eastern Buzzard is known to be a long-distance migrant.

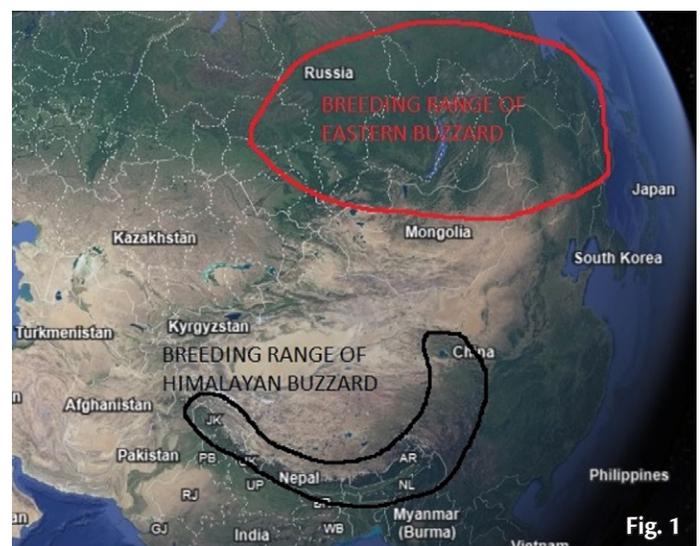


Fig. 1

Anecdotal evidence suggests that Eastern Buzzards from Siberia migrate southwards and could well be visiting India; the Eastern Buzzard was the most common migrating raptor in the South Baikal migratory corridor (Fefelov et al. 2012), and

the Birds of Siberia website shows that the Eastern Buzzard is absent there from November to February, with migration seen in September (<https://siberia.russia.birding.day/index.php?!=en>). It has been seen from data on tagged birds that Black Kite (*Milvus migrans*), Demoiselle Crane (*Grus virgo*), Steppe Eagle (*Aquila nipalensis*) and many other species from Mongolia / Siberia visit India in the winter. The approximate breeding ranges of Himalayan Buzzard and Eastern Buzzard, compiled based on data from 'eBird' and other websites/sources (birds breeding in Central China are included in Himalayan Buzzard here) (Fig.1), show that the breeding range of Eastern Buzzard is roughly from Lake Baikal (Siberia), northern Mongolia, NE China, east to Far East Russia & Japan; these taxa are probably reproductively isolated, with the Gobi Desert acting as a natural barrier.

It is distinctly possible that based on the breeding range of the Eastern Buzzard and its migratory behaviour, it could well be a winter migrant or vagrant to the Indian Subcontinent. Since there are no identification keys at present to separate Himalayan Buzzard from Eastern Buzzard, it is not possible to confirm if these buzzards in peninsular India are Eastern Buzzards. Yang & Shuihua (2024) suggest that the Eastern Buzzard has a darker tail than the Himalayan Buzzard, which needs to be checked and confirmed with specimens and in the field with live birds; at present, only molecular studies can confirm the identification. A further complication is that though Himalayan Buzzard and Eastern Buzzard are currently treated as separate species, the taxonomy is still unresolved. Also, the assertion that the Himalayan Buzzard is only an altitudinal migrant is untested, and, likely, the Himalayan Buzzard could also be a migrant, either short or long-distance. Hence, with so many unknowns, it is prudent to be cautious. Thus, it is assumed that these buzzards in Gujarat are Himalayan Buzzards. The Eastern Buzzard is not included in the India Checklist (Praveen & Jayapal 2025). Its occurrence in the country is not proven since no molecular analysis of specimens or live birds has been done. If the Himalayan Buzzard is proven to be only an altitudinal migrant within the Himalayas, then the buzzards seen in peninsular India (including Gujarat) would be Eastern Buzzards. It is recommended that in-depth studies on these taxa be conducted since it is most likely that the Eastern Buzzard could occur in India as a winter migrant.

Western Hooded Pitta (*Pitta sordida*): An extraordinary sighting of a Western Hooded Pitta was reported from Dholka, near Ahmedabad, in December 2024. The bird was seen in a farm for two days and the farmer noted that it was feeding on the ground. It was photographed, and the identification

was confirmed, with more than five photos taken. The photos were shared in various groups.

There are no reports of Western Hooded Pitta from western India. Further, this sighting, though likely correct, could not be verified. After this sighting was reported, this area was visited for three days, but further attempts to find this bird failed. This sighting was discussed with senior bird watchers here, and it was decided not to add this species to the Gujarat checklist since other bird watchers could not verify it independently. But this sighting is interesting and requires further study, and it can be assessed later if records of Western Hooded Pitta are noted in western India.

The following species have been added to the state checklist after the publication of the fourth update:

616. Blue-and-white Flycatcher (*Cyanoptila cyanomelana*): An immature Blue-and-white Flycatcher was photographed in March 2021 in Chadva *Rakhal*, Kachchh, by Riaz Khojani. The sighting was posted on social media (Facebook) with three photographs. The photographs clearly show an immature Blue-and-white Flycatcher, and there is no doubt regarding the identification vis-à-vis other flycatchers in Gujarat. However, Zappey's Flycatcher (*C. cumatilis*) is very similar to the Blue-and-white Flycatcher, and these two species cannot be separated in juvenile plumage, but, all sightings from peninsular India are considered to be of Blue-and-white Flycatcher (Vittapu & Dey 2021). The Blue-and-white Flycatcher has been reported in India, from Maharashtra, in southern states and down south to Sri Lanka in 'eBird'; it was included in the Gujarat field guide in Appendix 2 as 'possible in Gujarat'. This sighting is the first record of the Blue-and-white Flycatcher in Gujarat and is an addition to the state's avifauna.

617. Red-tailed Tropicbird (*Phaethon rubricauda*): A juvenile Red-tailed Tropicbird was rescued from Porbandar in April 2023 (Modhwadiya 2023). A few photographs show the all-dark beak well, which is a diagnostic of a juvenile red-tailed tropicbird. This species is an addition to the avifauna of Gujarat.

618. Pied Wheatear (*Oenanthe pleschanka*): A Pied Wheatear of *vittata* morph was seen and photographed in Kachchh in February 2024 (Kapadi 2024). Many photographs were taken of this individual, which are also posted on the eBird website. This species is also an addition to the avifauna of Gujarat.

619. Lanceolated Warbler (*Locustella lanceolata*): A Lanceolated Warbler was seen and photographed in Nalsarovar Bird Sanctuary in September 2024 (Kshirsagar,

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in print). The photographs were posted on social media and in various Whatsapp groups. Experts confirmed the identification. This is the first record of a Lanceolated Warbler from Gujarat.

620. Striated Grassbird (*Megalurus palustris*): A Striated Grassbird was photographed near Dandi, Surat, in February 2022; Dr. Pankaj Maheria shared the sighting. The photos were posted on the 'Birds of Gujarat' website, and the bird was seen well. The photos can be seen at: https://birdsofgujarat.co.in/bird_detail.php?id=27149. This is the first record of a Striated Grassbird from Gujarat.

Details of some vagrant and interesting species which were seen or photographed in Gujarat from 1 January 2023 to 31 December 2024:

Long-billed Dowitcher (*Limnodromus scolopaceus*): A Long-billed Dowitcher was seen and photographed at Bhavnagar in January 2023 (Vegad et al. 2023). It was seen for more than ten days in the area and was seen by many bird watchers. This was the third sighting of this species from Gujarat and the first sighting after 2012.

Orange-headed Thrush (*Geokichla citrina citrina*): The nominate subspecies of the Orange-headed Thrush was seen and photographed in Ahmedabad in March 2023 (Lalbhai 2023). The subspecies noted in Gujarat is *G. c. cyanotus*, which is resident in the state and seen in the forest belt from N to S Gujarat as well as in some parts of Saurashtra. However, the nominate subspecies were not known to occur in Gujarat, and this was the first record of this subspecies in Gujarat.

Green-crowned Warbler (*Phylloscopus burkii*): After the first sighting of a Green-crowned Warbler for Gujarat was reported from Kachchh, this species was noted again in Ratanmahal (Zabuawala 2023), which was the second record for Gujarat. This is an overlooked species, and bird watchers must be on the lookout for it here.

Pale Crag Martin (*Ptyonoprogne obsoleta*): An interesting sighting of a probable Pale Crag Martin was reported from Bhavnagar after Cyclone Biparjoy (Andharia 2023). The identification was discussed in detail with experts, but since the photos were not very good, the identification was inconclusive.

I sent the photos to Oscar Campbell, who has experience with this species, and he suggested that this bird looked fine for a Pale Crag Martin, but with the caveat that accepting this record would depend on a broader consensus regarding the identification. However, as explained in the note, due to

the poor quality of the photos, it was treated as a 'probable' Pale Crag Martin and could not be confirmed beyond doubt, though it is very likely that this was indeed a Pale Crag Martin.

Ashy Drongo (*Dicrurus leucophaeus leucogenis/salangensis*): A first sighting of an Ashy Drongo of the subspecies *leucogenis/salangensis* was reported by Gir (Trivedi & Parmar 2023). Though the authors contended that this individual was of the subspecies *leucogenis*, no photo showing the underwing-coverts was available. A previous sighting in peninsular India (from Madhya Pradesh) was of the subspecies *salangensis*, and sightings of *leucogenis* are only known from the Andaman Islands. Further, there is no clarity regarding which birds in the *D. l. innexus* group could potentially winter or occur as vagrants in peninsular India. Until more data is available, treating this sighting as *leucogenis/salangensis* is prudent. This is the first record of the Chinese White-faced Drongo from Gujarat.

Yellow-breasted Bunting (*Emberiza aureola*): A Yellow-breasted Bunting was noted in Nalsarovar Bird Sanctuary (Belim & Belim 2024). A single bird was seen well and photographed. This is the second record of this species from the state.

Grey-headed Lapwing (*Vanellus cinereus*): A Grey-headed Lapwing seen and photographed near Pavagadh was the third record of the species for the state (Dumadiya 2024). The bird stayed for a few days and was seen by many bird watchers. This species could be overlooked, and recent records show it could occur in the state.

Chestnut-winged Cuckoo (*Clamator coromandus*): A Chestnut-winged Cuckoo was seen and photographed in March 2024 in Vansada National Park (Patel 2024). After 2005, when the Chestnut-winged Cuckoo was first reported from Gujarat, this was only the state's second record of this species.

Lesser Frigatebird (*Fregata ariel*): A male Lesser Frigatebird was photographed near Porbandar in July 2024 (Modhvadia 2024). This was the third record for this species in Gujarat. A pelagic species, the Lesser Frigatebird is rarely seen in coastal areas, and this record is significant.

Northern Goshawk (*Astur gentilis*): An adult Northern Goshawk was photographed in Kachchh in December 2013. However, it was originally reported as a Peregrine Falcon (*Falco peregrinus*), which was a misidentification. This bird was later correctly identified as a Northern Goshawk, which Dick Forsman also confirmed. The photo is at <https://macaulaylibrary.org/asset/239677071> in the checklist <https://ebird.org/checklist/S69781077> and posted on 'eBird' (Singh

2013). This is the first photo record of a Northern Goshawk from Gujarat, as all earlier records of this species from Gujarat were taken before 1990.

Taxonomic update

After the publication of the Gujarat field guide, there have been some changes or recommendations regarding the taxonomy for a few species. In implementing these taxonomic changes to the Gujarat species list, various taxonomic authorities were referred to, and the latest India checklist

and taxonomic update (Praveen & Jayapal 2024) were consulted. Several interesting papers on taxonomy have been published recently, but the taxonomic authorities have not yet implemented the taxonomic recommendations given in these papers. Hence, such recommendations are not taken into account at present.

The species for which the taxonomy is changed from the Gujarat field guide (Ganpule et al. 2022) are as follows:

| Scientific names to be used/adopted | Notes on changes in taxonomy |
|--|---|
| Grey Francolin <i>Ortygornis pondicerianus</i> | genus change from <i>Francolinus</i> to <i>Ortygornis</i> |
| Little Bittern <i>Botaurus minutus</i> | genus change from <i>Ixobrychus</i> to <i>Botaurus</i> |
| Yellow Bittern <i>Botaurus sinensis</i> | genus change from <i>Ixobrychus</i> to <i>Botaurus</i> |
| Cinnamon Bittern <i>Botaurus cinnamomeus</i> | genus change from <i>Ixobrychus</i> to <i>Botaurus</i> |
| Black Bittern <i>Botaurus flavicollis</i> | genus change from <i>Ixobrychus</i> to <i>Botaurus</i> |
| Eastern Cattle Egret <i>Ardea coromanda</i> | split from Cattle Egret <i>A. ibis</i> , genus change from <i>Bubulcus</i> to <i>Ardea</i> and corrected specific epithet |
| White-bellied Sea Eagle <i>Icthyophaga leucogaster</i> | genus change from <i>Haliaeetus</i> to <i>Icthyophaga</i> |
| Shikra <i>Tachyspiza badia</i> | genus change from <i>Accipiter</i> to <i>Tachyspiza</i> and corrected specific epithet |
| Besra <i>Tachyspiza virgata</i> | genus change from <i>Accipiter</i> to <i>Tachyspiza</i> and corrected specific epithet |
| Northern Goshawk <i>Astur gentilis</i> | genus change from <i>Accipiter</i> to <i>Astur</i> |
| Grey-headed Swampphen <i>Porphyrio poliocephalus</i> | split from Purple Swampphen <i>Porphyrio porphyrio</i> |
| Demoiselle Crane <i>Anthropoides virgo</i> | genus change from <i>Grus</i> to <i>Anthropoides</i> |
| Little Ringed Plover <i>Thinornis dubius</i> | genus change from <i>Charadrius</i> to <i>Thinornis</i> |
| Caspian Plover <i>Anarhynchus asiaticus</i> | genus change from <i>Charadrius</i> to <i>Anarhynchus</i> |
| Kentish Plover <i>Anarhynchus alexandrinus</i> | genus change from <i>Charadrius</i> to <i>Anarhynchus</i> |
| Greater Sand Plover <i>Anarhynchus leschenaultii</i> | genus change from <i>Charadrius</i> to <i>Anarhynchus</i> |
| Tibetan Sand Plover <i>Anarhynchus mongolus</i> | genus change from <i>Charadrius</i> to <i>Anarhynchus</i> and split from Lesser Sand Plover <i>A. mongolus</i> |
| Steppe Gull <i>Larus barabensis</i> | split from Lesser Black-backed Gull <i>Larus fuscus</i> |
| Mongolian Gull <i>Larus mongolicus</i> | split from Vega Gull <i>Larus vegae</i> |
| Spotted Dove <i>Spilopelia chinensis</i> | genus change from <i>Streptopelia</i> to <i>Spilopelia</i> |
| Laughing Dove <i>Spilopelia senegalensis</i> | genus change from <i>Streptopelia</i> to <i>Spilopelia</i> |
| Asian Barn Owl <i>Tyto javanica</i> | split from Common Barn Owl <i>Tyto alba</i> |
| Forest Owlet <i>Athene blewitti</i> | genus change from <i>Heteroglaux</i> to <i>Athene</i> |

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| | |
|---|---|
| Dusky Eagle Owl <i>Ketupa coromandus</i> | genus change from <i>Bubo</i> to <i>Ketupa</i> and corrected specific epithet |
| Spot-bellied Eagle Owl <i>Ketupa nipalensis</i> | genus change from <i>Bubo</i> to <i>Ketupa</i> |
| Blyth's Swift <i>Apus leuconyx</i> | split from Pacific Swift <i>Apus pacificus</i> |
| Brown-capped Pygmy Woodpecker <i>Yungipicus nanus</i> | genus change from <i>Picoides</i> to <i>Yungipicus</i> |
| Malabar Flameback <i>Chrysocolaptes socialis</i> | split from Greater Golden-backed Woodpecker <i>Chrysocolaptes guttacristatus</i> |
| Black-lored Tit <i>Machlolophus aplanotus</i> | split from <i>Machlolophus xanthogenys</i> , which is now Himalayan Black-lored Tit |
| Indian Bushlark <i>Plocealauda erythroptera</i> | genus change from <i>Mirafra</i> to <i>Plocealauda</i> |
| Delicate Prinia <i>Prinia lepida</i> | split from Graceful Prinia <i>Prinia gracilis</i> |
| Bristled Grassbird <i>Schoenicola striatus</i> | genus change from <i>Chaetornis</i> to <i>Schoenicola</i> |
| Rusty-rumped Warbler <i>Helopsaltes certhiola</i> | genus change from <i>Locustella</i> to <i>Helopsaltes</i> |
| Lesser Whitethroat <i>Curruca curruca</i> | genus change from <i>Sylvia</i> to <i>Curruca</i> |
| Desert Whitethroat <i>Curruca minula</i> | genus change from <i>Sylvia</i> to <i>Curruca</i> |
| Hume's Whitethroat <i>Curruca althaea</i> | genus change from <i>Sylvia</i> to <i>Curruca</i> |
| Eastern Orphean Warbler <i>Curruca crassirostris</i> | genus change from <i>Sylvia</i> to <i>Curruca</i> |
| Asian Desert Warbler <i>Curruca nana</i> | genus change from <i>Sylvia</i> to <i>Curruca</i> |
| Common Whitethroat <i>Curruca communis</i> | genus change from <i>Sylvia</i> to <i>Curruca</i> |
| Jungle Babbler <i>Argya striata</i> | genus change from <i>Turdoides</i> to <i>Argya</i> |
| White-rumped Shama <i>Copsychus malabaricus</i> | genus change from <i>Kittacincla</i> to <i>Copsychus</i> and corrected specific epithet |
| Indian Robin <i>Copsychus fulicatus</i> | genus change from <i>Saxicoloides</i> to <i>Copsychus</i> |
| Thick-billed Flowerpecker <i>Pachyglossa agilis</i> | genus change from <i>Dicaeum</i> to <i>Pachyglossa</i> and corrected specific epithet |
| Siberian Pipit <i>Anthus japonicus</i> | split from Buff-bellied Pipit <i>Anthus rubescens</i> |

For the following species, the taxonomy has been updated but there is no change in the scientific names used:

Oriental Dwarf Kingfisher *Ceyx erithaca* has been split into Black-backed Dwarf Kingfisher *C. erithaca* and Rufous-backed Dwarf Kingfisher *C. rufidorsa* (extra-limital). We continue to use the name Oriental Dwarf Kingfisher, and there is no change in the scientific name used.

Indian Cuckooshrike *Coracina macei* has been split from *C. javensis*. However, this was given as *C. macei* in the field guide but with the name Large Cuckooshrike.

Eastern Red-rumped Swallow *Cecropis daurica* has been split from European Red-rumped Swallow *C. rufula*. We have used *C. daurica* in the field guide while *C. rufula* is not known to occur in Gujarat.

Many of the taxonomic changes adopted here were alluded to in the field guide. Still, they were not accepted since

the taxonomic authorities had not updated the respective checklists. With these changes implemented here, the Gujarat checklist is more in line with the taxonomic changes adopted by these authorities. Mongolian Gull and Steppe Gull are the only taxa which see a species level change; Mongolian Gull was treated earlier as a subspecies of Vega Gull but has now been treated as a separate species, while Steppe Gull was treated as a subspecies of Lesser Black-backed Gull (*L. fuscus*) but is now treated as a separate species. However, since both were assigned an individual serial number, this change does not affect the number of species listed for the state. The elevation of Steppe Gull to species status remains controversial but is adopted here following full species status to Mongolian Gull. Since white-headed gull taxonomy remains complicated, this treatment seems practical to address this group's confusion.

This taxonomic update will help align the Gujarat checklist with global taxonomic authorities. The species-level differences

in the Gujarat checklist vis-à-vis the India checklist are as per the details given in the field guide. Some species split adopted in the Gujarat field guide may be widely accepted in the future; for example, the Swedish Taxonomic Committee, in their 2024 report, accepted the split of the Variable Wheatear (*Oenanthe picata*) into three species. This is not yet done by the major taxonomies (or the India checklist) but the Variable Wheatear complex was split into three species in the Gujarat field guide. Thus, future research may confirm or refute the decisions on species-level splits.

As reported in the second update, the Working Group of Avian Checklists (WGAC) (under the IOU) is expected to publish a final draft of the world checklist in 2025, which will be made public. Many of the changes proposed by the working group have already been accepted by IOC and Clements (and are implemented in 'eBird'). An interesting development is that the Howard and Moore Checklist will be published online, probably in 2025, independent of the WGAC. Hence, the notion of having a unified world checklist seems unlikely and it remains to be seen if there are significant differences in these checklists. For the Gujarat checklist, it will be interesting to compare whether it aligns more with the Howard and Moore checklist or the WGAC. But it is probably for the better that there are different checklists as alternative views can be looked at before making any decision regarding the taxonomy for some problematic taxa.

Discussion

This update brings the species list for Gujarat to **620**, with five species added after the publication of the Gujarat field guide / fourth update to the Gujarat checklist. This paper has also updated the taxonomy, and the Gujarat checklist is now up-to-date with the latest taxonomic recommendations. The updated checklist (v2.0) will be available shortly on the 'Flamingo Gujarat' for all users to access.

There are a few species for which there is insufficient data. For example, the taxonomy of the Blue-throated Flycatcher (*C. rubeculoides*) complex in India has changed – for a simple explanation, see <https://bou.org.uk/blog-singh-blue-throated-flycatcher-taxonomy/>. Though the nominate *rubeculoides* from W Himalaya are expected to mainly occur in Gujarat, vagrancy from eastern populations in peninsular India remains unstudied. Though there is no change in the Gujarat checklist, future work will shed more light on whether the east taxon occurs in peninsular India as a vagrant. Similarly, Hanuman Plover (*A. seebohmi*), recently split from Kentish Plover, is said to appear in southern India, but its exact distribution in southern India remains a matter for further study. The Siberian

Sand Plover (*A. mongolus*) could occur as a vagrant in India and remains a less studied species. Thus, more work must be done on many other taxa since there is less knowledge regarding their status and distribution.

The next update will again aim to carry new and interesting records from Gujarat along with taxonomic changes, if any.

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First confirmed cross-border migration of the Laggar Falcon *Falco jugger* from Pakistan to India

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Fig. 1

Abstract

We report the first verified instance of international migration in Laggar Falcon (*Falco jugger*), a raptor species endemic to the Indian subcontinent. A ringed individual, rehabilitated initially and released in Karachi, Pakistan, was subsequently observed and identified at the outskirts of the Nal Sarovar Bird Sanctuary in Gujarat, India. This record, supported by photographic documentation and ring identification, reveals the species' capacity for long-distance, cross-border

movement. The observation has significant implications for understanding the spatial ecology and conservation of *F. jugger*, a species in decline across much of its range. This is the first confirmed evidence of Laggar Falcon migration.

Introduction

Laggar Falcon is a medium-sized falcon endemic to the Indian subcontinent, with a distribution range spanning India, Pakistan, Nepal, and parts of Bangladesh and Myanmar. It is typically associated with dry open habitats such as arid grasslands, semi-desert scrublands, and cultivated agricultural landscapes (Naoraji, 2006; Grimmett et al., 2011). Although often described as sedentary or resident with localised movements, the species' movement ecology remains poorly studied. [Fig 1].

Once considered widespread and relatively common, the Laggar Falcon has experienced significant population declines across much of its range. Further study is needed to confirm trends. Notably, breeding behaviour of the species has been documented in India (Mori et al., 2023; Rao & Adaki, 2018), which provides essential insights into its nesting ecology and regional breeding success. This decline is primarily attributed to a combination of factors, including habitat degradation due

to expanding agriculture, urbanisation, and illegal trapping for falconry markets, particularly in regions where falcons are captured for use as live decoys or 'baraks' to trap larger falcon species such as *Falco cherrug* and *Falco peregrinus*. Additionally, increasing competition from adaptable and often more aggressive falcon species, including the Peregrine Falcon (*Falco peregrinus*), may contribute to local declines in Laggar populations (BirdLife International, 2024). In Gujarat, the Laggar Falcon is an uncommon to rare resident and local migrant. While a population decline is suspected, further study is needed to confirm trends. We recommend systematic surveys to better understand its distribution, population status, and plumage variation, as highlighted by Bhatt et al. (2018) and Ganpule et al. (2022).

Currently, the species is classified as Near Threatened on the IUCN Red List due to its ongoing decline and continuing threats across its range. Despite its conservation concern, critical aspects of its ecology especially its dispersal behaviour, juvenile movements, and survival rates remain poorly understood due to a lack of targeted research and tracking data.

In this context, we present the first confirmed record of cross-border migration of a Laggar Falcon from Pakistan to India, based on identification of a ringed individual initially rehabilitated and released in Karachi, Pakistan, and later documented in Gujarat, India. This sighting offers a rare and valuable insight into the long-distance movements of the species, highlighting the need for stronger cooperation and information sharing between countries to conserve South Asian endemic raptors like the Laggar Falcon.

Methods

Observation

On 10th February 2025, around 08:45 hours, a juvenile Laggar Falcon (*Falco jugger*) was observed in an open agricultural habitat on barren land at the outskirts of the Nal Sarovar Bird Sanctuary in Gujarat, India. The bird was perched on an electric pole, seemingly awaiting an opportunity to hunt. The area was teeming with Greater Short-toed Larks (*Calandrella brachydactyla*), with thousands of these larks present, making them an easy target for predation. The exact location also hosted a variety of other raptors, likely attracted by the abundance of prey, including the Red-naped Shaheen (*Falco peregrinus babylonicus*), Red-necked Falcon (*Falco chicquera*), Black-winged Kite (*Elanus caeruleus*), Pallid Harrier (*Circus*

macrourus), Montagu's Harrier (*Circus pygargus*), Western Marsh Harrier (*Circus aeruginosus*), Long-legged Buzzard (*Buteo rufinus*), Greater Spotted Eagle (*Clanga clanga*), Steppe Eagle (*Aquila nipalensis*), and Shikra (*Tachypiza badia*). Over two hours, we observed this Laggar Falcon as it flew frequently and successfully captured larks. Later, two individual falcons were observed, one with a metal leg ring on its right tarsus. These birds were shy and maintained a considerable distance, making it complicated to read the ring number. However, high-resolution photographs confirmed the presence of the metal ring on the leg. After posting the images on social media, we received feedback from Sajjad Gujjar, a falconer from Karachi, Pakistan, who provided additional details regarding the ringed bird [Fig. 2].



Fig. 2

Photo: Mamish Sidani

The alphanumeric code [Chip Number - 827, Ring Number - PLP V 04] [Fig 3] was observed on the juvenile male bird across multiple photo frames taken by us, and its identification was later confirmed with the help of individuals involved in raptor conservation efforts in the region where the bird was initially released. The metal ring bearing this code was confirmed

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to have been placed as part of a rehabilitation and release program managed by 'Project Lagger' in Karachi, Pakistan (24.86°N, 67.01°E). (The Project Lagger is a UK-based trust focused on conserving the Lagger Falcon in South Asia.)



Fig. 3

Photo: Sajjad Gujjar

[A note on spelling: (*Falco jugger*) is widely known as the Laggar Falcon in most modern ornithological texts. However, an alternative spelling—Lagger—is also in use, especially in older literature and the names of certain conservation efforts, such as *The Project Lagger*. In this article, both spellings are used where appropriate: “Laggar” when referring to the bird itself, and “Lagger” when referencing initiatives that use that spelling. Both refer to the same species].

The bird was released on 25th December 2023 in the Malir area of Karachi, Sindh, Pakistan. Communication with project personnel provided further insight into the Laggar's background, including age, sex, ring number, date of release, and location.

Background on Rehabilitation Program

Shared by Sajjad Gujjar "We had 75 individuals as part of the release program, each equipped with a metal ring and a microchip containing a unique identification code. These birds represented a mix of sexes and various age groups: 41 females and 32 males, including juvenile, sub-adult, and adult stages. Being a juvenile at the time of release, this bird was one of the 75 individuals carefully rehabilitated and released into the wild as part of an ongoing conservation effort. In Pakistan, the Laggar Falcon is often trapped and used as a Barak to attract and capture more expensive birds like the Saker Falcon (*Falco cherrug*) and Peregrine Falcon (*Falco peregrinus*) for Arab falconers. I initially began rescuing and releasing birds of prey on my own. About a year ago, Bob Dalton from the UK invited me to collaborate on Project Lagger, which he leads. As a result, I started releasing Laggar Falcons after ringing them". [Fig 2].

Although he did not mention where these Laggar Falcons were captured or rescued from or their origins. We received all this information on 13th February 2025 through social media. Table 1 gives the ringing details and the sighting details of the bird seen here.

Table 1: Ringing and sighting details of Laggar Falcon

| Sr. No. | Chip No | Ring No | Age | Ringing Date | Ringing Location | Sighting Date | Sighting Location |
|---------|---------|----------|----------|-----------------|------------------------------------|-----------------|---|
| 1 | 827 | PLP 04 V | Juvenile | 25 - Dec - 2023 | Malir, Karachi. Sindh, Pakistan | 10 - Feb - 2025 | Outskirts of Nal Sarovar Bird Sanctuary |

As part of an ongoing conservation initiative in Pakistan, 75 Laggar Falcons, including 32 females and 41 males, have been ringed and released across key locations in Sindh and Punjab provinces between November 2023 and January 2025. Most of these birds, predominantly juveniles, were released in Malir,

Memon Goth, the M9 Motorway in Karachi, and Bahauddin Zakaria University in Multan and Dera Ghazi Khan. Each falcon was tagged with a unique ring number to facilitate long-term monitoring and research. This effort represents one of South Asia's most significant documented releases of the species.

It highlights collaborative efforts to conserve the declining populations of Laggar Falcons, a raptor species facing pressures from habitat loss, illegal trade, and declining prey availability. This information is shared here so that, in the future, if any birdwatcher spots a Laggar Falcon with a metal ring, the ringing details can be easily obtained from social media.



[Map 1]. Straight-line movement of a rehabilitated Laggar Falcon from Karachi, Pakistan, to Nal Sarovar, Gujarat, India (~550 km).

Results and discussion

The observation of a ringed Laggar Falcon at the outskirts of Nal Sarovar Bird Sanctuary on 10 February 2025 represents this species's first confirmed international movement record. The individual bore a uniquely coded metal leg ring, which was verified as part of a release program under *Project Lagger* in Karachi, Pakistan. This bird had been rehabilitated and released in the Malir region of Karachi on 25 December 2023, approximately 550 km from the location in Gujarat, India and where it was photographed subsequently [Map 1].

This record provides conclusive evidence of long-distance migration and cross-border movement in a species historically considered largely sedentary or a local migrant. Although anecdotal reports have suggested occasional wide-ranging movements in juvenile Laggar Falcons, such claims have not previously been substantiated with tagging or ringing data. This individual's journey not only highlights the species' ability to cover vast distances but also its capacity to traverse international boundaries; a behaviour not commonly attributed to *F. jugger*. Naoraji (2006) has stated that to some extent, it is a partial local migrant in some areas. Ferguson-Lees & Christie (2010) mention two old specimens from southern Turkmenistan (c 37°N) and northeast Uzbekistan (c 41°N), which indicate wider wandering or more northerly breeding. These records could be due to long-distance movements rather than northern breeding. Hence, the propensity of *F.*

jugger for long-distance movements could be more common than believed earlier.

Such long-range dispersal may affect gene flow between populations, recolonisation of suitable habitats, and resilience to local extirpations. The presence of two individuals at the site, one ringed and one not ringed, also raises the possibility of social or cohort-based migration, though more data are needed to explore this. The movement of this juvenile bird may be linked to post-fledging dispersal behaviour, a phase known to be ecologically significant in many raptor species (Newton, 1979). Juvenile dispersal is often influenced by prey availability, habitat openness, and reduced intraspecific competition, all of which are characteristics of the Nal Sarovar landscape during the winter months. The congregation of thousands of larks and the co-occurrence of numerous other raptor species draw attention to the area's high prey density and habitat suitability.

The fact that this bird survived post-release and dispersed successfully also suggests that rehabilitation and soft-release protocols employed by *Project Lagger* are yielding ecologically functional individuals. However, without telemetry data, it's impossible to know the exact route taken, stopover sites used, or survival challenges encountered during transit. It also raises important questions about territory establishment, migratory cues, and species' response to ecological pressures across its range. Sharing ringing data, as happened in this case, can help us better understand how these birds move and support more effective, collaborative conservation work.

Lastly, this finding reaffirms the value of citizen science platforms, digital photography, and open communication channels like social media for the timely identification and verification of significant ecological observations. The Laggar Falcon remains a poorly studied species in terms of its movement ecology, and this instance should catalyse future studies using satellite telemetry, genetic analysis, and population monitoring, particularly in western India and southern Pakistan.

Conclusion

The first confirmed case of a Laggar Falcon crossing the border from Pakistan to India is a big step in understanding this species' behaviour. It shows that *Falco jugger* can travel long distances across countries. The work done by Project Lagger in rehabilitating and releasing these birds is an excellent example of how to tackle the problem of illegal trapping, and it also gives us important insights into how these falcons move and survive. It's essential to keep tracking these released birds and

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the wild ones to help shape effective conservation plans. Going forward, research should expand to include more tracking, habitat studies, and efforts to reduce threats throughout their range.

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Short Birding Notes



Sighting of Greylag Goose *Anser anser* at Rajkot

On the afternoon of 21 February 2023, we visited Aji 2 Dam near Rajkot to go birdwatching and to search for White Storks (*Ciconia ciconia*). After spotting six White Storks, I observed a large bird swimming in the water alongside Eurasian Coots (*Fulica atra*) and Northern Shovelers (*Spatula clypeata*) through my binoculars. Given its considerable size and distance, I initially presumed it to be a species of goose. Upon capturing a photograph and zooming in, I identified the bird as a Greylag Goose (*Anser anser*), with four individuals present together. Rajkot is not a regular wintering site for this species. Previously, on 22 December 2001, Rajdeep Zala and I had recorded two Greylag Geese near Rajkot at Nyari-1 Dam, a sighting documented in the Gujarati bird newsletter *Vihang*. This recent observation, occurring after a gap of 22 years, is significant and contributes to understanding the species' recent distribution in the region.

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Sighting of Yellow-legged Buttonquail *Turnix tanki* on the outskirts of Ahmedabad

A rare and elusive bird, the Yellow-legged Buttonquail (*Turnix tanki*), was recently observed in the semi-urban landscape of Bopal-Ghuma, Ahmedabad. On the evening of June 23, 2024, while walking through a grassy patch near a farm, I flushed a small, quail-like bird that flew a short distance into a nearby bush. I managed to get a few photographs before it disappeared again. Something about it seemed unfamiliar. Later, while reviewing the images, I realised it was not one of the usual buttonquails seen in Gujarat. After consulting a bird expert, Ashok Mashru, the identification was confirmed: it was indeed a Yellow-legged Buttonquail. A check of eBird confirmed what I had suspected. There were no records of this species from Ahmedabad. Its presence here is not just unexpected but significant. Sightings of this bird are uncommon across India and even rarer in urban or semi-urban landscapes. This observation highlights how even small patches of habitat around our cities can harbour surprising biodiversity and reinforces the need to protect and study these remaining natural spaces more seriously.

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Sighting of Spotted Dove *Spilopelia chinensis* in Rajkot.

On August 17, 2024, after evening rains during a routine birding drive on Vagudad Road, I spotted a dove that looked different from the commonly seen species in Rajkot. A record shot confirmed it to be a Spotted Dove (*Spilopelia chinensis*), a species rarely reported from this area. On checking eBird, the only previous record near Rajkot was from Khirasara Vidi by Shri Mehul Patel, which lacked a photo. Other sightings are from Hingolghadh Sanctuary (~70 km away) during May–August. Thus, this is the first photographic record of the species near Rajkot. According to Birds of Saurashtra (Dharmkumarsinhji, 1955), this species shows local movements, especially after the monsoon (August–November). My sighting, along with those from Hingolghadh, supports the idea of post-monsoon local migration, but more observations are needed to confirm this pattern.

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Sighting of Red-backed Shrike *Lanius collurio* near Velavadar

On September 17, 2024, during one of my regular birding trips along the Narmada Canal just outside Velavadar, I recorded a notable sighting of a Red-backed Shrike (*Lanius collurio*). I visit this area every 10–15 days, as the mix of farmland and scrubland provides excellent habitat for various bird species, especially during migration periods. On previous visits, I had observed 5–6 Eurasian Rollers, numerous Blue-cheeked Bee-eaters, and even a Common Cuckoo—all strong indicators of migratory activity during the passage season. Around 5:30 PM, I noticed a shrike perched at a distance. As I tried to get closer, it flew off. I decided to wait in the same spot, and about 15 minutes later, the shrike returned and perched on an electric wire. I photographed it, and after consulting with birding experts, the bird was confirmed to be a Red-backed Shrike. A rarely seen passage migrant in Gujarat. Later, the shrike moved to a nearby Acacia branch where it remained until sunset. According to available literature and local observations, the Red-backed Shrike is considered an autumn passage migrant in Gujarat, with most records coming from Kachchh and some parts of Saurashtra (Ganpule et. al., 2022). A search on eBird revealed only one prior record from Bhavnagar district in 2021, documented by Vivek Upadhyay and Kandarp Andhariya. Interestingly, this year, a few other birders have reported sightings of this species from nearby areas around the same time, indicating a possible passage movement through this region also.

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Sighting of Western Crowned Warbler *Phylloscopus occipitalis* in Gandhinagar

On 2 October 2024, we explored Punit Van for migratory species. We encountered several singing Greenish Warblers (*Phylloscopus trochiloides*), Hume's Warblers (*Phylloscopus humei*), and a perched Common Cuckoo (*Cuculus canorus*). At around 08:30 hrs, we heard a distinct, repetitive, and sharp song. We immediately identified it as the song of a Western Crowned Warbler (*Phylloscopus occipitalis*). Since this species was most likely a passage migrant through the Ahmedabad and Gandhinagar districts, we were keen on obtaining documentation. Further down the track, we located two more individuals vocalising. We managed to document one of the three individuals and obtain recordings and photographs. We uploaded the documentation to our eBird checklist (<https://ebird.org/checklist/S197203950>). In our photographs, we observed distinctive features such as a long pale yellow supercilium, double wing bar (More prominent on the greater coverts than on the medians due to it being in worn plumage), indistinct crown stripe, olive lateral crown stripes, dark olive lores and eyestripe; bright olive-green upperparts, whitish underparts, and a prominent orange-yellow base of lower mandible. Our record marks the second sighting of this species in the Gandhinagar district, the first being by Naushad Theba in 2014 (<https://ebird.org/checklist/S162323163>). This record highlights the importance of consistent observations during migration season. Although the Western Crowned Warbler is considered a rare to uncommon winter visitor in Gujarat (Ganpule et. al., 2022).

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Sighting of European White Stork *Ciconia ciconia* in the Urban Area of Ahmedabad.

On Saturday, 17 November 2024, at around 12:30 PM, a rare and remarkable sighting of a White Stork (*Ciconia ciconia*) was reported from Chandola Lake, located in the urban area of Ahmedabad. The observation occurred during a routine drive when the observer noticed a distinctive object and decided to take a closer look using binoculars. While Asian Openbills and Painted Storks are commonly seen at Chandola Lake, the White Stork is an uncommon to common winter visitor to Gujarat (Ganpule et. al., 2022). This species is a winter migrant, known for its impressive size, measuring approximately 100-110 cm. It has predominantly white plumage with striking black primary feathers on the wings and a black tail. Males are generally larger than females. The presence of such uncommon species highlights the importance of Chandola Lake as an important habitat for migratory birds during the winter months.

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Sighting of Steppe Eagle *Aquila nipalensis* at Timbi Lake, Vadodara

On 3 December 2024, Ravi Kelkar and I visited Timbi Lake near Vadodara city for birdwatching. While searching for Isabelline and Brown Shrikes, we suddenly noticed a few eagles take off from the ground and land nearby. Initially, we assumed they were Greater Spotted Eagles, as this species has been regularly wintering at Timbi for the past three years. However, upon closer observation, we identified one of the birds as a Steppe Eagle (*Aquila nipalensis*), roosting alongside two Greater Spotted Eagles (*Clanga clanga*). One dark morph and one fulvescens morph. Interestingly, the fulvescens Greater Spotted Eagle closely followed the Steppe Eagle wherever it went, almost as if they were companions. Since this sighting on 3 December, we have been visiting Timbi Lake daily. However, there have been no further records of the Steppe Eagle. This sighting marks the first photographic record of the Steppe Eagle from Timbi Lake. Due to newly created water channels, the roosting site was inaccessible in the first half of December 2024. Despite this, the dark morph Greater Spotted Eagle was consistently seen at the same spot on the ground each day. However, there were no sightings of the Steppe Eagle or the fulvescens morph of the Greater Spotted Eagle during this time. Once the water levels receded and the area became accessible again, the dark morph Greater Spotted Eagle shifted its roosting site from the ground to nearby trees.

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First Record of Oriental Scops Owl *Otus sunia* from Kachchh

The Kachchh region, known for its rich biodiversity, continues to surprise with new avian records. On 8th December 2024, while birdwatching near Kotdi village, I was accompanied by young birder Romanch Nimavat. The area comprised typical scrub forest with Babul (*Venchellia nilotica*), Gorad (*Senegalia senegal*), and Khair (*Senegalia catechu*), a habitat that supports owls such as Spotted Owlet (*Athene brama*), Pallid Scops Owl (*Otus brucei*), Barn Owl (*Tyto alba*), and Indian Eagle-Owl (*Bubo bengalensis*). While exploring a rocky riverbed, we spotted several species, including the Sulphur-bellied Warbler (*Phylloscopus griseolus*). Around 10:30 hrs, we noticed a small rufous-colored bird flying between trees. Its flight pattern and size suggested it was an owl. The bird eventually perched on a Gorad tree, allowing us to observe and photograph it. Based on its appearance and behaviour, we identified it as an Oriental Scops Owl (*Otus sunia*). After sharing the sighting with experienced birders and checking eBird data, we confirmed that this is the first documented sighting of the Oriental Scops Owl in the Kachchh region. Previously, it was recorded from districts like Bhavnagar, Gandhinagar, Mehsana, Navsari, and Dang. The species is uncommon in well-wooded parts of Gujarat (Ganpule et al., 2022). This observation adds a new location to the species' known distribution and highlights the ecological importance of Kachchh's diverse habitats.

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Sighting of Laggar Falcon *Falco jugger* at Timbi Lake, Vadodara

On the morning of 7 December 2024, after a long birding trip, we decided to visit Timbi Lake. A well-known birding site near Vadodara city, renowned for its rich avifauna and picturesque sunrise views. We spent around 90 minutes at the lake and observed several species, including three species of munias: the Red Avadavat (*Amandava amandava*), Tricoloured Munia (*Lonchura malacca*), and Indian Silverbill (*Euodice malabarica*). Other notable species included Bluethroat (*Luscinia svecica*), Pied Cuckoo (*Clamator jacobinus*), and Brown Crake (*Zapornia akool*), among others. Parag suddenly spotted a falcon perched atop an advertisement board on our way home. I quickly took a couple of photographs from our car, followed by a few more precise shots before the bird took off. Initially, I believed it to be a Red-necked Falcon (*Falco chicquera*). However, after sharing the images with birder Vivekanand Swaminathan, he suggested that the bird might be a Laggar Falcon (*Falco jugger*). I contacted Nirav Bhatt to confirm the identification, and he verified that the individual was a fully adult Laggar Falcon. According to Ganpule et al. (2022), the Laggar Falcon is considered an “uncommon to rare resident and local migrant” in Gujarat. Regular sightings have been reported from the Great Rann of Kutch, Little Rann of Kutch, Dahod, Kheda, Lakhtar, and Velavadar (Bhatt et al., 2018). The species has, however, been previously recorded in nearby districts such as Anand and Kheda (Mistry, 2023). This is likely the first documented record for the Vadodara district. Classified as Near Threatened, the Laggar Falcon is believed to be undergoing a moderately rapid population decline due to various threats. This makes our observation particularly important from regional biodiversity monitoring and conservation perspectives.

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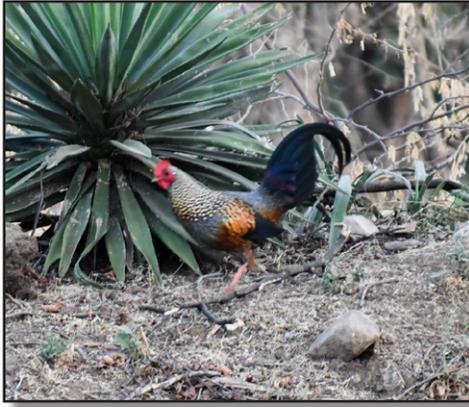
Sighting of Pied Cuckoo *Clamator jacobinus* in December: Late Migrant to Africa or South India?

During a birdwatching and awareness camp at Mithapur (Devbhumi Dwarka) on 22 December 2024, a sub-adult Pied Cuckoo (*Clamator jacobinus*) was sighted by the first two authors. This was unexpected, as the species is typically a monsoon visitor and departs by November. Separately, a sub-adult Pied Cuckoo was also observed by the third author at Timbi Lake, Vadodara, on 16 November and 6 December 2024. These sightings raise questions about delayed migration or possible southward movement to peninsular India. While eBird data show a sharp decline in Gujarat sightings after October, sightings continue year-round in Karnataka and Kerala. Combined with satellite tagging data showing winter migration to Africa, this suggests multiple migratory pathways or overwintering strategies. Further studies, particularly those involving tagging in southern India, are necessary to advance understanding of these patterns.

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Sighting of Grey Junglefowl *Gallus sonneratii* at Jessore Wildlife Sanctuary

On 23rd February 2025, I, Dr. Tarun Sutariya, Dr. Sumit Chadokhiya, and Rameshbhai Bhatiya were birding in the lowland areas of Jessore Wildlife Sanctuary when we observed a pair of Grey Junglefowl (*Gallus sonneratii*) quietly foraging near a flock of Chokhara, the local name for Red Spurfowl (*Galloperdix spadicea*). The Grey Junglefowl is an uncommon resident in South Gujarat (Ganpule et. al., 2022), and while it has been previously reported from Jessore, such sightings remain relatively uncommon, making this a valuable addition to field records from the area. The team also recorded a Forest Wagtail (*Dendronanthus indicus*) during the same visit. All three species typically prefer dense, wooded cover, and it is always a rewarding experience.

[Jessore Wildlife Sanctuary has been a favourite birding destination for many years, and several observers have seen species like the Red Spurfowl and Grey Junglefowl over time. However, very few of these sightings have been formally published, and the sanctuary has seen little representation in ornithological literature. This brief note marks the first formally published record of the Grey Junglefowl in Jessore. It was important to feature it in *Flamingo Gujarat* to emphasise the value of consistent fieldwork and the need for more systematic documentation from this biologically rich yet underreported site: Editor's note]

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BOOK REVIEW

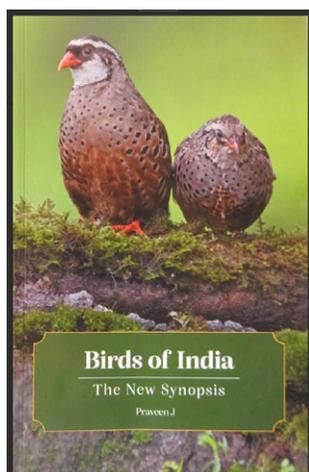
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Title: Birds of India – The New Synopsis (1-511 pp)

Author: Praveen J

Publisher: Nature Conservation Foundation, 2025

Format: Paperback



This book, written by Praveen J, is a synopsis of the birds of India. The author is well known to bird watchers in India and abroad, and in addition to his other accomplishments, is the chief editor of *Indian BIRDS*. He has published many path-breaking papers in peer-reviewed, reputed Indian and overseas journals, combining field and museum studies.

This book aims to consolidate all available information on the distribution of bird taxa in India, and it succeeds admirably in its aim. This book builds on S. D. Ripley's synopsis published in 1961, followed by the ten-volume 'Handbook of the birds of India and Pakistan' by Salim Ali and S. D. Ripley. The taxonomy followed in this synopsis is as per the eBird/Clements Checklist, which is also the taxonomy followed in the 'India Checklist'.

The format of the book is Acknowledgements, Tables of acronyms, an Introduction, a write-up on 'Patterns of subspecies variations in Indian Birds', followed by the main body of the book, and lastly, the Index. The book's main body consists of details of original descriptions, taxonomy, distribution, specimen details and conservation status of 1998 species and subspecies of birds recorded in India, with notes added wherever relevant. These are organised by taxonomic rank – Order, Family, Genus, Species and Subspecies. The introduction contains a write-up on taxonomy and lists the primary sources used to prepare this book. The section regarding the patterns of subspecies variations in Indian birds is fascinating. It provides a detailed overview based on habitats / bio-geographic zones and includes a paragraph on

outstanding and unresolved questions regarding some taxa in India.

The level of detail in this book is remarkable, and this synopsis provides a comprehensive summary of all the bird taxa in India. The information regarding museum specimens is of particular use, wherein the presence of specimens in various museums is listed. The author states that listing the collections where an Indian specimen of any taxon is housed is a key addition to this book compared with Ripley's synopsis. Also included for all species are the IUCN status, the conservation priority categories from State of India's Birds (SoIB) assessments, the Wildlife (Protection) Amendment Act 2022 (WLPA) schedules, as well as the appendices from CITES and CMS. This information is beneficial for users.

The main content in this synopsis is the distribution data on species and subspecies. The author states that while vagrancy is mentioned, the focus is not on capturing every vagrant record. In this context, this synopsis provides up-to-date distribution information. There are minor issues regarding this data; for example, Gujarat is not mentioned in the distribution for Grey-headed Fish Eagle, though there are many records from the state. Similarly, a record from Jamnagar is given for Black Tern, which was a case of mistaken identification. However, overall, the distribution data is accurate and well-researched. The author acknowledges that more research is required for specific species/subspecies due to identification and/or taxonomic issues, or that the available data has not been evaluated. This gives the reader an idea regarding the complexities in compiling this data and the work involved in putting it together. It is heartening to note that many papers published in our *Flamingo Gujarat* are referenced in this book.

Praveen carried out a herculean task when publishing this book. This is a welcome addition to our country's ornithological literature and provides a thorough synopsis of the birds of India. With updated taxonomy, distribution data, records of museum specimens and other relevant information, it provides a single point of reference for bird taxa in India. This book will be helpful for beginners as well as for experts and researchers and is available online from the NCF store at URL: <https://ncf-store.zohocommerce.in/products/birds-of-india-the-new-synopsis/1638627000002176041> for Rs. 499/-. I highly recommend this book for those interested in our country's ornithology, and it will be an excellent addition to any bird watcher's library.