Indian BIRDS

Vol. 21 No. 2

Indian Grey Hornbill
Chestnut-capped Babbler
White-throated Rock Thrush

Indian BIRDS

www.indianbirds.in Vol. 21 No. 2

Date of Publication: 24 June 2025

ISSN 0973-1407

Address for correspondence:
New Ornis Foundation, 2nd Flr, BBR Forum, Rd. No. 2, Banjara Hills, Hyderabad 500034, India.

CONTENTS

Front Cover: Blue-throated Barbet from Bajoon, Uttarakhand.
Photographer: Hemant Nighojkar

Back Cover: Green Munia from Achalgadh, Mount Abu, Rajasthan.
Photographer: Sahil Zutshi

Habitat determinants of nest-site selection by Indian Grey Hornbill *Ocyceros birostris* in an urbanized landscape in Aligarh, Uttar Pradesh, India

Aeiman Hafeez, Shahzada Iqbal & Orus Ilyas

Hafeez, A., Iqbal, S., & Ilyas, O., 202x. Habitat determinants of nest-site selection by Indian Grey Hornbill *Ocyceros birostris* in an urbanized landscape in Aligarh, Uttar Pradesh, India. *Indian BIRDS* 21(2): 33–39.

Aeiman Hafeez, Department of Wildlife Sciences, Aligarh Muslim University, Aligarh, 202002, Uttar Pradesh, India. E-mail: hafeezaiman9@gmail.com [Corresponding Author].

Shahzada Iqbal, Department of Wildlife Sciences, Aligarh Muslim University, Aligarh, 202002, Uttar Pradesh, India. & Wildlife Institute of India, Chandrabani, Dehradun, 248001, Uttarakhand, India.

Orus Ilyas, Department of Wildlife Sciences, Aligarh Muslim University, Aligarh, 202002, Uttar Pradesh, India.

Manuscript received on 27 November 2024.

Abstract

We studied nest-site selection by the Indian Grey Hornbill *Ocyceros birostris* in the urban landscape of Aligarh, Uttar Pradesh, during the breeding season from March to July 2022. A total of 21 active nests were documented across five focused intensive study sites. These nests were distributed among 11 tree species. The majority of nesting sites were found on *Eucalyptus tereticornis* (33%), followed by *Holoptelea integrifolia* (10%), *Delonix regia* (9%), *Cassia fistula* (9%), and *Azadirachta indica* (9%). All identified nests were located on living trees. Although *Eucalyptus tereticornis* had the highest number of nests, statistical analysis did not reveal a significant selection for any specific tree species. Multivariate Principal Component Analysis (PCA) revealed that the Indian Grey Hornbills preferred larger trees with greater height and girth at breast height (GBH), located in habitats with higher tree density, diversity, and richness. Shrub cover played only a secondary role, it still exhibited a modest positive association with nest-site selection, possibly because the additional cover and microhabitat complexity offer supplementary benefits. Moreover, we found no significant differences between nest-centered and random plots regarding their proximity to human habitation or roads, underscoring the hornbill's adaptability to urban environments. To support Indian Grey Hornbill populations in urban environments, we recommend preserving and planting native fruit-bearing trees to secure year-round food resources, installing and maintaining artificial nest cavities within green corridors.

Introduction

Hornbills are among the principal frugivores and play a crucial role in seed dispersal (Kitamura 2011; Naniwadekar et al. 2021). Their extensive daily foraging movements in search of fruiting trees enable them to contribute significantly to long-distance seed dispersal, which in turn enhances seed germination and facilitates forest regeneration—processes vital for maintaining ecosystem health and biodiversity (Balasubramanian et al., 2011; Holbrook et al. 2002). As secondary cavity nesters, hornbills rely on naturally occurring hollows or cavities created by primary cavity-excavating species, such as woodpeckers. This dependence makes the availability and selection of suitable nesting sites a critical factor in determining their reproductive success (Kemp 1995; Datta & Rawat 2004; Kasambe 2011). Nest-site selection thus becomes a fundamental component of hornbill's reproduction (Ali & Ripley 1983; Holt & Martin 1997; Losin et al. 2006; van Eerden et al. 2025). During the breeding season, the female seals herself inside the nest cavity and relies entirely on the male to supply food throughout the incubation period and early stages of chick rearing (Kemp 1995; Kitamura 2011; Naniwadekar et al. 2021).

For successful breeding, the nest site must provide protection from predators, maintain optimal thermal conditions for incubation, and lie close to adequate food resources. Both natural and anthropogenic factors that reduce the availability of suitable nesting sites can severely impact reproductive success (Poonswad et al. 1987; Kinnaird & Brend 1999). Conversely, when these resources are abundant, species like the Indian Grey Hornbill *Ocyceros birostris* (hereinafter, IGHO) achieve remarkably breeding success (Santhoshkumar & Balasubramanian 2010; Charde et al. 2011). Therefore, choosing an appropriate nesting site plays a vital role in ensuring breeding success (Ali & Ripley 1983; Holt & Martin 1997; Losin et al. 2006).

Several key factors influence this selection, including the presence of fruiting trees and the availability of suitable nesting cavities. Limited nesting options and ongoing habitat degradation driven by human activities and natural disturbances, further constrain breeding success (Poonswad 1995; Kinnaird & O'Brien 1999). Yet, some unusually adaptive hornbills like IGHO that readily forage in orchards and ornamental plantings, switch to cavities in dead trees, nest boxes, or even concrete walls, and supplement their diet with anthropogenic foods when fruit is scarce (Gadikar 2017). In urban landscapes, where human interference is strongest, securing adequately sized cavities still limits reproduction and may curb local population viability (Datta & Rawat 2004). Similarly, in fragmented forests where large cavity-bearing trees are scarce, competition for nest sites intensifies, underlining the pivotal role of nest site availability (Wiebe 2011).

The IGHO is the most common and widely distributed hornbill species in India. It occurs in urban areas, rural areas, as well as wooded habitats (Kasambe 2011). Despite its abundance, the species has received limited focused research compared to other Indian hornbills, especially in the context of nesting ecology in urban environments. Although various studies have explored the

breeding biology, nest-site selection, and nest tree use of other hornbills (Mudappa & Kannan 1997; Datta & Rawat 2004; James & Kannan 2009; Santhoshkumar & Balasubramanian 2010), this species remain understudied.

We examined the features that enable IGHO to breed successfully in human habitations and the factors that sustain their urban populations within Aligarh, Uttar Pradesh, India. Although rapid development is reshaping the landscape, this adaptable species seems to prosper where three resources coincide: (i) fruit-bearing avenue and orchard trees that provide food yearround, (ii) cavities in mature trees or in manmade structures that substitute for natural nest hollows, and (iii) tolerant human attitudes that minimise direct persecution (Datta & Rawat 2004; Charde et al. 2011; Gadikar 2017). By identifying the specific combinations of food trees, cavity types, and neighbourhood characteristics that predict nest occupancy, our study offers practical guidance for sustaining and even enhancing IGHO populations in increasingly urbanised landscapes.

Hornbills are exceptionally long-lived, field and ex-situ records indicate reproductive lifespans exceeding two decades (Kozlowski et al. 2015); hence, even modest annual gains in fledging success can translate into substantial lifetime reproductive output that can sustain healthy populations.

Study Area

Aligarh District is located in the northern Indian state of Uttar Pradesh (27.483°N–28.017°N, 77.483°E–79.667°E) and spans an area of approximately 3,650 sq. km. It is positioned between two perennial rivers, the Ganga and the Yamuna. Aligarh experiences a monsoon-driven climate with three primary seasons: winter (November to February), summer (late March to June), and the rainy or monsoon season (July to October). Winter nights can be as cool as 10°C, while summer temperatures may peak to 44°C. The district has a high population density, with 1,007 people per sq. km, totalling around 3.6 million residents as per the 2011 Census of India (Government of India 2011).

We conducted this study from March 2022 to July 2022, during the breeding season of the IGHO, thus covering the entire summer months and early monsoon (Ali & Ripley 1983; Santhoshkumar & Balasubramanian 2010). The urban landscape of Aligarh city is characterized by a mosaic of historical buildings, residential quarters, academic institutions, and green spaces with mature trees, which provided an ideal setting to study this species. Based on a preliminary field survey, five sites were selected for intensive study: Aligarh Fort, Naqvi Park, Tar Bungalow Road, and the Engineering and Zoology compounds. (Fig. 1). We selected these sites for their diverse habitat features (Table 1), enabling a comprehensive assessment of the nesting preferences and habitat utilization patterns of the IGHO in an urban environment.

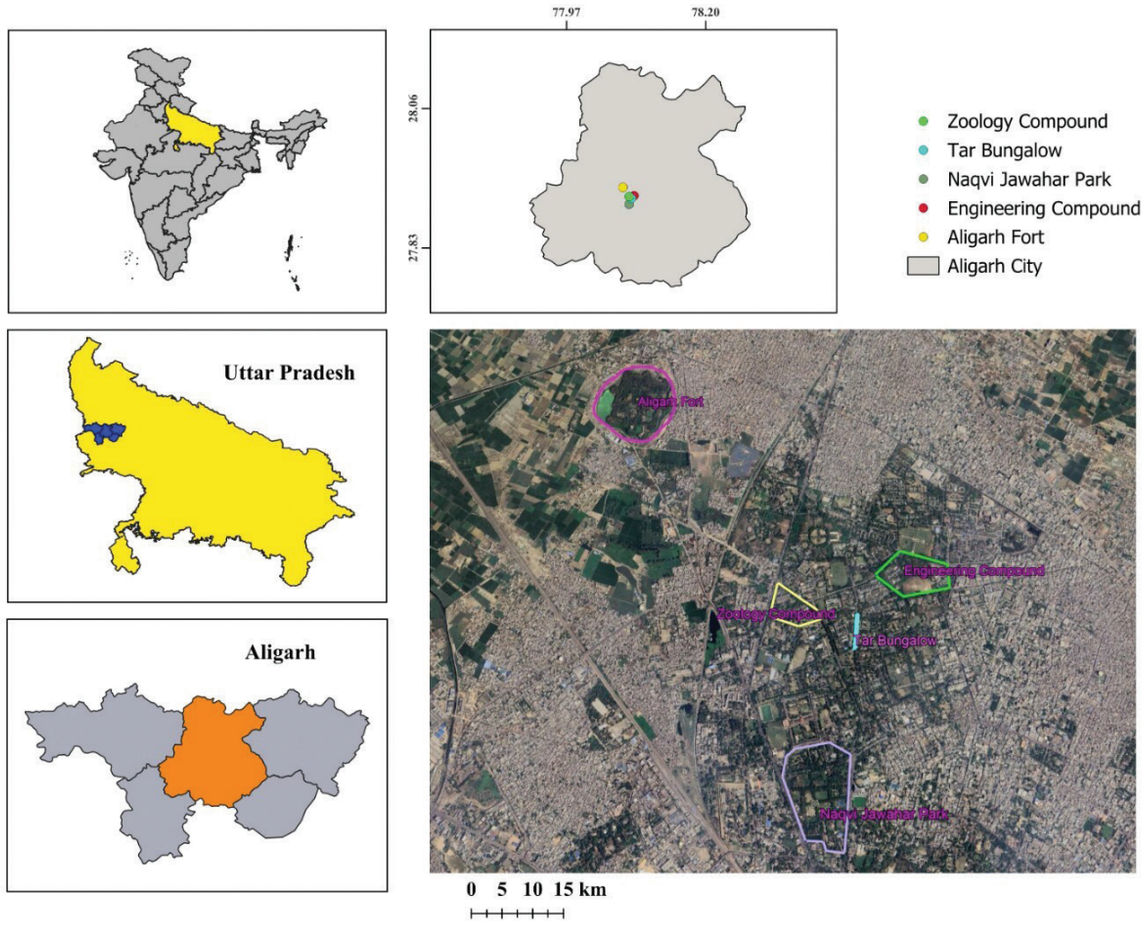

Fig 1. Map of the study area

Table 1. Intensive study site with key habitat features within the study area

Intensive Study Site	Area (in ha)	Key habitat features	Rationale for selection
Aligarh Fort	17.0	A walled heritage complex dominated by mature avenue plantings of flora, Human use is light and mainly diurnal, creating a low-disturbance refuge within the urban matrix.	Represents mature, cavity-rich refuge within the urban matrix
Zoology compound	3.0	Compact academic enclave with doublerow plantings of *Polyalthia longifolia*, *Eucalyptus tereticornis*, and *Dalbergia sissoo*.	High anthropogenic disturbance during the day time.
Tar Bungalow Road	10.0	Linear roadside habitat flanked by government bungalows. Avenue trees include large *Ficus religiosa*, *Millingtonia hortensis*, and *Eucalyptus spp*.	Linear corridor linking residential blocks–tests use of roadside avenues
Engineering compound	7.5	Mixeduse campus with lecture blocks interspersed with lawns and remnant groves of *Tectona grandis*, *Delonix regia*, and *Roystonea regia*.	Constant anthropogenic pressure
Naqvi Park	25.0	A municipal park comprising mature remnant woodland and artificial pond. Floristics are diverse	Highest fruit bearing trees

Methodology

Nest finding

As IGHO depend on tree cavities for nesting, we conducted an extensive search for nest cavities during a single breeding season, from March to July 2022 (Ali & Ripley 1983). Typically, females become incarcerated in mid to late March, and chicks emerge between mid-July and early August (Santhoshkumar & Balasubramanian 2010; Charde et al. 2011).

We located a total of 21 nests within the study area by tracking parent birds or solitary males, inspecting potential trees for cavities, and identifying middens accumulations of regurgitated seeds and faecal matter beneath active nests (Datta & Rawat 2004; Santhoshkumar & Balasubramanian 2010). Cavities frequently visited by breeding pairs were marked as nesting sites and later confirmed by the presence of incarcerated females. Each nest site was assigned an alphanumeric code, consisting of the abbreviation "N" for nest, the site number, and the intensive study area where it was located. For example, "10NNP" refers to nest number 10 in Naqvi Park (NP).

We adhered to the guidelines outlined in *Indian BIRDS* by Barve et al. (2020) to record all nest-related parameters. These included the GPS location, the tree species for each nesting tree, tree phenology, girth at breast height (GBH), tree height from the ground, canopy cover, nest strata, height from the ground, and distance of each nesting tree from human habitation and nearby roads. During our visits to monitor active nests, we ensured that we maintained an appropriate distance to avoid disturbing the species. To further minimize any potential disruption, we avoided visits during early morning hours.

Nest-habitat sampling

To assess the habitat characteristics influencing nest-site selection by IGHO, we compared the utilized (nest-centered) plots with available (random) plots using the circular plot method. In total, 63 plots were sampled; 21 nest-centered plots and 42 random plots, with two random plots placed 50 m away from each nest-centered plot. Tree species were recorded in 10 m radius plots, and shrub species were documented within a 3 m radius subplot. Tree canopy cover was measured using a 25 × 25 cm gridded mirror divided into 5 × 5 cm sections. At four random locations per plot, the mirror was held 1.25 m above the ground, and grids with over 50% foliage were counted to calculate tree cover percentage (Mudappa & Kannan 1997; Datta & Rawat 2004; Ilyas 2014). Ground cover was estimated using the point intercept method, wherein a meter tape was laid in four directions, and materials such as vegetation, litter, and bare ground were recorded at 5-cm intervals (Ilyas 2014). In each plot, we recorded the species of trees along with their density (count/plot), height, GBH, and canopy cover (Datta & Rawat 2004; Santhoshkumar & Balasubramanian 2010). Additionally, shrub species, their count, and height were noted within a 3 m radius subplot. GBH was measured by fully encircling the tree trunk at 1.37 m height using a measuring tape. Furthermore, we documented the distance of each nest-centered and random plot from the nearest road and human habitation. Finally, a comparison between nest-centered and random (non-nest) plots was conducted to identify the key habitat parameters influencing nest-site selection by IGHO.

Analysis

Data preparation: We applied square root transformation to continuous variables and arcsine transformation to percentage data in order to enhance the normality of the dataset prior to conducting statistical analyses. To identify the habitat variables influencing nest-site selection, we employed both univariate and multivariate approaches. As an initial step, we performed univariate independent sample t-test using IBM SPSS software (Norusis 1990) to assess significant differences in habitat variables between nest-centered plots (n = 21) and random plots (n = 42). This preliminary analysis enabled us to filter out non-informative variables and retain only those showing statistically meaningful group differences. Subsequently, we included these variables in Principal Component Analysis (PCA)[1], thereby improving the clarity, interpretability, and ecological relevance of the extracted components in explaining nest-site selection patterns.

Nest-habitat Principal Component Analysis (PCA): Out of 17 recorded habitat variables, we selected 13 for PCA to examine factors influencing nest-site selection by the IGHO across 63 sampling plots, including both nest-centered and random plots. We excluded highly autocorrelated variables—specifically, tree species, number of tree individuals, shrub species, and number of shrub individuals—to avoid redundancy in the analysis. We applied the Kaiser-Meyer-Olkin (KMO) test and Bartlett's test of sphericity to assess sampling adequacy and data suitability for

1 Principal Component Analysis (PCA) helps reduce many related variables into fewer, easier-to-understand patterns or gradients.

PCA. We conducted PCA using SPSS software, applying Varimax rotation (Norusis 1990) to extract independent components that represent key ecological gradients. Our primary objective was to reduce data dimensionality and identify variables that explain the greatest variation in nest-site selection. Accordingly, we retained only those components with eigenvalues greater than 1, as they accounted for a substantial proportion of the variance, while discarding those with lower eigenvalues due to their limited explanatory power. Within each retained component, we considered variables with factor loadings ≥ ±0.70 to be ecologically significant (Eni et al. 2012). Additionally, we performed a Chi-square goodness-of-fit test to evaluate whether IGHO exhibited statistically significant preferences for specific tree species when selecting nest sites.

We calculated tree and shrub densities in each sampling plot using the formula: Density = Number of individuals / Unit area. We quantified species diversity and richness using the Shannon-Wiener Diversity Index (H') and Margalef's Richness Index, respectively, and carried out these analyses in PAST 3 software.

Results

We identified a total of 21 nesting trees, with IGHO utilizing 11 different tree species for nesting **[39, 40]** out of the 86 tree species recorded in and around the Aligarh Muslim University campus (Parveen & Ilyas 2017). Results from the independent sample t-test indicated significant differences in tree density, diversity, richness, height, GBH, and canopy cover between nest-centered and random plots (Table 2).

39. A male hornbill feeding a brooding female nested inside a cavity on the *Bombax ceiba*.

BOTH: Aeiman Hafeez

40. A female searching for an appropriate nest-site on *Eucalyptus tereticornis*.

Table 2. Results of independent t-Test between nest-centred plots and random plots

*= p < 0.05; ** = p < 0.01; *** = p < 0.001; ns = not significant (p ≥ 0.05)

Habitat variables	Nest-centered plots	Random plots	t-value
Tree species	1.8±0.08	1.62±.04	2.03*
No. of individuals	2.38±0.12	2.12±0.08	1.76ns
Tree Density	9.60±0.50	8.23±0.31	2.42*
Tree Diversity	1.16±0.04	1.03±0.03	2.129*
Tree Richness	1.29±0.06	1.13±0.04	2.067*
Mean GBH (m)	1.40±0.04	1.23±0.03	3.1**
Mean Tree height(m)	4.49±0.11	3.59±0.12	4.66***
Shrub species	1.18±0.08	1.12±0.07	0.496ns
No. of individuals	1.83±0.20	1.65±0.16	0.735ns
Shrub density	15.88±2.26	13.49±1.95	0.799ns
Shrub diversity	0.81±0.03	0.81±0.03	-0.188ns
Shrub richness	0.80±0.03	0.81±0.03	-0.201ns
Shrub height	1.19±0.07	1.06±0.06	1.307ns
Canopy cover (%)	39.40±2.40	27.13±1.86	3.921***
Shrub cover (%)	23.89±4.56	20.39±3.26	0.621ns
Distance from human habitation (DFHH)	5.76±0.48	7.35±0.53	-2.219
Distance from road (DFR)	9.95±1.39	10.90±0.85	-0.617

The highest number of nests were observed in *Eucalyptus tereticornis* (33%), followed by *Holoptelea integrifolia* (10%), *Delonix regia* (9%), *Cassia fistula* (9%), and *Azadirachta indica* (9%). The remaining tree species had only one nesting tree each (Fig. 2).

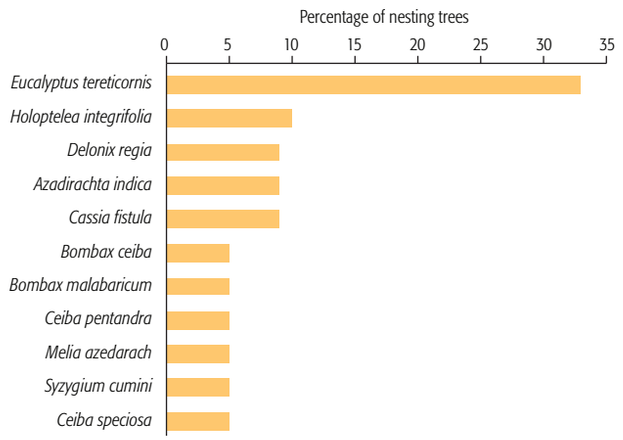

Fig. 2. Distribution of tree species used by Indian Grey Hornbill for their nests in Aligarh city, Uttar Pradesh, India

Most nests (67%) were located in the middle stratum of trees, with 24% in the lower and 9% in the upper stratum, indicating a preference for nesting in the middle canopy layer.

PCA further elucidated the habitat variables influencing nest-site selection. The first four principal components (PCs), each with eigenvalues greater than 1, collectively accounted for 79.87% of the total variance. PC I exhibited strong positive correlations with tree density (r = 0.849, p < 0.01), tree species

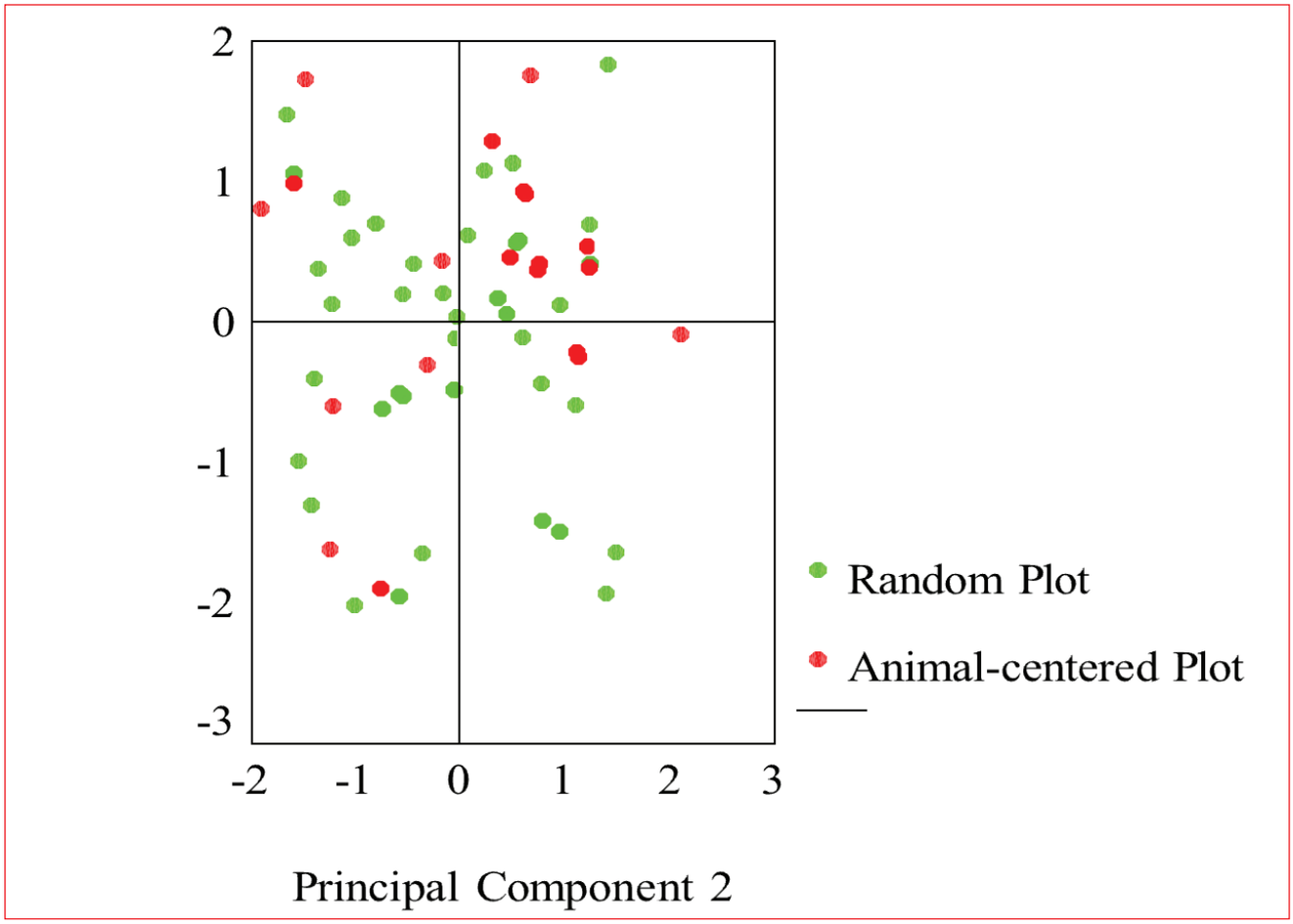

Fig. 3. Ordination diagram from principal component analysis of the nest sites selection by Indian Grey Hornbill based on nest-centred and random plots.

diversity ($r = 0.967$, $p < 0.01$), and species richness ($r = 0.948$, $p < 0.01$), explaining 33% of the variance with an eigenvalue of 4.29. Subsequently, PC II showed positive correlation with shrub density ($r = 0.773$, $p < 0.01$), shrub height ($r = 0.875$, $p < 0.01$), and shrub cover ($r = 0.754$, $p < 0.01$) comprising about 26.65% of the variance with (3.465) Eigenvalue loading (Fig. 3). The third component (PC III) accounted for about 12% variance and is positively correlated with shrub diversity ($r = 0.898$, $p < 0.01$) and Shrub richness ($r = 0.907$, $p < 0.01$) with (1.592) Eigenvalue loading. PC IV had two positively correlated variables GBH ($r = 0.941$, $p < 0.01$) and Tree height ($r = 0.898$, $p < 0.01$) accounted for about 7.97% total variance with (1.036) Eigenvalue (Table 3). Although *Eucalyptus tereticornis* supported the highest number of nests (7 out of 21), chi-square analysis indicated no statistically significant preference for any particular tree species [$\chi^2 = 16.19$, $df = 10$, $p > 0.05$].

Discussion

This study provides important insights into the nesting ecology of the IGHO. We documented 21 nests across five intensive study sites, all of which were located in live trees—an observation consistent with earlier findings for other hornbill species by Madge (1969), Kemp (1976), Hussain (1984), and Poonswad et al. (1987). Although we initially recorded one nest in a dead tree, it was destroyed during a thunderstorm and therefore excluded from the analysis. Parveen & Ilyas (2017) recorded 86

Table 3. Results of Principal component analysis

Variables ≥ ±0.70 are considered significant and are underlined.

Habitat Variables	PC1	PC2	PC3	PC4
Tree density	0.849	0.005	0.298	0.124
Tree diversity	0.967	0.103	0.076	0.049
Tree richness	0.948	0.114	-0.003	0.058
GBH	-0.094	0.029	-0.139	0.941
Tree height	0.239	-0.091	-0.065	0.891
Shrub density	0.177	0.773	0.507	-0.064
Shrub diversity	0.096	0.345	0.898	-0.089
Shrub richness	0.084	0.334	0.907	-0.091
Shrub height	0.163	0.875	0.124	-0.071
Canopy cover	0.195	-0.341	0.393	0.528
Shrub cover	0.082	0.754	0.435	0.039
DFHH	-0.387	0.463	0.065	-0.354
DFR	-0.383	0.448	0.152	-0.314
Eigenvalue	4.29	3.465	1.592	1.036
Variance (%)	33.001	26.653	12.248	7.97
Cumulative variance (%)	33.001	59.654	71.902	79.871

tree species on the Aligarh Muslim University campus, of which IGHO used only a small fraction (12 %) for nesting. No single tree emerged as statistically preferred even though *Eucalyptus tereticornis* accounted for the largest share of cavities. This absence of species-level selectivity suggests that hornbills exploit whichever large, cavity-bearing trees remain available, reinforcing the need to retain structural diversity rather than focusing on any one "favoured" species. Furthermore, rather than exhibiting species-specific preferences, hornbills appeared to select trees based on structural attributes—particularly taller trees with larger girths—that may offer more suitable nesting cavities. Additionally, hornbills likely favoured commonly available tree species, such as *Eucalyptus*, perhaps due to the scarcity of natural cavities suitable for nesting (Poonswad 1995). As one of the most frequently occurring and structurally suitable tree species across all five study sites, *Eucalyptus* likely met the cavity and size requirements of the species.

Our analysis demonstrates that IGHO do not choose nest sites at random. Trees that supported active nests were significantly taller, thicker, and embedded in stands with greater stem density, species richness, and diversity than control trees, whereas distances to roads and houses did not differ between nest-centered and random plots. One pair even bred in an *Azadirachta indica* cavity just 3 m from a human dwelling and a paved road, confirming that this species can tolerate intense human activity provided structural requirements are met. Similar plasticity in selection of nesting sites has been recorded elsewhere: hornbills in Nagpur nested on street trees within bustling markets (Kasambe 2020), and a pair in Indore in Madhya Pradesh successfully reared young inside a cavity that had formed in a concrete boundary wall (Gadikar 2017). Across sites, therefore, nest-site occupancy appears to be governed primarily by cavity suitability and the local abundance of fruit-bearing trees rather than by a fixed buffer distance from people. These observations, together with earlier work in forested landscapes (Datta & Rawat 2004; Charde et al. 2011), support a two-component framework for hornbill persistence in human-modified habitats: (i) a structural filter, in which nests are restricted to cavities of adequate size, depth, and microclimate; natural or manmade, and (ii) a forage filter, in which yearround fruit supply and low hunting pressure allow adults to maintain body condition during the prolonged nesting cycle (Mudappa & Raman 2009). Habitat management actions/ planning that preserve/s large cavitybearing stems, incorporate artificial hollows into mature trees and safe built structures, and retain/s a diverse mix of native fruiting species should enhance breeding opportunities for this adaptable hornbill in rapidly urbanising landscapes.

PCA revealed that nest tree height and GBH were the primary factors contributing to variation in nest site characteristics. While shrub density, height, diversity, and richness also showed a positive correlation with nest plots, their role appears supplementary, potentially influencing the microhabitat around nest sites. A diverse and dense shrub layer may enhance habitat complexity and stability, indirectly supporting nest site suitability by offering concealment and attracting a wider range of prey items such as insects and small vertebrates, which hornbills are known to consume during the breeding season (Fitzsimons 2019).

The importance of nesting site availability is further emphasized by von Haartman (1957), who noted that for cavity-nesting birds, the number of suitable tree cavities can limit breeding opportunities. In our study area, *Eucalyptus* trees, due to their considerable height and broad girth, likely provide potential nesting cavities. This aligns with findings by Mudappa & Kannan (1997) and Santhoshkumar & Balasubramanian (2010), who observed a preference among IGHO for large, mature trees with wide trunks when selecting nest sites.

Despite increasing urbanization and habitat degradation, our study suggests that the IGHO can persist in urban landscapes like Aligarh, provided certain ecological requirements are met. Specifically, the presence of large trees with broad GBH, along with high density and diversity of fruiting, nesting, and roosting tree species, appears to support hornbill populations in such modified environments. Furthermore, at broader spatial scales, population indices corroborate our sitelevel observations. The *State of India's Birds 2023* assessment lists the IGHO in the "rapid increase / stable" category nationally and documents stable trends in Uttar Pradesh as well as longterm increases in Delhi and Uttarakhand (SoIB 2023). These trajectories reinforce our conclusion that, even under intensive urbanisation, IGHO persist and can expand where two ecological conditions are satisfied: (i) the continued presence of large, cavity-bearing stems (or suitable artificial hollows) and (ii) a high local density and diversity of fruit, nest, and roostbearing tree species.

Hornbills remain vulnerable to habitat loss and certain human-induced pressures. While the importance of large trees is well established, our results also highlight the need for further investigation into the role of shrubs in nest-site selection. Although shrub density and diversity were positively associated with nest plots, these features were relatively evenly distributed throughout the study area. As obligate frugivores, hornbills play a vital role in seed dispersal and forest regeneration, acting as ecological engineers within their habitats. Therefore, conserving remnant forest patches and promoting urban green spaces with a diverse and dense tree structure is essential not only for the survival of hornbills but also for maintaining ecosystem processes. In turn, the continued presence of hornbills can contribute to the ecological integrity of these landscapes.

Acknowledgement

We would like to extend our heartfelt gratitude to Devanshu Arun Agarwal for his unwavering support and valuable contributions throughout this research journey. We are thankful to the Department of Wildlife Sciences for their invaluable support, expertise, and resources which were instrumental in bringing this work to fruition.

References

Ali, S., & Ripley, S. D., 1983. *Handbook of the birds of India and Pakistan together with those of Bangladesh, Nepal, Bhutan and Sri Lanka*. Compact ed. Delhi: Oxford University Press. Pp. i–xlii, 1 l., pp. 1–737, 56 ll.

Balasubramanian, P., Santhoshkumar, E., & Anbarasu, C., 2011. Vegetation features and restoration initiatives in the Indian grey hornbill habitats in Sathyamangalam wildlife sanctuary, eastern ghats, India. *Raffles Bulletin of Zoology* 24: 53-57.

Barve, S., Raman, T. R. S., Datta, A., & Jathar, G., 2020. Draft guidelines for conducting research on the nesting biology of Indian birds. *Indian BIRDS* 16 (1): 10–11.

Charde, P., Kasambe, R., Pimplapure, A., & Tarar, J. L., 2011. Nest sanitation in Indian Grey Hornbill *Ocyceros birostris* in central India. *Raffles Bulletin of Zoology* Suppl. 24: 65–67.

Datta, A., & Rawat, G. S., 2004. Nest-site selection and nesting success of three hornbill species in Arunachal Pradesh, north-east India: Great Hornbill *Buceros bicornis*, Wreathed Hornbill *Aceros undulatus* and Oriental Pied Hornbill *Anthracoceros albirostris*. *Bird Conservation International* 14 (S1): S39–S52.

Eni, D. D., Iwara, A. I., & Offiong, R. A., 2012. Analysis of Soil Vegetation Interrelationships in a South Southern Secondary Forest of Nigeria. *International Journal of Forestry Research* 2012 (1): 469326.

Fitzsimons, J. A., 2019. Vertebrate prey handling in the Indian Grey Hornbill *Ocyceros*

birostris (Aves: Bucerotiformes: Bucerotidae). *Journal of Threatened Taxa*, 11 (14): 14891–14894.
Gadikar, P. V., 2017. Adaptations of the Indian Grey Hornbill *Ocyceros birostris* in an urban environment. *Indian Birds* 13 (6): 167–168.
Government of India, 2011. Census of India 2011: Provisional population totals. Office of the Registrar General & Census Commissioner, India. Available at: https://censusindia.gov.in.
Hammer, Ø., Harper, D. A. T., & Ryan, P. D., 2001. PAST: Paleontological Statistics Software Package for Education and Data Analysis. *Palaeontologia Electronica* 4: 9.
Holbrook, K. M., Smith, T. B., & Hardesty, B. D., 2002. Implications of long distance movements of frugivorous rain forest hornbills. *Ecography* 25 (6): 745–749.
Holt, R. F., & Martin, K., 1997. Landscape modification and patch selection: the demography of two secondary cavity nesters colonizing clearcuts. *The Auk* 114 (3): 443–455.
Hussain, S. A., 1984. Some aspects of the biology and ecology of Narcondam Hornbill (*Rhyticeros narcondami*). *Journal of Bombay Natural History Society* 81 (1): 1–18.
Ilyas, O., 2014. Status, habitat use and conservation of Alpine musk deer (*Moschus chrysogaster*) in Uttarakhand Himalayas, India. *Journal of Applied Animal Research* 43 (1): 83–91.
James, D. A., & Kannan, R., 2009. Nesting habitat of the Great Hornbill (*Buceros bicornis*) in the Anaimalai Hills of southern India. *The Wilson Journal of Ornithology* 121 (3): 485–492.
Kasambe, R., 2011. Breeding behaviour of Indian Grey Hornbill in central India. *The Raffles Bulletin of Zoology* 24: 59–64.
Kasambe, R., 2020. *Indian Grey Hornbill: Unravelling the Secrets (Vol. 1)*. Published by the author.
Kemp, A. C., 1976. Feeding ecology of the same species of hornbills. *Transvaal Museum Memoirs* 20 (1): 12–18.
Kemp, A. C., 1995. *The hornbills*. Oxford: Oxford University Press
Kinnaird, M. F., & O'Brien, T. G., 1999. Breeding ecology of the Sulawesi Red knobbed Hornbill *Aceros cassidix*. *Ibis* 141 (1): 60–69.
Kinnaird, M. F., & O'Brien, T. G., 2007. *The ecology and conservation of Asian hornbills: farmers of the forest*. University of Chicago Press.
Kitamura, S., 2011. Frugivory and seed dispersal by hornbills (Bucerotidae) in tropical forests. *Acta Oecologica* 37 (6): 531–541.
Kozlowski, C.P., Bauman, K.L., & Asa, C. S., 2015. Reproductive behavior of the great hornbill (*Buceros bicornis*). *Zoo Biology* 34 (4): 328–334.
Losin, N., Floyd, C. H., Schweitzer, T. E., & Keller, S. J., 2006. Relationship between aspen heartwood rot and the location of cavity excavation by a primary cavity-nester, the Red-naped Sapsucker. *The Condor* 108 (3): 706–710.
Madge, S. G., 1969. Notes on the breeding of the Bushy-crested Hornbill *Anorrhinus galeritus*. *Malayan Nature Journal* 23: 1–6.
Mudappa, D. C., & Kannan, R., 1997. Nest-site characteristics and nesting success of the Malabar Gray Hornbill in the southern Western Ghats, India. *The Wilson Bulletin* 109 (1): 102–111.
Mudappa, D., & Raman, T. S., 2009. A conservation status survey of hornbills (Bucerotidae) in the Western Ghats, India. *Indian Birds* 5(4), 90–102.
Naniwadekar, R., Mishra, C., Isvaran, K., & Datta, A., 2021. Gardeners of the forest: hornbills govern the spatial distribution of large seeds. *Journal of Avian Biology* 52 (11). DOI: https://doi.org/10.1111/jav.02748.
Norusis, M. J., 1990. SPSS/PC+ Advanced Statistics 4.0. Chicago: SPSS Inc.
Parveen, & Ilyas., 2017. *Vegetation composition in AMU Campus*. M.Sc. Dissertation, Aligarh Muslim University, Aligarh.
Poonswad, P., 1995. Nest site characteristics of four sympatric species of hornbills in Khao Yai National Park, Thailand. *Ibis* 137 (2): 183–191.
Poonswad, P., Tsuji, A., & Ngampongsai, C., 1987. A comparative study on breeding biology of sympatric hornbill species (Bucerotidae) in Thailand with implications for breeding in captivity. In *Proceedings of the Jean Delacour/IFCB symposium on breeding birds*, North Hollywood, California, USA 250–277.
Santhoshkumar, E., & Balasubramanian, P., 2010. Breeding behaviour and nest tree use by Indian Grey Hornbill *Ocyceros birostris* in the Eastern Ghats, India. *Forktail* 26: 82–85.
SoIB Partnership, 2023. State of India's Birds factsheet: Indian Grey Hornbill *Ocyceros birostris* (India). Website: https://stateofindiasbirds.in/species/inghor2/. [Accessed on 04 May 2025.]
van Eerden, A. O. K., Komdeur, J., Richardson, D. S., Dugdale, H. L., & Hammers, M., 2025. Nest-site selection and nest predation in a tropical passerine in relation to food, friends, and foes. *Ornithology* 142 (1): ukae049.
von Haartman, L., 1957. Adaptation in hole-nesting birds. *Evolution* 11 (3): 339–347.
Wiebe, K. L., 2011. Nest sites as limiting resources for cavity nesting birds in mature forest ecosystems: a review of the evidence. *Journal of Field Ornithology* 82 (3): 239–248.

In Memoriam

SUNJOY GOPALDAS MONGA

(07 MARCH 1962 – 28 MAY 2025)

Notes on the natural history of the Chestnut-capped Babbler *Timalia pileata* in southern West Bengal

Sekhar Pramanik & Kaushik Deuti

Pramanik, S., & Deuti, K., 2025. Notes on the natural history of the Chestnut-capped Babbler *Timalia pileata* in southern West Bengal. Indian BIRDS 21 (2): 40–44
Sekhar Pramanik, Zoological Survey of India, 27 JL Nehru Road, Kolkata 700016, India.
Kaushik Deuti, Zoological Survey of India, 27 JL Nehru Road, Kolkata 700016, India. E-mail: kaushikdeuti@gmail.com [Corresponding author]
Manuscript received on 12 March 2025.

Introduction

The Chestnut-capped Babbler *Timalia pileata* is a skulking small babbler that inhabits tall grass, reed-beds, and scrub in low-lying wet areas of the Terai region in northern India, foothills of north-eastern India, and with residual populations in similar habitats in southern West Bengal and Bhitarkanika mangroves of north-eastern Odisha (Ali & Ripley 2001: 187; Rasmussen & Anderton 2012: 441; Praveen 2025: 291). It stays in small groups of six to eight individuals, remaining well hidden among the grass stems, feeding on insects off the leaves and twigs and clambering up and threading its way through the tangles of grass, seldom exposing itself (Ali & Ripley 2001: 188; Collar & Robson 2020). Sexes are similar (Ali & Ripley 2001; Collar & Robson 2020), but the male is much larger than the female (Rasmussen & Anderton 2012: 441). During the breeding season they form pairs, when males emerge briefly out of the grass stems, while singing (Grewal et al. 2016: 491). Though historically known from southern West Bengal (Hume 1889: 91; Ali & Ripley 2001: 188), recent records from this part of the country have been mostly from two regions; the Sundarbans and the region around Kalbansh village beside the Damodar River (eBird 2025). Their nests are described as an oval or dome shaped ball, or sometimes a deep cup, with a large side entrance, made of dry coarse grass, straw, dry bamboo, or other leaves and rootlets, placed up to one meter above ground, low down in a bush or sapling. The nest is usually surrounded by long grass, is on spikes protruding from grass nodes, or on ground sheltered by bush or grass tussock (Collar & Robson 2020). However, not much has been written about the bird's nesting habits since the colonial era (Hume 1889: 90; Stuart Baker 1932: 132) and hence, we provide our observation notes from our study.

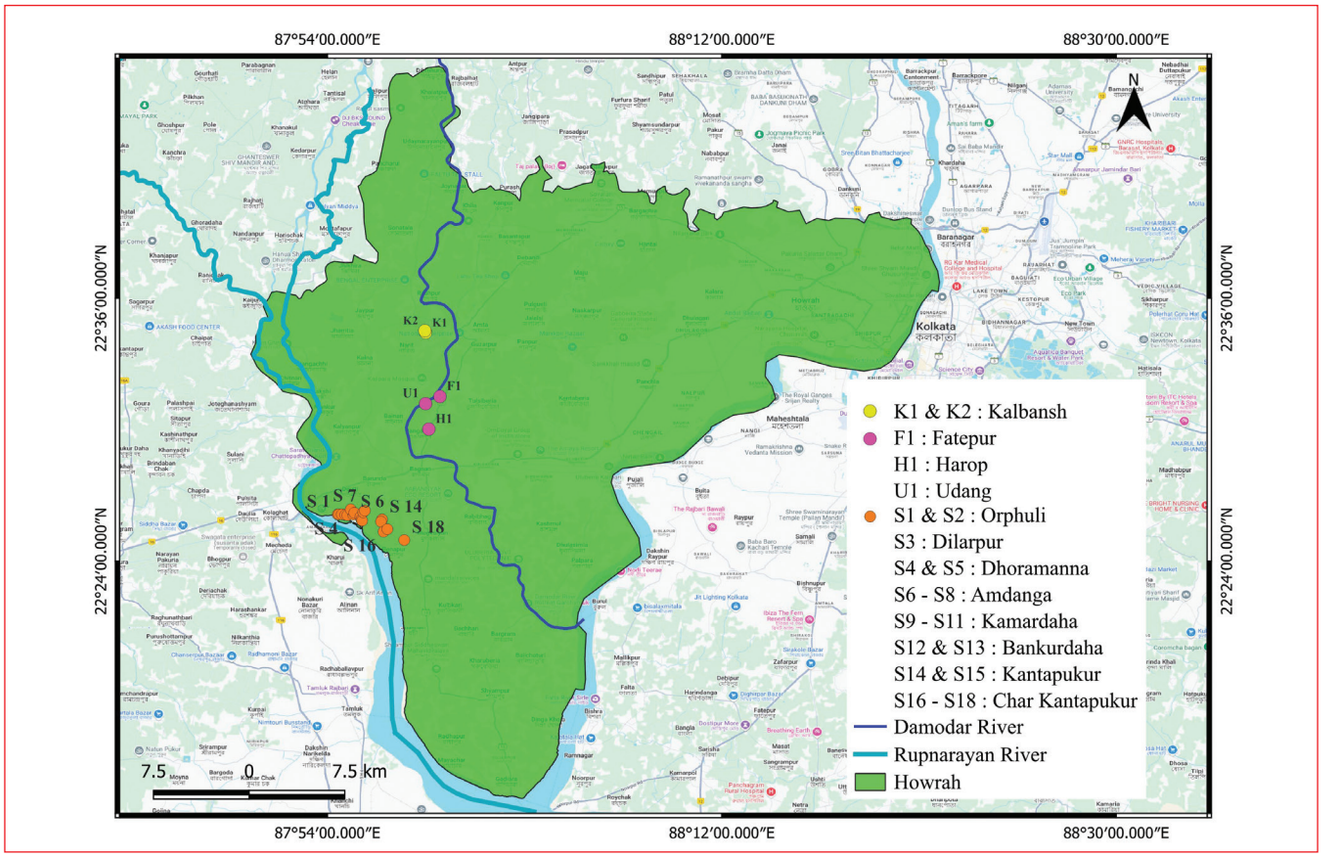

Fig. 1. Map of Howrah District showing our study area where Chestnut-capped Babblers occur.

Study area

From December 2022 to March 2025, we observed the Chestnut-capped Babbler *Timalia pileata* in the grasslands of two adjoining rivers, the Rupnarayan and the Damodar in Howrah District of southern West Bengal (22.570°–22.630°N, 88.210°–88.310°E). These sites consist of 18 riverine grassland patches of *Saccharum spontaneum* (locally called 'Kash') along the Rupnarayan, spread near seven villages, and five grassland patches of *S. fenestrum* (locally called 'Khori') along the Damodar, spread near three villages (Fig. 1). None of these areas are formally protected. All these grassland patches are similarly thick or dense and extended for 100–700 m from the bank of either of these rivers. However, the *S. spontaneum* grassland patches were more extensive along the bank of the wider Rupnarayan (200–700 m) than the *S. fenestrum* grassland patches along the bank of the narrower Damodar (100–200 m). The height of both grass species increased from two meters to five meters after the monsoons, when they flowered, producing fluffy balls at the tip of the stems.

Methodology

Between December 2022 to March 2025, we visited these sites twice every week during the breeding season from February to May, once every month from June to September during the monsoons, and twice every month from October to January during the winter – amounting a total of 102 field visits. Apart from the two of us, we were sometimes accompanied by wildlife photographers and bird enthusiasts from Kolkata, who were keen to see and photograph this species and thus helped us in photo documentation. We generally spent about four hours (0530–0930 h) in the morning and two hours (1630–1830 h) in the evening at these sites, during both breeding and non-breeding seasons. While observing the birds and recording their calls (with a Zoom H1 Essential digital sound recorder), we always remained at least 20m away from them so as not to disturb them and hamper our own observations (Barve et al. 2020).

Results

In all we found 23 sites in our study region where Chestnut-capped Babblers occur: 18 along the Rupnarayan River and five along the Damodar River (Fig. 1 & 2). At all the large grassland patches in these sites the species was present during the full duration of our study.

Sexual dimorphism

Although all field-guides mention that there is no sexual dimorphism, we noted a difference in the iris colour of birds. Based on their behaviour, we think that the birds with a red iris are the males **[41, 42]** while the birds with a black iris are the females **[43]**. Our preliminary conclusion results from our observations that only individuals with red iris vocalize and emerge more out of the grass clumps during the breeding season (February to May). This behaviour of red-iris birds was consistent and we observed it in over 70 occasions (~140 individuals) in our study area. Our observations and photographs taken by different bird

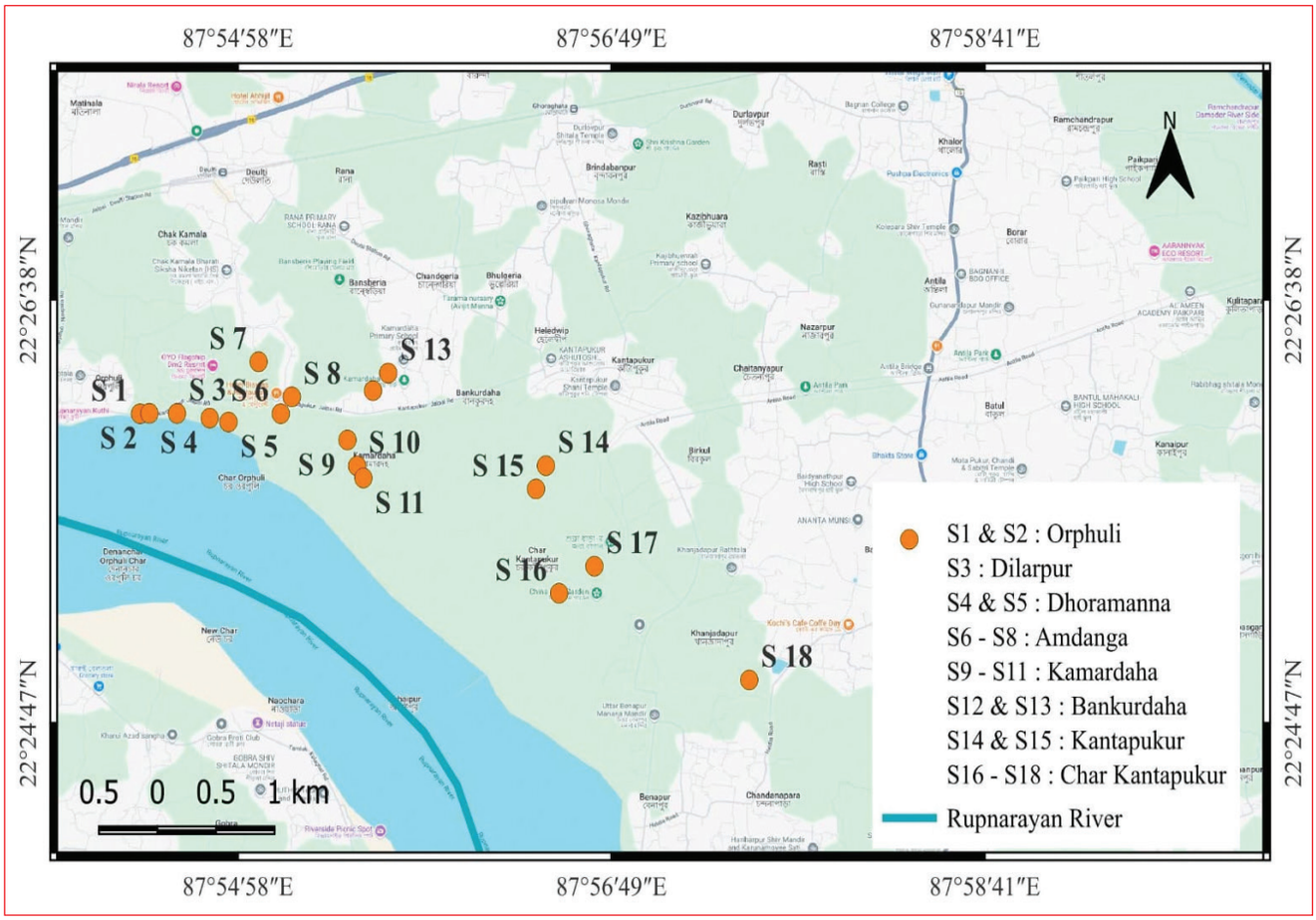

Fig. 2. Detailed map of occurrence sites of the Chestnut-capped Babbler along the Rupnarayan River

photographers, throughout the year **[41, 42]**, suggest that the eye colour in this species is not a seasonal variation. The colour of the iris has been variously described as 'dark red' (Oates 1889: 132), 'deep bright red' (Stuart Baker 1922: 226), or 'reddish-brown' (Ali & Ripley 2001: 188). It would not be surprising that such an important morphological difference was missed by previous ornithologists; most studies on morphology happened in the museums where the eyes have not been preserved. Such differences in colour of iris have been missed previously as well (see Sant et al. 2019).

Bubay Dolui

41. Chestnut-capped Babbler, presumably the male, during its breeding season, with red iris on 02 February 2025 at Char Kantapukur Site of Rupnarayan River grasslands.

Samar Jana

42. Chestnut-capped Babbler, presumably the male, during its non-breeding season, with red iris, calling on 10 September 2024 at Dilarpur Site of Rupnarayan River grasslands.

Sumit Kayal

43. Chestnut-capped Babbler, presumably the female, with black iris on 06 April 2025 at Fatepur Site of Damodar River grasslands.

Activity Pattern

Chestnut-capped Babblers emerged out of the grass occasionally between 0600 and 0800 h in the morning and again briefly between 1700 and 1730 h during the winter season (October to January). During the breeding and monsoon season, this changes slightly to 0530–0730 h and again briefly at dusk 1630–1830 h. This is not surprising as some other grassland birds, that co-habit in the same grassland patches, like the Striated Babbler *Argya earlei*, Yellow-bellied Prinia *Prinia flaviventris*, Red Munia *Amandava amandava*, and Tricoloured Munia *Lonchura malacca*, also were noted to have a similar activity pattern.

Food

We observed Chestnut-capped Babblers feeding on Noctuid and other moths **[44]**, grasshoppers, and leaf bugs which they found easily while clambering up and down the grass stems in their habitat; not much different from what has already been documented (Collar & Robson 2020).

Supriyo Samanta

44. Chestnut-capped Babbler feeding on a Noctuid moth on 12 March 2023 at Orphuli Site of Rupnarayan River grasslands.

Vocalizations

The species was observed to emit at least three types of calls: alarm call (Fig. 3), territorial call (Fig. 4), and breeding or courtship call (Fig. 5). We recorded all of these at the Fatepur Site and analyzed by ourselves at the laboratory. The breeding call was only heard from February to May, while alarm and territorial calls were heard throughout the year. We also reviewed the Cornell Lab's Macaulay Library (www.macaulaylibrary.org) and found that of its holdings of 216 recordings of this species, the recordists have specifically assigned 36 as calls, and 31 as songs. Of these, 78 recordings were from India (13 calls, 8 songs) and 24 from West Bengal. Similarly, in Xeno Canto (https://xeno-canto.org/), we found a total of 148 recordings (19 call and subsongs, 5 duets, 48 songs, and 4 alarm calls) of which 14 are from India and only one from West Bengal. Clearly, there are more variations in their vocalization than the three we recorded.

Breeding

Although all 23 sites are foraging grounds of this species, evidence for their breeding and nesting was observed only at Orphuli, Kamardaha, and Char Kantapukur sites on the north-eastern bank of the Rupnarayan River and Kalbansh site on the western bank of the Damodar River. From February to May, the

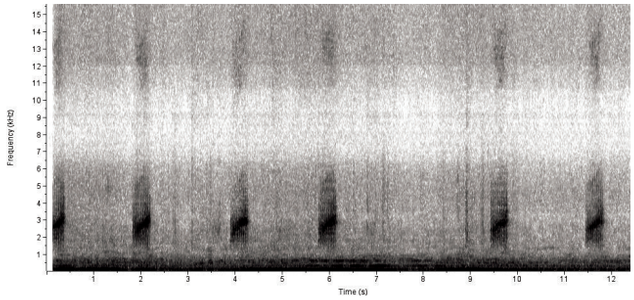

Fig. 3. Alarm call of the Chestnut-capped Babbler. Sonogram: Sekhar Pramanik

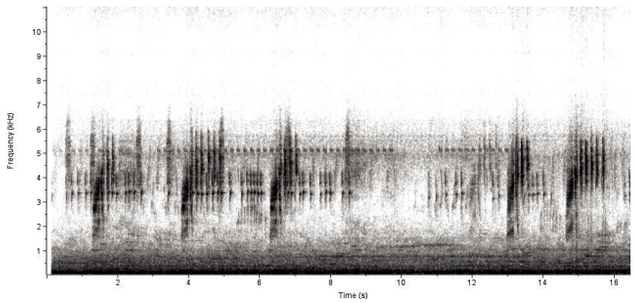

Fig. 4. Territorial call of the Chestnut-capped Babbler. Sonogram: Sekhar Pramanik.

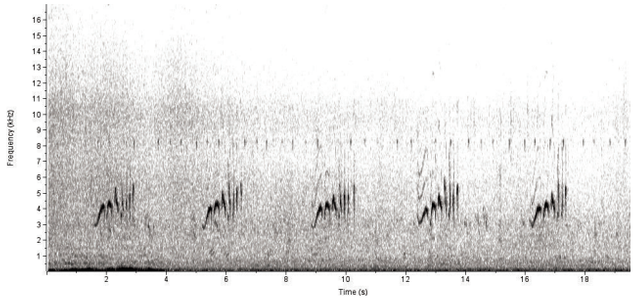

Fig 5: Breeding song of the Chestnut-capped Babbler. Sonogram: Sekhar Pramanik.

red-eyed individuals were found to emit breeding / courtship song and were seen occasionally displaying their full body while perching on the top of the grass stems for a few seconds. The pairs invariably comprised a red-eyed and a black-eyed bird, however no copulation could be observed.

During February and April 2024, we came across two nests that were being constructed at Orphuli and Kamardaha sites near the Rupnarayan River and in both cases, the nests were well-hidden among thick tall grass, which we did not wish to sift through to photograph as that would lead to disturbing the nesting birds and forcing them to abandoning their nests. J. R. Cripps mentioned that a nest found on 01 April 1878 in eastern Bengal (probably now in Bangladesh) was deserted by the pair after being disturbed (Hume 1889: 91–92). On four other occasions, nests were deserted after being disturbed (Hume 1889:92).

Both the nests were entirely made up of grass leaves intertwined with dry mud and clay. Although these low-lying grasslands get inundated, one of the nests at Kamardaha constructed in April 2024, was only 44 cm above the ground, and measured about 20 x 14 cm. At Orphuli, the first nest construction started during the first week of February 2024 and was completed within one month. This 18 x 10 cm nest was pear-shaped. It was attached to grass at 31 cm above the ground. Unfortunately, just after their completion, both nests were burnt during grass burning by villagers **[45]**. All our measurements were taken after the nests got burnt and the birds have abandoned the nests.

Eugene Oates found two nests in Burma (=Myanmar) on 02 June and 04 July and concluded that the breeding season in Myanmar was June–July (Hume 1889: 90). However, after finding nests in April, he thought that this species is perhaps double-brooded and laid about three eggs in each clutch (*ibid*.). Hume also quoted J. C. Parker, who found a nest from Salt Lakes (Kolkata) on 14 August 1875, along with that of the Yellow-bellied Prinia (Hume 1889: 91). However, at our site, the breeding season seems to be much earlier than April. The nest that Oates found was made of bamboo leaves and lined sparingly with fine grass. It was oval, 18 x 10 cm (similar to ours), with a large entrance at the side, its lower edge being about the middle of the nest. The nest was placed on the fork of a thick thorny shrub, very near to the ground and surrounded on all sides by tall grass. The nest found by Parker was placed on spikes growing from the joints of a species of grass very thick and stiff which was 15 x 10 cm. The egg cavity was 5 cm and the entrance hole 3.5 cm. The nest was situated 90 cm above the ground (higher than ours) and was loosely put together with dead leaves of tiger-grass twisted round and round and lined with coarse grass.

Threats

Though riverine grasslands in India are facing several threats, the main local threat for this species was the cutting and burning of grass stems **[46]** for clearing land for hibiscus *Hibiscus rosasinensis* and marigold *Tagetes erecta* floriculture **[47]**. The Rupnarayan grasslands, in fact, are on a natural riverbed that was exposed when the river changed course; they still get submerged during high tides. Hence, long-term cultivation is not possible in these grasslands. The demand for fresh flowers in Kolkata—for worship in temples, puja pandals, and homes—is so high, that


Sekhar Pramanik

45. Burnt nest of the Chestnut-capped Babbler at Orphuli.

46. Cutting and burning of grasses in Chestnut-capped Babbler habitat for flower cultivation.

47. Marigold flower cultivation after grass burning at the Rupnarayan grasslands.

ALL: Kaushik Deuti

48. Villagers making garlands with marigold flowers cultivated at the Rupnarayan grasslands.

villagers of these seven villages adjoining the Rupnarayan River have cleared riverine grasslands for the lucrative floriculture industry. This is turning out to be the primary means of livelihood for these villages **[48]**. The demand for flowers is such that villagers now even hire machinery (e. g., JCB) to clear grasslands instead of the traditional, slower physical scything. The development of transportation infrastructure, both road and rail, allows rapid movement of the crop to markets, and has added to the increase in the destruction of these grasslands. Hence, the plight of all grassland obligate species, like the Chestnut-capped Babbler, is imperiled and they may only survive in the protected area networks like the Sundarbans.

Acknowledgements

We thank the Director of Zoological Survey of India for allowing us to conduct this study, where Dr. Gopinathan Maheswaran, Dr. K. A. Subramanian and Dr. Amitava Majumder gave us some helpful suggestions. We are grateful to Mr. Goutam Bhattacharjee, Retd Officer, Kolkata Police, for showing us the localities at Bangalpur and Fatepur villages along the Damodar River. We are also very grateful to Mr. Krishnendu Bhuiya for drawing the maps. We thank Mr. Bubay Dolui, Mr. Samar Jana, Mr. Sumit Kayal and Dr. Supriyo Samanta for sharing their photographs, which they took when they went with us.

References

Ali, S., & Ripley, S. D., 2001. *Handbook of the birds of India and Pakistan together with those of Bangladesh, Nepal, Bhutan and Sri Lanka*, 2nd ed. (Sponsored by Bombay Natural History Society.) Oxford University Press [Oxford India Paperbacks.], Delhi. Vol. 6 (Cuckoo-Shrikes to Babaxes) of 10 vols. Pp. 2 ll., pp. i–xiii, 1–247, 2 ll. (blank), 2 ll.

Barve, S., Raman, T. R. S., Datta, A., & Jathar, G., 2020. Guidelines for conducting research on the nesting biology of Indian birds. *Indian Birds* 16 (1): 10–11.

Collar, N., & Robson, C., 2020. Chestnut-capped Babbler (*Timalia pileata*), version 1.0. In: *Birds of the World*. Cornell Lab of Ornithology, Ithaca, NY, USA. https://birdsoftheworld.org/bow/species/chcbab1/cur/introduction.

eBird, 2025. Webpage URL: https://ebird.org/map/chcbab1. [Accessed on 5 May 2025].

Grewal, B., Sen, S., Singh, S., Devasar, N., & Bhatia, G., 2016. *A pictorial field guide to the birds of India, Pakistan, Nepal, Bhutan, Sri Lanka and Bangladesh*, 1st ed. (I. Mitra & S. Sarkar-Seth, eds). Om Books International, New Delhi, India. Pp. 1–791.

Hume, A. O., 1889. *The Nests and Eggs of Indian Birds*, 2nd ed. R.H. Porter, London. Vol. I of 3 vols. Pp. i–x, 1 l., 1–397.

Praveen, J., 2025. *Birds of India - The New Synopsis*. Nature Conservation Foundation, Mysuru. Pp. i–xlvii, 1–468.

Oates, E. W., 1889. *The fauna of British India, including Ceylon and Burma (Birds)*, 1st ed. Taylor and Francis, London. Vol. I of 4 vols. Pp. i–xx, 1–556.

Rasmussen, P. C., & Anderton, J. C., 2012. *Birds of South Asia: the Ripley guide: attributes and status*, 2nd ed. Smithsonian Institution and Lynx Edicions., Washington, D.C. and Barcelona. Vol. 2 of 2 vols. Pp. 1–683.

Sant, N., Prabhukhanolkar, R., & Charantimath, A., 2019. Colour variations in Broad-tailed Grassbird *Schoenicola platyurus*. *Indian Birds* 14 (6): 176–182.

Stuart Baker, E. C., 1922. *The fauna of British India, including Ceylon and Burma. Birds*, 2nd ed. Taylor and Francis; Thacker, Spink, & Co.; Thacker & Co, London; Calcutta; Bombay. Vol. I of 8 vols. Pp. i–xxiii+1, 1–479.

Stuart Baker, E. C., 1932. *The nidification of birds of the Indian empire* [*Corvidae-Cinclidae*], 1st ed. Taylor & Francis, London. Vol. I of 4 vols. Pp. i–xxiii, 1–470.

Correspondence

Addition of the White-throated Rock Thrush *Monticola gularis* to the avifauna of India and South Asia

During a birdwatching excursion to Phawngpui National Park (NP), Mizoram, India, we observed an adult male White-throated Rock Thrush *Monticola gularis*, a new species for the country and South Asia.

On 10 March 2025, we (DK, CL, JRZT & PJ) reached the Thaltlang forest gate at 0530 h to enter the Phawngpui (Blue Mountain) National Park. While JRZT was working on the permits and transferring our luggage to a different vehicle, the rest of us decided to hike up through the Thaltlang community forests towards Far Pak. Birding was slow, with not much happening as the morning sunlight had not hit the forests yet. About a kilometre from the Thaltlang gate (22.692°N, 93.049°E; *c.* 1,650m), at 0550 h, DK noticed a mid-sized bird in the canopy of the open forests, which he could not identify. The bird was first seen against the light and had blue upper parts and chestnut underparts, evoking some confusion as we discussed whether this could be a thrush, a robin, a niltava, or even a flycatcher. However, when we put the bird, which was facing us, on our spotting scope, it immediately became apparent that it was a Rock Thrush *Monticola sp.* with blue on upperparts and chestnut on underparts, with Blue-capped Rock Thrush *M. cinclorhyncha* being a contender. However, the bird had an obvious white stripe through the throat that widened a bit towards the breast. A quick look at Merlin indicated this to be a male White-throated Rock Thrush, as a Blue-capped male does not have this throat patch in any plumage. DK's notes recorded from the field while watching through the scope details the bird with chestnut underparts, deep chestnut or orangish cheeks, some dark stripes on the mesial area with a pale whitish streak between the mesial region that thickens towards the breast like a white spot; blue cap, blue sides of the wings with scaling as expected on a rock thrush. Excitement was evident, and DK digiscoped the bird **[49]** and CL photographed it **[50]**. Given the rarity of the species, we acknowledged the possibility that certain key features might have been overlooked, and so to confirm, we played a recording of its song to observe any behavioural response. The bird appeared to respond by flying slightly closer, though it remained on a high perch, *c.* 20 m above us. This change in position allowed CL to capture additional photographs, revealing the scaly pattern on the wings and the pale legs, the latter being another feature that differentiates it from the Blue-capped Rock Thrush **[51]**.

By then, another group of five birders, including Chandramouli Ganguly, Abhijeet Mhaskar, and Kiddy Vanchhawng, were driving up in their vehicle towards Far Pak. We stopped them and informed about the sighting, and with a bit of effort, they were also able to get reasonably good photographs of the bird confirming all the features visible in our photo set – white on throat, pale legs, blue cap, a white patch on the wings, light orange vent, black stripe through the eye which turns paler in loral region, a pale eye-ring that is more prominent towards the rear and absent directly above the eye, black bill, small blue patch on alula, blue-black primaries and a bluish tail, all confirming this bird to be an adult male. Overall, we were at the spot for about an hour until JRZT came up with our vehicle, but by then the bird seemed to have gone higher up on the ridge. Subsequent visits to the site during the week, by Chandramouli's team and ours, could not relocate the bird.

Dipu Karuthedathu

49. White-throated Rock Thrush, Phawngpui National Park, Mizoram.

50. White-throated Rock Thrush showing white throat stripe.

Both: Christopher J.Z. Lawlor

51. White-throated Rock Thrush showing pale legs and scaly pattern on the wing.

The White-throated Rock Thrush breeds in temperate forests across north-eastern China, south-eastern Russia, and North Korea, typically between May and July. It winters in subtropical or tropical moist lowland forests across Southeast Asia, including countries like Cambodia, Laos, Thailand, Vietnam, and parts of southern China. The species was not totally unexpected here, as Rasmussen & Anderton (2012) specifically mentioned the Mizo hills where it might possibly occur during passage migration. It is

listed as a scarce to uncommon winter visitor to eastern Myanmar (Robson 2000). The nearest known record is from Mount Popa in central Myanmar (Keaveney 2010), *c.*300 km southeast of our sighting. It is probably a passage or winter migrant through the eastern parts of Myanmar, but is typically unreported due to the region being under-birded.

References

Keaveney, A., 2010. Webpage URL: https://ebird.org/checklist/S50623567 [Accessed on 23 March 2025].

Rasmussen, P. C., & Anderton, J. C., 2012. *Birds of South Asia: the Ripley guide: attributes and status*, 2nd ed. Smithsonian Institution and Lynx Edicions., Washington, D.C. and Barcelona. Vol. 2 of 2 vols. Pp. 1–683.

Robson, C., 2000. *A field guide to the birds of South-East Asia*, 1st ed. New Holland Publishers (UK) Ltd., London. Pp. 1–504.

– Dipu Karuthedathu, Christopher J.Z. Lawlor, Joe R. Z. Thanga & Praveen J

Dipu Karuthedathu, Jaya Emerald, Maruthinagar, Bengaluru 560075, Karnataka. Email: [Corresponding author] [DK]

Christopher J.Z. Lawlor, Government Kolasib College, Kolasib-796081, Mizoram. Email: chrislawlor68@gmail.com [CL]

Joe R. Z. Thanga, Zoram Tours, A-9. Sikulpuikawn, Mission Veng, Aizawl, Mizoram. Email: joerzthanga@yahoo.com [JRZT]

Praveen J, Villa 5, Embassy Homes, Mudavanmugal, Poojappura PO, Thiruvananthapuram, Kerala. Email: paintedstork@gmail.com [PJ]

Frog in diet of the Black-bellied Tern *Sterna acuticauda* from the National Chambal Sanctuary, India

The Black-bellied Tern *Sterna acuticauda* is a small (33 cm), Endangered tern with a deeply forked tail, long orange bill, and in breeding plumage showing a black cap, distinctive black belly and vent, and long outer tail feathers in breeding plumage (Rahmani 2012; Rasmussen & Anderton 2012; BirdLife International 2025). The species, like some other riverine bird species in South and Southeast Asia, was once widespread and abundant along large rivers, but its population and range has undergone a drastic decline in recent times. It is now principally confined to India, where the vast majority (>90%) of the population resides (BirdLife International 2025).

The Black-bellied Tern (BBTE) is resident from the Indus River in Pakistan, along major river systems of India, eastwards to the Assam Valley and central Bangladesh (Rasmussen & Anderton 2012; Gochfeld et al. 2020). It is found on large rivers with extensive sandbanks, occasionally on smaller pools and ditches, in lowlands (BirdLife International 2025). It breeds between February and May on bare sandy islands on large rivers (Rasmussen & Anderton 2012). The National Chambal Sanctuary (hereinafter, NCS) on the Chambal River in India is well-known for hosting a significant population of BBTE (Rahmani 2012). The species forages predominantly in shallow, slow moving stretches of the river as it provides an abundance of prey items, including small fish and invertebrates. It feeds by flying low over water and plucking food from the water surface; it also plunge-dives for fish or aerial dips for insects over water and land (Rasmussen & Anderton 2012; Gochfeld et al. 2020). It feeds mainly on small fishes, also insects (including dragonflies) and crustaceans (Rahmani 2012; Gochfeld et al. 2020). We reviewed 1,376 images of BBTE archived at the Macaulay Library database and found 33 images of the species with prey items. After accounting for duplicate images, we finally used 26 images (= 26 records) to ascertain the prey preference of the species. 69% (18) records had small fish as prey, 4% (1) records had small shrimp as prey; however, the prey item in the remaining 27% (7) records was unidentifiable due to the poor quality of images. In all images, the fish species could not be identified but the images indicate that the prey items were small fish, 5–7 cm in length, and forming the major part of the diet of the species.

During our long-term nest monitoring study of riverine birds at NCS from 2017–2023, with fieldwork during March–July, we regularly observed BBTE feeding on small fish. During the same period, we also identified some of the food-items brought by adults for nestlings as small shrimp. On one occasion, we found a small, completely dried frog in an active nest in May 2023. On 01 June 2023, we observed a BBTE actively foraging at edges of the river and catching a Common Skittering Frog *Euphlyctis cyanophlyctis* on the river bank **[52]**. Based on our two observations of BBTE preying on frogs, it can probably be considered as an opportunistic prey item in the diet of the species, especially during the nesting season when the species is provisioning nestlings. Given the absence of prior research on the dietary habits of the BBTE, this record presents an opportunity for further investigation.

We thank the Conservation Leadership Programme (CLP), BirdLife International for funding our study, the Madhya Pradesh and Uttar Pradesh Forest Departments for permissions, and the Director, BNHS for his support. We are thankful to the anonymous referee for helping us start the photo-analysis and to all citizen scientists who uploaded their photographs.

Viraj Athalye

52. Black-bellied Tern (breeding adult) with a Common Skittering Frog as prey, dated 01 June 2023.

References

BirdLife International, 2025. Black-bellied Tern *Sterna Acuticauda*. Webpage URL: https://datazone.birdlife.org/species/factsheet/black-bellied-tern-sterna-acuticauda. [Accessed on 27 March 2025.]

Gochfeld, M., Burger, J., & de Juana, E., 2020. Black-bellied Tern (*Sterna acuticauda*), version 1.0. In Birds of the World (J. del Hoyo, A. Elliott, J. Sargatal, D. A. Christie, and E. de Juana, Editors). Webpage URL: https://birdsoftheworld.org/bow/species/blbter1/. [Accessed on 27 March 2025.]

Rahmani, A. R., 2012. *Threatened birds of India: their conservation requirements*. Indian Bird Conservation Network; Bombay Natural History Society; Royal Society for the Protection of Birds; BirdLife International; Oxford University Press, Mumbai. Pp. i–xvi, 1–864.

Rasmussen, P. C., & Anderton, J. C., 2012. *Birds of South Asia: the Ripley guide: attributes and status*, 2nd ed. Smithsonian Institution and Lynx Edicions., Washington, D.C. and Barcelona. Vol. 2 of 2 vols. Pp. 1–683.

– Parveen Shaikh & Viraj V. Athalye

Parveen Shaikh, Bombay Natural History Society, Hornbill House, Opposite Lion Gate, SBS Road, Fort, Mumbai 400001, Maharashtra, India. E-mail: parveenevs@gmail.com [Corresponding author]

The Daurian Starling *Agropsar sturninus* in Ladakh, India

The Daurian Starling *Agropsar sturninus* is widely distributed throughout the Oriental Region, ranging from Russia and China to most Southeast Asian countries and the Sundas (BirdLife International 2024). It breeds in eastern Mongolia, the Trans-Baikal region, the Amur Valley in China, and extending southwards into North Korea (Dickinson 2003). Its primary wintering areas include southern China, Thailand, Malaysia, Singapore, Cambodia, Laos, Vietnam, Sumatra, Java, and Myanmar (King & Dickinson 1975). The species was considered as a vagrant in South Asia and has been documented in northern Pakistan, Nepal, Sundarbans in Bangladesh, Sri Lanka, southern India, and the Andaman and Nicobar Islands, India (Kotagama et al. 2006; Rasmussen & Anderton 2012; Thompson et al. 2014); however, recent records from the latter two regions in India indicate that it is probably regular there (eBird 2024a).

On 17 June 2022, SS & JG while birding near Hanle village (32.783°N, 79.001°E; 4,302 m asl), in eastern Ladakh, spotted a fast-moving bird that eventually perched on a low bush and allowed them to photograph it. They were initially puzzled by its identity, however, after consulting the field-guide (Grimmett et al. 2011) and browsing images on eBird confirmed it to be a Daurian Starling **[53]**. A single individual was found at this time and the habitat of the location was characterized by fast flowing streams with scattered shrubbery and minimal vegetation.

On 6 June 2024, at 0827 h, VR observed one individual near Leh (34.066°N, 76.601°E; 3,219 m asl), Ladakh, during a birdwatching excursion, accompanied with visitors from Singapore **[54]**. The bird was identified by features, such as, a mainly pale grey body, the wings, tail and back blackish with a purple iridescent sheen, and showing a glossy purplish patch on the hind crown and a white ring around the eye. When viewed from behind, the bird showed a distinctive white V-pattern formed by its rear scapulars. Females and juveniles of the species share a similar pattern to adult males but appear duller, with a grey-brown mantle and less vibrant wings and tail (Grimmett et al. 2011). Thus, the plumage characteristics of the bird we observed were consistent with that of an adult male. This location was adjacent to the Indus River, and the habitat was predominantly composed of poplar *spp.* with dense shrubbery **[55]**. Other birds observed in the vicinity here included the Eurasian Hoopoe *Upupa epops,* Long-tailed Shrike *Lanius schach*, Brahminy Starling *Sturnia pagodarum*, and Bluethroat *Luscinia svecica*.

Sarwandeep Singh

53. Daurian Starling near Hanle village, Ladakh on 17 June 2022.

54. Daurian Starling in Leh, Ladakh on 06 June 2024.

Both: Vivek Rawat

55. Habitat where Daurian Starling was sighted on 06 June 2024.

In the Indian Subcontinent, the first mainland record of the species was documented from Chitral in Pakistan (Fulton 1904). On mainland India, only a handful of records of the species in over a century, were reported up until at least 2012 (Sharma & Sangha 2012). However, several reports in recent years have emerged from Kerala and Tamil Nadu in southern India (eBird 2024a). The only record from the Western Himalaya in northern India has been recently documented by Kumar et al. (2024). A pair of birds, one male and one female, was reported in May 2021, followed by a sighting of a single female in May 2022, both from Chamoli, Uttarakhand, at an elevation of 1,451 m asl (Kumar et al. 2024). No subsequent sightings have been reported from the Western Himalaya or the surrounding region. The nearest previous record of the species is from Nepal in the Central Himalaya (Basnet & Chaudhary 2003), *c.*850 km southeast of the sighting from Uttarakhand, India. Thus, our two records of Daurian Starling from Ladakh, one each from June 2022 and 2024, appear to be the first records of the species for Ladakh.

Ladakh, located at the junction of the Palearctic and the Indo-Malayan zoogeographic zones, supports species from both regions and boasts a uniquely diverse avifauna with 438 bird species documented to date (eBird 2024b). Several comprehensive studies have documented the avifaunal diversity of Ladakh region (Meinertzhagen 1927; Holmes 1986; Mishra & Humbert-Droz 1998; Pfister 2001; Namgail 2005; Hussain et al. 2008; Bhat & Bhat 2012; Ahmed et al. 2015; Malik 2017; Sharma et al. 2021), but none have reported the occurrence of this species. Moreover, to the best of our knowledge, we could not find any other records of the species from Ladakh on citizen science portals such as eBird. Prior to our observations, records of only four starling species have been known from Ladakh that are supported with photographic evidence: Brahminy Starling, Common Starling *Sturnus vulgaris*, Rosy Starling *Pastor roseus*, and Chestnut-tailed Starling *S. malabarica* (eBird 2024b). This note documents the first two records of Daurian Starling in the Ladakh (Trans-Himalayan) region, with both sightings occurring in June but at different elevations and locations. The June 2022 sighting at Hanle (4,302 m asl) represents the highest elevation record for this species in India, while the June 2024 sighting from Leh (3,219 m asl) provides an additional insight of the occurrence of the species in the region at this time of year. The linear distance between these two records is *c.*200 km.

Both our June records are particularly interesting as they occurred during the typical breeding season of the species in its native range (eastern Mongolia, Trans-Baikal region, and Amur Valley), suggesting possible range expansion or changes in migration pattern of the species. The nearest record of the species to our Ladakh records is from Chamoli, Uttarakhand, India in the Western Himalaya, *c.*440 km and *c.*220 km away respectively, and was also reported in the month of May (Kumar et al. 2024). The occurrence of the species so far west of its usual range during this period (May–June) in consecutive years is noteworthy. More observations would help to understand any potential seasonal patterns of the species or changes in its movements in the region. As the species is considered a rare straggler to India, particularly in northern India, more bird surveys would help in better understanding its true status in this region, and to establish whether it is a regular migrant or just a vagrant.

References

Ahmed, T., Khan, A., & Chandan, P., 2015. A pilot survey of the avifauna of Rangdum Valley, Kargil, Ladakh (Indian Trans-Himalaya). *Journal of Threatened Taxa* 7 (6):7274–7281.

Basnet, S., & Chaudhary, B., 2003. Purple-backed Starling Sturnus sturninus: a new species for Nepal. *Forktail* 19:129.

Bhat, B. A., & Bhat, G. A., 2012. Distribution of avifauna in yusmarg forest – Jammu and Kashmir, India. *International Journal of Current Research* 4 (5):52–56.

BirdLife International, 2024. Webpage URL: https://datazone.birdlife.org/species/factsheet/purple-backed-starling-agropsar-sturninus. [Accessed on 15 February 2025].

Dickinson, E. C., 2003. *The Howard and Moore complete checklist of the birds of the World*, Revised and enlarged 3rd. Christopher Helm, London. Pp. 1–1039.

eBird, 2024a. Webpage URL: https://ebird.org/species/dausta1. [Accessed on 16 March 2025].

eBird, 2024b. Webpage URL: https://ebird.org/region/IN-LA/bird-list. [Accessed on 16 March 2025].

Fulton, H. T., 1904. Notes on the birds of Chitral. *Journal of the Bombay Natural History Society* 16 (1):44–64.

Grimmett, R., Inskipp, C., & Inskipp, T., 2011. *Birds of the Indian Subcontinent*, 2nd ed. Oxford University Press & Christopher Helm, London. Pp. 1–528.

Holmes, P. R., 1986. The avifauna of the Suru Rivery Valley, Ladakh. *Forktail* 2 (December):21–41.

Hussain, S. A., Singh, R. K., & Badola, R., 2008. An ecological survey of the Trans-Himalayan wetlands of the proposed Changthang Biosphere Reserve, India, for conservation planning. *Biosphere Conservation* 9 (1):53–63.

King, B. F., & Dickinson, E. C., 1975. *A field guide to the birds of South-East Asia covering Burma, Malaya, Thailand, Cambodia, Vietnam, Laos and Hong Kong*. Collins, London. Pp. 1–480.

Kotagama, S. W., De Silva, R. I., Wijayasinha, A. S., & Abeygunawardane, V., 2006. Avifaunal list of Sri Lanka. In: *The fauna of Sri Lanka: Status of taxonomy, research and conservation*. (C. N. B. Bambaradeniya, ed). Colombo, Sri Lanka: The World Conservation Union & Government of Sri Lanka. Pp. 164–203.

Kumar, A., Lochan, R., Dewan, S., & Sharma, D. K., 2024. Off the Track or the Pioneers: New Vagrant Records of Daurian Starling Agropsar sturninus from North-western Himalaya, India. *Journal of Bombay Natural History Society* 121 (1).

Malik, J., 2017. *Avifauna of Ladakh*. Educreation Publishing, New Delhi. Pp. 151.

Meinertzhagen, R., 1927. Systematic results of birds collected at high altitudes in Ladak and Sikkim. (Part II.). *Ibis* 69 (4):571–633.

Mishra, C., & Humbert-Droz, B., 1998. Avifaunal survey of Tsomoriri Lake and adjoining Nuro Sumdo wetland in Ladakh, Indian trans-Himalaya. *Forktail* 14 (August):65–67.

Namgail, T., 2005. Winter birds of the Gya-Miru Wildlife Sanctuary, Ladakh, Jammu and Kashmir, India. *Indian Birds* 1 (2):26–28.

Pfister, O., 2001. Birds recorded during visits to Ladakh, India, from 1994 to 1997. *Forktail* 17:81–90.

Rasmussen, P. C., & Anderton, J. C., 2012. *Birds of South Asia: the Ripley guide: attributes and status*, 2nd ed. Smithsonian Institution and Lynx Edicions., Washington, D.C. and Barcelona. Vol. 2 of 2 vols. Pp. 1–683.

Sharma, M., & Sangha, H. S., 2012. Purple-backed Starling *Sturnus sturninus* in the Andaman Islands, India, and its status in the Indian Subcontinent. *Indian Birds* 7 (6):172–173.

Sharma, S., Wangmo, R., & Rana, S. K., 2021. *A Comprehensive Account of The Birds of Ladakh: Commentary, Notes, and Field Guid*. Pp. 368.

Thompson, P. M., Chowdhury, S. U., Haque, E. ul, Khan, M. M. H., & Halder, R., 2014. Notable bird records from Bangladesh from July 2002 to July 2013. *Forktail* 30:50–65.

– Vivek Rawat, Shariq Safi, Sarwandeep Singh, Jaideep Grewal, & Rigzin Nubu

Vivek Rawat, Naturalist & Nature Guide, Ramnagar 244715, Uttarakhand, India. Email: rawat.vivek22@gmail.com [VR]

Shariq Safi, Department of Wildlife Sciences, AMU, Aligarh 202002, Uttar Pradesh, India. Email: shariq4920.ss@gmail.com [Corresponding author]

Sarwandeep Singh, Managing Director, Signature Birding Tours, Noida 201301, Uttar Pradesh, India. Email: sarwandeep11@gmail.com [SS]

Jaideep Grewal, Bird watcher, Chandigarh 160001, Punjab, India. [JG]

Rigzin Nubu, Nature Guide, Leh 194101, UT of Ladakh, India. Email: ladakhwanderlust.in@gmail.com [RN]

The Himalayan Rubythroat *Calliope pectoralis* in Jharkhand, India

On 7 January 2024, at 0835 h, while birdwatching in Massanjore, Dumka District, Jharkhand, India (24.073°N, 87.332°E), the

authors observed a single individual of Himalayan Rubythroat *Calliope pectoralis*. The bird was photographed, and its identity was confirmed based on its distinct plumage and morphological characteristics **[56]**. This sighting represents the first confirmed record of the species in Jharkhand.

Banideep Sinha

56. Himalayan Rubythroat, Massanjore, Jharkhand.

The Himalayan Rubythroat is a striking passerine known for its bright red throat and distinctive vocalizations. It primarily inhabits alpine meadows and dwarf shrub thickets at elevations between 2,600–4,000 m asl, breeding across the high-altitude regions of the Himalaya, Pamirs, Tien Shan, and adjacent ranges (Collar & Christie 2020). It descends to lower altitudes during winter, occupying dense scrub, tea gardens, and grasslands along the Himalayan foothills (Collar & Christie 2020). Non-breeding populations are commonly documented in northern and central Himalayan states (Grimmett et al. 2011).

The bird observed in Massanjore exhibited the deep red chin and upper throat characteristic of Himalayan Rubythroat, with uniformly grey upper parts and a prominent white supercilium. These features distinguish it from the closely related Chinese Rubythroat *C. tschebaiewi*, which has a broader red throat patch separated from a white submoustachial stripe by a narrow black malar stripe (del Hoyo et al. 2020). Similarly, the Siberian Rubythroat *C. calliope* has a metallic, pale ruby-red chin and throat, bordered below by a blackish line that links the malar area, with an olive-brown back and a bold white supercilium and submoustachial stripe (Collar 2020). Based on these diagnostic characteristics, the authors confidently identify the bird as a Himalayan Rubythroat.

Massanjore is situated in north-eastern Jharkhand, and it lies within the Chota Nagpur Plateau, a region characterized by undulating terrain, shallow valleys, and a network of small streams and rivers. The habitat comprises dry deciduous forests, open scrubland, and moist, mixed deciduous forest patches. The Massanjore Reservoir, located on the Mayurakshi River, enhances habitat diversity, supporting a wide range of flora and fauna. This unique ecological setting provides a diverse array of microhabitats suitable for various resident and migratory species.

This sighting is a significant ornithological record, as no historical specimens or previous observations exist from the state of Jharkhand. While this species is commonly recorded in northern and central Himalayan states, such as Uttarakhand and Himachal Pradesh, its presence in Jharkhand has not been documented previously (Grimmett et al. 2011; SoIB 2023). However, a few wintering records exist from Purulia and Howrah Districts in adjacent West Bengal (Nandy 2019). Additionally, sightings from central India, extending to Maharashtra, suggest potential long-distance migratory capabilities (eBird 2025). Given the limited ornithological surveys conducted in Jharkhand, it is plausible that other montane and migratory species remain undocumented in the region. This record highlights the importance of systematic avifaunal surveys and long-term monitoring efforts to better understand species distributions within the state.

The authors sincerely thank Arkajyoti Mukherjee, Satwik Vyas, Kanad Baidya, and Ashwin Viswanathan for confirming the identification and contributing to this document.

References

Collar, N., 2020. Siberian Rubythroat (*Calliope calliope*), version 1.0. In *Birds of the World* (J. del Hoyo, A. Elliott, J. Sargatal, D. A. Christie, and E. de Juana, Editors). Cornell Lab of Ornithology, Ithaca, NY, USA. https://doi.org/10.2173/bow.sibrub.01

Collar, N., & Christie, D. A., 2020. Himalayan Rubythroat (Calliope pectoralis), version 1.0. In *Birds of the World* (J. del Hoyo, A. Elliott, J. Sargatal, D. A. Christie, and E. de Juana, Editors). Cornell Lab of Ornithology, Ithaca, NY, USA. https://doi.org/10.2173/bow.himrub1.01

del Hoyo, J., Collar, N., & Christie, D. A., 2020. Chinese Rubythroat (*Calliope tschebaiewi*), version 1.0. In *Birds of the World* (J. del Hoyo, A. Elliott, J. Sargatal, D. A. Christie, and E. de Juana, Editors). Cornell Lab of Ornithology, Ithaca, NY, USA. https://doi.org/10.2173/bow.chirub1.01

eBird, 2025. Species range map: Himalayan Rubythroat. Website URL: https://ebird.org/species/himrub1/IN-WB-PU [Accessed on 21 October 2024.]

Grimmett, R., Inskipp, C., & Inskipp, T., 2011. *Birds of the Indian Subcontinent*. 2nd ed. London: Oxford University Press & Christopher Helm. Pp. 1–528

Nandy, S., 2019. Himalayan Rubythroat *Calliope pectoralis* in southern Bengal. *Indian BIRDS* 15(2): 61–62

SoIB, 2023. State of India's Birds factsheet: Himalayan Rubythroat *Calliope pectoralis*. Website URL: https://stateofindiasbirds.in/species/himrub1/ [Accessed on 21 October 2024.]

– Prasenjit Chowdhury, Banideep Sinha & Manish Kumar Chattopadhyay

Prasenjit Chowdhury, Jalpaiguri Government Engineering College, Jalpaiguri, 735102, Jalpaiguri, West Bengal, India

Banideep Sinha, Suri Vidyasagar College, Burdwan University, Suri, 731101, Birbhum, West Bengal, India

Manish Kumar Chattopadhyay, Maulana Abul Kalam Azad University of Technology, Kolkata, 7000064, West Bengal, India. E-mail: manish.ee22@gmail.com [Corresponding author]

Displaying Lesser Floricans *Sypheotides indicus* in the arid Desert National Park, Rajasthan, India

The Lesser Florican *Sypheotides indicus* is the smallest of the four bustards found in India and is endemic to India, Pakistan and Nepal. Listed as Critically Endangered by the IUCN (BirdLife International 2021), it is a specialist of semi-arid agro-grassland and has faced a catastrophic decline over the last three generations (Dutta et al. 2018). Lesser Florican distribution spans the semi-arid and sub-humid bioclimatic regions in India. The species migrates to north-western India to breed and known historical breeding records are from southern and western Gujarat, southern and eastern Rajasthan, and western and southern Madhya Pradesh (Sankaran et al. 1992). The breeding range once extended further west, to the southern Sindh region of Pakistan, but the species is thought to be possibly extinct there (BirdLife International 2021). The last survey in 2017 estimated their population to comprise 426 (174–805)[1] breeding males (~800 individuals) across its distribution range with one of the two large breeding populations found in the Ajmer landscape of Rajasthan with an estimated 110–136 breeding males (Dutta et al. 2018). This decline is primarily attributed to agricultural conversion and mismanagement of grasslands compounded by other factors such as historical hunting, egg collection, high

1 This is expressed as mean and 95% confidence interval

livestock grazing intensity, and development of infrastructure and mining projects in their habitat (Dutta et al. 2018). The species is a local migrant in the country but their ranging patterns and basic ecology are poorly known. To date, it has not been reported from anywhere in the Desert National Park (hereinafter, DNP) from the arid zone of Thar desert in eastern Rajasthan.

A male Lesser Florican was sighted in the Sudasari enclosure of DNP on 02 July 2024. On 12 July 2024, a male in full breeding plumage was seen displaying within the same enclosure (26.723°N, 70.606°E) **[57, 58]**. On the next day, two males were seen displaying at the same location. We heard both of them displaying on the subsequent day as well. The last sighting was a male in breeding plumage on 28 July 2024. All sightings were within a *c.*60 ha area inside the Sudasari enclosure of DNP.

The birds were easily identified as male Lesser Floricans by their characteristic courtship display where they leapt up to 2m in the air, rapidly beating their wings and paddling their legs after which they swiftly fell back to the ground with their wings and legs tucked in. Simultaneously they emitted a frog-like rattle from the friction of their primaries that has been recorded to be heard up to ~300 m away (Sankaran & Rahmani 1986) . The areas where they were seen had a mosaic of short (30cm tall) and tall grasses (30–60cm) with few *Capparis decidua* (1–2m) and *Zizyphus nummularia* shrubs (1–2m).

57. A male Lesser Florican inside Sudasari ACD, Desert NP on 12 July 2024.

BOTH: Shimontika Gupta

58. A male Lesser Florican performing courtship display inside Sudasari ACD, Desert NP on 12 July 2024.

Its arrival in Rajasthan is marked by the onset of the southwest monsoon and it has been recorded in the districts of Ajmer, Bhilwara, Shahpura, Kekri, Tonk, Pali, and Pratapgarh (Bharadwaj et al. 2011; Vyas & Sharma 2013; Dutta et al. 2018). In the early breeding season of 2023, a female florican tagged by the Wildlife Institute of India (WII), migrated from the non-breeding areas in southern India up to Balesar in the Jodhpur District of Rajasthan before moving to Gujarat (Uddin & Dutta unpublished data). However, it is unknown if there was any breeding activity in this area. Hence, this marks the first record of the species in DNP and the westernmost record of the species in Rajasthan (Sankaran et al. 1992; Rahmani & Soni 1997; Anoop et al. 2017). The closest recorded breeding area of the florican from here is *c.*300 km away in the Pali District of Rajasthan (Sankaran et al. 1992).

The DNP, officially a Wildlife Sanctuary, is a 3,162 sq. km area in the Thar Desert spanning the Jaisalmer and Barmer districts of Rajasthan. In the Thar Desert, rainfall is low and erratic, varying between 100–450 mm in a year and drought occurs every two to three years (Rao et al. 2012). This landscape is majorly characterized by dry open grasslands, some of the last remaining extensive grasslands in the country (Rahmani & Soni 1997). Within the DNP, there are around 88 villages with a population of over 49,000 people who are dependent on the land for livelihoods, mainly through agriculture and livestock rearing (Anoop et al. 2017). With the development of the Indira Gandhi canal, there has been a rapid increase in cultivation resulting in large-scale conversion of grasslands into croplands in some areas outside of DNP. Growing livestock populations have further led to a reduction in pastures, intensifying grazing pressures. To combat this issue, a major focus of management of the DNP has been the establishment of inviolate enclosed areas to allow the restoration of degraded grasslands (Anoop et al. 2017). Today, these protected grasslands, covering ***c.*** 170 sq. km in total, support significant biodiversity and are used extensively by the Critically Endangered Great Indian Bustard *Ardeotis nigriceps*.

The habitat within these enclosures is characterized by good grass cover and subsequently higher insect abundance along with minimal grazing and human disturbance. Sudasari, a 15 sq. km enclosure within DNP, is one of the oldest enclosures and forms one of the primary breeding grounds for the only viable population of the Great Indian Bustard (Dutta et al. 2024). These grassland enclosures are an ideal habitat for meeting the breeding requirements of the Lesser Florican. Grasslands form their primary breeding grounds with moderately high grass biomass and consequently low grazing pressure, and remoteness from settlements being important predictors of their density (Dutta & Jhala 2014). Within grasslands, male breeding territories have been found to have more heterogeneous ground vegetation, possibly to meet their various life-history needs (Dutta et al. 2018). There are records of breeding activity in lightly wooded grasslands/savannas, and the species is found more frequently in croplands (structurally similar to grasslands) when grasslands are either intensively grazed or the grass is too tall (>1.5m) as a result of heavy rainfall (Sankaran 1997). The dispersal and movement of the Lesser Florican are strongly influenced by the distribution and amount of rainfall with its arrival in breeding areas dependent on high rainfall and good grass cover (Vyas & Sharma 2013). Additionally, Lesser Floricans are known to show unpredictable movements and males are more detectable

due to their aerial courtship displays during monsoon (breeding season), whereas females are highly cryptic but have been found to nest typically around male display territories (pers. obsv. MU). It is possible that the male floricans followed the southwest monsoon to DNP as the area received its first heavy rainfall (~140mm) the week prior to the first sighting. Finding a suitable habitat, the males stayed for about a month and even began performing courtship displays. It is yet to be determined if environmental conditions are suitable for these birds to continue breeding activity here. This region exhibits much more arid conditions than the rest of its range. Earlier studies have shown that if rainfall is interspersed with long spells of dry and sunny days, the birds abandon their territories for better breeding sites (Vyas & Sharma 2013). However, this record of Lesser Florican from an arid area outside its known range indicates that with active habitat restoration, such opportunistic species might be able to expand their range and exploit additional suitable areas for breeding. Thus, this finding has important conservation implications in the wake of erratic rainfalls that are mediated by climate change (Ratnam et al. 2016) and the global decline of biodiversity in grassland ecosystems.

The fieldwork leading to this article has been funded by the National Compensatory Afforestation Fund Management and Planning Authority (CAMPA) Authority under the Bustard Recovery Program, a joint initiative of the WII, Rajasthan Forest Department (RFD), and the Ministry of Environment, Forest and Climate Change (MoEFCC). We thank the administrative authorities of the WII, RFD, and MoEFCC for providing necessary logistic, field permission, and funding support for this work. We also thank the researchers and field assistants of the Bustard Recovery Program team based at Jaisalmer for their overall support and contribution to fieldwork.

References

Anoop, K. R., Bhardwaj, G. S., & Shekhawat, R. S., 2017. *Management Plan for Desert National Park Wildlife Sanctuary (Plan Period: 2017-2027)*. Rajasthan Forest Department.

Bhardwaj, G.S., Sivakumar, K. & Jhala, Y.V., 2011. *Status, distribution and conservation perspectives of Lesser Florican in the North-Western India: A Survey Report.* Wildlife Institute of India.

BirdLife International, 2021. *Sypheotides indicus*. The IUCN Red List of Threatened Species 2021: e.T22692024A199959007. https://dx.doi.org/10.2305/IUCN.UK.2021-3.RLTS.T22692024A199959007.en. [Accessed on 26 September 2024.]

Dutta, S., & Jhala, Y., 2014. Planning agriculture based on landuse responses of threatened semiarid grassland species in India. *Biological Conservation* 175: 129–139.

Dutta, S., Karkaria, T., Bipin, C. M., Uddin, M., Kher, V., Sharma, H., Joshi, H., Bishnoi, V., Sonika, C. K., Paul, I., Gupta, T., Supakar, S., Nagar, A., Pati, A., Gupta, S., Purohit, N., Lawrence, S., Jangid, A. K., Gujjar, M., Moitra, M., Bhattacharya, S., Sawant, M., Krishna, M., Sakhlani, P., Kawlni, L., Kolipakam, V., & Qureshi, Q., 2024. *Bustard Recovery Program: Annual Progress Report 2023-24*. Wildlife Institute of India, Dehradun.

Dutta, S., Narwade, S., Bipin, C. M., Gadhavi., D. Uddin, M., Mhaskar, M., Pandey, D., Mohan, A., Sharma, H., Iyer, S., Tripathi, R., Verma, V., Varma, V., Jangid, A., Chakdar, B., Karulkar, A., Lambture, B., Khongsai, N., Kumar, S., Gore, K., Jhala, D., Vaidya, N., Horne, B., Chittora, A., Annigeri, B. S., Trivedi, M., & Jhala, Y. V., 2018. *Status of the Lesser Florican Sypheotides indicus and implications for its conservation*. Wildlife Institute of India, Dehradun. Pp: 1–112.

Islam, M. Z. U. & Rahmani, A. R., 2011. Thar Desert, Rajasthan, India: anthropogenic influence on biodiversity and grasslands. *Biodiversity* 12 (2): 75–89.

Rahmani, A. R., & Soni, R., 1997. Avifaunal changes in the Indian Thar Desert. *Journal of Arid Environments* 36 (4): 687–703. https://doi.org/10.1006/jare.1996.0242

Rao, A. S., Poonia, S., & Choudhary, S., 2012. Climate change projections and impacts on Thar desert ecosystem. *Annals of plant and soil research* 14 (2): 87–94.

Ratnam, J., Tomlinson, K.W., Rasquinha, D. N. & Sankaran, M., 2016. Savannahs of Asia: antiquity, biogeography, and an uncertain future. *Philosophical Transactions of the Royal Society B: Biological Sciences* 371 (1703): 20150305.

Sankaran, R., 1997. Habitat use by the Lesser Florican. *Journal of the Bombay Natural History Society* 94(1): 40–47.

Sankaran, R., & Rahmani, A. R., 1986. Intra- and inter-specific behaviour of the Lesser Florican. Study of ecology of certain endangered species of wildlife and their habitats. Annual Report I. 1984-85. Bombay: BNHS.

Sankaran, R., Rahmani, A. R., & Ganguli-Lachungpa, U., 1992. The distribution and status of the Lesser Florican *Sypheotides indica* (JF Miller) in the Indian subcontinent. *Journal of the Bombay Natural History Society* 89 (2): 156–179.

Vyas, R., & Sharma, B. K., 2013. Distribution, Status and Conservation of Lesser Florican *Sypheotides indicus* in Rajasthan. In *Faunal Heritage of Rajasthan, India: General Background and Ecology of Vertebrates*: 347–356.

– Shimontika Gupta, Mohib Uddin, Swapna Lawrence, Sadar, Ashish Vyas, Sutirtha Dutta

Shimontika Gupta, Wildlife Institute of India, Dehradun, Uttarakhand, India.
E-mail: shimontikagupta@gmail.com [Corresponding author] [SG]
Mohib Uddin, Wildlife Institute of India, Dehradun, Uttarakhand, India.
E-mail: mohibuddin2065@gmail.com
Swapna Lawrence, Wildlife Institute of India, Dehradun, Uttarakhand, India.
E-mail: swap.lawrence@gmail.com
Sadar, Bustard Recovery Program, Sam, Rajasthan, India. E-mail: sadarkhan792@gmail.com
Ashish Vyas, Divisional Forest Officer, Desert National Park, Rajasthan, India.
E-mail: ashishvyas.optics@gmail.com
Sutirtha Dutta, Wildlife Institute of India, Dehradun, Uttarakhand, India.
E-mail: sutirthadutta@gmail.com

An Oriental Bay-Owl *Phodilus badius* rescued from Valmiki Tiger Reserve, West Champaran, Bihar, India

The Oriental Bay-Owl *Phodilus badius* is widely, but sparsely, distributed across South and South-east Asia (Bruce et al. 2020). It is scarce throughout the north-eastern hill states of India, the eastern Himalaya, and is a resident of semi-evergreen, and evergreen forests (Praveen 2025). It is strictly nocturnal in habits, and found in low densities. Its secretive nature had contributed to its status as one of India's little-known owls (Ali & Ripley 1987). It occurs from northern Bengal and Sikkim through Bhutan, Arunachal Pradesh, lowland Assam, and all north-eastern hill states except Manipur, where it might surely occur, but has not been reported yet (Ray et al. 2020; Praveen 2025). I document the first record of Oriental Bay-Owl from Bihar, India.

On the evening of 01 December 2022, an apparently exhausted Oriental Bay-Owl was rescued from bamboo thickets from Vijaypur Karmabari village (27.420°N, 83.909°E) on fringes of Valmiki Tiger Reserve, West Champaran District, Bihar by villagers along with the staff of Bihar Forest Department. It was subsequently released into forest after some treatment (Rarity* 2022).

The incident was published in a local newspaper in Hindi which read:

> *"An owl of rare variety was seen by local people in a bamboo thicket in Vijaypur Karmabari village near fringes of Valmiki Tiger Reserve as being attacked by crows. Local people rescued it and later on officials from the forest department took the bird on 01 December 2022 (same day) from Vijaypur Karmabari. It underwent treatment and was released in Valmikinagar range of Valmiki Tiger Reserve"* (translated text)

The identity of the bird as to an Oriental Bay-Owl was straightforward; the image depicted in the newspaper had the characteristic white face with short crest, chestnut wings and whitish underparts. It was not an Eastern Barn Owl *Tyto javanica* or an Eastern Grass-Owl *T. longimembris*; two species that are commonly confused as this species. The bird was not identified

by the forest department and I identified it based on the newspaper clip. The original photograph is not available now but I confirmed that the photograph given in the newspaper was of the same rescued individual.

The habitat of the area from where it was rescued was moist-deciduous broadleaf forest with some patches of dense bamboo, with small canals and sugarcane on the forest fringes. This report at Valmiki Tiger Reserve would be the most westerly documented presence of Oriental Bay-Owl till date (Ray et al. 2020). Its presence in Nepal has been suspected but the only collected material (skin) was procured by Hodgson from a shop near Kathmandu, and there is also a possibility that the bird may have originated from elsewhere and transported to Kathmandu (Inskipp & Inskipp 1991; Ray et al. 2020). Hence, this report from Valmiki Tiger Reserve provides some credence to Hodgson's record as this area is the fact a part of the Chitwan-Valmiki landscape, shared between India and Nepal, that exhibits mammalian, reptilian and avian fauna similar to both western and eastern Himalaya (Maheswaran 2024). There are no definitive records from Uttarakhand (Mohan & Sondhi 2017) but a verbal documentation of this species from Dehradun (Mr R. Thomson, verbally, to Mr Hume) mentioned by Blanford (1895)pp. i–xiv, 1–450, text–figs. 1–102, 4 text–figs. (unnum. exist, which indicates the possibility of this bird's presence farther westwards than Nepal.

However, there is also a possibility that the bird was transported here by bird traders as owls are known to be used in black magic, and the bird somehow escaped or was released from captivity. There are chances that the bird was procured from north-eastern India and was on its way to be exported out of country through Nepal. However, the chances of this possibility are remote as the species itself is rare in north-eastern India, and the bird escaping and getting rediscovered within a well-protected tiger reserve in ideal habitats is even more remote. Hence, in all likelihood, this is a truly wild individual.

I would like to thank editors and anonymous referees from *Indian BIRDS* for their crucial input, which helped me greatly to improve the manuscript.

References

Ali, S., & Ripley, S. D., 1987. *Compact handbook of the birds of India and Pakistan together with those of Bangladesh, Nepal, Bhutan and Sri Lanka*, 2nd ed. Oxford University Press, Delhi. Pp. i–xlii, 1 l., 1–737, 52 ll.

Blanford, W. T., 1895. *The fauna of British India, including Ceylon and Burma (Birds)*, 1st ed. Taylor and Francis; Thacker, Spink, & Co.; Thacker & Co.; R. Friedländer & Sohn, London; Calcutta; Bombay; Berlin. Vol. III of 4 vols. Pp. i–xiv, 1–450.

Bruce, M. D., Kirwan, G. M., & Marks, J. S., 2020. Oriental Bay-Owl (*Phodilus badius*), version 1.0. In: *Birds of the World*. Cornell Lab of Ornithology, Ithaca, NY, USA. https://birdsoftheworld.org/bow/species/orbowl1/cur/introduction.

Inskipp, C., & Inskipp, T., 1991. *A guide to the birds of Nepal*, 2nd ed. Christopher Helm (Publishers) Ltd., London. Pp. 1–400.

Maheswaran, G., 2024. Valmiki Tiger Reserve: At the junction of Himalayan fauna. *Sanctuary Asia* 44 (4): 44–49.

Mohan, D., & Sondhi, S., 2017. *An updated checklist and bibliography of the birds of Uttarakhand*. Uttarakhand Forest Department, Dehradun, India. Pp. i–vi, 1–98.

Praveen, J., 2025. *Birds of India - The New Synopsis*. Nature Conservation Foundation, Mysuru, India. Pp. i–xlvii, 1–468.

Rarity*, B. rare bird records, 2022. Webpage URL: https://ebird.org/checklist/S158757296. [Accessed on 14 April 2025].

Ray, P., Pandey, S., & Chatterjee, S., 2020. Status of the Oriental Bay Owl *Phodilus badius* from regions west of Bhutan, with new records from northern West Bengal. *Indian Birds* 15 (5): 156–158.

– Abhishek Sharma

C/o Prem Prakash Sharma, Harinagar Sugar Mills Ltd., Distillery Division, P.O. Harinagar, West Champaran District 845103, Bihar, India. E-mail: nitinsharmabvm19@gmail.com

The status and distribution of the White-winged Tern *Chlidonias leucopterus* in Goa, India

The White-winged Tern *Chlidonias leucopterus*, although a regular winter visitor to northwestern India and Sri Lanka, is considered a rare winter visitor elsewhere in the Indian subcontinent, likely due to being overlooked (Prasad 2005). There are sporadic records during the winter months across India (as far east as Assam), Bangladesh, the Maldives, the Andaman & Nicobar Islands, and Pakistan (eBird 2025). Grewal et al. (2002) consider it a scarce passage migrant and a winter visitor throughout the subcontinent, occurring more regularly in Gujarat, Tamil Nadu, and Sri Lanka. Based on historical sight records, this species has been included in the checklist of the birds of Goa by Baidya & Bhagat (2018, 2024). In this note, we review the status and distribution of the White-winged Tern in Goa and report its first photographic record. While reviewing historical records of the White-winged Tern from Goa, several discrepancies were noted in previously published sources. Here, we identify these and provide an updated list of records from Goa (Table 1).

On 14 July 2020 at 1000 h, JR witnessed a flock of various terns while birding at the Maina-Curtorim wetlands (15.299°N, 74.008°E), Curtorim, South Goa District, Goa. The congregation was frequently disturbed by a Brahminy Kite *Haliastur indus*. This mixed flock included the Gull-billed Tern *Gelochelidon nilotica*, Whiskered Tern *Chlidonias hybrida*, and River Tern *Sterna aurantia*. Suddenly, JR noticed a tern distinctly smaller than the rest flew out of the flock. He managed to photograph it **[59]** before it flew away. The bird had dark ear coverts extending below its eye that looked like earmuffs. Unlike the Whiskered Tern, it had a long, slender black bill, shorter legs, and a different head pattern. It also had black shoulder patches, underwing coverts, and varying amounts of black on the body. It was later identified as a moulting White-winged Tern using various field guides (Grewal et al. 2002; Grimmett et al. 2011; Rasmussen & Anderson 2012). Subsequently, the sighting was submitted to eBird (Rebello 2020).

Justino Rebello

59. White-winged Tern, Maina-Curtorim wetlands.

Table 1 indicates that all sightings from 1993 to 2003 were recorded in the North Goa District. Thereafter, no sightings were reported for 15 years until the record reported in this work, which is the only sighting from the South Goa District. The sightings in 2024 were again in the North Goa District. The sighting locations in both the districts of Goa have been plotted on Fig. 1, and the month-wise distribution of sightings is shown in Table 3.

Table 1. Chronological records of White-winged tern from Goa (NG: North Goa District; SG: South Goa District; S: Sight record; P: Photographic record)

Sr. No.	Date	Max	Plumage	Observed by	Location	Type	References
1	21 March 1993	1	Unknown	Paul Willoughby & Mark Newsome	Mandovi river near Old Goa, NG	S	Willoughby (1996), Newsome M., *in litt.,* e-mail dated 14 July 2024
2	1996	1	Unknown	Peter Harris	Candolim, NG	S	Harris (1996)
3	06 February 1998	1	An adult in winter plumage	Paul Holt	Carambolim and paddies from the neighboring causeway, NG	S	Holt (1998)
4	18 March 1998	1	Possibly the same bird seen on 06 February 1998	Spalding	Carambolim, NG	S	Lainer (2004b)
5	18 August 1998	1	Molting from summer to winter plumage	Frost, Manville & Heinz Lainer	Morjim Beach, Pernem, NG or Navelim, Divar Island, NG (see Table 2, Row 3)	S	Lainer (2004a,b)
6	13 September 1999	3	One in identical plumage as seen on 18 August 1998, and two in first summer or adult winter plumage	D' Souza, Frost, & Heinz Lainer (see Table 2, Row 5)	Navelim, Divar Island, NG	S	Lainer (2004a,b)
7	17 September 1999	5	Two adults in moult and three first summer juveniles	Heinz Lainer (see Table 2, Row 5)	Navelim, Divar Island, NG (see Table 2, Row 4)	S	Lainer (2004a,b)
8	03 October 1999	1	Breeding	Heinz Lainer (see Table 2, Row 5)	Navelim, Divar Island, NG	S	Lainer (2004a,b)
9	18 November 1999	29	Unknown	Heinz Lainer	Seabird Watch, Anjuna, NG	S	Pittie (1999)
10	28 November 2000	1	First winter	Mark Newsome	Morjim Beach, Pernem, NG	S	Newsome (2000)
11	26 August 2002	1	Molting adult	Mark Newsome and Lloyd Fernandes	Divar Island, NG	S	Newsome (2002)
12	09 September 2003	6+	Unknown	Anand Prasad	Chapora Estuary, NG	S	Prasad (2004)
13	28 September 2003	3	Unknown	Anand Prasad	Chapora Estuary, NG	S	Prasad (2004)
14	29 September 2003	9	Unknown	Anand Prasad	Chapora Estuary, NG	S	Prasad (2004)
15	04 October 2003	1+	Unknown	Anand Prasad	Chapora Estuary, NG	S	Prasad (2004)
16	05 October 2003	1	Unknown	Anand Prasad	Chapora Estuary, NG	S	Prasad (2004)
17	09 October 2003	1+	Unknown	Anand Prasad	Chapora Estuary, NG	S	Prasad (2004)
18	11 October 2003	1	Unknown	Anand Prasad	Chapora Estuary, NG	S	Prasad (2004)
19	13 October 2003	6	Unknown	Anand Prasad	Chapora Estuary, NG	S	Prasad (2004)
20	21 October 2003	11	Unknown	Anand Prasad	Chapora Estuary, NG	S	Prasad (2004)
21	14 July 2020	1	Molting into winter plumage	Justino Rebello	Maina-Curtorim wetlands, SG	P	This work
22	10 September 2021	1	Non-breeding	Siddharth Srinivasan, Deepti Bajaj	Agassaim mudflats, NG	P	Srinivasan (2021)
23	09 October 2022	1	First winter	Rahul Pereira, Lyndon Andrade, Elmo Gomes	Agassaim mudflats, NG	P	Pereira (2022)
24	15 September 2024	1	2nd summer plumage	Savio Fonseca	Neura Wetlands, NG	P	Fonseca (2024)
25	21 September 2024	1	Juvenile	Sagar Naik & Jalmesh Karapurkar	Agassaim mudflats, NG	P	Naik (2024)
26	23 September 2024	1	Juvenile	Atharva Kasturia	Agassaim mudflats, NG	P	Kasturia (2024a)
27	27 September 2024	1	Juvenile	Atharva Kasturia	Agassaim mudflats, NG	P	Kasturia (2024b)

The following are some discrepancies we found while tabulating Table 1.

Table 2. Discrepancies in earlier publications

Sr. No.	Discrepancy
1	Willoughby (1996) only mentioned single sightings from Candolim and the Mandovi River, both of which are without exact dates. The name of the observer who sighted the bird at Candolim, Peter Harris, was not mentioned. Date and observers were clarified later in Lainer (2004a).
2	Holt (1998) stated that the observation on 06 February 1998 is only the second record for Goa, which is not the case. The sighting by Peter Harris at Candolim in 1996 (Harris 1996; Prasad 2005) is the second record for Goa.
3	Lainer (in Pittie 1998) stated that a White-winged Tern was sighted on 18 August 1998 by Heinz Lainer at the mouth of the Chapora River. Later, Lainer (2004a) stated that the location for the same sighting is Morjim (Pernem), whereas Lainer (2004b) stated the location as Navelim, Divar Island, in the inland estuary of the Mandovi River. So, a single sighting has been attributed to three locations in published literature.

Table 2. Discrepancies in earlier publications

Sr. No.	Discrepancy
4	Lainer (in Pittie 1999) mentioned the sighting of five (two adults, three juveniles) on 17 September 1999 at the Mandovi River estuary. Later, Lainer (2004a) mentioned "Up to 5 birds in various stages of moult and in first summer plumage frequented mudflats on Divar Island between mid-September and the first week of October". It does not mention whether these sightings are from 1998 or 1999. Later, Pittie et al. (2005) stated that Lainer's sightings were between August and September 1998. The above contradictions are settled in Lainer (2004b), which states that the sightings were in Divar Island, one from August 1998, two from September 1999, and one from October 1999 (Table 1, rows 5 to 8).
5	Lainer (2004a) mentioned that the observers of the sightings in Table 1, rows 5 to 8 (referred to in discrepancy 4 above) are Lainer, Frost, and Manville. However, Lainer (2004b) stated that the observers were Lainer, Frost, and Harvey D'Souza.
6	Baidya & Bhagat (2018) wrongly stated that Newsome had three reports from Divar Island in August 2002. Instead, the three sightings were from March 1993, November 2000, and August 2002 from the Mandovi River, Morjim Beach, and Divar Island, respectively. (Table 1, rows 1, 10, 11).

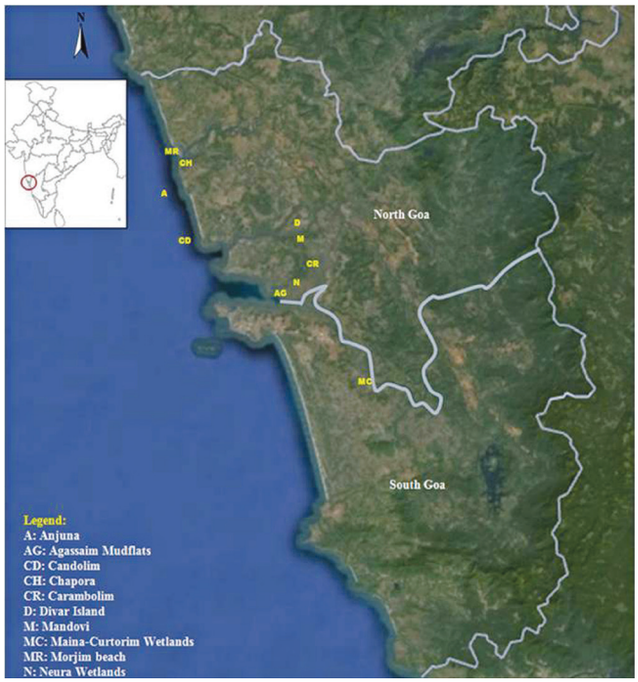

Fig. 1. Location of White-winged Tern sightings in Goa.

Table 3. Month-wise records of White-winged Tern in Goa

January	0	May	0	September	10
February	1	June	0	October	08
March	2	July	1	November	02
April	0	August	2	December	0

Notably, most sightings are in September and October, which are autumn migration months, and there are no confirmed sightings in January, April, May, June, and December (Table 3). As a scarce migrant, gaps in sightings are expected. In December and January, the birds that moved through during autumn are expected to be wintering further south, while from April to June, they are primarily on breeding grounds further north. Additionally, past observations may have overlooked the species among other tern flocks. This review suggests it is a rare passage migrant in Goa, moving to and from wintering grounds further south before and after breeding. It should be noted that historically, observer effort in Goa was limited, with most visiting birdwatchers present between November and March, when the species had already migrated south. Recent interest and broader year-round coverage by resident ornithologists are improving documentation, likely leading to more recorded sightings.

The authors express their sincere gratitude to Aasheesh Pittie for sharing the material required during the preparation of this manuscript and to Pritam Baruah for his valuable suggestions and comments.

References

Baidya, P., & Bhagat, M., 2018. A checklist of the birds of Goa, India. *Indian BIRDS* 14 (1): 1–31.

Baidya, P., & Bhagat, M., 2024. A checklist of the birds of Goa, India (v6.0). Website URL: https://www.indianbirds.in/wp- content/ uploads/2024/06/Goa_Checklist_v6_0.xlsx. [Accessed on 18 March 2025.]

eBird, 2025. Species Map: White-winged Tern. Website URL: https://ebird.org/species/whwter/IN [Accessed on 18 March 2025].

Fonseca, S., 2024. Website URL: https://ebird.org/india/checklist/S195247273 [Accessed on 18 March 2025.]

Grewal, B., Harvey, B., & Pfister, O., 2002. *A Photographic Guide to the Birds of India and the Indian Subcontinent, including Pakistan, Nepal, Bhutan, Sri Lanka and the Maldives.* Princeton University Press, USA. 512 pp.

Grimmett, R., Inskipp, C., & Inskipp, T., 2011. *Birds of the Indian Subcontinent.* 2nd ed. London: Oxford University Press & Christopher Helm. Pp. 1–528.

Harris, P., 1996. *Goa. The Independent Birder's Guide*. Eastern Publications, Lowestoft.

Holt, P. I., 2000. *Goa: notes on seven trips between January 1996 and November 1999*. Privately published.

Kasturia, A., 2024a. eBird Checklist. Website URL: https://ebird.org/india/checklist/S196187855 [Accessed on 18 March 2025.]

Kasturia, A., 2024b. eBird Checklist. Website URL: https://ebird.org/india/checklist/S196613531 [Accessed on 18 March 2025.]

Lainer, H., 2004a. Additions to The Birds of Goa' (Lainer 1999). *The Journal of the Bombay Natural History Society* 101, 163–165.

Lainer, H., 2004b. *Birds of Goa. A reference book.* Mapusa, Goa: The Goa Foundation. Pp. i–ii, 1–244.

Naik, S., 2024. eBird Checklist. Website URL: https://ebird.org/india/checklist/S196019038 [Accessed on 18 March 2025.]

Newsome, M., 2000. eBird Checklist. Website URL: https://ebird.org/india/checklist/S182688883 [Accessed on 02 June 2024.]

Newsome, M., 2002. eBird Checklist. Website URL: https://ebird.org/india/checklist/S34647287 [Accessed on 02 June 2024.]

Pereira, R., 2022. eBird Checklist. Website URL: https://ebird.org/india/checklist/S120288960 [Accessed on 23 May 2024.]

Prasad, A., 2004. Sea-watching, Goa, India. Sea Swallow. 53: 47–54.

Prasad, A., 2005. Further comments on White-winged Tern *Chlidonias leucopterus* distribution in the Indian Sub-continent. *Indian Birds* 1 (5): 117.

Pittie, A., 1998. Birding notes. *Pitta* 90: 4.

Pittie, A., 1999. Birding notes. *Pitta* 104: 8.

Pittie, A., Quader, S., & Pittie, P., 2005. Distribution of White-winged Tern *Chlidonias leucopterus* in India and a new record from Andhra Pradesh. *Indian Birds* 1(4): 81–83.

Rasmussen, P. C., & Anderton, J. C., 2012. *Birds of South Asia: the Ripley guide: attributes and status*. 2nd ed. Washington, D.C. and Barcelona: Smithsonian Institution and Lynx Edicions. Vol. 2 of 2 vols. Pp. 1–683.

Rebello, J., 2020. eBird Checklist. Website URL: https://ebird.org/india/checklist/

S177481737 [Accessed on 23 May 2024.]
Srinivasan, S., 2021. eBird Checklist. Website URL: https://ebird.org/india/checklist/S94441332 [Accessed on 23 May 2024.]
Willoughby, P., 1996. Goa: A Birder's Guide 2nd ed. Unpublished.

– Rupali Pandit, Justino Rebello, Mangirish Dharwadkar & Mark Newsome

Rupali Pandit, Department of Zoology, Government College of Arts, Science and Commerce, Quepem, Goa, 403705, India. E-mail: rupalipandit30@gmail.com [Corresponding author]
Justino Rebello, House no. 817/C, Sodovim, Verna, Goa, 403722, India. Email: birdmagnet14@gmail.com [JR]
Mangirish Dharwadkar, O/o The Dy. Conservator of Forests, Wildlife & Eco-tourism (South), Margao, 403601, India. E-mail: rishbirds@gmail.com
Mark Newsome, 69 Cedar Drive, Jarrow, Tyne and Wear, NE32 4BF, England. E-mail: mvnewsome@hotmail.com

Recent records of Eurasian Oystercatcher *Haematopus ostralegus* from the northeastern coast of India

The Eurasian Oystercatcher *Haematopus ostralegus*, an IUCN Near Threatened wader, breeds along the coasts and offshore islands of the Palearctic, the Middle East, Central Asia, western and far eastern Russia, and adjacent areas of China (BirdLife International 2024). It winters on the coasts of Africa, Arabia, India, China, Hong Kong, and South Korea (Hockey et al. 2020). Rasmussen & Anderton (2012), who relied primarily on historical records and museum collections from the Indian Subcontinent, noted that these birds are regular along the coast of Pakistan but irregular along both the western and eastern coasts of India. However, the updated status in the checklist of Indian birds, supported by eBird data, indicates that they are fairly regular winter visitors along the western Indian coast from Gujarat to Kerala (eBird 2024; Praveen 2025). Historically, this species has been considered to be rarer on the eastern coast than the western coast of the Indian Subcontinent (Ali & Ripley 1980; Santharam 1982; Balachandran 1995). In India, it is currently believed to be a common winter visitor along certain stretches of the eastern coast, ranging from Tuticorin in Tamil Nadu to Kakinada in Andhra Pradesh (Praveen 2025). There have been numerous recent observations along the eastern coast of India, particularly from the beaches and backwaters of Tamil Nadu, most notably near Point Calimere and Pulicat Lake (eBird 2024). Additional recent records exist from Andhra Pradesh, around the mouths of the Godavari and Penna rivers, where flocks of up to 16 individuals have been reported (Ravindranath 2023). In contrast, records from further north, along the eastern coast, specifically in Odisha and West Bengal, remain notably scarce (Praveen 2025).

An avifaunal survey (Gopi & Pandav 2007) conducted in the coastal habitats of Bhitarkanika, the second largest mangrove forest along the coast of India, identified the Eurasian Oystercatcher as a common species. However, a general faunal survey (Behera et al. 2021) in the nearby Gahirmatha Wildlife Sanctuary considers this species to be rare there. There also exist a few photographs of the Eurasian Oystercatcher from this area and further east, within the estuary of the Subarnarekha River (Bandi 2014; Chand 2023). This species is considered vagrant in Southeast Asia, with sparse records from the Malay Peninsula and Archipelago (Mann 2008; Putra et al. 2018; Chowdhury 2020; Robson 2020).

During a routine shorebird survey in the Sunderban Biosphere Reserve on 28 January 2023, we, MS, AS, and SM, found a solitary Eurasian Oystercatcher **[60]** among a group of Eurasian Curlew *Numenius arquata*. All the birds were standing in shallow tidal water on a sandflat at the eastern side of Lothian Island, South 24 Parganas, West Bengal (21.652°N, 88.349°E). The observation was made at approximately 1330 h, under clear and sunny conditions, as the rising tide gradually submerged the sandflat's edges. SM approached the bird to capture close-up photographs, while AS and MS observed it with binoculars and a spotting scope. SM managed to photograph the individual, an adult distinguished by its red eye, unlike the drab color typically found in immatures (Hayman et al. 1991; Robson 2020). We watched the bird for about six minutes, closing the distance to *c.*80 m before it flew off toward the G-plot, approximately seven km southeast of Lothian Island.

Following our observation, we shared the photographs with DR, RJ, MM, and SJJ, all officials from the forest department. They assisted in tracking previous records of this species within the Sundarban Biosphere Reserve and alerted forest patrolling staff to remain vigilant for any further sightings in their jurisdiction. After our visit, this species has been reported from Gobardhanpur Beach (21.615°N, 88.405°E) within the G-Plot area on 23 February 2023 (West Bengal Rarities 2023) and from Frezarganj Beach (21.570°N, 88.243°E), near the Ganges River mouth and ***c.***14 km southwest of Lothian Island, on 09 April 2023 (Sarkar 2023). More recently, on 31 January 2024 at approximately 1230 h, AKD photographed two adult Eurasian Oystercatchers near the same sandflat at Lothian Island where we had documented a sighting the previous year **[61]**. The sightings of Eurasian Oystercatchers for two consecutive years in the Indian Sundarbans, along with recent records from the coast of Orissa, raise questions about whether this species is a vagrant or a regular visitor to the northeastern coast of India. The Eurasian Oystercatcher has also been spotted inside the Sundarbans National Park and Tiger Reserve, where two adults were seen at Narantalar Char, a sandbank on the western side of the Gosaba River, on 01 December 1998 (Chatterjee 2004). One of the forest guards, who guided Prakiti Samsad's team, referred to these birds as *'gajar-thuti'* (Apurba Chakraborty pers. comm, February 2024), a Bengali term that translates to carrot-billed. It accurately describes the distinctive bill colour of the species and suggests that the Eurasian Oystercatcher may not be unfamiliar to the people of the Indian Sundarbans.

Supratim Mukherjee

60. Eurasian Oystercatcher amongst Eurasian Curlews on 28 January 2023 at Lothian Island.

Ashim Kumar Dandapat

61. Eurasian Oystercatchers on 31 January 2024 at Lothian Island.

This species also occurs within the Bangladesh Sundarbans, but it is not certain if it is a vagrant or a regular winter visitor (Thompson et al. 1993; Thompson & Johnson 2003). However, two or three individuals have been sighted infrequently in the Bangabandhu char between 2013-2024 (Chowdhury 2020; Azmiri 2024). There is also a historical record of breeding. In late April of 1922, Stanford and Fawcus discovered a pair of birds, with the female incubating eggs on a shoreline located approximately 160 km south of Khulna, within the Sundarbans of Bangladesh (Stanford 1937). On subsequent visits, Fawcus observed birds renesting near the same spot and even observed their young in the same breeding season.

The Eurasian Oystercatcher has three distinct subspecies across its range (Hayman et al. 1991) – *longipes*, *osculans*, and the nominate *ostralegus.* The nominate *ostralegus* is the European race, which winters in the northwest African and west African coast (Hockey et al. 2020; BirdLife International 2024). The race *longipes* breeds in central Eurasia and winters on the coasts of East Africa, Arabia, India, and Bangladesh (Chowdhury 2020; Hockey et al. 2020). The race *osculans* breeds in far eastern Asia (northeast coast of Russia, China, and North Korea) and winters primarily on the coast of eastern China, but it may extend to Myanmar, Bangladesh, and the Malay Archipelago (Wells 1999; Chowdhury et al. 2014; Hockey et al. 2020; Robson 2020). The subspecies of the individuals found breeding in the Bangladesh Sundarbans remained undetermined, as no skin was collected (Stanford 1937). However, Ali & Reply (1980) mentioned this record as *osculans* subspecies (Ali & Ripley 1980). Recent photographic records have confirmed that both *longipes* and *osculans* subspecies winter in the Bangladesh Sundarbans (Chowdhury & Melville 2018). Individuals of the *longipes* race are usually recorded along much of the Indian coast during winter (Praveen 2024). Previous records of oystercatchers from the northeastern coasts of India did not call out subspecies (Chatterjee 2004; Gopi & Pandav 2007; Behera et al. 2021).

The subspecies observed at Lothian is expected to be *longipes*, which typically migrates to India via the Central Asian flyway (Wetlands International 2024). The presence of a prominent white collar on the foreneck in non-breeding plumage rules out the possibility that the birds observed at Lothian in both 2023 and 2024 belong to *osculans* (Melville et al. 2014). Furthermore, the race *osculans* also lacks white on the rachis of the outer two or three primaries (Ali & Ripley 1980; Hayman et al. 1991). In flight, the leading bird in **[61]** exhibited white on the rachis of all its primaries, especially noticeable on the first two, further confirming that it cannot be considered as *osculans*.

The *longipes* subspecies can be identified by a nasal groove that extends more than halfway along the bill (ratio>0.5), in contrast to the *ostralegus* race, where the groove extends less than halfway (Hayman et al. 1991). However, the presence of a shorter nasal groove does not definitively exclude *longipes* (Rusticali et al. 2002). The image of the two individuals, observed at Lothian Island on 31 January 2024, failed to retain details about the length of the nasal groove, making it difficult to ascertain precisely where the nasal grooves terminate. Nevertheless, visual inspection of the birds in **[61]** seems to suggest that both individuals are close but slightly lower than this ratio. Since the trailing bird has some brown on its back, it is highly likely to be *longipes*. On the leading bird, the extent of the black breast below the wing-bend seems to suggest that it too might be a *longipes*; however, it is unclear if its hunched posture influenced the visible shape & extent of its black-breast, hence the subspecies remains inconclusive.

We thank the Department of Science and Technology and Biotechnology, Government of West Bengal, for funding to SM (Memo no-855 (Sanc.)/STBT-11012(27)/3/2020-ST SEC). SM is indebted to Rajesh Kumar, Additional Principal Chief Conservator of Forests, Wildlife, and Ajay Das, Field Director STR, for their hearty cooperation, suggestions, and necessary arrangements. We thank the forest staffer, Gurupada Mondal, and the Range Officer Bhagbatpur, Tanmay Chatterjee, for their support at Lothian Island. Additionally, we thank Mr. Apurba Chakraborty for providing valuable information regarding his observation of the Eurasian Oystercatcher in the Sunderban Tiger Reserve.

References

Ali, S., & Ripley, S. D., 1980. *Handbook of the birds of India and Pakistan together with those of Bangladesh, Nepal, Bhutan and Sri Lanka. Megapodes to Crab Plovers*. 2nd ed. Oxford University Press, Delhi. Vol. 2 of 10 vols. Pp. i–xvi, 1–347.

Azmiri, Z., 2024. Webpage URL: https://ebird.org/checklist/S160082970 [Accessed on 31 October 2024.]

Balachandran, S., 1995. Shorebirds of the Gulf of Mannar Marine National Park, Tamil Nadu. *Journal of the Bombay Natural History Society* 92 (3):303–313.

Bandi, R., 2014. Webpage URL: https://ebird.org/checklist/S21511157 [Accessed on 31 October 2024.]

Behera, S., Mohapatra, S., & Nayak, S., 2021. An ecological assessment of major groups of faunal biodiversity in Gahirmatha Marine Wildlife Sanctuary, Odisha, east coast of India. *International Journal of Conservation Science* 12 (4):1421–1440.

BirdLife International, 2024. Webpage URL: https://datazone.birdlife.org/species/factsheet/eurasian-oystercatcher-haematopus-ostralegus [Accessed on 31 October 2024.]

Chand, D., S., 2023. Webpage URL: https://ebird.org/checklist/S190131908 [Accessed on 31 October 2024.]

Chatterjee, S., 2004. Bird status survey of Sunderban Tiger Reserve by Prakriti Samsad (1997–2000): A report. *Naturalist* 3:51–67.

Chowdhury, S., Diyan, M., Zöckler, C., Foysal, M., & Lemke, H., 2014. A survey of shorebirds in the Sundarbans of Bangladesh. *Stilt* 66:10–13.

Chowdhury, S. U., 2020. Birds of the Bangladesh Sundarbans: status, threats and conservation recommendations. *Forktail* 36:35–46.

Chowdhury, S. U., & Melville, D. S., 2018. Comments on the subspecific identification of Eurasian Oystercatchers *Haematopus ostralegus* in Indonesia and Bangladesh. *Wader Study* 125:142–143.

eBird, 2024. Webpage URL: https://ebird.org/map/euroys1 [Accessed on 5 November 2024.]

Gopi, G. V., & Pandav, B., 2007. Avifauna of Bhitarkanika mangroves, India. Zoo'sPrint Journal 22 (10):2839–2847.

Hayman, P., Marchant, J., & Prater, T., 1991. *Shorebirds*. Bloomsbury Publishing, London, Pp. 1–414.

Hockey, P., Kirwan, G. M., & Boesman, P. F. D., 2020. Eurasian Oystercatcher (*Haematopus ostralegus*), version 1.0. Birds of the World. Cornell Lab of Ornithology, Ithaca, NY, USA. https://doi.org/10.2173/bow.euroys1.01

Mann, C. E., 2008. *The Birds of Borneo. BOU Checklist Series 23*. British Ornithologists' Union, Peterborough.

Melville, D. S., Gerasimov, Y. N., Moores, N., Yat-Tung, Y., & Bai, Q., 2014. Conservation assessment of far eastern oystercatcher *Haematopus [ostralegus] osculans*. *International Wader Studies* 20:129–154.

Praveen, J., 2025. *Birds of India - The New Synopsis* Nature Conservation Foundation Pp: i–xlvii, 1–468.

Putra, C. A., Hikmatullah, D., & Iqbal, M., 2018. Eurasian Oystercatcher *Haematopus ostralegus*: A new species for Indonesia. *Wader Study Group Bulletin* 119:140–141.

Rasmussen, P. C., & Anderton, J. C., 2012. *Birds of South Asia: the Ripley guide: attributes and status*, 2nd ed. Smithsonian Institution and Lynx Edicions., Washington, D.C. and Barcelona. Vol. 2 of 2 vols. Pp. 1–683.

Ravindranath, K., 2023. Webpage URL: https://ebird.org/checklist/S125978486 [Accessed on 1 November 2024.]

Robson, C., 2020. Field guide to the birds of South-East Asia. Bloomsbury Publishing.

Rusticali, R., Scarton, F., & Valle, R., 2002. Taxonomic status of the Oystercatcher *Haematopus ostralegus* breeding in Italy. *Bird Study* 49 (3):310–313.

Santharam, V., 1982. Some rare encounters. *Newsletter for Birdwatchers* 22 (5–6):5–8.

Sarkar, P., 2023. Webpage URL: https://ebird.org/checklist/S134694908 [Accessed on 31 October 2024.]
Stanford, J. K., 1937. On the breeding of the Oystercatcher (*Haematopus ostralegus* subsp.) and other birds in the Bengal Sunderbunds. *Journal of the Bombay Natural History Society* 39 (4):867–868.
Thompson, P. M., Harvey, W. G., Johnson, D. L., Millin, D. J., Rashid, S. M. A., Scott, D. A., Stanford, C., & Woolner, J. D., 1993. Recent notable bird records from Bangladesh. *Forktail* 9:12–44.
Thompson, P. M., & Johnson, D. L., 2003. Further notable bird records from Bangladesh. *Forktail* 19:85–102.
Wells, D. R., 1999. *The birds of the Thai-Malaya peninsula, covering Burma and Thailand south of the eleventh parallel, peninsular Malaysia and Singapore. Non-passerines*. 1st ed. Academic Press, London. Vol. 1 of 2 vols. Pp. i–liii, 1–648.
West Bengal Rarities, 2023. Webpage URL: https://ebird.org/checklist/S155778264 [Accessed on 31 October 2024.]
Wetlands International, 2024. Eurasian Oystercatcher. Webpage URL: https://wpp.wetlands.org/explore/3076/731 [Accessed on 5 November 2024.]

– Manojit Sau, Debal Ray, Rajendra Jakher, Milan Mondal, S. Jones Justin, Ashim Kumar Dandapat, Arnab Shee, Samir Kumar Saha, & Supratim Mukherjee

Manojit Sau, Department of Zoology, West Bengal State University, Barasat, Kolkata, West Bengal, 700126, India. [MS]
Debal Ray, Office of the PCCF (Wildlife), Government of West Bengal, Salt Lake, Kolkata, West Bengal, 700091, India. [DR]
Rajendra Jakher, Office of the Field Director STR, Government of West Bengal, 24 Parganas (South), West Bengal, 743329, India [RJ]
Milan Mondal, Office of the DFO, Government of West Bengal, Alipore, West Bengal, 700027, India [MM]
S. Jones. Justin, Office of the Field Director STR, Government of West Bengal, 24 Parganas (South), West Bengal, 743329, India [SJJ]
Ashim Kumar Dandapat, Office of the DFO, Government of West Bengal, Alipore, West Bengal, 700027, India [AKD]
Arnab Shee, Dept of Zoology, Government General Degree College, Singur, West Bengal,712409, India. [AS]
Samir Kumar Saha, Dept of Zoology, West Bengal State University, Barasat, Kolkata, West Bengal, 700126, India [SKS]
Supratim Mukherjee, Dept of Zoology, Government General Degree College, Singur, West Bengal, 712409, India. E-mail:supratim.zoology@singurgovtcollege.org [SM [Corresponding author]

A Lanceolated Warbler *Locustella lanceolata* from Nal Sarovar, Gujarat, India

On a rainy afternoon, on 27 September 2024, on the outskirts of Nal Sarovar Bird Sanctuary (22.8179°N, 72.0453°E; 35 m asl), I, along with fellow birders and bird guide Memud Multani, set out in the hope of photographing some of the passage migrant species, such as, Red-tailed Shrike *Lanius phoenicuroides* and Red-backed Shrike *L. collurio*, which are usually seen during autumn migration in Gujarat. The habitat in the area we visited consisted of open scrublands around a water body and some paddyfields. While looking out for a Rock Bush-Quail *Perdicula argoondah* by the road side, one of my fellow birders spotted a shy bird in a bush beside us. As the bird was too shy and skulking around the base of the bush, it was difficult to identify it. Our guide, Memud Multani, assumed it to be a Grasshopper Warbler *Locustella naevia*, which is observed during the passage migration and winter season in and around Nal Sarovar. We played the song of a Grasshopper Warbler but this individual did not respond and stayed low at the base of the bush. We waited and moved away a little. After some time, for hardly a few seconds, the bird perched in the open and we could take a few photographs **[62, 63]**. Even after waiting for a long time, the bird did not appear in the open again and was not observed subsequently. We tried to look for the individual again at this location for the next two days but were unable to find it again. We posted the photographs on the social media and after discussions on different platforms over the next few days, it was re-identified and confirmed as Lanceolated Warbler *L. lanceolata*, which is a very rare species for western India. Over the next few days, other birders tried to lookout for the bird, but were unsuccessful in finding the bird again at this location.

The identification of Lanceolated Warbler and its separation from Grasshopper Warbler is challenging. The main features to be noted in a Lanceolated Warbler vis-à-vis Grasshopper Warbler are as follows: extensive throat, breast and flank streaking, presence of malar stripe, a thicker based bill, prominent and contrasting streaking on crown, evenly wide and well-defined edges to tertials, and pattern of markings on undertail-coverts (Shirihai & Svensson 2018). Many of these features were visible in the photographs we took and the identification was further confirmed based on these features.

Chattopadhyay (2023) reviewed the status of Lanceolated Warbler from mainland India; for western India, a few records from Gujarat have been listed but these were all treated as unconfirmed. Recent confirmed records of this species have been mainly from West Bengal while a historical specimen record exists from Uttar Pradesh. But there are no accepted records of this species from western India and hence, this is the first confirmed sighting of Lanceolated Warbler from western India. This species also represents an addition to the avifauna of Gujarat as it was not listed for the state of Gujarat by Ganpule et al. (2022) but was listed in an appendix of that work (which listed unconfirmed/hypothetical species) with the comments, such as, 'unconfirmed sightings from Kachchh' and 'inadequately documented'.

I thank my fellow birders Shreenivas Ghaisas and Dattatray Kulkarni for encouraging me to write the report of such a rare observation. We are grateful to Memud Multani for his field expertise and dedication towards finding such a rare species. I specially thank Lars Svensson, Nils van Duivendijk, and Arend Wassink for confirming the identification. I am grateful to Prasad Ganpule for his help in the initial identification and for getting the identification confirmed from experts. Special thanks to Sunil Kini, Hemant Dhadanekar and Chinmay Rahane for their constant support.

62. Lanceolated Warbler at Nal Sarovar.

63. Lanceolated Warbler at Nal Sarovar.

BOTH: Krutarth Kshirsagar

References

Chattopadhyay, P., 2023. The Lanceolated Warbler *Locustella lanceolata* from the South 24 Parganas District, West Bengal, and a review of its status in mainland India. *Indian BIRDS* 18 (6):187–190.

Ganpule, P., Varu, M., Trivedi, B., & Raina, A. D., 2022. *A field guide to the birds of Gujarat*, 1st ed. Bird Conservation Society, Gujarat, Ahmedabad. Pp. i-viii,1-488.

Shirihai, H., & Svensson, L., 2018. *Handbook of Western Palearctic Birds. Volume I. Passerines: Larks to* Phylloscopus *Warblers*. Helm, London, UK. Vol. 1 of 2 vols. Pp. 1–648.

– Krutarth Kshirsagar

Dr. Krutarth Kshirsagar, Plot No.28, Sahawas Society, Karvenagar, Pune 411052, Maharashtra, India. Email: krutarth.kshirsagar@gmail.com [Corresponding author]

Reports of Little Bunting *Emberiza pusilla* from Tripura, Jharkhand, Haryana, Punjab, and Rajasthan in 2024–2025

The Little Bunting *Emberiza pusilla* breeds from northern Scandinavia, eastwards through northern Russia and Siberia (Byers et al. 1995). In the non-breeding season, it is found in eastern Nepal, northeastern India, northern and central Myanmar, northern Thailand, northern Laos, northern Vietnam, southern China, and Taiwan (Byers et al. 1995; Copete 2020). It is known as vagrant to most European countries, including Iceland, and to the Canary Islands, Morocco, Algeria, Turkey, Lebanon, Jordan, Egypt, Iran, Kuwait, Oman, the United Arab Emirates, Afghanistan, Pakistan, Borneo, the Philippines, Alaska and California (Byers et al. 1995). In the non-breeding period, it is found in a variety of open and semi-open habitats, such as fringes of forest, scrubby hillsides, crop fields, stubble and paddy fields, gardens and orchards, edges of roads and paths, riverbanks, and bushy areas near marshes (Byers et al. 1995; Copete 2020). This note describes unusual sightings from northern and eastern India, resulting in the addition of this species to the avifauna lists of Tripura, Haryana, Punjab, and Rajasthan, as well as a first photographic record from Jharkhand. Since males and females are indistinguishable, identification of sex was not possible. Otherwise, relevant identification features have been mentioned for each observation.

Khilpara, Sukhsagar, Gomati District, Tripura

On 01 November 2024, a Black-faced Bunting *E. spodocephala* was spotted by PC, SB, and DC in a marshy area known as Sukhsagar (23.520°N, 91.496°E; *c.*22 m asl), near Udaipur city in the Gomti District of Tripura. This was the first recorded sighting of the species in Tripura. Inspired by this discovery, PC and his co-birders, SB, DC, SK & SG, visited the location on 02 November 2024 and successfully photographed the Black-faced Bunting. While PC was taking pictures, another bunting caught his attention. At first glance, he thought it to be a Chestnut-eared Bunting *E. fucata*. So, after a couple of photos, he did not pay much attention to it since he already had good images of that species. Later, SB identified the bird from the photos as a Little Bunting **[64]**. This bird was identified based on the combination of chestnut ear-coverts bordered black with a pale spot, chestnut lores, black lateral crown stripes, and grey nape, thus ruling out all possible confusion species and confirming it as a Little Bunting. Excited by the initial sighting, they searched extensively for the bird but could not spot it again. The bird was not seen for nearly two months thereafter, when on 31 December 2024, two individuals were sighted again near the same location, this time by PC and SB, marking the second recorded observation of this species in Tripura. This encounter rekindles the interest in the habitat and movements of Little Buntings in the region, suggesting the possibility of a more sustained presence than previously thought.

Shawon Kuri

64. Adult non-breeding Little Bunting, Sukhsagar, Tripura.

Massanjore Dam, Dumka District, Jharkhand

Massanjore is located on the northeastern fringes of the Chota Nagpur Plateau in Dumka District, Jharkhand. This area features undulating terrain, shallow valleys, and a network of streams and rivers, supporting a diverse range of habitats, including dry deciduous forests, scrublands, and fallow lands. The Massanjore Reservoir, created on the Mayurakshi River, enhances habitat diversity by providing a stable aquatic ecosystem. These varied landscapes and rich habitat heterogeneity make Massanjore a vital haven for a diverse array of wildlife, including migratory birds.

On 30 November 2024, BS, PC, MKC, SD & AM were out for birding near Massanjore Dam (24.109°N, 87.297°E; *c.*123 m asl). At 0930 h, they came across a Little Bunting **[65]**. The combination of small stature with a straight culmen, a pale reddish-brown median crown stripe bordered by darker crown sides, and light reddish brown lores with a pale supercilium identified it as a Little Bunting. Further supporting this identification are the white outer-tail feathers, pale eye-ring, reddish-brown ear coverts bordered by a dark line at the rear, and a pale spot in the rear corner of the ear coverts (Grimmett et al. 2011; Copete 2020).

Following its first recorded observation on 30 November 2024, the Little Bunting was also sighted at Massanjore on 04, 15, and 30 January 2025, confirming its continued presence there. Ara (1976) reported a single sighting of the Little Bunting from the Kechki area of erstwhile Bihar (now in Jharkhand).

Banideep Sinha

65. Adult non-breeding Little Bunting, Massanjore Dam, Jharkhand.

However, it was not a photographic record. Therefore, these recent photographic records, spanning a period of two months and occurring nearly five decades after the last report, are highly significant for understanding the status of the Little Bunting in Jharkhand. These observations also suggest that the species may be wintering in the region over an extended period. Further monitoring could provide valuable insights into its seasonal movements and habitat preferences in eastern India.

Sultanpur Flats, Gurugram, Haryana

On 01 December 2024, PG, AG, and their team were conducting a bird count at Sultanpur National Park, Gurugram, Haryana. Following a lunch break, the group proceeded to survey the Sultanpur flats (28.456°N, 76.891°E; *c.*215 m asl). Weather conditions were favorable for birding, with moderate temperatures and good visibility. While scanning the area, a flock of approximately 15 Tree Pipits *Anthus trivialis* was seen perched on a *Neltuma juliflora* tree. Accompanying them was a flock of Indian Silverbills *Euodice malabarica*, both flocks appearing to visit the area to drink water. Among them, a single Little Bunting was observed to be foraging. No direct interaction between the Little Bunting and the Tree Pipits or Indian Silverbills was noted. The bunting was seen hopping into the grass to feed before returning to perch on the same tree **[66]**. It was primarily identified based on a combination of chestnut ear-coverts, a distinct pale spot on the rear of the ear-coverts, a post-orbital line wrapping around the rear edge of the ear-coverts, a dark lateral crown-stripe, and a uniform grey-brown mantle streaked dark brown (Grimmett et al. 2011; Rasmussen & Anderton 2012). This bird was obviously an adult in non-breeding plumage as the crown-stripe was somewhat obscured and there was less rufous on the face. Common Reed Bunting *E. schoeniclus* in female and non-breeding plumage may look similar to Little Bunting, but never shows contrasting chestnut ear-coverts. The Chestnut-eared Bunting also shows prominent chestnut ear-coverts but lacks dark lateral crown-stripes (Byers et al. 1995). After a social media post, this individual was seen and photographed by other bird watchers for at least a week after the current observation.

Pankaj Gupta

66. Adult non-breeding Little Bunting, Sultanpur Flats, Gurugram, Haryana.

Kokowal Forest, near Garhshankar, Punjab

On 03 December 2024, at 1030 h, PSA was bird watching in the Kokowal forest area (31.301°N, 76.272°E; ***c***.492 m asl) at the base of the Shivalik foothills, north of Garhshankar, Hoshiarpur District, Punjab. In the scrub forest with *Lantana camara* undergrowth, he found a bunting in the company of other species such as Sind Sparrows *Passer pyrrhonotus* and Common Rosefinches *Carpodacus erythrinus*. He initially thought it was a Chestnut-eared Bunting because of the rufous ear-coverts. However, a discussion on social media confirmed the bird as a Little Bunting **[67]**. This individual was not well marked, and the plumage was duller than typical non-breeding adults. However, the face pattern was clearly that of a Little Bunting. Therefore, it was identified as a first-winter bird. After about two and a half months, the Little Bunting was observed again around the same location on 14 January 2025 and 15 February 2025, and this time, the birds were in better-marked adult plumage. Thus, it is possible that the birds were wintering in this area.

Paramnoor Singh Antaal

67. First-winter Little Bunting, Kokowal forest near Garhshankar, Punjab.

Mount Abu, Sirohi District, Rajasthan

On 12 December 2024 at 1645 h, SZ spotted a Little Bunting **[68]** in the agricultural fields situated on the periphery of Oriya village (24.627°N, 72.760°E; *c.*1,325 m asl), located 08 km north-east of Mount Abu, Rajasthan. SZ was observing Tree Pipits foraging on the ground, which were routinely being sighted in the same area, until a Little Bunting was unexpectedly spotted foraging along with the Tree Pipits. It was easily identified from the rusty central crown stripe, dark lateral crown stripes, a pale eye-ring, and a fine dark border to the rear of its cheeks. The bird was observed foraging in an uncultivated crop field scattered with cut, decaying grass and weeds, located off the Achalgarh Road and near Oriya Duck Pond. Most crop fields in the area were recently tilled and left uncultivated. However, an adjoining field was cultivated with wheat, green peas, and garlic, bordered by a patch of grass and stagnant water. Sub-zero night-time temperatures were consistently recorded during the week, which,

Sahil Zutshi

68. Adult Little Bunting near Oriya village, Mount Abu, Rajasthan.

although not uncommon during winters at Mount Abu, coincided with a cold wave gripping North India. The area was surveyed the following morning, and 12 individuals were spotted. They were seen perched on dry grass and shrubs. Some individuals periodically perched on wild rose hedges bordering the area and on electrical wires running across the field, before returning to forage on seeds of flattened grass in a marshy area. On 14 December 2024, the field on which they were found foraging was tilled, and the area began experiencing disturbance from farmers and tractors. However, 4-6 individuals were spotted in the area until 16 December 2024, after which the birds appeared to have moved from the area.

Discussion

In the Indian Subcontinent, the Little Bunting occurs as a winter visitor, primarily to the eastern parts of the region, from central Nepal to Arunachal Pradesh, northern Bengal, the Assam Valley, hills south of the Brahmaputra, Meghalaya, Nagaland, Manipur, Mizoram, and northeast Bangladesh. It is mostly found below 1,800 m asl but can be observed at higher altitudes during passage. Several records exist in the Western Himalaya from northern Kashmir to western Nepal. It is also reported occasionally from southern West Bengal, Andaman & Nicobar Islands, and southwest Bangladesh (Rasmussen & Anderton 2012; SoIB 2023; eBird 2024). There are at least seven independent reports of Little Bunting from western Peninsular India, Maharashtra, Karnataka, and Kerala (Eaton & Mathew 2016; Praveen et al. 2018; eBird 2024).

However, this species has not been mentioned from Tripura, Haryana, Rajasthan, and Punjab in published literature (Grimmett et al. 2011; Rasmussen & Anderton 2012; Vyas 2015; Kalsi et al. 2019; Kumar & Chakrabarti 2019), and we could not find any records on social media and citizen science platforms. Thus, the records from Punjab, Haryana, Rajasthan, and Tripura, presented in this work, represent the first records from these states. The record from Jharkhand is the first photographic record from the state. Other than the above observations, there have been increasing sightings from Uttarakhand and southern West Bengal. In the last decade, eBird reports about 36 individuals across 13 sightings from Uttarakhand and over 50 individuals from southern West Bengal (eBird 2024). Multiple sightings from different states away from the known distribution range, especially the flock of 12 individuals in Rajasthan, coupled with repeat sightings from Tripura, Jharkhand, and Punjab, indicate a possible extension in its wintering range. Perhaps, the trend in the next few years will better indicate whether the above sightings were instances of vagrancy or a true range extension.

The observers from Jharkhand express their sincere gratitude to Satwik Vyas, Kanad Baidya, and Ashwin Viswanathan for their unwavering support. SZ also wishes to thank Ashwin Viswanathan for prompting him to write about the sighting from Rajasthan. Additionally, we acknowledge the suggestions from the anonymous reviewer and Praveen J to develop a collaborative note about the sighting of the Little Bunting in different states within a single season.

References

Ara, J., 1976. A comparison of the birdlife of Kechki and Horhap in Bihar. *Newsletter for Birdwatchers* 16(4): 5–8.

Byers, C., Olsson, U., & Curson, J., 1995. *Buntings and Sparrows: A Guide to the Buntings and North American Sparrows*. Sussex: Pica Press. pp. 1–334.

Copete, J. L. (2020). Little Bunting (*Emberiza pusilla*), version 1.0. In Birds of the World (del Hoyo, J., Elliott, A., Sargatal, J., Christie, D. A., & de Juana, E., Editors). Cornell Lab of Ornithology, Ithaca, NY, USA. Webpage URL: https://doi.org/10.2173/bow.litbun.01 [Accessed on 04 December 2024.]

Eaton, J. A., & Mathew, J., 2016. Little Bunting *Schoeniclus pusillus* in Munnar Hills, Kerala. *Indian BIRDS* 12 (1): 17–18.

eBird, 2024. Little Bunting Range Map. Webpage URL: https://ebird.org/map/litbun [Accessed on 23 December 2024].

Grimmett, R., Inskipp, C., & Inskipp, T., 2011. *Birds of the Indian Subcontinent*. 2nd ed. London: Oxford University Press & Christopher Helm. pp. 1–528.

Kalsi, R. S., Sharma, S. C., & Choudhary, J. R., 2019. *Birds of Haryana - A Field Guide*. Panipat, Haryana, India: Unique Publications. pp. 1–602.

Kumar, M., Chakrabarti, P., 2019. *Birds of Tripura*. Tripura, India: Niharika Publishers. pp. 1–156.

Praveen, J., Subramanya, S., & Raj, V. M., 2018. Karnataka checklist: Corrections and additions. *Indian BIRDS* 14 (4): 127–128.

Rasmussen, P. C., & Anderton, J. C., 2012. *Birds of South Asia*: *the Ripley guide*. 2nd ed. Washington, D. C., and Barcelona: Smithsonian Institution and Lynx Edicions. 2 vols. pp. 1–378; 1–683.

SoIB, 2023. State of India's Birds factsheet: Little Bunting *Emberiza pusilla* (India). Webpage URL: https://stateofindiasbirds.in/species/litbun/ [Accessed on 19 December 2024.]

Vyas, R., 2013. *Birds of Rajasthan*. 1st ed. Mumbai, India: Bombay Natural History Society & Oxford University Press. pp. i–xiv, 1–322.

– Parthasarathi Chakrabarti, Suman Biswas, Dipayan Chakraborty, Shawon Kuri, Sova Ghosh, Banideep Sinha, Prasenjit Chowdhury, Manish Kumar Chattopadhyay, Saikat Das, Arkajyoti Mukherjee, Pankaj Gupta, Arnav Gupta, Paramnoor Singh Antaal, Sahil Zutshi & Gurpartap Singh

Parthasarathi Chakrabarti, Between Bridge and Post Office, Abhoynagar, Agartala, 799005, Tripura. E-mail: parthaagt@gmail.com [PC]

Suman Biswas, House of Lt. Sudhir Ch. Biswas, VPO Kalshimura, 799102, Sepahijala District, Tripura. E-mail: sumanbiswasudp@gmail.com [SB]

Dipayan Chakraborty, GPRA Complex, Gandhigram, 799012, Tripura. Email: piku511985@gmail.com [DC]

Shawon Kuri, 2nd Floor, H.K. Tower, Opposite 22 Ward Office, Banamalipur, Agartala, 799001, Tripura. E-mail: kuri.shawon@gmail.com [SK]

Sova Ghosh, C/o Biplab Ghosh, VPO Lankamura, 799009, Agartala, Tripura. E-mail: gsova2020@gmail.com [SG]

Banideep Sinha, Suri Vidyasagar College, Burdwan University, Suri, 731101, Birbhum, West Bengal. E-mail: banideep72@gmail.com [BS]

Prasenjit Chowdhury, Jalpaiguri Government Engineering College, Jalpaiguri, 735102, Jalpaiguri, West Bengal. E-mail: wildtale91@gmail.com [PC]

Manish Kumar Chattopadhyay, Maulana Abul Kalam Azad University of Technology, Kolkata,, 7000064, West Bengal. E-mail: manish.ee22@gmail.com [MKC]

Saikat Das, Patha Bhavana, Visva Bharati, Santiniketan, 731235, Birbhum, West Bengal. E-mail: saikatgkh@gmail.com [SD]

Arkajyoti Mukherjee, Indian Institute of Technology, Kharagpur 721302, West Bengal. E-mail: arkajyoti02@gmail.com [AM]

Pankaj Gupta, House No. 5164, Sector B, Pocket7, Vasant Kunj, 110070, New Delhi. E-mail: pankajgupta_fm@yahoo.co.in [PG]

Arnav Gupta, House No. 5164, Sector B, Pocket7, Vasant Kunj, 110070, New Delhi. E-mail: arnavgupta1209@gmail.com [AG]

Paramnoor Singh Antaal, House No. 26, Urban Estate Phase-I, Patiala, 147002, Punjab. E-mail: aroopkamal@gmail.com [PSA]

Sahil Zutshi, Irupidam, Oriya, Mt. Abu, Sirohi District, 307501, Rajasthan. E-mail: sahilzutshi@hotmail.com [SZ]

Gurpartap Singh, 1969, Sector 64, Mohali 160062, District Sahibzada Ajit Singh Nagar, Punjab. E-mail: prof.gurpartap.singh@gmail.com [GPS] [Corresponding author]

The Black-throated Munia *Lonchura kelaarti vernayi* in Odisha, India

The Black-throated Munia *Lonchura kelaarti* is a small passerine bird in the family Estrildidae. It comprises three subspecies in the Indian Subcontinent: the nominate *L. k. kelaarti* occurring in Sri Lanka (Payne 2020); *L. k. vernayi* occurring in eastern India in the north-eastern Ghats of southern Odisha (historical) and north-eastern Andhra Pradesh, and a more widely distributed western subspecies *L. k. jerdoni*. The last one is sporadic and local in north-western Ghats from Mumbai region till about Goa but more regular in the Western Ghats of Karnataka and further south as well as in Biligirirangans, Servarayan, and Kolli hills in south-eastern Ghats and outcrops of Palani and Vasundhara hills

in Tamil Nadu (Praveen 2025). Dudhane (2015) reported the species from Mulshi, Pune, and (Bhagat 2015) reported it from Bhimashankar Wildlife Sanctuary, Pune. The latter marks the northernmost limit of distribution for the species known so far. The distribution is largely limited to the Western Ghats and parts of Sri Lanka (Rasmussen & Anderton 2012) with a few scattered records from the Eastern Ghats.

On 17 September 2022, at 0700 h, on a birding trip to Similipal National Park (NP), Mayurbhanj District (21.734°N, 86.360°E), Odisha; VR observed a small group of Munias perched on a tree. It was raining, but VR managed to photograph them **[69, 70]** which was later identified as Black-throated Munia based on the following characters; black face and throat, streaked mantle and crown, and the lack of clear white rump and underparts (Rao 2022). Out of the four Black-throated Munias, there were three adults and one juvenile perched on the branches of a tree along with five Scaly-breasted Munias *L. punctulata*.

Vipin Rao

69. Black-throated Munia showing black face and throat at Similipal NP, Odisha on 17 September 2022.

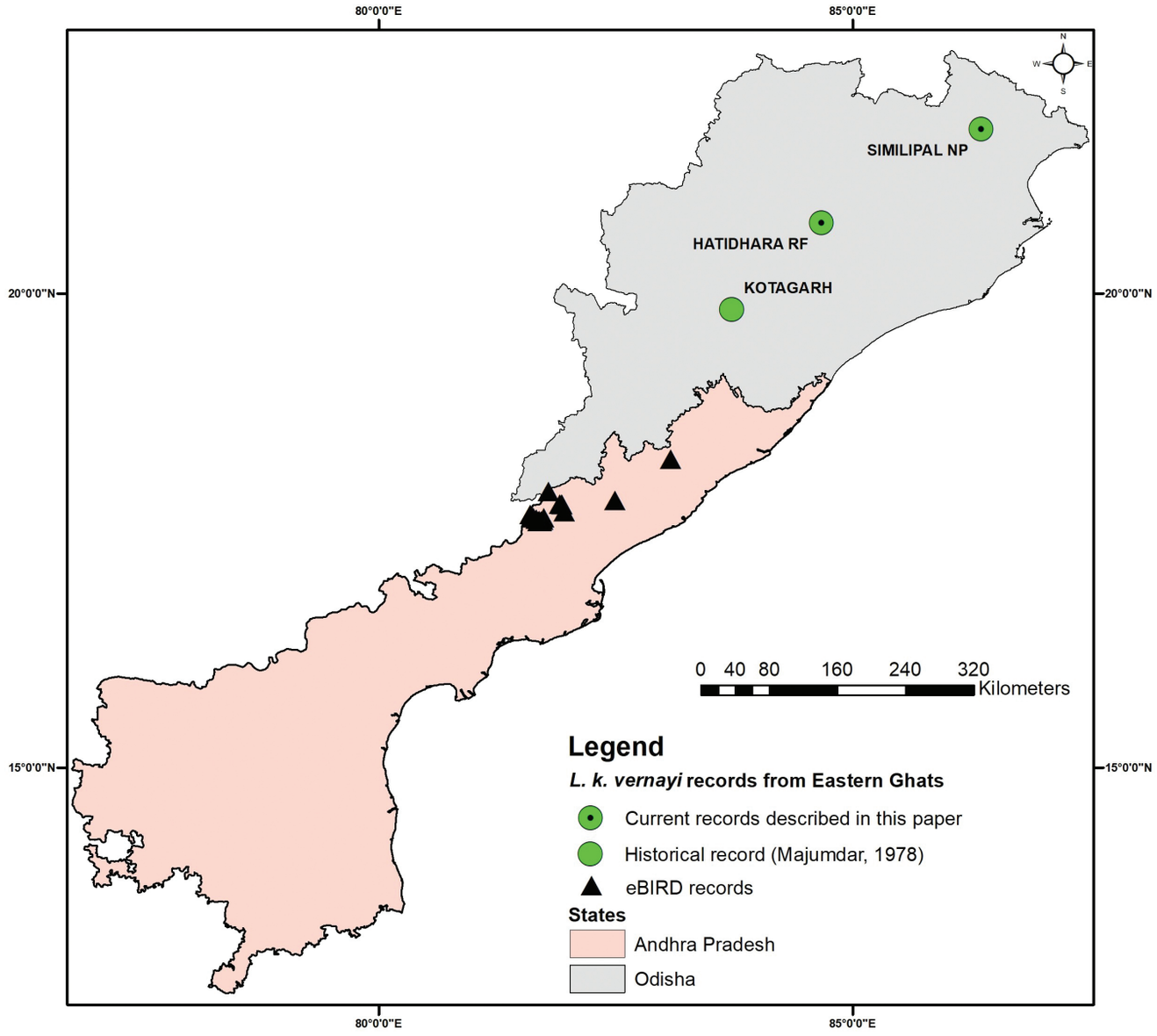

Fig. 1: Distribution of Black-throated Munia in Odisha State.

Vipin Rao

70. Black-throated Munia (on the top) showing brown rump with pinkish-white cross-like marks and light yellowish-brown upper tail-coverts at Similipal NP, Odisha on 17 September 2022.

On 05 December 2023, at 1043 h, during a field survey at Hatidhara Reserve Forest, Angul District (20.730°N, 84.670°E), Odisha, SKM observed a Black-throated Munia in a mixed flock of seven Scaly-breasted Munias **[71]**. The bird was identified by its characteristic black throat, brown upperparts, and pinkish-white underparts (Mohanta 2023) using reference books (Ali & Ripley 1983; Grimmett et al. 2011). The habitat of this location in the Eastern Ghats of Odisha (337 m asl) is largely northern tropical moist deciduous and dry deciduous forests.

Siddhanta Kumar Mohanta

71. Black-throated Munia from Hatidhara RF, Angul District, Odisha on 05 December 2023.

Photographs from these observations suggest that the birds belong to the *vernayi* subspecies, as indicated by the brown rump with pinkish-white cruciform marks, and light yellowish-brown upper-tail coverts. Three specimens of Black-throated Munia (ZSI#33387–89) were collected by P. K. Das on 25 May 1972 from Boudhkhondmals and one specimen (ZSI# 33390) was collected by Majumdar on 22 March 1976, from Kotagarh, Phulbani District (Majumdar 1979). Though, the species has been reported from Similipal in northern Odisha before (Ramakrishna et al. 2006), this is the first time when it has been documented with supporting evidence. Hence, these records constitute the first definite reports of the Black-throated Munia from northern Odisha, and the northernmost record from the Eastern Ghats (Fig. 1).

Based on the records in eBird (Fig. 1), the current population size of the Eastern Ghats *vernayi* may be small, with patchy distribution in its range and infrequent reports. This emphasizes the need to understand its habitat and ecology across its range. The sightings of the Black-throated Munia in different forest types across Odisha suggests that its range may be more extensive than previously documented and underscores the importance of regular monitoring and further targeted surveys.

References

Ali, S., & Ripley, S. D., 1983. *Handbook of the birds of India and Pakistan together with those of Bangladesh, Nepal, Bhutan and Sri Lanka*, Compact. Oxford University Press, Delhi. Pp. i–xlii, 1 l., pp. 1–737, 56 ll.

Bhagat, A., 2015. Webpage URL: https://ebird.org/checklist/S96361232. [Accessed on 19 May 2025].

Dudhane, S. A., 2015. Black-throated Munia *Lonchura kelaarti* in Pune District, Maharashtra. *Indian Birds* 10 (6): 160–161.

Grimmett, R., Inskipp, C., & Inskipp, T., 2011. *Birds of the Indian Subcontinent*, 2nd ed. Oxford University Press & Christopher Helm, London. Pp. 1–528.

Majumdar, N., 1979. On the taxonomic status of the Eastern Ghats Rufousbellied Munia, *Lonchura kelaarti vernayi* (Whistler and Kinnear, 1933) [Aves: Ploceidae]. *Journal of the Bombay Natural History Society* 75 (2): 493–495.

Mohanta, S. K., 2023. Webpage URL: https://ebird.org/checklist/S195564913. [Accessed on 19 May 2025].

Payne, R. B., 2020. Black-throated Munia (*Lonchura kelaarti*), version 1.0. In: *Birds of the World*. Cornell Lab of Ornithology, Ithaca, NY, USA. https://birdsoftheworld.org/bow/species/bltmun1.

Praveen, J., 2025. *Birds of India - The New Synopsis*. Nature Conservation Foundation, Mysuru, India. Pp. i–xlvii, 1–468.

Ramakrishna, Siddiqui, S. Z., Sethy, P., & Dash, S., 2006. *Faunal resources of Similipal Biosphere Reserve, Mayurbhanj, Orissa. Conservation Area Series, 28*. Director: Zoological Survey of India, Kolkata, India. Pp. i–iv, 1–87.

Rasmussen, P. C., & Anderton, J. C., 2012. *Birds of South Asia: the Ripley guide: attributes and status*, 2nd ed. Smithsonian Institution and Lynx Edicions., Washington, D.C. and Barcelona. Vol. 2 of 2 vols. Pp. 1–683.

– Vipin Rao, Siddhanta Kumar Mohanta & Anurag Mishra

Vipin Rao, Senior Technical Associate, Forest Survey of India, Kaulagarh Road, Dehradun, Uttarakhand, 248195, India.
Email: raoanizer@gmail.com [VR] [Corresponding author]
Siddhanta Kumar Mohanta, Wildlife Biologist, Kalahandi South Division, Bhawanipatna, Kalahandi, Odisha 766001, India. [SKM]
Email: Siddhantakumar2332000@gmail.com
Anurag Mishra, Divisional Forest Office, Kalahandi North Division, Bhawanipatna, Kalahandi, Odisha 766001, India. [AM]
Email: anuragmishra1009@gmail.com

Opinion

Modified advertising masts as high-visibility flight-path blockers: a possible mitigation of powerline collision risk for bustards

The Great Indian Bustard *Ardeotis nigriceps* ('GIB') has been in a strong, steady decline towards extinction over the past half-century, as a consequence of many different threats and pressures which, in a detailed account of the species, BirdLife International (2001) grouped under four generic headings: (1) habitat loss, (2) human exploitation, (3) predation and disturbance, and (4) mismanagement of habitat/inadequate protection. It is striking to read that text now, a quarter of a century later, and realise that it contains no mention of powerlines. This is all the more remarkable when one reflects that probably the single most serious driver of the bird's continuing decline—indeed, quite probably the proximate cause of its total extinction (Uddin et al. 2021; Dutta et al. 2023)—is now collision with powerlines. At the start of this decade an expert extrapolation using all relevant evidence suggested that GIBs were dying on powerlines at a rate of 16 individuals per year from a population of only some 128 (Wildlife Institute of India 2020). There is no other bird species on the planet whose main threat to its existence is judged to be energy infrastructure.

A comprehensive review (Silva et al. 2023) of the problem of bustards and powerlines in all parts of the family's range, including India, recently concluded that static and dynamic bird flight diverters (BFDs)—devices intended to be more visible than the powerlines to which they are fitted—cannot be trusted to perform well enough to be recommended as the solution. They have sometimes been reported to 'reduce' mortality, which is clearly inadequate; thus, the only truly dependable answer is 'undergrounding'. More recently still, an issue of *Buceros* 28 (2&3) was dedicated to the general problem of bird mortalities on powerlines and wind turbines, but with a particular emphasis on the GIB. However, the papers that make up the volume offer scant encouragement. A global overview (Girkar et al. 2024) itemises recent technological developments that slow rates of avian mortality at powerlines, but cites the same evidence (Shaw et al. 2021) used by Silva et al. (2023) that BFDs commonly fail to alleviate collision rates by bustards despite working moderately well with other bird species; see photographs in Narwade et al. (2024): 55–67 showing a GIB lying dead beneath a line marked with BFDs. A national review (Maxima & Selvaraj 2024) depressingly highlights Rajasthan, last home and hope of the GIB, as India's top state for number of powerline bird fatalities, but recommends nothing more detailed or practical for the GIB than 'immediate actions… to avoid further collisions' and 'underground cables… in [its] prime habitats'. By contrast, a bustard-specific review focusing on Rajasthan (Narwade et al. 2024) issues some strong, specific demands, including making the Pokhran area (seemingly some 1,600 km^2) a 'no infrastructure zone' and burying 13 stretches of high-tension transmission lines totalling 183 km. Sadly, however, there is no indication that those with real power in this situation take such recommendations seriously. Indeed, quite the opposite is the case according to the journal's editorial, in which BNHS director Kishor Rithe announces that, just as the issue went to press, 'the honourable Supreme Court ordered to free the grassland habitats to set up solar plants and transmission lines as they cannot hold up the development in the entire landscape for Great Indian Bustard'.

Despite the immense damage that powerlines do to bird populations, companies and governments routinely refuse to bury them, citing either significant additional cost or plain infeasibility; this was true in India when the Supreme Court previously ruled in favour of undergrounding. Routes may be modified to take account of sensitive areas, but otherwise there is little compromise. The only mitigations construction companies are willing to consider are offsets or BFDs. However, both of these responses commonly fall far short of truly compensating for the damage done, not least because the damage is permanent whereas the mitigation either fails genuinely to compensate or, typically, misfunctions over time (for BFDs see, e.g., Dashnyam et al. 2016). In any case, major lending banks with reputations to guard only require the mitigation to last 30 years at most; which is of course as absurd as creating a national park to last 30 years and expecting nature to take care of itself thereafter.

Meanwhile, the disappointing research results concerning the efficacy of BFDs in respect of bustards only deepen the conservationists' already acute dilemma over the GIB. On the one hand, conscience obliges them to grasp any opportunity to obtain better long-term management of habitat within its two tiny remaining areas south and east of Jaisalmer. On the other, it equally obliges them to accept that if BFDs reduce mortalities in some cases, it must be better for the species to deploy them than not to (see Dutta et al. 2023). Yet in both these situations the risk is that, if the benefit of the mitigation merely slows the mortality rate, the conservationists' support for such measures renders them complicit in the process by which the species becomes extinct.

With captive breeding programmes now underway for both the GIB and the Lesser Florican *Sypheotides indicus* (also in huge trouble, with powerlines partly to blame: see Narwade et al. 2024), it may be that some conservationists are pinning all their hope on the possibilities that in 30–40 years' time *ex situ* populations of both species will still exist, the problems of energy transmission will be solved, and well-restored habitat will allow reintroductions to proceed. However, the danger of this alluring vision is that it weakens the urgency and resolution to do the utmost to save the birds in the wild *now*. Alas, there is no guarantee that *ex situ* management will continue to work for the length of time it takes to sort out the environmental and infrastructural conundrums of Rajasthan. Even if it does, generations of captive breeding are very likely to result in genetic and phenotypic changes to the species that compromise their ability to survive in natural conditions (see, e. g., Dolman et al. 2021). So, the mission to save both species in the wild cannot be allowed to falter; it must be resumed with redoubled energy and intent—and perhaps some lateral thinking.

Free-standing flight-path blockers

On a visit to Rajasthan in February 2019, I spent several days malevolently contemplating the long chains of pylons and great swathes of powerlines that cut across the landscapes near Desert National Park. On the same visit, however, I encountered what could perhaps be the model for a gigantic 'bird flight diverter' about which I had sometimes idly speculated—some kind of tall structure bearing so obvious an object, so clear an obstruction, that no bird, however lateral its vision, could fail to

see and avoid it. On all my car journeys through the state I was repeatedly impressed by the very tall metal masts, topped with a placard bearing the provider's name and logo, that advertised almost every petrol station I passed **[72, 73]**. So ubiquitous were these structures, called pylon signs in the USA, that I had to assume that they cannot be very costly to install. Moreover, being unconnected to any wires, if used to divert bustards from approaching danger they would also be far cheaper and more straightforward to maintain and upgrade. Could India's petrol station advertising masts, widely touted for sale on the internet, be modified to provide (or simply be a model for) a new kind of free-standing BFD that might actually work for bustards?

72. A sample of an advertising mast. Source: https://www.indiamart.com/proddetail/petrol-pump-signage-23334821797.html

Several obvious questions arise before this overarching question can be answered. How tall would the mast need to be to reach a height sufficient to ensure approaching birds fly higher than the highest wires? What would the object replacing the advertising placard atop the mast consist of in order to maximise its effect—what size, shape, materials, colours, patterns, moving parts, illuminated features and even klaxons would be most appropriate? Would one mast be enough to protect the span of wires between two pylon towers? Would another be needed on the other side of the wires? What measures should be taken to ensure the safety of both the mast and the line? And what would be the difference in long-term costs between producing, installing and servicing one of these free-standing flight-path blockers ('FPBs') and purchasing, installing and long-term servicing dozens of dynamic BFDs on the multiple lines that span between one tower and another?

Two items of evidence drive a modest degree of optimism

73. Another sample of an advertising mast. Source: https://www.indiamart.com/proddetail/signage-high-mast-pole-for-petrol-pump-2850558485030.html

that such blockers might be both valuable and feasible. First, work in Africa has found that 87% of bird collisions occur in or near the middle sections of a span, resulting in the suggestion that parallel powerlines with staggered pylons (so that each pylon is next to the mid-span of the adjacent line) can produce a visual obstacle that in theory should cut bird mortalities by two-thirds (Pallett et al. 2022). The blocker would, therefore, simply replicate the role of a staggered pylon (Fig. 3A). Second, it is apparent from the photograph in Girkar et al. (2024): 21 that free-standing masts supporting artificial nesting platforms have been deployed elsewhere (for White Storks *Ciconia ciconia*), very close to powerline pylons. Operators of the lines may therefore be comfortable with the safety of this kind of measure.

Clearly such blockers, whether one per span or, if affordable, two, put on either side of the wires and somewhat staggered for even greater theoretical deterrence (Figure 3B), are not going to add to the aesthetics of the landscape; but the powerlines themselves have already ruined the view. Moreover, I would assume they would not necessarily be used on every span of a powerline, but targeted at those stretches where the danger is clearly highest. These, at least, would be the places to start, always accepting that we know too little about how birds move over the course of a year—and indeed over a lifetime—to be fully confident of identifying the areas of greatest risk. Nevertheless, the potential for doing good for the species is just too significant to ignore (including the opportunity to provide well-illuminated features that would show up strongly at night and in low light, when many bustard collisions with lines are thought by experts to occur). I therefore appeal to all conservationists in India concerned with the fate of the GIB,

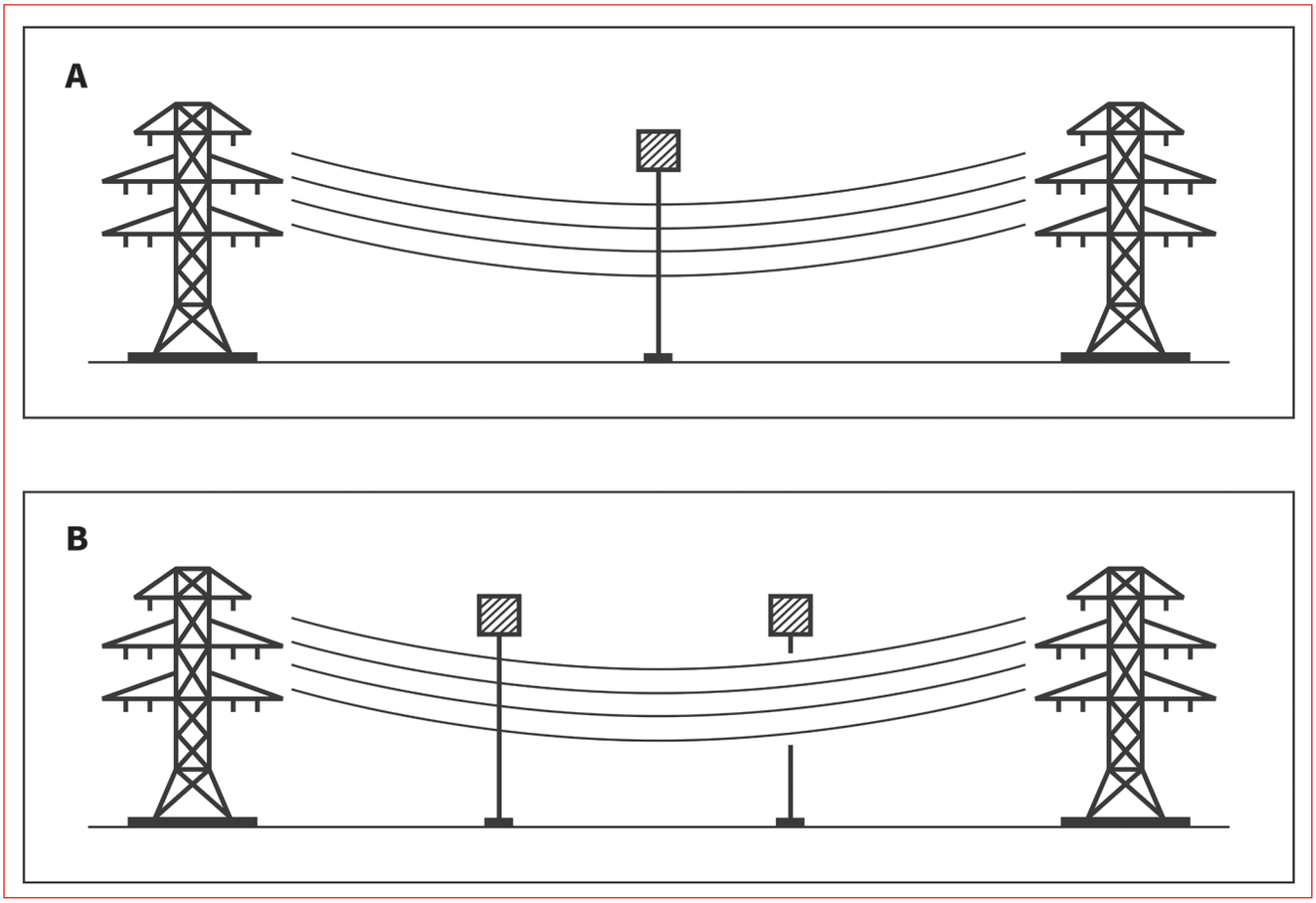

Fig. 3. Schematic view of a powerline between pylons with (A) a modified advertising mast serving as a flight-path blocker (FPB) at mid-span, and (B) two staggered FPBs either side of the powerline, aiming for maximum deterrence against collisions by flying bustards. Note that the squares atop the poles are simply one option and are not intended to suggest the only size and shape that might prove to be most effective.

the Lesser Florican and indeed all large birds that suffer the terrible (and sometimes lingering) death that striking a cable in flight brings, to investigate the costs and feasibility of these proposed flight-path blockers, as well as the optimal designs and functionality that the mast-top structures might have in order to maximise their effectiveness.

I am most grateful to Mimi Kessler, co-chair of the IUCN Bustard Specialist Group, for her comments on a first draft, to John Yayen for making Figure 3, and to a referee for helpful comments that reshaped the contribution. I offer it in memory of Radheshyam Bishnoi, who led the Godawan Community Conservation project in Rajasthan.

References

BirdLife International, 2001. Great Indian Bustard *Ardeotis nigriceps. In: Threatened Birds of Asia: the BirdLife International Red Data Book*. (N. J. Collar, A. V. Andreev, S. Chan, M. J. Crosby, S. Subramanya, & J. A. Tobias, eds). Cambridge, UK: BirdLife International. Pp. 1321–1344.

Dashnyam, B., Purevsuren, T., Amarsaikhan, S., Bataa, D., Buuveibaatar, B., & Dutson, G., 2016. Malfunction rates of bird flight diverters on powerlines in the Mongolian Gobi. *Mongolian Journal of Biological Sciences* 14 (1–2): 13–20.

Dolman, P. M., Burnside, R. J., Scotland, K. M., & Collar, N. J., 2021. Captive breeding and the conservation of the threatened houbara bustards. *Endangered Species Research* 46: 161–173. DOI: https://doi.org/10.3354/esr01151.

Dutta, S., Karkaria, T., Bipin, C. M., Uddin, K. V., Sharma, H., Joshi, H., Paul, I., Gupta, T., Supakar, S., Varma, V., Nagar, A., Bishnoi, V., Pati, A., Gupta, S., Purohit, N., Lawrence, S., Bhattacharya, S., Gujjar, M., Moitra, M., Rathore, S. S., Sakhlani, P., Kolipakam, V., Qureshi, Q., & Jhala, Y. V., 2023. Bustard Recovery Program: Progress Report.

Girkar, N., Gosavi, P., & Narwade, S., 2024. Bird mortality and power lines globally and mitigation measures– A literature review. *Buceros* 28 (2 & 3): 4–28.

Maxima, S. L., & Selvaraj, R. K., 2024. Bird mortalities due to electrocutions and collisions with energy infrastructures in India – A review. *Buceros* 28 (2 & 3): 35–48.

Narwade, S., Bora, N., & Bishnoi, P., 2024. Energy infrastructure, especially powerlines in grasslands, poses a challenge for conserving Bustard and Florican. *Buceros* 28 (2 & 3): 55–83.

Pallett, J., Simmons, R. E., & Brown, C. J., 2022. Staggered towers on parallel transmission lines: a new mitigation measure to reduce collisions of birds, especially bustards. *Namibian Journal of Environment* 6 (A): 14–21.

Shaw, J. M., Reid, T. A., Gibbons, B. K., Pretorius, M., Jenkins, A. R., Visagie, R., Michael, M. D. & Ryan, P. G., 2021. A large-scale experiment demonstrates that line marking reduces power line collision mortality for large terrestrial birds, but not bustards, in the Karoo, South Africa. *Ornithological Applications* 123 (1): duaa067.

Silva, J. P., Marques, A. T., Bernardino, J., Allinson, T., Andryushchenko, Y., Dutta, S., Kessler, M., Martins, R. C., Moreira, F., Pallett, J., Pretorius, M. D., Scott, H. A., Shaw, J. M., & Collar, N. J. 2023. The effects of powerlines on bustards: how best to mitigate, how best to monitor? *Bird Conservation International* 33: e30. DOI: https://doi.org/10.1017/S0959270922000314.

Uddin, M., Dutta, S., Kolipakam, V., Sharma, H., Usmani, F., & Jhala, Y. V., 2021. High bird mortality due to power lines invokes urgent environmental mitigation in a tropical desert. *Biological Conservation* 261: 109262. DOI: https://doi.org/10.1016/j.biocon.2021.109262.

Wildlife Institute of India, 2020. Power-Line Mitigation Measures. Second Edition.

– N. J. Collar

BirdLife International, Pembroke St, Cambridge UK. Email: nigel.collar@birdlife.org

PITTI
ENGINEERING SOLUTIONS
Since 1983

Pitti Engineering Limited

[Formerly Pitti Laminations Limited]
(An ISO 9001-2008 certified company)
Manufacturers of Electrical steel laminations, motor core, sub-assemblies, die-cast rotors, press tools, and machining of metal components .
Regd. Office: 6-3-648/401, 4th Floor, Padmaja Landmark, Somajiguda, Hyderabad 500082, Telangana, India.
Phones: 23312770, 23312774, 23312768, Fax: 23393985. E-mail: info@pitti.in, Website: www.Pitti.in, CIN: L29253TG1983PLC004141