

# Indian BIRDS

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Mysuru City Bird Atlas  
Gadhi-Siraichuli, Nepal  
Northern Wheatear





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- To publish a newsletter that will provide a platform to birdwatchers for publishing notes and observations primarily on birds of South Asia.
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PHOTOGRAPHER: Omkar Dharwadkar

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PHOTOGRAPHER: Kallol Mukherjee

# Mysuru City Bird Atlas (2014–2016): A systematic study of birds across space and time

Shivaprakash A., Sheshgiri B. R., Suhel Quader & Mysore Nature Team

Shivaprakash A., Sheshgiri B. R., Quader, S., & Mysore Nature Team. 2019. Mysuru City Bird Atlas (2014–2016): A systematic study of birds across space and time. *Indian BIRDS* 15 (3): 65–73.

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SA, SBR, and SQ wrote the paper. All participants listed above took part in fieldwork.

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The Mysuru City Bird Atlas is an ambitious volunteer project to map the birds of an entire city – the first systematic effort of its kind in India. Mysuru city was gridded into a set of square cells, and each cell was surveyed for birds in the winters and summers of 2014, 2015, and 2016. The goal of this effort was to assess the distribution and abundance of birds in Mysuru such that the accumulated information could be used to assess seasonal changes in avifauna, as well as to examine the relationship between birds and their habitat in an urban setting. Below, we present selected outcomes, including maps, as well as raw comparisons of abundance across the two seasons and the three years of the surveys. Some of the results recapture broadly understood phenomena, such as long-distance migration resulting in seasonal differences in bird communities and species richness. Other results are suggestive of previously undescribed patterns, such as seasonal local movements. Further learnings from the project include areas of improvement in Atlas design and the identification of more sophisticated approaches to data analysis. Taken as a whole, the information generated through the Mysuru City Bird Atlas can be used as a baseline against which long-term change in avifauna could be assessed.

## Introduction

A biodiversity atlas is a collection of primary, spatially explicit, data on species occurrences (Dunn & Weston 2008), and through this, presents a detailed picture of distribution and abundance of biodiversity. There are over 400 completed bird atlases across the world (Gibbons *et al.* 2007). Because of their scale, almost all atlases rely heavily on volunteer effort, and such a project can only be feasible where sufficient numbers of skilled birdwatchers are willing to volunteer their time. In India, the first atlas effort covered the states of Delhi, and Haryana (Harvey *et al.* 2006), dividing up the region into grid cells and marking presence and abundance in each cell. More recently, a similar approach has been used to document the birds of Manipal town in Karnataka (Singal 2016). Both these pioneering efforts were based largely on opportunistically collected data.

The idea of preparing a systematic bird atlas came up during a discussion on bird atlases and monitoring at the second International Conference on Indian Ornithology, conducted by the Sálím Ali Centre for Ornithology and Natural History, at Coimbatore, in November 2013. Mysuru (formerly called Mysore) appeared a natural location to initiate the first systematic atlas of birds in India. By 'systematic atlas', we mean an atlas prepared on the basis of information collected through a common protocol, with uniform distribution of effort across the region of interest. For this to be feasible, a large number of skilled volunteers are needed, as is careful coordination among them.

Mysuru has a long history of detailed bird documentation as well as coordinated projects on birds. Information on waterbirds exists since 1986 through work initiated by Manu K., and Guruprasad P., and inspired by the Mysuru Zoo Youth Club. A large amount of information collected in this way is available in the Asian Waterbird Census reports, and with the Indian Bird Conservation Network of BNHS-India.

The Mysore Nature ([www.mysorenature.org/](http://www.mysorenature.org/)) group has been regularly documenting birds in and around Mysuru through the monthly Mysore Birding Diary (<http://www.mysorenature.org/mysore-birding-diary>) since 2006, and the annual Winter Bird Monitoring Program since 2001. From 2014 onwards, Mysore Nature has also been a part of the Bird Count India ([www.birdcount.in](http://www.birdcount.in)) partnership, which aims to document and monitor India's wild birds.

Despite all this work, much remains to be learned about the birds of Mysuru. For example, although birds of popular birding spots are well known, most locations in the city remain, understandably, unvisited by birders—so overall distribution, and spatial patterning remain unknown. Similarly, seasonal changes in distribution and abundance are inadequately known, since information is mostly available for the winter migratory season. The objectives of the Mysuru City Bird Atlas, therefore, were to survey the city in a systematic manner, so as to better understand the fine-scale distribution, abundance, and movement patterns of birds. A further objective was to set a baseline against which long-term changes (over years to decades) in these aspects can be assessed. The information generated could be used for these

purposes, as well as more detailed analyses (not attempted here)—such as understanding the fine-scale relationships between birds and their habitat. Here, we present an overview of the Atlas and the information it has generated.

## Methods

The most important ingredient in a project such as this is the birdwatchers who contribute their time. Worldwide, a large number of nature enthusiasts play active roles in generating new information about ecology and biodiversity. Because birdwatching is a popular hobby, bird-monitoring projects have been particularly successful in drawing volunteers (Aravind 2013). Several Mysuru birdwatchers stepped forward to take part in the Atlas project. Most of them had already been part of a number of birdwatching trips and were skilled at identification. Across all birders who took part in the Atlas surveys, the average number of years of birding experience was 8.9 years, and 60% had been involved in previous bird surveys or censuses. Additional field-based birdwatching and training sessions were organized for relative newcomers, to increase their skill in visual and aural identification. Atlas surveys were led by experienced birders and were never carried out by novices. Two workshops were conducted at Kukkarahalli Lake in January and May 2014 to discuss the protocols to be followed. These training sessions also included instructions on how to upload the bird sightings to eBird (see below). Over the three years of the Atlas, 60 volunteer birders contributed their time, effort, and birdwatching skills to collect the information summarised here. Their names are listed under the Mysore Nature Team, above.

The protocol for data collection was designed to ensure

equal effort across Mysuru city. The extent of the city (c.160 sq km) was divided into 33 cells (Fig. 1) of 2.2x2.2 km size ( $1.25^{\circ} \times 1.25^{\circ}$ ), aligned to Survey of India toposheets. Each cell was further subdivided into four equal-sized sub-cells. There were, thus, a total of 132 sub-cells of size 1.1x1.1 km, an area that we considered reasonable for being covered in a single short visit. A single survey involved a team of one to four birders visiting a sub-cell for 30 min, between 0630 and 1000 h, and noting down the number of individuals of each species. Volunteers did not follow straight-line transects or other pre-defined routes; rather, they were asked to walk about, covering all available habitats in the sub-cell. Routes were not standardized across multiple surveys, nor was the actual coverage of a sub-cell assessed. Birds were not counted using a formal method, but volunteers were asked to try and avoid double counting. There was no explicit instruction to leave out birds flying over the sub-cells, and so some surveys include flyovers of species like Rose-ringed Parakeets *Psittacula krameri*, which can occasionally form large flocks.

Each sub-cell was surveyed in this way, once in February (winter), and once in June (summer/monsoon) in 2014, 2015, and 2016. Participants uploaded checklists (with counts of each species), for each sub-cell, to eBird (ebird.org), a global platform for recording bird sightings. The use of eBird made data collection more efficient by the use of a standardised taxonomy and nomenclature, digitizing data at source, and by removing the need to later combine data from multiple digital files. Data quality checks were conducted on the raw data downloaded from eBird. Survey lists were scrutinized to correct nomenclatural errors (e.g., reporting Great Tit for Cinereous Tit *Parus cinereus*, or Plaintive Cuckoo for Grey-bellied Cuckoo *Cacomantis passerinus*).

In addition, all unusual and unlikely reports of species were also examined manually, and withheld if no supporting documentation was provided. In this way, records of 13 species were removed because of inadequate supporting documentation, including Common Golden-backed Woodpecker *Dinopium javanense*, Blue-bearded Bee-eater *Nyctornis athertoni*, Painted Bush Quail *Perdula erythrorhyncha*, and Black-lored Tit *Machlolophus xanthogenys*, none of which have documented records from Mysuru city or its immediate environs.

Progress was monitored using social media (<https://www.facebook.com/groups/mysorenature/>) as a notice board, where participants signed up to cover particular sub-cells, and posted the list URLs of their eBird observations for the sub-cell when completed. A master spreadsheet listed all sub-cell numbers, the names of those who had signed up to cover each sub-cell, and, as surveys were carried out, the list URLs for each sub-cell. Atlas coverage was complete in both years and seasons, except in February 2015, when 29 sub-cells were inadvertently left un-surveyed. Each year, data summaries were generated

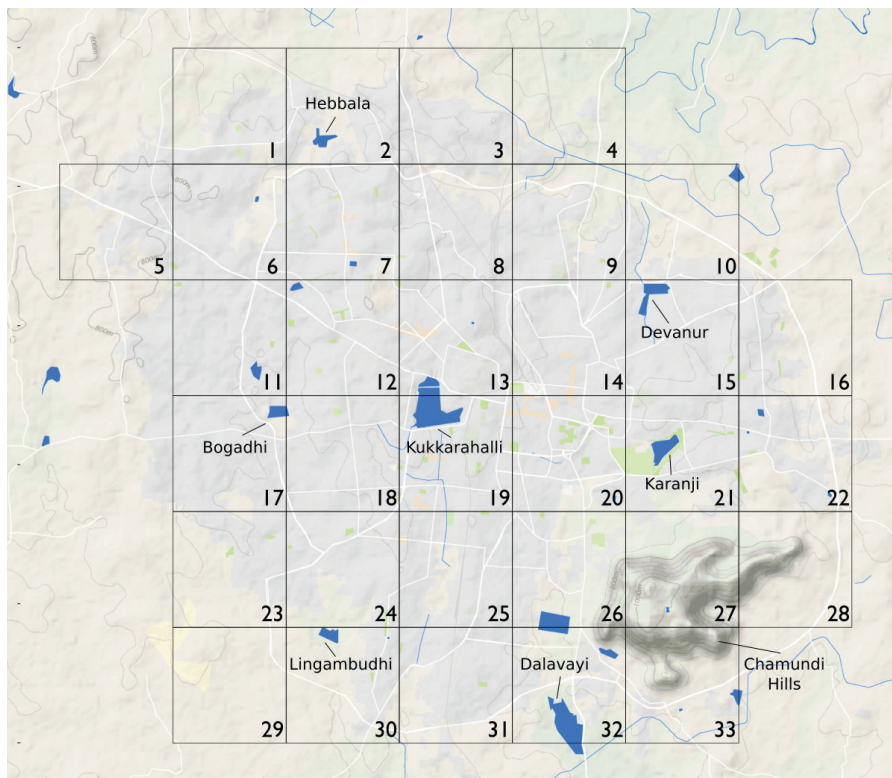


Fig. 1. The 33 grid cells surveyed in the Mysuru City Bird Atlas, with key locations indicated, including the lakes (keres) mentioned in the text. Map layer from Google Maps.



and uploaded to the Mysuru Atlas webpage ([www.birdcount.in/events/mysore-bird-atlas](http://www.birdcount.in/events/mysore-bird-atlas)): these included interactive maps (generated through the Tableau visualization platform) and tabular summaries.

To analyse the abundance of individual species, we have used 'frequency of reporting', which we have calculated as the proportion of sub-cells in which a species was observed. At the grid level, there are four sub-cells and so the frequency of reporting can be one of 5 values (0%, 25%, 50%, 75%, or 100%). When aggregating over grids to examine overall abundance, the denominator in these calculations is the total number of sub-cells surveyed.

All analyses and graphs presented below are based on the 'raw' frequencies of reporting. We discuss the limitations of this method, and possible future approaches, thereafter ('Lessons learnt'). All computations were carried out in the programming and statistical platform R (R Core Team 2017).

## Results and discussion

Atlas participants adhered fairly closely to the standard protocol. The majority of sub-cells (93% of 763 sub-cell-repetitions across three years) were surveyed for exactly 30 min, and only 3% of sub-cells were surveyed for a duration outside the range of 30–40 min. Similarly, surveys in nearly all sub-cells (90%) were started within the prescribed time: between 0630 and 1000 h. Although participants were asked to count numbers of individuals of each species, rather than simply mark their presence, count information was absent from a small proportion of records (1.1% of 18,641 records). Counting presence-only records as single birds, 116,689 individual birds were counted in total. Overall, we believe that the information generated through the Atlas surveys can be compared across the city (different cells and sub-cells) as well as across seasons and years—although we do identify areas for improvement (see 'Lessons learnt', below).

### Number of species across seasons and years

In all, 192 bird species were recorded across the three years of the Atlas. We should note that nocturnal species are less likely to appear in this tally than are diurnal, and extremely rare species are likely to be missing.

To assess the adequacy of sampling in each of the three years, we constructed species-effort curves (Fig. 2). In each season and each year, the total number of species found rises rapidly with survey effort (in this case sub-cells), and then the curves taper to become nearly flat, suggesting that we had detected a majority of, although not all, the species present by the end of the surveys.

Fig. 2 also shows a clear seasonal difference, with more species being found in February (winter) than in June (summer/monsoon), as expected from the known influx of winter migrants. On average, 33 additional species were seen in February than in June, giving rise to an overall difference of 50 species between the seasons (Table 1).

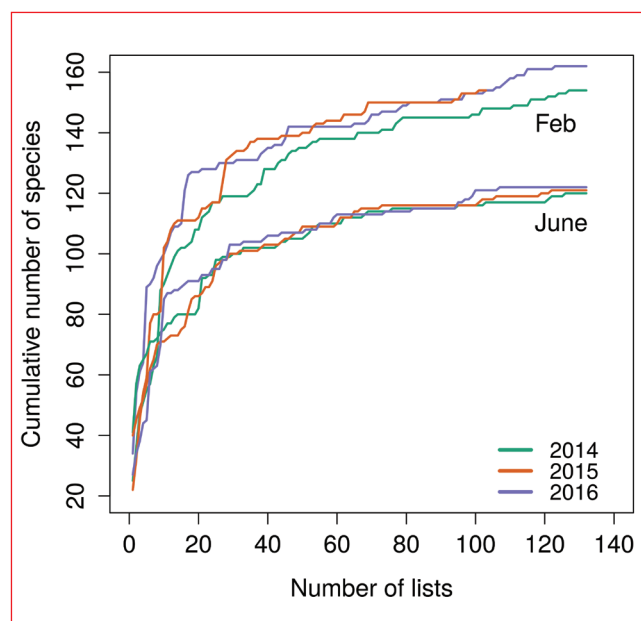


Fig. 2. Species-effort curves for each of the six iterations of the atlas surveys. Note the difference in final species numbers between the seasons, but the relative similarity across years within a season (especially in June).

Examining the overlap in species records within each season but across years (Fig. 3) reveals that 130 species were seen in all three years in February, and the equivalent number of June was 105, indicating that these are, roughly, the numbers of species that could be reliably expected each year in the respective seasons.

### Species richness across Mysuru city

The Atlas protocol allows a grid-wise comparison of species numbers across Mysuru city since all grids are surveyed with equal effort (with only minor deviations). There was substantial variation in the number of species recorded per grid. Species numbers in February varied from fewer than 50 (grids 7, 13, and 14) to 100 or more (2, 10, and 30). In June, five grids yielded fewer than 50 species (12, 13, 14, 18, and 20); and the most species-rich grids (2, 10, and 30) were the same as those in February, plus two others (28 and 32), all of which yielded over 80 species. Reference to Fig. 4 indicates that the grids with the highest numbers of species were those with a combination of waterbodies, wooded areas, and open habitat; e.g., surrounding Hebbala (grid 2: 109 species in February; 93 species in June), Lingambudhi (grid 30: 103 species in February; 83 species in June), Dalavayi (grid 32: 99 species in February, 87 species in June), and Bogadhi Lakes (grid 17: 95 species in February, 74 species in June). This does not necessarily apply to all grids with lakes. For example, Karanji Lake (grid 21; 91 species in February, 64 species in June), and Devanur Lake (grid 15; 70 species in February, 55 species in June) held only a moderate number of species. Grid 28, covering the north-eastern spur of Chamundi Hill, contained a small seasonal waterbody, and accounted for an impressive 93 species in February and 88 species in June. At the other end of the scale, grids with the fewest species generally consisted of highly built-up areas with little open space.

**Table 1.** Number of bird species recorded in each of the six iterations of the atlas surveys.

	February	June	Total
2014	154	120	168
2015	154	121	171
2016	162	122	172
Total	187	137	192

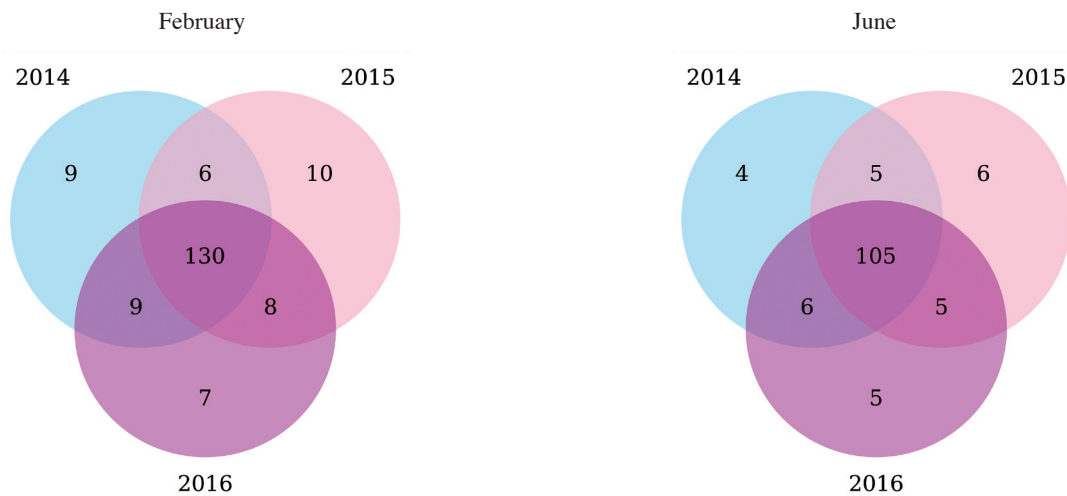


Fig. 3. Venn diagram of overlap in species recorded in the three years of the atlas, separately for February and June surveys. 70% of February species were recorded in all three years, with the equivalent number for June being 77%. No single year stands out in being particularly unusual (ie, showing more unique species than other years).

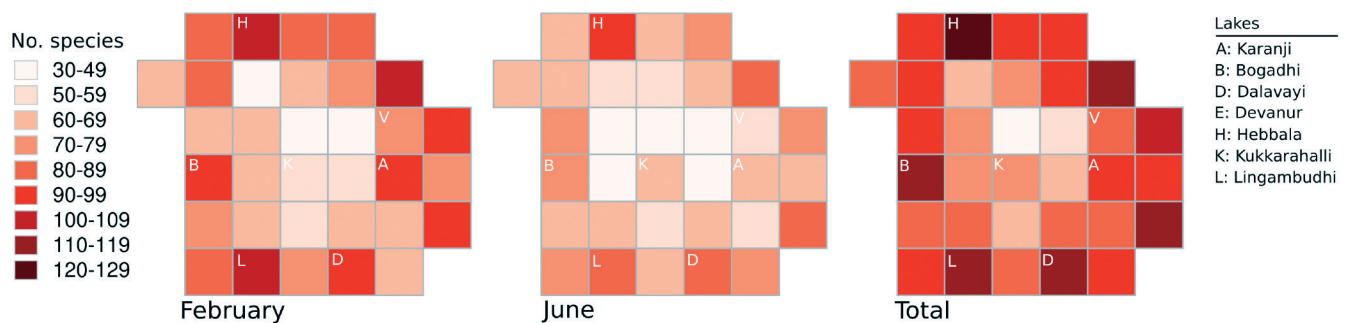


Fig. 4. Variation in species number across Mysuru city, by season. Comparing grids across seasons shows that, to a rough approximation, grids that have more species in February also tend to have more species in June (the correlation between the two months is 0.85). Broadly speaking, grids with more species are those that have wetlands within them. Grids containing each of seven major waterbodies are marked.

### Seasonal abundance of individual species

The overall abundance of individual species (calculated as a frequency of reporting in sub-cells across years) reveals interesting seasonal and between-year patterns. A number of species show relatively consistent abundances between February and June and are resident in Mysuru city (Fig. 5). Other species have high abundances in February, which decline dramatically in June (Fig. 6). Some of these are true winter migrants (e.g., Barn Swallow *Hirundo rustica*, Blyth's Reed Warbler *Acrocephalus dumetorum*, and Rosy Starling *Pastor roseus*). But others (e.g., Black Drongo *Dicrurus macrocercus* and Purple Sunbird *Cinnyris asiaticus*) are not long-distance migrants and might, instead, be showing local or regional-scale movements in and out of Mysuru city. A final set of species show higher abundances in June than in February (Fig. 7). It is possible that some of the seasonal changes are not entirely due to the movement of birds, but, rather, due to seasonal differences in the behaviour of the birds, resulting in changing detectability (ability to find a bird when it is present). An obvious example comes from the Asian Koel *Eudynamis scolopaceus*, which is likely to remain relatively constant in abundance across the seasons, but is detected more frequently in June, when males sing much more often (and are therefore much more detectable) than in February. Similarly, the Black-headed Ibis

*Threskiornis melanocephalus* may be more detectable in June, being more active during, and immediately after, their breeding season. Seasonal patterns for species without prominent song, or other changes in behaviour (e.g., Scaly-breasted Munia *Lonchura punctulata*), are likely to be more-or-less accurately reflected in the patterns shown here.

Note that for most species, the year-to-year variability in abundance within a season is relatively low (e.g., Black Kite *Milvus migrans*, Common Myna *Acridotheres tristis*, Barn Swallow, and Scaly-breasted Munia). Even when there is variation from one year to the next, it is typically not dramatic (Large-billed Crow *Corvus macrorhynchos* in June, and Rosy Starling, and Ashy Prinia *Prinia socialis* in February are exceptions). This gives us some confidence that, for many species, these estimates of abundance are robust and can therefore be compared across years and decades, e.g., during a subsequent repetition of the Atlas surveys.

Overall, which are the most common birds in Mysuru city? Again, we can answer this question using the frequency of reporting across sub-cells for each species. These are presented (separately for each season, and averaged across years) in Table 2.



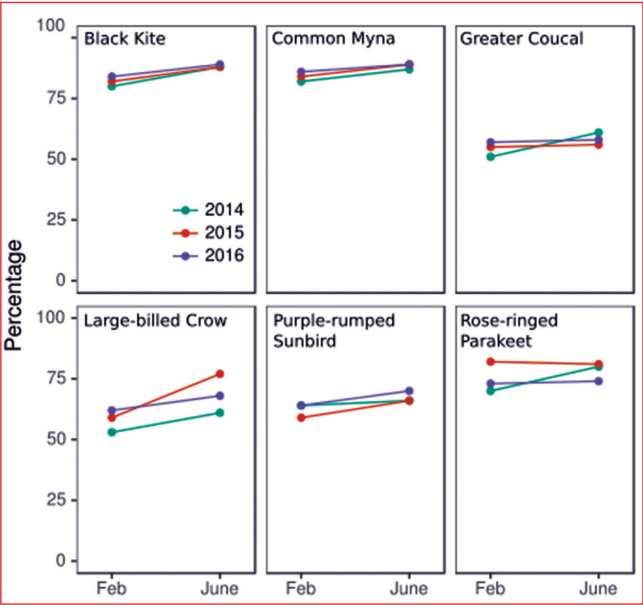


Fig. 5. Examples of species showing similar abundances (reporting frequency across sub-cells) between February and June.

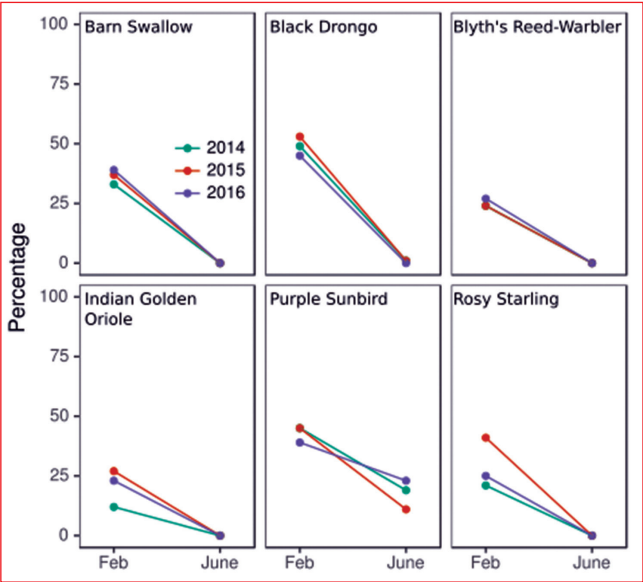


Fig. 6. Example of species showing seasonal change from high abundance (frequency of reporting) in winter, to low in summer/monsoon. Some of these are established long-distance migrants, but seasonality of 'residents' with local or regional movements can also be seen.

The commonest among these are known commensals of humans, either living off garbage and waste, or taking readily to gardens and parks. It is interesting to note that, even in February, none of the top 20 commonest species are long-distance migrants.

Seasonal distribution of individual species

Apart from looking at the overall abundance of individual species and how this changes with the seasons, the Atlas surveys also allow an examination of the fine-scale distribution of different species across the extent of the city. A few such species are depicted and discussed here—maps of all species (including

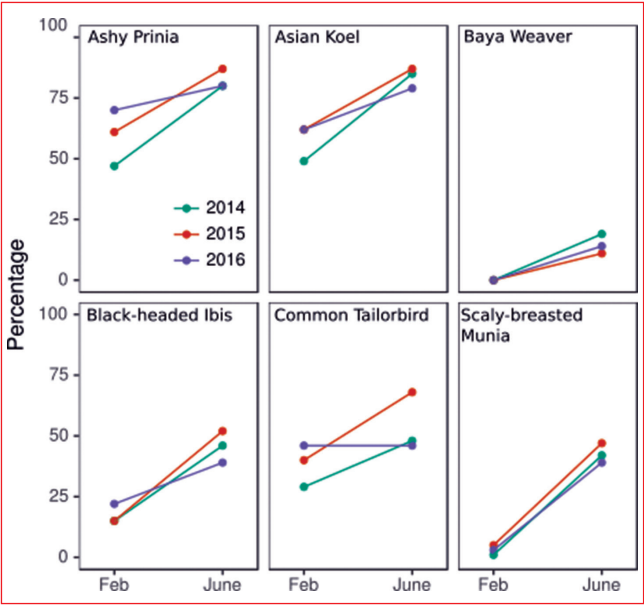


Fig. 7. Examples of species with greater abundances (frequency of reporting) in June, than in February. These are likely to contain some species that truly change in abundance with season, and others whose detectability (but not abundance) changes. See text for a discussion on this issue.

**Table 2.** The 20 most abundant species (in descending order), as measured by the percentage of sub-cells in which they were recorded, averaged across the three years of the survey. See the Appendix for a full list of species with abundances.

February, all years	June, all years
84% Common Myna	88% Common Myna
82% Black Kite	88% Black Kite
75% Rose-ringed Parakeet	84% Asian Koel
69% Feral Pigeon	82% Ashy Prinia
62% Purple-rumped Sunbird	78% Rose-ringed Parakeet
59% Brahminy Kite	74% Feral Pigeon
59% Ashy Prinia	69% Large-billed Crow
58% Large-billed Crow	67% Purple-rumped Sunbird
58% Asian Koel	62% Pale-billed Flowerpecker
57% House Crow	60% Red-whiskered Bulbul
55% Red-whiskered Bulbul	59% Spotted Dove
53% Spotted Dove	58% Jungle Myna
54% Greater Coucal	58% Greater Coucal
52% Red-vented Bulbul	57% House Crow
51% Jungle Myna	56% Brahminy Kite
51% Cattle Egret	54% Common Tailorbird
49% Black Drongo	53% Red-vented Bulbul
50% Pale-billed Flowerpecker	47% Cattle Egret
48% Pied Bushchat	46% Black-headed Ibis
43% Purple Sunbird	46% Pied Bushchat

separate maps for each year of the survey) can be viewed at the Atlas' webpage ([www.birdcount.in/mysore-bird-atlas/](http://www.birdcount.in/mysore-bird-atlas/)).

Certain birds can be roughly classified as obligatory commensals of humans, i.e., they are typically not found (or found only at very low density) away from human habitation. Of these, Black Kite, Feral Pigeon *Columba livia* (except around Chamundi Hill), and House Crow *Corvus splendens* are abundant and widespread across the city. House Sparrow *Passer domesticus*, by contrast, is only patchily distributed and is much less abundant (Figure 8). A few other species show interesting spatial patterns. For example, the Baya Weaver *Ploceus philippinus* is absent in February, but appears around the outskirts of the city in June,

presumably to breed (Figure 9). Some species pairs also show peculiar patterns. For example, while Spotted Dove *Streptopelia chinensis* is found across the city, Laughing Dove *S. senegalensis* appears only on the edges and outskirts. Similarly, while Red-whiskered Bulbul *Pycnonotus jocosus* is widespread, Red-vented Bulbul *P. cafer* is conspicuously absent from the centre of the city. A more thorough and systematic investigation of the spatial patterns in distribution of different species remains to be carried out.

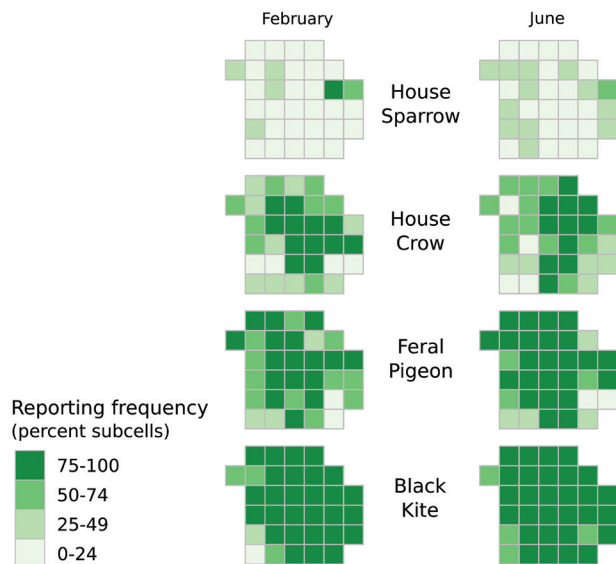


Fig. 8. Distribution of obligatory commensal species. The colours depict the frequency of lists in which a species was reported (i.e., the percent sub-cells containing that species, aggregated over the three years of the survey).

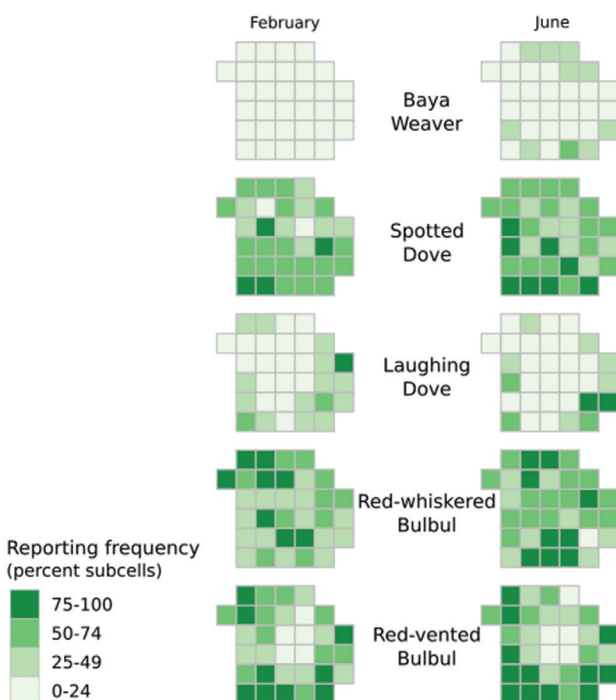


Fig. 9. Distribution of selected species that show variation in spatial patterning across seasons or across space. The colours depict the frequency of lists in which a species was reported (i.e., the percent sub-cells containing that species, aggregated over the three years of the survey).

## Lessons learnt

The experience of organizing and conducting the Atlas surveys in Mysuru, over six seasons, has resulted in many lessons learnt. One set of lessons pertains to volunteer preparation and training. Participants of the Mysuru Atlas project were varied in their skill at identifying birds by sight and sound. We tried to minimize this issue by ensuring that team leaders were always of moderate-to-high experience and skill. In addition, formal training sessions would have ensured a minimum acceptable ability to identify and count birds (both visually and aurally) across all participants, not only team leaders. We also realized that some aspects of the protocol were either unspecified (e.g., to count flyovers separately) or, sometimes unclear (e.g., to *always* count individual birds and not just mark presence); better tools are needed to remind participants of what is expected, for example a physical list of key points that should be reviewed before starting a survey.

From the perspective of the design of atlas surveys, one important point that has emerged is the need to be able to assess the probability of detection of different species in different seasons. If the likelihood of detecting (by sight or sound) is different for different species (which it surely is), and if this changes with season (which is likely to be so, for at least some species) or habitat, then relying purely on the 'raw' frequencies of detection can be misleading. In such cases, survey designs that allow the estimation of detection probabilities to adjust the raw frequencies of detection are needed. Such designs are usually based on survey replicates in either space or time, with more replicates being better. The current design of the Mysuru City Bird Atlas reflects a compromise between the need to assess detection probabilities and the practicalities of a volunteer-dependent survey. It is possible to use the existing design to estimate probabilities of detection, since each grid cell has four spatial replicates in each season in each year. Such an analysis is beyond the scope of the present article, but we invite anyone interested to use the data (available at <https://doi.org/10.5061/dryad.8k3d81r>) to carry out more sophisticated analyses.

## Conclusions and future directions

We draw several conclusions from conducting the first systematic bird atlas in India. Most importantly, with a combination of enthusiasm and careful organization, it is clearly possible for a community of birdwatchers to generate scientifically valuable information even when the project requires that city centers and bus stands (not typical birdwatchers' haunts) be surveyed! The data gathered during the Atlas work can now be used in a variety of valuable ways. From the perspective of a basic understanding of bird ecology, the Atlas gives an insight into the details of seasonality and distribution at a very fine scale. For example, the analysis presented here reveals previously unsuspected features of spatial patterning and seasonal variation in even common species. From a conservation point of view, in a world of rapid urbanization, we need to understand how cities change over time and how these changes influence bird species composition and abundance. How do decisions about urban growth and zoning by residents, developers, planners, and elected representatives affect birds? Data acquired by remote sensing or other methods remotely-sensed, or otherwise, can be used to assess different kinds of habitats (e.g., parks, waterbodies, etc.) across the city, and how they



change over time—information that is freely available online. The Mysuru Atlas allows these questions to be answered by providing information on the bird side of the equation, both in itself and in creating a baseline to measure future changes. The answers should inform attempts to design urban living spaces that allow birds and other wildlife to coexist with humans.

## Acknowledgements

In a citizen science project such as this, a very large number of people must be thanked for freely volunteering their time. The names of all birdwatchers who took part in the atlas surveys are listed on the first page of this article. Sandeep Kumar Jayasankar helped create the Tableau visualizations on the Mysuru City Bird Atlas website in 2014, and these were updated and modified subsequently by Abinand Reddy in 2015 and 2016. Mousumi Ghosh did some preliminary analysis of the bird data taken together with landcover information. M. D. Madhusudan helped create the map (Fig. 1) from Google's mapping tools. The late Sri Sadananda K. B. was a leading light for many amateur and expert naturalists in the Mysuru region. He was the inspiration behind many collective efforts

to document birds and other aspects of nature in and around Mysuru. The Mysuru City Bird Atlas is conducted in his memory and is dedicated to him, with gratitude and thanks.

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**Appendix:** List of all bird species, with abundances in each year and season. Separate information is presented on the frequency of reporting (percent of lists in which the species occurred), and the count of each species, averaged over only those lists in which the species occurred. In other words, the average count represents the number of individuals one can expect to find, when the species is present.

Species name	Frequency (percent of lists)								Average count (when present)							
	2014		2015		2016		Average		2014		2015		2016		Average	
	Feb	June	Feb	June	Feb	June	Feb	June	Feb	June	Feb	June	Feb	June	Feb	June
Lesser Whistling Duck <i>Dendrocygna javanica</i>	2	2	0	1	2	5	1	3	50.7	5		2	18	18	34.4	8.3
Cotton Teal <i>Nettion coromandelianus</i>	0	1	0	0	1	0	0	0		3			3		3	3
Indian Spot-billed Duck <i>Anas poecilorhyncha</i>	5	21	7	19	8	11	7	17	18.1	5.4	15.4	5.4	9.1	14.6	14.2	8.5
Northern Shoveler <i>Spatula clypeata</i>	2	0	1	0	2	0	2	0	46		500		39		195	
Northern Pintail <i>Anas acuta</i>	2	0	1	0	2	0	2	0	5		4		10		6.3	
Common Teal <i>Anas crecca</i>	1	0	0	0	0	0	0	0	3						3	
Indian Peafowl <i>Pavo cristatus</i>	3	12	12	15	7	13	7	13	2	1.8	2.5	1.8	3.3	1.9	2.6	1.8
Jungle Bush Quail <i>Perdica asiatica</i>	0	0	1	2	1	3	1	2			4	1.7	3	3.8	3.5	2.8
Grey Francolin <i>Francolinus pondicerianus</i>	27	23	50	21	36	23	38	22	2.6	1.2	2.1	2.1	1.8	1.8	2.2	1.7
Little Grebe <i>Tachybaptus ruficollis</i>	5	8	5	10	5	9	5	9	11.8	18.1	9.6	5	6	11.3	9.1	11.5
Asian Openbill <i>Anastomus oscitans</i>	2	8	4	4	1	2	2	5	1.5	3.5	1	2	1	8.5	1.2	4.7
Painted Stork <i>Mycteria leucocephala</i>	8	4	7	3	11	8	9	5	3.7	10.6	3.6	4.8	3.2	4.3	3.5	6.6
Little Cormorant <i>Microcarbo niger</i>	6	21	17	26	15	5	13	17	1.9	3.3	6.9	2.4	4.3	5.4	4.4	3.7
Great Cormorant <i>Phalacrocorax carbo</i>	6	5	7	10	8	5	7	7	4.1	6.5	3.6	9	4	7.3	3.9	7.6
Indian Cormorant <i>Phalacrocorax fuscicollis</i>	2	3	7	13	3	2	4	6	2	3.5	4.9	6.5	3.5	6	3.5	5.3
Oriental Darter <i>Anhinga</i>	2	10	1	7	2	7	2	8	2	1.9	6	1.6	2	1.2	3.3	1.6
Spot-billed Pelican <i>Pelecanus philippensis</i>	7	2	6	8	8	5	7	5	11.2	7.7	3.7	4.3	3.3	8.3	6.1	6.8
Yellow Bittern <i>Ixobrychus sinensis</i>	0	1	0	1	1	2	0	1		2		2	1	1	1	1.7
Grey Heron <i>Ardea cinerea</i>	14	5	17	8	10	5	14	6	1.9	2.7	1.4	2	2.3	3.9	1.9	2.9
Purple Heron <i>Ardea purpurea</i>	3	4	6	4	7	5	5	4	1.2	1.6	1	1.4	1.8	2.2	1.3	1.7
Great Egret <i>Ardea alba</i>	2	2	7	5	2	0	4	2	3.3	2	5.3	1.2	1.3		3.3	1.6
Intermediate Egret <i>Ardea intermedia</i>	5	8	2	8	3	7	3	8	2.8	3.1	4.5	2.8	1.2	1.8	2.8	2.6
Little Egret <i>Egretta garzetta</i>	10	14	14	18	18	20	14	17	4.9	9.8	13.6	4.2	6	4	8.2	6
Cattle Egret <i>Bubulcus ibis</i>	54	55	46	46	52	39	51	47	9.6	6.8	9.3	3.5	6.2	8.4	8.4	6.2
Indian Pond Heron <i>Ardeola grayii</i>	36	37	37	48	42	39	38	41	6	4.6	12.6	3	5.1	3.9	7.9	3.8
Striated Heron <i>Butorides striata</i>	1	0	0	0	0	0	0	0	1						1	
Black-crowned Night Heron <i>Nycticorax nycticorax</i>	2	2	5	4	3	2	3	3	2.3	2.3	2.8	4.2	2.8	5	2.6	3.8
Glossy Ibis <i>Plegadis falcinellus</i>	5	0	2	0	4	1	4	0	18.9		1.5		2.6	3	7.7	3
Indian Black Ibis <i>Pseudibis papillosa</i>	29	31	14	26	22	20	22	26	2.8	2.4	2.3	1.6	2.3	2.5	2.5	2.2
Black-winged Kite <i>Elanus caeruleus</i>	1	1	4	1	0	2	2	1	1	1	1	1		1	1	1
Oriental Honey Buzzard <i>Pernis ptilorhynchus</i>	2	1	4	0	2	1	3	1	1.7	2	1.2		1.3	1	1.4	1.5
Crested Serpent Eagle <i>Spilornis cheela</i>	0	1	0	0	1	1	0	1		1			1	1	1	1
Short-toed Snake Eagle <i>Circus gallicus</i>	0	0	0	0	2	0	1	0					1		1	
Indian Spotted Eagle <i>Clanga hastata</i>	2	2	0	1	1	0	1	1	1	1		1	2		1.5	1
Booted Eagle <i>Hieraetus pennatus</i>	1	0	0	0	1	0	1	0	1				1		1	
Tawny Eagle <i>Aquila rapax</i>	0	2	3	1	0	2	1	2		1	1	1		1	1	1
Bonelli's Eagle <i>Aquila fasciata</i>	0	1	0	1	1	2	0	1	1		1		1	3.5	1	1.8
Western Marsh Harrier <i>Circus aeruginosus</i>	1	0	5	0	3	0	3	0	1		1.4		1		1.1	
Shikra <i>Accipiter badius</i>	22	23	25	17	25	23	24	21	1.4	1.5	1.2	1.3	1.2	1.3	1.3	1.4

Species name	Frequency (percent of lists)								Average count (when present)							
	2014		2015		2016		Average		2014		2015		2016		Average	
	Feb	June	Feb	June	Feb	June	Feb	June	Feb	June	Feb	June	Feb	June	Feb	June
Black Kite <i>Milvus migrans</i>	80	88	82	88	84	89	82	88	5.9	6.1	5.3	4.6	6.5	5	5.9	5.2
Brahminy Kite <i>Haliastur indus</i>	51	59	65	54	61	55	59	56	3.6	2.9	3.7	2.6	2.3	2.8	3.2	2.8
White-breasted Waterhen <i>Amaurornis phoenicurus</i>	8	9	8	13	15	20	10	14	1.4	1.9	2.3	1.9	1.8	2	1.8	1.9
Ruddy-breasted Crane <i>Zapornia fusca</i>	0	0	0	0	1	1	0	0					1	1	1	1
Common Coot <i>Fulca atra</i>	4	4	5	8	5	7	5	6	11.8	28.6	20	7.8	11.5	18.1	14.4	18.2
Indian Thick-knee <i>Burhinus indicus</i>	1	1	0	1	1	2	1	1	3	2		4	2	1.5	2.5	2.5
Black-winged Stilt <i>Himantopus himantopus</i>	4	1	4	0	2	0	3	0	13.2	3	10.2		6.7		10	3
Yellow-wattled Lapwing <i>Vanellus malabaricus</i>	3	6	2	4	7	9	4	6	3	4	10.5	5.4	4.3	3.8	5.9	4.4
Red-wattled Lapwing <i>Vanellus indicus</i>	20	36	45	38	29	42	31	39	2.6	4	2.7	2.4	3.4	2.8	2.9	3.1
Little Ringed Plover <i>Charadrius dubius</i>	1	0	2	0	1	0	1	0	6		1.5		2		3.2	
Pheasant-tailed Jacana <i>Hydrophasianus chirurgus</i>	0	2	0	0	0	2	0	1		1.7			1			1.4
Bronze-winged Jacana <i>Metopidius indicus</i>	3	3	2	4	3	4	3	4	6.2	1.8	3.5	2.2	2	2.2	3.9	2.1
Little Stint <i>Calidris minuta</i>	1	0	0	0	0	0	0	0	31						31	
Common Sandpiper <i>Actitis hypoleucos</i>	6	0	6	0	5	0	6	0	2.5		2.3		2.6		2.5	
Green Sandpiper <i>Tringa ochropus</i>	7	0	7	0	6	0	7	0	2.8		2.7		1.5		2.3	
Common Greenshank <i>Tringa nebularia</i>	2	0	1	0	1	0	1	0	1		7		1		3	
Marsh Sandpiper <i>Tringa stagnatilis</i>	1	0	1	0	0	0	1	0	18		4				11	
Wood Sandpiper <i>Tringa glareola</i>	8	0	7	0	8	0	8	0	6.5		11		2.6		6.7	
Barred Buttonquail <i>Turnix suscitator</i>	2	0	1	0	0	1	1	0	1.7		2		3		1.8	3
Whiskered Tern <i>Chlidonias hybrida</i>	0	0	2	0	1	0	1	0			11.5		3		7.2	
River Tern <i>Sterna aurantia</i>	0	0	3	1	1	1	1	1			3.7	8	4	1	3.8	4.5
Feral Pigeon <i>Columba livia</i>	58	73	78	75	72	73	69	74	16.1	18.5	19.9	14.4	13.4	20.7	16.5	17.9
Eurasian Collared Dove <i>Streptopelia decaocto</i>	27	20	20	17	17	20	21	19	3.4	3.4	2.3	2.8	2.2	2.6	2.6	2.9
Spotted Dove <i>Streptopelia chinensis</i>	45	62	61	64	52	52	53	59	2.4	2.8	2.8	2.4	2.1	2.4	2.4	2.5
Yellow-legged Green Pigeon <i>Treron phoenicopterus</i>	2	0	0	0	0	0	1	0	3						3	
Greater Coucal <i>Centropus sinensis</i>	51	61	55	56	57	58	54	58	2.2	1.9	1.8	1.9	1.7	1.6	1.9	1.8
Blue-faced Malkoha <i>Phaenicophaeus viridirostris</i>	4	2	5	3	2	2	4	2	1	1.3	1.4	1.5	1.5	1	1.3	1.3
Pied Cuckoo <i>Clamator jacobinus</i>	1	8	1	8	1	7	1	8	1	1.9		1.2	2	1.2	1.5	1.4
Asian Koel <i>Eudynamis scolopaceus</i>	49	85	62	87	62	79	58	84	3.2	3	1.9	2.8	1.9	2.3	2.3	2.7
Grey-bellied Cuckoo <i>Cacomantis passerinus</i>	1	5	0	5	0	1	0	4	1	1.2		1.3		1	1	1.2
Indian Eagle Owl <i>Bubo bengalensis</i>	0	1	0	1	0	0	0	1		1		1				1
Spotted Owlet <i>Athene brama</i>	2	3	4	5	7	6	4	5	1.7	2.5	1.5	3.8	2.1	2	1.8	2.8
Mottled Wood Owl <i>Strix ocellate</i>	0	0	1	0	0	0	0	0			4				4	
Indian Nightjar <i>Caprimulgus asiaticus</i>	0	1	0	1	0	0	0	1		3		3				3
Indian House Swift <i>Apus affinis</i>	2	12	10	8	2	14	5	11	9	5.1	11	5.4	12	4.4	10.7	5
Common Hoopoe <i>Upupa epops</i>	13	8	14	6	12	9	13	8	1.6	1.5	1.4	1.2	2	1.6	1.7	1.4
Indian Grey Hornbill <i>Ocyrocus birostris</i>	28	34	39	37	30	36	32	36	2.4	3.1	3	2.2	2.3	2.6	2.6	2.6
Common Kingfisher <i>Alcedo atthis</i>	2	3	4	2	3	3	3	3	1.3	1.2	1.2	1	1.5	1.8	1.3	1.3
Stork-billed Kingfisher <i>Pelargopsis capensis</i>	0	0	0	0	2	0	1	0					1		1	
White-throated Kingfisher <i>Halcyon smyrnensis</i>	29	40	40	50	44	45	38	45	1.6	2	1.6	1.8	1.6	1.9	1.6	1.9
Pied Kingfisher <i>Ceryle rudis</i>	0	0	1	1	1	2	1	1			2	1	1	1.5	1.5	1.2
Green Bee-eater <i>Merops orientalis</i>	44	33	40	29	42	39	42	34	4.7	6.1	6.2	4.2	4.4	3.2	5.1	4.5
Blue-tailed Bee-eater <i>Merops philippinus</i>	23	4	18	0	20	1	20	2	7.6	2.4	8.5		4.4	2	6.8	2.2
Indian Roller <i>Coracias benghalensis</i>	6	10	13	5	8	6	9	7	1.9	1.8	1.1	1.3	1.6	1.1	1.5	1.4
Coppersmith Barbet <i>Psilopogon haemacephalus</i>	36	31	41	27	37	38	38	32	2	2	1.6	2.7	1.4	1.8	1.7	2.2
Lesser Golden-backed Woodpecker <i>Dinopium benghalense</i>	3	11	7	4	7	6	6	7	1.2	1.4	1.7	1.2	1.1	1.6	1.3	1.4
Common Kestrel <i>Falco tinnunculus</i>	4	0	7	0	2	0	4	0	1.2		1.1		1		1.1	
Peregrine Falcon <i>Falco peregrinus</i>	0	0	1	1	0	0	0	0			1	1			1	1
Rose-ringed Parakeet <i>Psittacula krameri</i>	70	80	82	81	73	74	75	78	87.3	34	41.2	36.3	13.2	23	47.2	31.1
Plum-headed Parakeet <i>Psittacula cyanocephala</i>	0	1	0	2	1	2	0	2		1		1.5	1	1	1	1.2
Indian Pitta <i>Pitta brachyura</i>	0	0	1	0	0	0	0	0			1				1	
Common Woodshrike <i>Tephrodornis pondicerianus</i>	2	0	0	3	2	0	1	1	2.7		2.5		1.7		2.2	2.5
Common Iora <i>Aegithina tiphia</i>	15	27	34	23	21	28	23	26	2.5	1.9	1.5	2.6	1.6	1.7	1.9	2.1
Small Minivet <i>Pericrocotus cinnamomeus</i>	10	17	20	18	16	11	15	15	4.4	2.7	3.6	3.6	3.6	2.8	3.9	3
Black-headed Cuckooshrike <i>Lalage melanoptera</i>	0	0	4	1	2	0	2	0			1.3	1	1.7		1.5	1
Brown Shrike <i>Lanius cristatus</i>	13	0	10	0	10	0	11	0	1.2		1.1		1		1.1	
Bay-backed Shrike <i>Lanius vittatus</i>	3	0	5	2	1	0	3	1	1.2		1	1	1		1.1	1
Long-tailed Shrike <i>Lanius schach</i>	4	7	11	8	11	8	9	8	1.8	1.3	1.4	1.9	1.8	1.6	1.7	1.6
Indian Golden Oriole <i>Oriolus kundoo</i>	12	0	27	0	23	0	21	0	1.4		2.1		1.5		1.7	
Black-naped Oriole <i>Oriolus chinensis</i>	0	0	0	0	2	0	1	0					1.3		1.3	
Black-hooded Oriole <i>Oriolus xanthornus</i>	1	0	0	0	1	0	1	0	1				1		1	
Black Drongo <i>Dicrurus macrocercus</i>	49	1	53	1	45	0	49	1	2.9	1	2.6	1	2.1		2.5	1
White-spotted Fantail <i>Rhipidura albogularis</i>	7	6	9	14	13	11	10	10	3.3	2.8	2.4	1.9	1.7	1.5	2.5	2.1
Black-naped Monarch <i>Hypothymis azurea</i>	0	0	1	0	0	0	0	0			1				1	
Indian Paradise-flycatcher <i>Terpsiphone paradisi</i>	2	0	4	0	3	0	3	0	1.7		1		1.5		1.4	
Rufous Treepie <i>Dendrocitta vagabunda</i>	1	0	0	1	0	0	0	0	1		5				1	5
Large-billed Crow <i>Corvus macrorhynchos</i>	53	61	59	77	62	68	58	69	13.3	4.8	8.2	4.7	5	4.5	8.8	4.7
Rufous-tailed Lark <i>Ammomanes phoenicurus</i>	1	0	1	0	2	0	1	0	2		2		1.5		1.8	
Ashy-crowned Sparrow Lark <i>Eremopterix griseus</i>	2	3	6	2	5	4	4	3	2.7	1.5	5.3	1	2.1	2.6	3.4	1.7
Singing Bushlark <i>Mirafra cantillans</i>	1	0	1	0	0	2	1	1	2		2			1	2	1
Jerdon's Bushlark <i>Mirafra affinis</i>	17	20	14	18	14	11	15	16	2.6	2.5	2.2	3.1	2.1	2.3	2.3	2.6



Species name	Frequency (percent of lists)								Average count (when present)							
	2014		2015		2016		Average		2014		2015		2016		Average	
	Feb	June	Feb	June	Feb	June	Feb	June	Feb	June	Feb	June	Feb	June	Feb	June
Indian Bushlark <i>Mirafra erythroptera</i>	2	5	4	5	5	10	4	7	3.3	1.6	1.2	1.3	2.2	1.9	2.2	1.6
Oriental Skylark <i>Alauda gulgula</i>	1	4	10	1	0	1	4	2	1	2.8	2.8	1		2	1.9	1.9
Dusky Crag Martin <i>Ptyonoprogne concolor</i>	1	2	0	0	0	1	0	1	10	3.5			3	10	3.2	
Barn Swallow <i>Hirundo rustica</i>	33	0	37	0	39	0	36	0	24.3		33.9		15.3		24.5	
Wire-tailed Swallow <i>Hirundo smithii</i>	3	5	5	7	9	3	6	5	2	2	2.4	2.6	2.6	3.5	2.3	2.7
Red-rumped Swallow <i>Cecropis daurica</i>	16	33	20	27	30	30	22	30	10.9	3.7	14.6	4	14.1	4.3	13.2	4
Streak-throated Swallow <i>Petrochelidon fluvicola</i>	1	0	3	0	2	1	2	0	8		27.3		2	1	12.4	1
Cinereous Tit <i>Parus cinereus</i>	20	36	28	30	33	32	27	33	2.7	2.5	2.6	2.6	2.3	2	2.5	2.4
Red-vented Bulbul <i>Pycnonotus cafer</i>	49	48	56	55	50	56	52	53	5.8	3.5	3.6	3.7	3.4	4.4	4.3	3.9
Red-whiskered Bulbul <i>Pycnonotus jocosus</i>	40	47	63	64	61	68	55	60	3.3	3.2	3.6	2.8	3.2	2.8	3.4	2.9
White-browed Bulbul <i>Pycnonotus luteolus</i>	21	18	29	24	20	26	23	23	4.6	2.9	3.7	3	3	2.2	3.8	2.7
Green Leaf Warbler <i>Phylloscopus nitidus</i>	0	0	0	0	2	0	1	0					1.5		1.5	
Greenish Leaf Warbler <i>Phylloscopus trochiloides</i>	2	0	3	0	8	0	4	0	1		1		1.3		1.1	
Booted Warbler <i>Iduna caligata</i>	32	0	40	0	30	0	34	0	3.2		5.4		2		3.5	
Sykes's Warbler <i>Iduna rama</i>	15	0	2	0	20	0	12	0	2		1		1.2		1.4	
Paddyfield Warbler <i>Acrocephalus Agricola</i>	5	0	2	0	2	0	3	0	1		1.5		1		1.2	
Blyth's Reed Warbler <i>Acrocephalus dumetorum</i>	24	0	24	0	27	0	25	0	1.8		2.3		1.7		1.9	
Clamorous Reed Warbler <i>Acrocephalus stentoreus</i>	3	0	5	0	5	0	4	0	1.8		2		2		1.9	
Zitting Cisticola <i>Cisticola juncidis</i>	0	3	1	2	2	5	1	3		4.8	2	1.3	2	1.7	2	2.6
Common Tailorbird <i>Orthotomus sutorius</i>	29	48	40	68	46	46	38	54	1.8	2.2	2.6	2	2	1.7	2.1	2
Grey-breasted Prinia <i>Prinia hodgsonii</i>	0	2	1	0	0	0	0	1		1.5	1				1	1.5
Jungle Prinia <i>Prinia sylvatica</i>	2	10	0	5	1	5	1	7	1	2.1		3.4	1	1.3	1	2.3
Ashy Prinia <i>Prinia socialis</i>	47	80	61	87	70	80	59	82	2.4	5.2	3.3	4.3	2.2	3.2	2.6	4.2
Lesser Whitethroat <i>Sylvia curruca</i>	0	0	1	0	0	0	0	0			1				1	
Yellow-eyed Babbler <i>Chrysomma sinense</i>	2	0	0	3	5	2	2	2	3			2.8	4.7	4	3.8	3.4
Oriental White-eye <i>Zosterops palpebrosus</i>	0	0	0	2	0	0	0	1				2.5				2.5
Tawny-bellied Babbler <i>Dumetia hyperythra</i>	1	2	1	2	1	2	1	2	3	2	4	1.7	3	2.5	3.3	2.1
Large Grey Babbler <i>Argya malcolmi</i>	6	4	4	3	4	2	5	3	8.7	4.6	8.2	4.2	6	6	7.6	4.9
Yellow-billed Babbler <i>Turdoides affinis</i>	27	25	33	26	24	24	28	25	9.5	5.3	6.6	5.9	6.8	5.2	7.6	5.5
Asian Brown Flycatcher <i>Muscicapa dauurica</i>	4	0	1	0	4	0	3	0	1		1		1		1	
Indian Robin <i>Saxicola fuscatus</i>	33	35	40	45	40	52	38	44	3.3	3.8	2.4	3.4	2.3	3	2.7	3.4
Oriental Magpie Robin <i>Copsychus saularis</i>	22	31	32	38	35	37	30	35	2	2.4	2.1	1.5	2.1	1.7	2.1	1.9
Tickell's Blue Flycatcher <i>Cyornis tickelliae</i>	3	7	14	7	6	7	8	7	1.2	1.8	1.1	1.2	1.9	1.3	1.4	1.4
Verditer Flycatcher <i>Eumyias thalassinus</i>	0	0	0	0	1	0	0	0					1		1	
Indian Blue Robin <i>Larivora brunnea</i>	0	0	1	0	0	0	0	0			1				1	
Bluethroat <i>Luscinia svecica</i>	0	0	0	0	1	0	0	0					1		1	
Red-breasted Flycatcher <i>Ficedula parva</i>	0	0	0	0	1	0	0	0					1		1	
Blue-capped Rock Thrush <i>Monticola cinclorhyncha</i>	2	0	1	0	1	0	1	0	1.5		1		1		1.2	
Blue Rock Thrush <i>Monticola solitarius</i>	1	0	1	0	0	0	1	0	1		1				1	
Siberian Stonechat <i>Saxicola maurus</i>	0	0	1	0	0	0	0	0			1				1	
Pied Bushchat <i>Saxicola caprata</i>	44	47	50	43	49	48	48	46	3.4	3.6	3	3.1	2.9	2.9	3.1	3.2
Rosy Starling <i>Pastor roseus</i>	21	0	41	0	25	0	29	0	87.5		47.3		40.9		58.6	
Brahminy Starling <i>Sturnia pagodarum</i>	4	6	6	5	3	7	4	6	3	2.1	3.2	2.4	6.2	2.4	4.1	2.3
Chestnut-tailed Starling <i>Sturnia malabarica</i>	6	0	8	0	4	0	6	0	14.5		33.9		20.2		22.9	
Common Myna <i>Acridotheres tristis</i>	82	87	84	89	86	89	84	88	18.9	13.7	15.1	8.9	8	10.6	14	11.1
Jungle Myna <i>Acridotheres fuscus</i>	42	58	60	60	52	56	51	58	11.2	7.2	12.5	6.2	7.7	6.9	10.5	6.8
Jerdon's Leafbird <i>Chloropsis jerdoni</i>	3	2	2	1	2	2	2	2	1.8	1.5	1	2	1.5	2	1.4	1.8
Pale-billed Flowerpecker <i>Dicaeum erythrorhynchos</i>	50	64	48	67	52	56	50	62	3.1	3.7	3.5	3	2.5	2.4	3	3
Purple-rumped Sunbird <i>Leptocoma zeylonica</i>	64	66	59	66	64	70	62	67	4.1	3.4	4.7	3	3.4	2.5	4.1	3
Purple Sunbird <i>Cinnyris asiaticus</i>	45	19	45	11	39	23	43	18	2.7	1.8	3.7	1.5	1.9	1.4	2.8	1.6
Western Yellow Wagtail <i>Motacilla flava</i>	7	0	11	0	14	0	11	0	9.2		15		8.3		10.8	
Grey Wagtail <i>Motacilla cinerea</i>	3	0	7	0	11	0	7	0	1.2		2		3.1		2.1	
White Wagtail <i>Motacilla alba</i>	1	0	6	0	7	0	5	0	1		3.2		4.8		3	
White-browed Wagtail <i>Motacilla maderaspatensis</i>	11	11	17	11	17	13	15	12	2.5	2	2.2	1.9	1.7	2.4	2.1	2.1
Paddyfield Pipit <i>Anthus rufulus</i>	5	1	1	5	2	3	3	3	2.3	1	1	1.8	3	2.5	2.1	1.8
Tree Pipit <i>Anthus trivialis</i>	0	0	1	0	1	0	1	0			11		1		6	
House Sparrow <i>Passer domesticus</i>	10	20	17	21	17	16	15	19	37.2	25.7	16.4	7	5.7	7.4	19.8	13.4
Streaked Weaver <i>Ploceus manyar</i>	0	2	1	3	0	2	0	2		10.5	6	3.8		18.5	6	10.9
Baya Weaver <i>Ploceus philippinus</i>	0	19	0	11	0	14	0	15		15.5		14.1		13.7		14.4
Red Munia <i>Amandava amandava</i>	1	1	2	0	2	4	2	2	8	2	3.5		14	4.2	8.5	3.1
Indian Silverbill <i>Euodice malabarica</i>	8	12	10	17	14	22	11	17	5.5	4.8	6.6	4.8	8.3	6.9	6.8	5.5
White-rumped Munia <i>Lonchura striata</i>	0	1	2	2	2	3	1	2		4	5.5	4.3	6.3	2.2	5.9	3.5
Scaly-breasted Munia <i>Lonchura punctulata</i>	1	42	5	47	3	39	3	43	7	7.7	7.8	4.3	4.5	5.4	6.4	5.8
Tricoloured Munia <i>Lonchura malacca</i>	2	8	0	10	2	11	1	10	6	5.8		3.8	3	6.5	4.5	5.4

# Gadhi-Siraichuli—An important bird and biodiversity area in Nepal under serious threat

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## Abstract

Gadhi-Siraichuli, which lies in the Chepang Hills in the Mahabharat Range of central Nepal, Chitwan District, is one of 37 Important Bird and Biodiversity Areas (*henceforth*, IBAs) identified in Nepal. It supports significant populations of bird species in the Sino-Himalayan subtropical forest biome as well as four globally threatened, two globally near-threatened and 20 nationally threatened species. The IBA includes the largest extent and the highest quality of subtropical mixed broadleaved forest now known to remain in Nepal. A new road that is now under construction seriously threatens these forests. Local people are objecting strongly to the road construction because it will disrupt their only water supply and result in landslides. Another road, which is far less damaging to forest diversity already exists. The full attention and support of conservation organisations and independent conservationists in Nepal is urgently sought to counter these threats.

## Introduction

Gadhi-Siraichuli is one of 37 Important Bird and Biodiversity Areas identified in Nepal (Bird Conservation Nepal, Department of National Parks and Wildlife Conservation, Department of Forests and Soil Conservation *In press*; *henceforth*, BCN, DNPWC and DoFSC). It lies in the Chepang Hills in the Mahabharat Range of central Nepal, Chitwan District (27.80–27.74°N, 84.57–84.65°E). The area covers around 37.65 sq. km. Siraichuli (1,945 msl) is the highest point in the district (Fig. 1). Above 1,000 msl the principal vegetation is dense subtropical mixed broadleaved forest with a well-developed understorey, and climbers, and epiphytes [76]. It comprises both, the largest extent, and the highest quality of this forest type now known to remain in Nepal. Tropical broadleaved forest, mainly of *Sal Shorea robusta* grows between 250 and 1,000 msl. Parts of the area are cultivated and abandoned terraces partly overgrown with shrubs occur widely. The area is thinly populated—mainly by the Chepang tribe.

## Methods

Members of the Bird Education Society, an NGO based in Sauraha, Chitwan National Park Buffer Zone ([www.besnepal.org/](http://www.besnepal.org/)), have been visiting Gadhi-Siraichuli regularly from May 2002 up to June 2019 and the study is ongoing. They have covered over half the area, including the best quality forest areas. A bird checklist, annotated with species' status, comprising 238 species, was compiled in 2004 based on survey work carried

out up till that year (Bird Education Society 2004). Since then, bird-watchers and ornithologists from the Bird Education Society (HSB, BB, TRG, TBC, CI, RK, and HS) have made several annual visits, up to 2019, in March–May (spring), June–August (summer), and November–February (winter), and a number of species has been added (Appendix). Species were identified using Grimmett *et al.* (1999, 2011). No formal census was conducted, and, hence, abundance measures are not available; however, seasonality, breeding, and rarity status are indicated based on casual observations. Global and national threat status and biome restricted species are also listed. Observations on butterflies and mammals, to date, consist of casual observations and are far from complete.

Formal scientific biological surveys are planned in November 2019 and March and November 2020 by *Objectif Sciences International*, a Geneva-based NGO, under its biodiversity and conservation biology program called *Biodiversita*. The aim of the project in Gadhi-Siraichuli is to conduct participatory biodiversity surveys together with national biologists and conservationists to facilitate the process towards effective conservation of the IBA (Sylvain Allombert, *in litt.*, e-mail dated 05 December 2018). This paper is intended as a baseline for the avian data for the upcoming biological surveys.

## Results

Up to February 2019, a total of 318 bird species had been recorded in the Gadhi-Siraichuli IBA. Considering its biogeographic



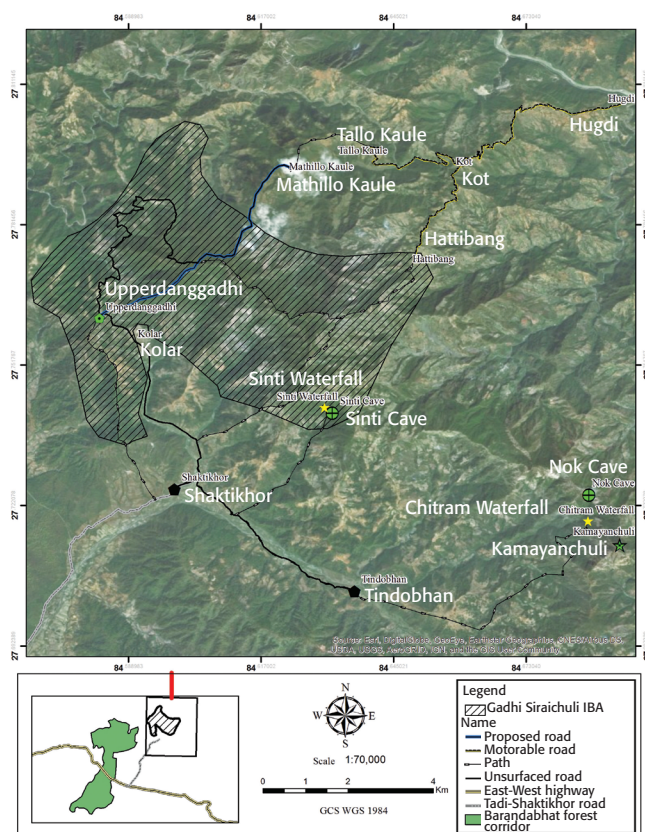


Fig. 1. Location of Gadhi-Siraichuli IBA in Nepal. Credit: Zoological Society of London Nepal office



Carol Inskipp

76. Extensive subtropical mixed broadleaved forest in the Gadhi-Siraichuli Important Bird and Biodiversity Area.

position in Nepal and the lack of birding in certain months of the year, and vagrants, we expect a total species richness of about 400–450 species.

### Qualification as an Important Bird and Biodiversity Area Globally Threatened Species

Grey-crowned Prinia *Prinia cinereocapilla*: Gadhi-Siraichuli holds a significant population of this globally threatened species, assessed as Vulnerable (BirdLife International 2019). Grey-crowned Prinia is mainly confined to protected areas in Nepal and this IBA is only the second locality outside the protected area system where it has been recorded in the country (Baral *et al.*

2018). The species is listed in the first checklist of the IBA (Bird Education Society 2004) and has been regularly recorded since; it probably breeds here. On 10 February 2019, for example, five to six individuals were recorded between 500 and 1,100 msl (Giri *et al.* 2019). Within protected areas, the species is strongly associated with *Themeda* grassland, which often grows close to mature sal or mixed broadleaved forests (Baral 2001, 2002). In the Gadhi-Siraichuli IBA the species has been recorded in *Themeda* grassland, which grows amongst bushes on degraded slopes, close to sal and tropical mixed broadleaved forest.

Three other globally threatened species have been recorded (BirdLife International 2019). Indian Spotted Eagle *Clanga hastata* (Vulnerable) is probably a rare visitor; it breeds close to the southern part of the IBA in Chitwan National Park. Greater Spotted Eagle *Clanga clanga* (Vulnerable) and Steppe Eagle *Aquila nipalensis* (Endangered) are passage migrants and possibly also winter visitors. In addition, two globally near-threatened species have been recorded: Red-breasted Parakeet *Psittacula alexandri* and Alexandrine Parakeet *P. eupatria*.

### Restricted-range species

Spiny Babbler *Acanthoptila nipalensis*: Gadhi-Siraichuli supports a significant population of this species, Nepal's only endemic bird [77]. In May 2016, individuals were seen carrying food, indicating they bred in the area (Baral *et al.* 2018). The Spiny Babbler is also a restricted-range species belonging to the Central Himalayas Endemic Bird Area. The abandoned terraces of the Chepang tribe form important bird habitats for this species. Gadhi-Siraichuli may potentially hold a higher population of Spiny Babblers than any of the other Nepal IBAs, but this needs to be established by formal studies.



Sagar Giri

77. Spiny Babbler is Nepal's only endemic bird and is common on Chepang terraces in the Gadhi-Siraichuli Important Bird and Diversity Area.



### Biome-restricted assemblages

The extensive subtropical broadleaved forests in this IBA support 69% (38 of 55) of the characteristic species of the Sino-Himalayan subtropical forest biome that breed in Nepal; this was a criterion for its qualification as an IBA (BCN, DNPWC and DoFSC in press) (see Table 1).

**Table 1.**

Species	Global Status	National Status
Mountain Imperial Pigeon <i>Ducula badia</i>		CR
Himalayan Vulture <i>Gyps himalayensis</i>	NT	VU
Indian Spotted Eagle <i>Clanga hastata</i>	VU	VU
Greater Spotted Eagle <i>Clanga clanga</i>	VU	VU
Steppe Eagle <i>Aquila nipalensis</i>	EN	VU
Common Barn Owl <i>Tyto alba</i>		VU
Red-headed Trogon <i>Harpactes erythrocephalus</i>		EN
Red-breasted Parakeet <i>Psittacula alexandri</i>	NT	VU
Alexandrine Parakeet <i>Psittacula eupatria</i>	NT	
Blue-naped Pitta <i>Hydrornis nipalensis</i>		EN
Hooded Pitta <i>Pitta sordida</i>		VU
Little Spiderhunter <i>Arachnothera longirostra</i>		CR
Black-headed Bunting <i>Emberiza melanocephala</i>		VU
Sultan Tit <i>Melanochloa sultanea</i>		EN
Grey-crowned Prinia <i>Prinia cinereocapilla</i>	VU	CR
White-throated Bulbul <i>Alophoixus flaveolus</i>		EN
Black-chinned Yuhina <i>Yuhina nigrimenta</i>		VU
Lesser Necklaced Laughingthrush <i>Garrulax monileger</i>		VU
Greater Necklaced Laughingthrush <i>Garrulax pectoralis</i>		VU
Silver-eared Mesia <i>Leiothrix argentauris</i>		EN
Red-faced Liocichla <i>Liocichla phoenicea</i>		CR

### Nationally threatened species

A total of 20 nationally threatened species has been recorded, but the Mountain Imperial Pigeon *Ducula badia* has not been recorded since 2004 (Table 1).

This is the only known locality for Red-faced Liocichla *Liocichla phoenicea*, a characteristic species of the Sino-Himalayan subtropical forest, and was rediscovered here in 2016 (Baral *et al.* 2018). It has been assessed as Critically Endangered, nationally, because of its small population size and because it is currently only known from this locality in Nepal (Baral *et al.* 2018).

The other species in Gadhi-Siraichuli, assessed nationally as Critically Endangered, the Little Spiderhunter *Arachnothera longirostra*, is regularly recorded; in recent years, singles were recorded on 22 May 2016 (Baral *et al.* 2018), and on 08 February 2019 (Giri *et al.* 2019).

Five species recorded in the IBA have been assessed as nationally Endangered (Inskipp *et al.* 2016). These include the Blue-naped Pitta *Hydrornis nipalensis*, which was found breeding in May 2016 (Hathan Chaudhary & Ramesh Chaudhary *verbally* in May 2018) and the White-throated Bulbul *Alophoixus flaveolus*: both species are characteristic of the Sino-Himalayan subtropical zone. Other endangered species are: the Red-headed Trogon *Harpactes erythrocephalus* [78], which is regularly recorded, e.g., four were found on 07 February 2019 (Giri *et al.* 2019); the Silver-eared Mesia *Leiothrix argentauris*, which is also regularly recorded, for instance, six in May 2016 (Baral *et al.* 2018), over 100 birds seen together on 09 February 2017 (Giri *et al.* 2017), and 40 in a flock on 07 February 2019 (Giri *et al.* 2019); and the Sultan Tit *Melanochloa sultanea*, which is rare: records include single birds seen on 07 and 08 February 2019 (Giri *et al.* 2019).



Utsab Jung Thapa

78. Red-headed Trogon, a nationally Endangered bird, is regularly recorded in Gadhi-Siraichuli.

### Other wildlife

Casual surveys have recorded fifteen mammal species, including Common Leopard *Panthera pardus*, which is very rare, Black Giant Squirrel *Ratufa bicolor*, and Assamese Macaque *Macaca assamensis* (BCN, DNPWC and DoFSC, in press). There has been no formal documentation of small mammals, reptiles, amphibians, or fresh water fishes. A total of 56 butterfly species has been recorded (TBMG) but this is incomplete at this point in time and formal surveys are needed for all insect fauna.

Gadhi-Siraichuli is an important functional north–south link for Chitwan National Park and Buffer Zone within the highly biodiverse Terai Arc Landscape and Chitwan Annapurna Linkage: two landscape level initiatives identified and prioritized by the government of Nepal for conservation (WWF 2019a, b). This IBA lies directly to the northward of the Barandabhar Corridor Protected Forest, further highlighting its value for conservation. Barandabhar connects the Chitwan National Park, through its buffer zone, to the mid-hills of which Gadhi-Siraichuli is an important segment. As Nepal's premier wildlife site, Chitwan's best connectivity is currently recognized through this area of forest. Therefore, the position and the intactness of the forest are significant reasons for its protection.

### Land management

Gadhi-Siraichuli is outside the network of protected areas. There are seven community forests (*henceforth*, CF): Amalachuri, Janapragati, and Jamuna CFs on the south-eastern side of the IBA, Jharana CF and Sampharang CF on the southern side, Batauli CF on the south-eastern side, and Ajambari CF on the northern side.

The main inhabitants, the Chepang people, followed a nomadic lifestyle until late into the twentieth century. Living off the rich forests of the region as hunters and gatherers, their lives were inextricably intertwined with the local environment. A variety of external forces, including the immigration of new ethnic groups, forced the Chepang to take up a more sedentary life based upon simple agriculture. However, due to the steep terrain of their homeland, agricultural productivity is limited and the Chepang people are still dependent on gathering wild food (Bird Education Society 2004; Karmacharya 2015).



## Threats

The construction of a new road was started in May 2019 and is posing a serious threat to the subtropical broadleaved forests of Gadhi-Siraichuli. No Environmental Impact Assessment (*henceforth*, EIA) has been carried out on the damage that this road will cause. The planned route is from Mathillo Kaule village towards Chisapanitar (Fig. 2), the most important area for birds in Gadhi-Siraichuli, the only known locality for Red-faced Liocichla in the entire country, and vital habitat for all the nationally threatened forest breeding species. Beyond Chisapanitar the planned route will proceed down a steep slope, covered in subtropical broadleaved forest, to Gadhi village. This section of the road will be at high risk of erosion and landslide [79]. The people of Gadhi village are deeply concerned about the risk of landslides, and by the fact that the road will disrupt their only water source; the planned route of the road would cross water pipes leading down the mountainside and through the forest to the villages (Inskipp & Karmacharya 2019). The condition of the local watersheds will determine the fate not only of wildlife that migrate through the Barandabhar Corridor Forest but also of people living directly



Prem Thapa

79. Road construction cutting through a section vulnerable to erosion and landslides.

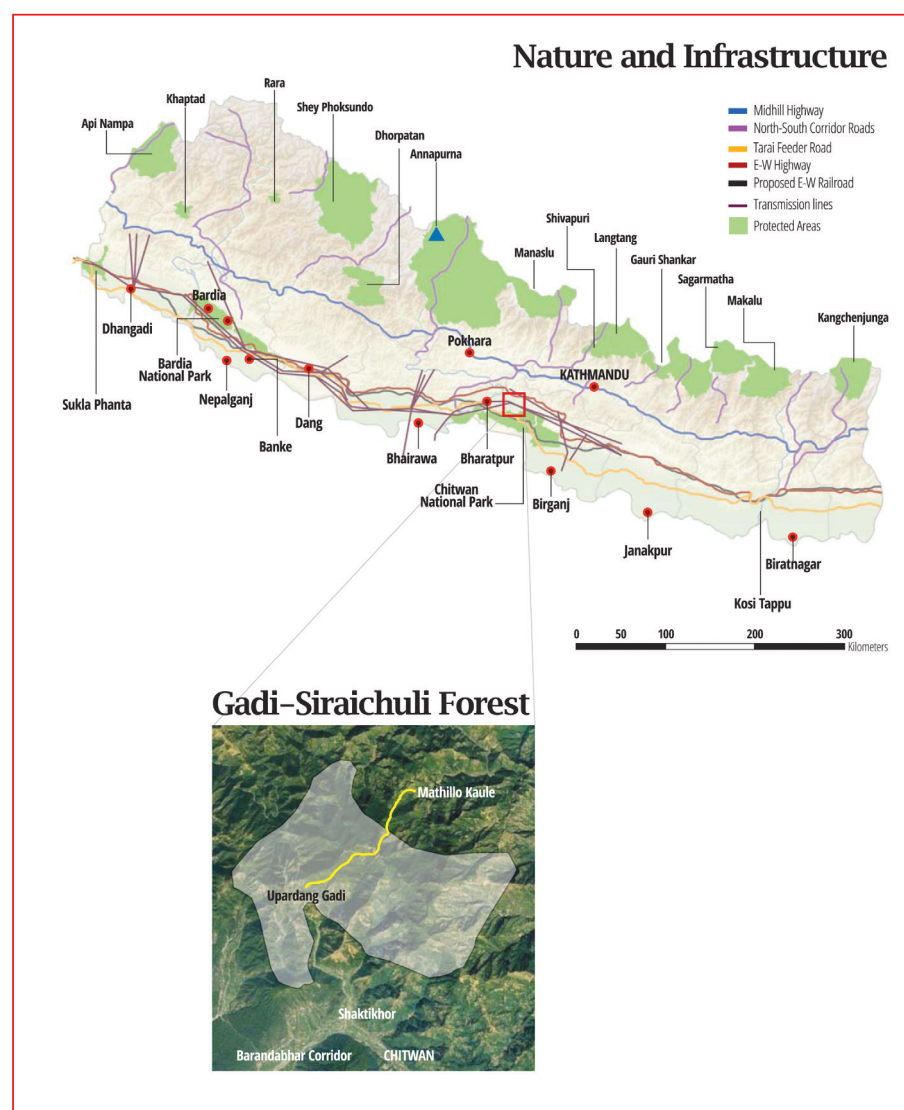


Fig. 2. Map of Gadhi-Siraichuli IBA with proposed road construction. Credit: The Nepali Times

below the watersheds—in terms of water availability and how that will seriously affect their livelihoods. The new road is only a short cut, and an alternative route, which is somewhat longer, but has far fewer adverse effects on forest biodiversity, exists. Written objections and personal representations pertinent to the new road have been made to all the relevant authorities in Nepal; the construction was successfully stopped in June 2019, by the Nepal government Ministry of the Environment, as they had been alerted to the fact that no EIA had been carried out. However, the forest remains seriously at risk until it has legal protection, perhaps, as a Conservation Area, or a Protected Forest of Nepal.

Conservation awareness amongst local communities is low. Hence, hunting, trapping, and forest encroachment are the other main threats. Although the Chepang tribe has become agrarian nowadays, members continue to hunt game birds, which are now rare in Gadhi-Siraichuli. Kalij Pheasant *Lophura leucomelanos* is especially favoured, while pigeons and doves are rare/uncommon considering the high-quality broadleaved forests in the IBA, and are also probably hunted. In addition, children collect young birds from nests for pets (Karmacharya 2015).

A quarry lies close to the IBA's southern boundary, very near to the main site where the Grey-crowned Prinia has been regularly recorded. The quarry increases the risk of landslides and erosion, which would threaten both, wildlife habitats, and local peoples'

livelihoods (Rupendra Karmacharya *in litt.*, to Carol Inskipp, dated 25 February 2017). The quarry has been closed recently, and is currently only a potential threat; however, local opinion is that it could be re-opened at any time.

## Conclusions

Forests of the Gadhi-Siraichuli IBA, especially the subtropical broadleaved forests, are of high quality and are now a rare and declining habitat in Nepal. These forests support large populations of species of threatened and range-restricted birds and are an invaluable resource to the local Chepang communities. These forests face a serious threat due to a road development project, and the full support of conservation organisations and independent conservationists, especially those within Nepal, is urgently needed to counter these threats. All IBAs automatically qualify as Key Biodiversity Areas, which were adopted as priority sites for conservation under IUCN's new policy and strategy. As Nepal is a state member of the IUCN, the Nepal government is obliged to provide a certain level of protection and management for critically important sites like Gadhi-Siraichuli.

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## Appendix

Species	Status
Common Hill Partridge <i>Arborophila torqueola</i>	R
Rufous-throated Hill Partridge <i>Arborophila rufogularis</i>	s,R
Indian Peafowl <i>Pavo cristatus</i>	R
Black Francolin <i>Francolinus francolinus</i>	R
Red Junglefowl <i>Gallus gallus</i>	R
Kalij Pheasant <i>Lophura leucomelanos</i>	R
Rock Pigeon <i>Columba livia</i>	R
Common Wood Pigeon <i>Columba palumbus</i>	WV
Oriental Turtle Dove <i>Streptopelia orientalis</i>	R, WV
Eurasian Collared Dove <i>Streptopelia decaocto</i>	R
Red Collared Dove <i>Streptopelia tranquebarica</i>	R
Spotted Dove <i>Streptopelia chinensis</i>	R
Yellow-legged Green Pigeon <i>Treron phoenicopterus</i>	R
Asian Emerald Dove <i>Chalcophaps indica</i>	R
Mountain Imperial Pigeon <i>Ducula badia</i>	V*
Grey Nightjar <i>Caprimulgus jotaka</i>	R?
Large-tailed Nightjar <i>Caprimulgus macrurus</i>	R
Crested Treeswift <i>Hemiprocne coronata</i>	R
White-rumped Spinetail <i>Zoonavena sylvatica</i>	Vi
White-throated Needletail <i>Hirundapus caudacutus</i>	Vi
Silver-backed Needletail <i>Hirundapus cochinchinensis</i>	Vi
Himalayan Swiftlet <i>Aerodramus brevirostris</i>	R
Alpine Swift <i>Tachymarptis melba</i>	Vi
Nepal House Swift <i>Apus nipalensis</i>	R
Greater Coucal <i>Centropus sinensis</i>	R
Sirkeer Malkoha <i>Taccocua leschenaultii</i>	R
Green-billed Malkoha <i>Phaenicophaeus tristis</i>	R
Pied Cuckoo <i>Clamator jacobinus</i>	SV
Chestnut-winged Cuckoo <i>Clamator coromandus</i>	SV
Asian Koel <i>Eudynamis scolopaceus</i>	R
Banded Bay Cuckoo <i>Cacomantis sonneratii</i>	R
Grey-bellied Cuckoo <i>Cacomantis passerinus</i>	SV
Fork-tailed Drongo Cuckoo <i>Surniculus dicruroides</i>	SV
Large Hawk Cuckoo <i>Hierococcyx sparveroides</i>	SV
Common Hawk Cuckoo <i>Hierococcyx varius</i>	R
Indian Cuckoo <i>Cuculus micropterus</i>	SV
Common Cuckoo <i>Cuculus canorus</i>	SV
Himalayan Cuckoo <i>Cuculus saturatus</i>	SV
Lesser Cuckoo <i>Cuculus poliocephalus</i>	SV
Indian Pond Heron <i>Ardeola grayii</i>	R
Little Egret <i>Egretta garzetta</i>	R
Great Cormorant <i>Phalacrocorax carbo</i>	WV, PM
Little Ringed Plover <i>Charadrius dubius</i>	R, PM
Red-wattled Lapwing <i>Vanellus indicus</i>	R
Eurasian Woodcock <i>Scolopax rusticola</i>	WV
Green Sandpiper <i>Tringa ochropus</i>	WV, PM
Osprey <i>Pandion haliaetus</i>	PM
Crested Serpent Eagle <i>Spilornis cheela</i>	R
Himalayan Vulture <i>Gyps himalayensis</i>	WV, PM
Griffon Vulture <i>Gyps fulvus</i>	PM?



Species	Status
Mountain Hawk Eagle <i>Nisaetus nipalensis</i>	R
Black Eagle <i>Ictinaetus malaiensis</i>	R?
Indian Spotted Eagle <i>Clanga hastata</i>	Vi
Greater Spotted Eagle <i>Clanga clanga</i>	WV, PM
Steppe Eagle <i>Aquila nipalensis</i>	WV, PM
Bonelli's Eagle <i>Aquila fasciata</i>	PM?
Booted Eagle <i>Hieraetus pennatus</i>	WV, PM
Shikra <i>Accipiter badius</i>	R
Besra <i>Accipiter virgatus</i>	R
Northern Goshawk <i>Accipiter gentilis</i>	WV?PM?
Black Kite <i>Milvus migrans</i>	R
Himalayan Buzzard <i>Buteo refectus</i>	WV, PM
Long-legged Buzzard <i>Buteo rufinus</i>	WV, PM
Upland Buzzard <i>Buteo hemilasius</i>	WV, PM
Common Barn Owl <i>Tyto alba</i>	R?
Brown Hawk Owl <i>Ninox scutulata</i>	R
Collared Owllet <i>Glaucidium brodiei</i>	R
Asian Barred Owllet <i>Glaucidium cuculoides</i>	R
Jungle Owllet <i>Glaucidium radiatum</i>	R
Spotted Owllet <i>Athene brama</i>	R
Mountain Scops Owl <i>Otus spilocephalus</i>	R
Collared Scops Owl <i>Otus lettia</i>	R
Red-headed Trogon <i>Harpactes erythrocephalus</i>	R
Common Hoopoe <i>Upupa epops</i>	R, PM
Speckled Piculet <i>Picumnus innominatus</i>	R
Himalayan Golden-backed Woodpecker <i>Dinopium shorii</i>	R
Lesser Golden-backed Woodpecker <i>Dinopium benghalense</i>	R
Rufous Woodpecker <i>Micropternus brachyurus</i>	R
Greater Yellow-naped Woodpecker <i>Chrysophlegma flavinucha</i>	R
Lesser Yellow-naped Woodpecker <i>Picus chlorolophus</i>	R
Grey-headed Woodpecker <i>Picus canus</i>	R
Bay Woodpecker <i>Blythipicus pyrrhotis</i>	s,R
Greater Golden-backed Woodpecker <i>Chrysocolaptes guttacristatus</i>	R
Grey-capped Pygmy Woodpecker <i>Dendrocopos canicapillus</i>	R
Fulvous-breasted Pied Woodpecker <i>Dendrocopos macei</i>	R
Brown-fronted Pied Woodpecker <i>Dendrocopos auriceps</i>	R
Great Barbet <i>Psilopogon virens</i>	R
Lineated Barbet <i>Psilopogon lineatus</i>	R
Blue-throated Barbet <i>Psilopogon asiaticus</i>	s,R
Coppersmith Barbet <i>Psilopogon haemacephalus</i>	R
Blue-bearded Bee-eater <i>Nyctornis athertoni</i>	R
Green Bee-eater <i>Merops orientalis</i>	R, SV
Chestnut-headed Bee-eater <i>Merops leschenaulti</i>	SV
Blue-tailed Bee-eater <i>Merops philippinus</i>	SV
Indian Roller <i>Coracias benghalensis</i>	R
Common Kingfisher <i>Alcedo atthis</i>	R
Pied Kingfisher <i>Ceryle rudis</i>	R
White-throated Kingfisher <i>Halcyon smymensis</i>	R
Collared Falconet <i>Microhierax caerulescens</i>	R
Lesser Kestrel <i>Falco naumanni</i>	PM
Common Kestrel <i>Falco tinnunculus</i>	R, WV, PM
Peregrine Falcon <i>Falco peregrinus</i>	R, WV, PM
Slaty-headed Parakeet <i>Psittacula himalayana</i>	s,R
Plum-headed Parakeet <i>Psittacula cyanocephala</i>	R
Red-breasted Parakeet <i>Psittacula alexandri</i>	R
Alexandrine Parakeet <i>Psittacula eupatria</i>	R
Rose-ringed Parakeet <i>Psittacula krameri</i>	R
Blue-naped Pitta <i>Hydornis nipalensis</i>	s,R? SV?
Hooded Pitta <i>Pitta sordida</i>	SV
Long-tailed Broadbill <i>Psarisomus dalhousiae</i>	R
Small Minivet <i>Pericrocotus cinnamomeus</i>	R
Grey-chinned Minivet <i>Pericrocotus solaris</i>	R?
Long-tailed Minivet <i>Pericrocotus ethologus</i>	WV
Scarlet Minivet <i>Pericrocotus flammeus</i>	R
Rosy Minivet <i>Pericrocotus roseus</i>	s,R?
Large Cuckooshrike <i>Coracina javensis</i>	R
Black-winged Cuckooshrike <i>Lalage melaschistos</i>	s,R

Species	Status
Black-headed Cuckooshrike <i>Lalage melanoptera</i>	SV
Blyth's Shrike-babbler <i>Pteruthius aeralatus</i>	R? WV?
White-bellied Erpornis <i>Erpornis zantholeuca</i>	R
Maroon Oriole <i>Oriolus traillii</i>	s,R
Black-hooded Oriole <i>Oriolus xanthornus</i>	R
Indian Golden Oriole <i>Oriolus kundoo</i>	SV
Ashy Woodswallow <i>Artamus fuscus</i>	R
Bar-winged Flycatcher-shrike <i>Hemipus picatus</i>	R
Large Woodshrike <i>Tephrodornis virgatus</i>	R
Common Woodshrike <i>Tephrodornis pondicerianus</i>	R
Common Iora <i>Aegithina tiphia</i>	R
Black Drongo <i>Dicrurus macrocercus</i>	R
Ashy Drongo <i>Dicrurus leucophaeus</i>	R? SV?
White-bellied Drongo <i>Dicrurus caerulescens</i>	PM?
Bronzed Drongo <i>Dicrurus aeneus</i>	R
Lesser Racket-tailed Drongo <i>Dicrurus remifer</i>	R
Hair-crested Drongo <i>Dicrurus hottentottus</i>	R
Greater Racket-tailed Drongo <i>Dicrurus paradiseus</i>	R
White-browed Fantail <i>Rhipidura aureola</i>	R
White-throated Fantail <i>Rhipidura albicollis</i>	R
Brown Shrike <i>Lanius cristatus</i>	WV PM
Long-tailed Shrike <i>Lanius schach</i>	R
Grey-backed Shrike <i>Lanius tephronotus</i>	WV PM
Rufous Treepie <i>Dendrocitta vagabunda</i>	R
Grey Treepie <i>Dendrocitta formosae</i>	s,R
Red-billed Blue Magpie <i>Urocissa erythrorhyncha</i>	R
Common Green Magpie <i>Cissa chinensis</i>	R
Eurasian Jay <i>Garrulus glandarius</i>	R
House Crow <i>Corvus splendens</i>	R
Large-billed Crow <i>Corvus macrorhynchos</i>	R
Fire-breasted Flowerpecker <i>Dicaeum ignipectus</i>	R? WV?
Little Spiderhunter <i>Arachnothera longirostra</i>	R
Streaked Spiderhunter <i>Arachnothera magna</i>	s,R
Purple Sunbird <i>Cinnyris asiaticus</i>	R? SV?
Fire-tailed Sunbird <i>Aethopyga ignicauda</i>	WV
Black-throated Sunbird <i>Aethopyga saturata</i>	s,R
Green-tailed Sunbird <i>Aethopyga nipalensis</i>	R? WV?
Crimson Sunbird <i>Aethopyga siparaja</i>	R
Golden-fronted Leafbird <i>Chloropsis aurifrons</i>	R
Orange-bellied Leafbird <i>Chloropsis hardwickii</i>	s,R
Rufous-breasted Accentor <i>Prunella strophiate</i>	WV
Baya Weaver <i>Ploceus philippinus</i>	R
White-rumped Munia <i>Lonchura striata</i>	R
Scaly-breasted Munia <i>Lonchura punctulata</i>	R
Tricoloured Munia <i>Lonchura malacca</i>	R?
House Sparrow <i>Passer domesticus</i>	R
Eurasian Tree Sparrow <i>Passer montanus</i>	R
Olive-backed Pipit <i>Anthus hodgsoni</i>	WV PM
Paddyfield Pipit <i>Anthus rufulus</i>	R
Western Yellow Wagtail <i>Motacilla flava</i>	WV PM
Grey Wagtail <i>Motacilla cinerea</i>	R
Citrine Wagtail <i>Motacilla citreola</i>	WV PM
White-browed Wagtail <i>Motacilla maderaspatensis</i>	R
White Wagtail <i>Motacilla alba</i>	WV PM
Common Rosefinch <i>Carpodacus erythrinus</i>	WV
Scarlet Finch <i>Carpodacus sipahi</i>	R?
Brown Bullfinch <i>Pyrrhula nipalensis</i>	R
Dark-breasted Rosefinch <i>Procarduelis nipalensis</i>	WV
Yellow-breasted Greenfinch <i>Chloris spinoides</i>	WV
Crested Bunting <i>Emberiza lathami</i>	R
Black-headed Bunting <i>Emberiza melanocephala</i>	V
Yellow-bellied Fairy-fantail <i>Chelidorhynx hypoxanthus</i>	WV
Grey-headed Canary-flycatcher <i>Culicicapa ceylonensis</i>	R
Yellow-browed Tit <i>Sylviparus modestus</i>	WV
Sultan Tit <i>Melanochlora sultanea</i>	R?
Green-backed Tit <i>Parus monticolus</i>	R
Cinereous Tit <i>Parus cinereus</i>	R
Black-lored Tit <i>Macholophus xanthogenys</i>	R

Species	Status
Zitting Cisticola <i>Cisticola juncidis</i>	R
Striated Prinia <i>Prinia crinigera</i>	s,R
Grey-crowned Prinia <i>Prinia cinereocapilla</i>	R
Grey-breasted Prinia <i>Prinia hodgsonii</i>	R
Common Tailorbird <i>Orthotomus sutorius</i>	R
Thick-billed Warbler <i>Arundinax aedon</i>	WV PM
Booted Warbler <i>Iduna caligata</i>	WV PM
Blyth's Reed Warbler <i>Acrocephalus dumetorum</i>	WV PM
Paddyfield Warbler <i>Acrocephalus agricola</i>	WV PM
Pygmy Wren Babbler <i>Pnoepyga pusilla</i>	R
Scaly-breasted Wren Babbler <i>Pnoepyga albiventer</i>	WV
Northern House Martin <i>Delichon urbicum</i>	PM
Asian House Martin <i>Delichon dasypus</i>	WV PM
Nepal House Martin <i>Delichon nipalense</i>	R
Red-rumped Swallow <i>Cecropis daurica</i>	R
Barn Swallow <i>Hirundo rustica</i>	R SV
Eurasian Crag Martin <i>Ptyonoprogne rupestris</i>	WV PM
Grey-throated Martin <i>Riparia chinensis</i>	R? PM?
Sand Martin <i>Riparia riparia</i>	PM
White-throated Bulbul <i>Alophoixus flaveolus</i>	s,R?
Ashy Bulbul <i>Hemixos flavala</i>	R
Mountain Bulbul <i>Ixos mcclellandii</i>	s,R
Black Bulbul <i>Hypsipetes leucocephalus</i>	s,R
Striated Bulbul <i>Pycnonotus striatus</i>	s,R
Black-crested Bulbul <i>Pycnonotus flaviventris</i>	R
Red-whiskered Bulbul <i>Pycnonotus jocosus</i>	R
Himalayan Bulbul <i>Pycnonotus leucogenis</i>	s,R
Red-vented Bulbul <i>Pycnonotus cafer</i>	R
Yellow-browed Warbler <i>Phylloscopus inornatus</i>	WV?
Hume's Leaf Warbler <i>Phylloscopus humei</i>	WV
Lemon-rumped Warbler <i>Phylloscopus chloronotus</i>	WV
Buff-barred Warbler <i>Phylloscopus pulcher</i>	WV
Ashy-throated Warbler <i>Phylloscopus maculipennis</i>	WV
Dusky Warbler <i>Phylloscopus fuscatus</i>	WV
Common Chiffchaff <i>Phylloscopus collybita</i>	WV
Tickell's Leaf Warbler <i>Phylloscopus affinis</i>	WV PM
Grey-cheeked Warbler <i>Phylloscopus poliogenys</i>	WV?
Green-crowned Warbler <i>Phylloscopus burkii</i>	R
Whistler's Warbler <i>Phylloscopus whistleri</i>	WV
Chestnut-crowned Warbler <i>Phylloscopus castaneiceps</i>	WV
Greenish Leaf Warbler <i>Phylloscopus trochiloides</i>	WV
Blyth's Leaf Warbler <i>Phylloscopus reguloides</i>	WV
Western Crowned Leaf Warbler <i>Phylloscopus occipitalis</i>	WV PM
Grey-hooded Leaf Warbler <i>Phylloscopus xanthoschistos</i>	s,R
Grey-bellied Tesia <i>Tesia cyaniventer</i>	R
Chestnut-crowned Bush Warbler <i>Cettia major</i>	WV
Grey-sided Bush Warbler <i>Cettia brunnifrons</i>	WV
Chestnut-headed Tesia <i>Cettia castaneocoronata</i>	WV
Aberrent Bush Warbler <i>Horornis flavolivaceus</i>	WV
Black-throated Tit <i>Aegithalos concinnus</i>	s,R
Black-chinned Yuhina <i>Yuhina nigrimenta</i>	s,R
Stripe-throated Yuhina <i>Yuhina gularis</i>	WV
Whiskered Yuhina <i>Yuhina flavicollis</i>	R? WV?
Oriental White-eye <i>Zosterops palpebrosus</i>	R
White-browed Scimitar Babbler <i>Pomatorhinus schisticeps</i>	R
Streak-breasted Scimitar Babbler <i>Pomatorhinus ruficollis</i>	R
Rusty-cheeked Scimitar Babbler <i>Erythrogonys erythrogonys</i>	s,R
Grey-throated Babbler <i>Stachyris nigricaps</i>	R
Pin-striped Tit Babbler <i>Mixornis gularis</i>	R
Black-chinned Babbler <i>Cyanoderma pyrrhops</i>	s,R
Rufous-winged Fulvetta <i>Schoeniparus castaneiceps</i>	R? WV?
Puff-throated Babbler <i>Pellorneum ruficeps</i>	R
Nepal Tit Babbler <i>Alcippe nipalensis</i>	s,R
Striated Laughingthrush <i>Grammatoptila striata</i>	R
Himalayan Cutia <i>Cutia nipalensis</i>	s,R
Spiny Babbler <i>Acanthoptila nipalensis</i>	s,R
Lesser Necklaced Laughingthrush <i>Garrulax monileger</i>	R
White-crested Laughingthrush <i>Garrulax leucolophus</i>	R

Species	Status
Spotted Laughingthrush <i>Garrulax ocellatus</i>	WV
Rufous-chinned Laughingthrush <i>Garrulax rufogularis</i>	s,R
Greater Necklaced Laughingthrush <i>Garrulax pectoralis</i>	R
White-throated Laughingthrush <i>Garrulax albogularis</i>	R
Blue-winged Laughingthrush <i>Trochalopteron squamatum</i>	s,R
Streaked Laughingthrush <i>Trochalopteron lineatum</i>	R
Chestnut-crowned Laughingthrush <i>Trochalopteron erythrocephalum</i>	R
Rufous Sibia <i>Heterophasia capistrata</i>	WV
Silver-eared Mesia <i>Leiothrix argentea</i>	R
Red-billed Leiothrix <i>Leiothrix lutea</i>	s,R
Red-tailed Minla <i>Minla ignotincta</i>	WV
Red-faced Liocichla <i>Liocichla phoenicea</i>	s,R
Blue-winged Minla <i>Siva cyanouroptera</i>	s,R
Chestnut-tailed Minla <i>Chrysominla strigula</i>	R
Chestnut-bellied Nuthatch <i>Sitta cinnamoventris</i>	R
White-tailed Nuthatch <i>Sitta himalayensis</i>	R
Velvet-fronted Nuthatch <i>Sitta frontalis</i>	R
Wallcreeper <i>Tichodroma muraria</i>	WV PM
Asian Pied Starling <i>Gracupica contra</i>	R
Chestnut-tailed Starling <i>Sturnia malabarica</i>	R
Common Myna <i>Acridotheres tristis</i>	R
Jungle Myna <i>Acridotheres fuscus</i>	R
Common Hill Myna <i>Gracula religiosa</i>	R
Brown Dipper <i>Cinclus pallasii</i>	R
Oriental Magpie Robin <i>Copsychus saularis</i>	R
White-rumped Shama <i>Kittacinda malabarica</i>	R
Pale-chinned Flycatcher <i>Cyornis poliogenys</i>	R
Blue-throated Flycatcher <i>Cyornis rubeculoides</i>	SV
Rufous-bellied Niltava <i>Niltava sundara</i>	R
Small Niltava <i>Niltava macgrigoriae</i>	s,R
Verditer Flycatcher <i>Eumyias thalassinus</i>	SV
Bluethroat <i>Luscinia svecica</i>	WV PM
Little Forktail <i>Enicurus scouleri</i>	WV
Black-backed Forktail <i>Enicurus immaculatus</i>	R
Slaty-backed Forktail <i>Enicurus schistaceus</i>	s,R
Spotted Forktail <i>Enicurus maculatus</i>	R
Blue Whistling Thrush <i>Myophonus caeruleus</i>	R
Himalayan Rubythroat <i>Calliope pectoralis</i>	WV
Siberian Rubythroat <i>Calliope calliope</i>	WV PM
White-tailed Robin <i>Myiommela leucura</i>	s,WV
White-browed Bush Robin <i>Tarsiger indicus</i>	WV PM
Golden Bush Robin <i>Tarsiger chrysaeus</i>	WV
Himalayan Bush Robin <i>Tarsiger rufilatus</i>	WV
Rusty-tailed Flycatcher <i>Ficedula rufigastra</i>	WV PM
Taiga Flycatcher <i>Ficedula albicilla</i>	WV
Rufous-gorgeted Flycatcher <i>Ficedula strophata</i>	WV PM
Little Pied Flycatcher <i>Ficedula westermanni</i>	R?
Slaty-blue Flycatcher <i>Ficedula tricolor</i>	WV
Blue-fronted Redstart <i>Phoenicurus frontalis</i>	WV PM
Blue-capped Redstart <i>Phoenicurus coerulescapula</i>	WV? PM?
White-capped Water Redstart <i>Phoenicurus leucocephalus</i>	R
Plumbeous Water Redstart <i>Phoenicurus fuliginosus</i>	R
Black Redstart <i>Phoenicurus ochruros</i>	WV PM
Blue-capped Rock Thrush <i>Monticola cinclorhyncha</i>	s,SV
Chestnut-bellied Rock Thrush <i>Monticola rufiventris</i>	R
Blue Rock Thrush <i>Monticola solitarius</i>	WV
Pied Bushchat <i>Saxicola caprata</i>	R
Grey Bushchat <i>Saxicola ferreus</i>	R
Pied Thrush <i>Geokichla wardii</i>	s,SV
Orange-headed Thrush <i>Geokichla citrina</i>	SV
Grey-winged Blackbird <i>Turdus boulboul</i>	s,R
Tickell's Thrush <i>Turdus unicolor</i>	s,R? SV?
Tibetan Blackbird <i>Turdus maximus</i>	WV
Chestnut Thrush <i>Turdus rubrocanus</i>	WV
Black-throated Thrush <i>Turdus atrogularis</i>	WV

KEY: Status: PM Passage migrant; R Resident throughout the year; SV Summer visitor; V Vagrant; Vi Visitor—species has been recorded at any time of the year, is not a passage migrant and is not known to breed; WV Winter visitor; \*Species not recorded since at least 2004; s Characteristic species of Sino-Himalayan Subtropical Forest Biome.



# Status of Asian/Lesser Short-toed Larks *Alaudala cheleensis/rufescens* in India

Catherine Christian

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The Asian Short-toed Lark *Alaudala cheleensis* and the Lesser Short-toed Lark *A. rufescens* are a species pair that is part of a larger complex in the genera *Alaudala* and *Calandrella*. Taxonomic studies are ongoing and there is no last

word yet on the status of the different subspecies under this pair or their exact species limits. Identification pointers, as to a particular species/race, are also not resolved. This note attempts to summarize all known records of this species pair, with the hope



Lesser/Asian Short-toed Larks from India

Row 1: 80–82. Desert National Park, Rajasthan in January 2017.

Row 2: 83–85. Tal Chappar Sanctuary, Rajasthan in November 2018.

Row 3: 86–88. Panchghora, Durgapur Expressway, West Bengal in November 2012.

Row 4: 89–91. Shekhpur-Manjhawli, Haryana in December 2016.





Albin Jacob

Ashwin Viswanathan

Nayana Amin

Lesser/Asian Short-toed Larks from India (contd)

Row 1: 92–94. Desert National Park, Rajasthan in November 2018.  
 Row 2: 95–97. Tal Chappar Sanctuary, Rajasthan in December 2018.

Row 3: 98–100. Tal Chappar Sanctuary, Rajasthan in January 2019.

that a future work would be able to assign these records to the relevant species whenever the taxonomic flux and identification issues are resolved. However, identification of this pair from other Short-toed Larks is also challenging—particularly from the Sand Lark *A. raytal* and Hume's Short-toed- *Calandrella acutirostris*, the Greater Short-toed- *C. brachydactyla* and Sykes's Short-toed Larks *C. dukhunensis*. We give below the key characters that separate these two from all other similar larks. However, there is such considerable variation within species that only a suite of characters would be needed to confirm the species.

1. Three to four primary tips (vs two to three in Sand Lark) clearly visible beyond the longest tertial. All *Calandrella* species have primaries concealed under the tertials.
2. Shorter and stouter bill (vs longer curved bill of Sand Lark).
3. Upperparts are paler, sandy-buff (vs greyer in Hume's); more finely and sparsely streaked than Greater/Sykes's.
4. Dark centres to median coverts less pronounced than Greater/Sykes's.
5. Brown band of fine streaking below.
6. Crown strongly streaked but more finely than Greater/Sykes's.
7. Plain face with very obscure supercilium and pale forehead.
8. Streaking across the breast and extending to the flanks (vs unstreaked or very sparsely streaked in Hume's).

9. Edges to secondary coverts and tertials buff rather than whitish.

### Observations

On 22 January 2017, while birding in Desert National Park (26.70°N, 70.62°E), Jaisalmer, Rajasthan, I saw and photographed [80–82] a mixed flock of birds gathered at a small waterhole. Amongst the group of Greater Short-toed Larks, Bimaculated Larks *Melanocorypha bimaculata*, and House Sparrows *Passer domesticus*, some birds appeared to be unlike the usual lark species seen here. The ID was discussed by the editors of eBird, and also initially confirmed by Tim Inskipp that they were indeed Asian/Lesser Short-toed Larks based on these pointers from the above list: (#1) long primary projection, (#8) streaking right across the breast (and extending to the flanks), (#2) short sturdy bill, (#7) plain face with very obscure supercilium and pale forehead, and a fairly long tail (Inskipp 2018).

Subsequently, on my visit to Tal Chappar Sanctuary (27.58°N, 74.43°E) on 23 November 2018, I came across a similar individual in a mixed flock of larks that mainly consisted of Greater Short-toed Larks. It was also confirmed as an Asian/Lesser Short-toed Lark [83–85] based on the (#1) longer primary projection, (#2) shorter and stouter bill, (#3) fine streaking on the upperparts, and (#8) streaking across the breast, extending to the flanks.

**Table 1.** Distribution range descriptions/maps in standard references for the Indian Subcontinent

No	Reference	Distribution/maps
1	Oates (1890)	Listed for Punjab as <i>Calandrella rufescens persica</i>
2	Baker (1926)	Listed as <i>Alaudula rufescens persica</i> for Sindh, Pakistan but not from India (cf. Ticehurst 1927 for critique on this distribution).
3	Ripley (1982)	Listed as <i>Calandrella rufescens persica</i> , as possibly breeding in Rupshu, winter visitor to Sirsa, and passage migrant in Gilgit.
4	Ali & Ripley (1987)	Listed as <i>Calandrella rufescens persica</i> for Hisar [=Hissar] district, Haryana [then Punjab]
5	Grimmett <i>et al.</i> (1998), Kazmierczak (2000)	Records mapped in Gilgit and north-western Haryana for Lesser and south-east Ladakh for Asian.
5	Grimmett <i>et al.</i> (2011)	Records mapped in north-western Haryana and south-east Ladakh for Asian.
6	Rasmussen & Anderton (2012)	Listed as <i>Calandrella rufescens persica</i> for Hisar [=Hissar], Punjab and Rajasthan. Mapped for north-west Rajasthan, south-west Punjab and north-western Haryana.

**Table 2.** Historical records of Asian/Lesser Short-toed Larks from India and their assessment

No	Year	Locality	References	Remarks
1	Pre-1867	Korzog, Rupshu, Jammu & Kashmir	Hume (1870) Pfister (2004) Stoliczka (1868) Tak <i>et al.</i> (2008)	Specimen taken by Stoliczka and listed as <i>Alaudula pispoletta</i> , though Hume (1870) disputed his identification.
2	Pre-1870 & pre-1890	Sirsa, Haryana	Hume (1870) Sharpe (1890)	Three specimens of <i>Alauda pispoletta</i> were collected in Sirsa District by Nizam Oodeen Khan and sent to Hume. Sharpe (1890) found five specimens from the Hume collection in the NHM, collected in December and January, and identified them as <i>persica</i> . These are, so far, the sole basis for accepting Lesser Short-toed Lark into the 'India Checklist' (Praveen <i>et al.</i> 2016). Between 1884 and 1966, Sirsa was a part of Hisar District. In his critique of Baker (1926), Ticehurst (1927) listed both <i>persica</i> and <i>seebohmi</i> from Sirsa, based on the Hume collection, presumably having re-identified one or more of the five specimens.
3	Pre-1880	Sultanpur, Haryana	Hume (1880)	Adult female collected and identified by Hume as the taxon <i>minor</i> . The whereabouts of this specimen is unknown. <i>A. r. minor</i> is a resident or short-range migrant in North Africa and Arabia and unlikely to occur in India. Without the specimen it will not be possible to determine the true identity.
4	14 November 1879 [Or 1880]	Gilgit, Jammu and Kashmir	Scully (1881)	One was collected and listed under <i>Calandrella pispoletta</i> noting that 'In colour and markings this example is identical with the specimen described and figured by Dresser in the 'Birds of Europe' as <i>C. pispoletta</i> (Pallas); but it is to be noted that, according to Herr v. Homeyer (J. f. O. 1873, p. 197), this form is not the true <i>Alauda pispoletta</i> of Pallas, but should stand as <i>Calandris heinii</i> , [sic] Homeyer.'
5	Pre-2001	Churu District, Rajasthan	Singh <i>et al.</i> (2010)	Actual record untraced. Listed as recorded by Rahmani (1996), Sharma (2001), and by Singh <i>et al.</i> (2010; without details). However, Rahmani (1996) did not list this species and hence quoting that work must be an error, and Sharma (2001) has not been examined. It is not known if the listing of Rajasthan in Rasmussen & Anderton (2012) is based on the same source.

**Table 3.** Recent photographic records of Lesser/Asian Short-toed Larks from India, and their identification

No	Date	Count	Location	State	Observer (s)	Reference	Remarks on Identification
1	18 November 2012	1	Panchghora, Durgapur Expressway	West Bengal	Sandip Das	Das (2012)	The bill shape, long primary projection, and plumage fit this species better than a Sand Lark (TI). Probably a <i>heinei</i> , which is migratory (PA). [86–88]
2	31 December 2016	1	Shekhpur-Manjhawli	Haryana	Hemant Kirola & Nitu S	Nitu (2016)	Darkish, heavily streaked upperparts; streaking on underparts extending to the flanks; long tail; short thick bill, long primary extension beyond the tertials, edges to secondary coverts & tertials buff rather than whitish (TI) <i>A. rufescens/cheleensis</i> and not a Sand Lark based on general coloration, extension of streaking on underparts, longer primary-projection as well as probably stockier bill even compared to <i>adamsi</i> (MS) Looks more like from the <i>cheleensis</i> group, however, tricky to separate (PA) [89–91]
3	22 January 2017	6	Desert National Park	Rajasthan	Catherine Christian	Christian (2017)	Definitely not a Sand Lark. Most likely to be from the <i>heinei</i> group (PA) [80–82]
4	23 November 2018	2	Tal Chappar Sanctuary	Rajasthan	Catherine Christian & Abhijeet Mhaskar	Christian (2018)	Most likely from <i>heinei</i> (PA) [83–85]
5	24 November 2018	2	Desert National Park	Rajasthan	Albin Jacob & Parikshit Khisty	Jacob (2018)	Bill shape, streaked ear coverts, and longer primary projection can be seen in these images. [92–94]
6	29 December 2018	3	Tal Chappar Sanctuary	Rajasthan	Ashwin Viswanathan, Anup Prakash, Bhanu Sridharan, Dayani Chakravarthy & Krishna Murthy	Viswanathan (2018)	'At least 3 individuals with heavy streaking on the breast (up to flanks almost), paler plumage and a small stubby bill.' [95–97]
7	21 January 2019	1	Tal Chappar Sanctuary	Rajasthan	Nayana Amin & Chirag Ahuja	Amin (2019)	[98–100]

Note: MS= Manuel Schweizer; PA=Per Alström; TI=Tim Inskipp.



## Range and distribution

In Table 1 I list the range statements/summaries provided by different works from the nineteenth century till date. I have tried to track the original records that translated into these range statements in Table 2. Specifically, I have discounted references to the taxon *pisipoletta*—collected by Mandelli (Hume 1874), and then by Brooks (Hume 1880) from Sikkim—as almost certainly these refer to Hume's Short-toed Larks and has been ignored by all standard works on Indian ornithology (Ali & Ripley 1987; Grimmett *et al.* 2011; Rasmussen & Anderton 2012).

Apart from that, there are several recent photographic records of this pair from north-western India as well as West Bengal and I list them chronologically in Table 3.

It is clear that there is a high likelihood that more than one race has occurred in India. Racial assignment of *persica* and *heinei* remains unresolved and this may be the leading pointer for resolution of these species for the 'India Checklist' (Praveen *et al.* 2019), though Lesser Short-toed Lark is accepted for now, based on the specimen of *persica* from Sirsa, and the treatment of this race under Lesser Short-toed Lark by Dickinson & Christidis (2014).

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# Status of Red-throated Thrush *Turdus ruficollis* in the Indian Subcontinent, west of Nepal

C. Abhinav & Raj Rawal

Abhinav, C., & Rawal, R., 2019. Status of Red-throated Thrush *Turdus ruficollis* in the Indian Subcontinent, west of Nepal. *Indian BIRDS* 15 (3): 85–88.

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The Red-throated Thrush *Turdus ruficollis* winters in India, and breeds in south-central Siberia, northern Mongolia, and north-western China (Clement & Hathway 2000; Collar 2019). It is considered a regular winter migrant in the Himalayas, from Nepal further westwards into Arunachal Pradesh, and the hills of north-eastern India (Rasmussen & Anderton 2012); barring some isolated records from west of Nepal (Grimmett *et al.* 2011). In this note, we review the status of this thrush by compiling all known records from the Indian Subcontinent, west of Nepal, while describing our own records from Himachal Pradesh.

The Red-throated- and Black-throated *T. atrogularis* Thrushes were, both, once considered distinct species (Oates 1890), but subsequently they were treated as races of a single species, in some works (Baker 1921), while in some, the earlier status quo was retained (Baker 1924). Ali & Ripley (1987) considered them as subspecies. Later they both were included in the Dark-throated Thrush complex (Grimmett *et al.* 1998; Clement & Hathway 2000; Kazmierczak 2000), but now these are again considered distinct (Grimmett *et al.* 2011; Rasmussen & Anderton 2012; Praveen *et al.* 2016; Clements *et al.* 2018; Collar 2019). This taxonomic lumping has, to some extent, masked the real status of the Red-throated Thrush when it was being reported under the Dark-throated Thrush.

On 23 February 2011, CA saw a thrush feeding on damp ground, around a pond in Sthana village, near Shah Nehar Barrage, in the outflow area of Pong Dam, Kangra District, Himachal Pradesh (31.96°N, 75.91°E; c.325 m asl). It had grey upperparts and a whitish belly. It resembled a Black-throated Thrush, which is a common bird in the region, except for the dark rufous colour on the supercilium, throat, breast, and outer tail. It was shy and immediately took cover in the nearby reeds. The bird was photographed and identified as an adult male Red-throated Thrush. One adult male, probably the same individual, was seen on 17 March 2011, along with five Black-throated Thrushes at the same spot [101, 102].

On 25 November 2015, RR heard an unfamiliar call near his house in Rualing, Lahaul and Spiti District (32.61°N, 76.93°E; c.3,200 m asl). He saw a thrush sitting on a *Salix* sp. tree and took few photographs [103]. It stayed there for ten minutes and then flew away. It was not seen again. He posted its image on the Facebook group 'Birds of Himachal', where it was identified as Red-throated Thrush by CA and Ankit Vikrant. It was an adult male with an unmarked dark rufous throat, breast, and supercilium. There was extensive dark rufous in its tail.



C. Abhinav



C. Abhinav

101, 102. Red-throated Thrush at Sthana, Kangra District on 17 March 2011.



Raj Rawal

103. Red-throated Thrush at Rualing, Lahaul and Spiti District on 25 November 2015.

**Table 1.** Other records of Red-throated Thrush from the Indian Subcontinent, west of Nepal

State/ Country	Location	Date	Details	Altitude in m asl*	Reference
Uttarakhand	Sitabani, Ramnagar Forest Division, Nainital District	14 or 15 February 1997	One female bird was photographed; reproduced in Pfister (2004)	900	Otto Pfister <i>pers comm.</i> dated 03 April 2019
	Mandal, Chamoli District	03 February 2019	One adult male photographed	1,490	Prince <i>et al.</i> (2019a)
	Urgam, Chamoli District	04 February 2019	One adult male was seen	2,050	Prince <i>et al.</i> (2019b)
	Mandal, Chamoli District	27 & 28 February 2019	One bird was seen. More photographs of adult male from the same location and month by different observers are available in the Facebook group 'Indian Birds'	1,600	Krishnan <i>et al.</i> (2019a, b)
	Shyamket, Nainital District	28 February 2019	One adult male photographed	1,750	Ashok (2019)
	Mahesh Khan, Nainital District	19 March 2019	One adult male photographed	2,090	Wedderburn (2019)
Himachal Pradesh	Lahaul, Lahaul and Spiti District	Undated	Speke observed large flocks in May–June, in the Western Himalayas, which seems unlikely, as they are known to breed during May–July in Russia (Collar 2019). Perhaps some other species was involved	-	Jerdon (1872); Whistler (1925)
	Chamba town, Chamba District	1879–1884	Two were shot after a snow-storm	950	Marshall (1884)
	Dharamshala, Kangra District	11 February 1923	Whistler saw two individuals after a heavy snowfall	1,585	Whistler (1926)
	Keylong, Lahaul and Spiti District	18 October 1936		3,100	Anonymous (1936a)
	Tsokang Nalla, Lahaul and Spiti District	21 October 1936	Three specimens collected in Lahaul Valley, perhaps from the same trip; now in 'Field Museum of Natural History'	-	Anonymous (1936b)
	Thirot, Lahaul and Spiti District	22 October 1936		2,720	Anonymous (1936c)
	Prashar Lake, Mandi District	29 January 2011	One individual photographed; probably a female / first winter bird, because it had a prominent black malar stripe and dark streaking on a rufous and grey breast. Upperparts and tail are not visible in the photograph	2,600	Goller (2014)
	Nagrota Surian, Pong Lake, Kangra District	09 and 12 March 2017	Two similar looking individuals, with very less rufous in plumage, were ringed during 'Bird Ringing Capacity Building Workshop' by H.P. Forest Department and the Game and Wildlife Conservation Trust, UK. Peter Clement commented on one individual that it was probably an extremely poorly marked first winter female Red-throated Thrush but the possibility of a hybrid couldn't be ruled out. Few sight records of these individuals after ringing from the same place and month.	400	Lakshminarasimha Ranganathan <i>in litt.</i> , e-mails dated 07 and 24 April 2019, Peter Clement <i>in litt.</i> , e-mail dated 16 April 2019
Jammu & Kashmir	Gilgit, Pakistan-occupied Kashmir	January 1878	Specimen of an adult hybrid male	1,500	Biddulph (1881, 1882)
	Kashmir Valley		Occasionally found in winter in the Valley	>1,600	Ward (1906)
	Tso Kar, Rupshu, Ladakh	28 September 1936	One specimen collected; now in 'Field Museum of Natural History'	4,550	Anonymous (1936d)
	Tikse, Ladakh	1976–1982	Was seen occasionally in early spring during the study period	3,250	Williams & Delany (1986)
	Shey, Ladakh	02 December 1981	Sight record	3,250	Mallon (1987)
	Shey, Ladakh	1990–1999	One or two sightings	3,250	Otto Pfister <i>pers comm.</i> , dated 02 April 2019
	Danyore, Gilgit, Pakistan-occupied Kashmir	23 February 2014	One bird photographed; appears to be a hybrid between Red-throated Thrush and Black-throated Thrush	1,500	Shah (2014)
	Spituk, Ladakh	27 November 2017	An individual was photographed	3,200	Lonchey (2017)
Pakistan	Saspul, Ladakh	28 March 2018	One male bird was seen	3,440	Datta (2018)
	Kaghan Valley	February 1911	D. Donald shot one individual	950	Whitehead (1914)
	Kallar, near Rawalpindi	24 February 1926	Specimen of a female bird was collected	500	Whistler (1930)
	Balloki headworks	03 March 1974	One bird was seen	200	Vittery (1994)

\*Where the exact location of the sighting is not available, a rough average altitude of the place is shown in the table.



While researching the past records of the Red-throated Thrush, we found some older records from Himachal Pradesh. These records, along with those from the Indian Subcontinent, westwards of Nepal, are given in Table 1 and shown in (Figs. 1, 2). Several records that only mentioned *T. ruficollis*, without details of subspecies, or a description, from the period when the two species were considered races of one, are not included in the table.

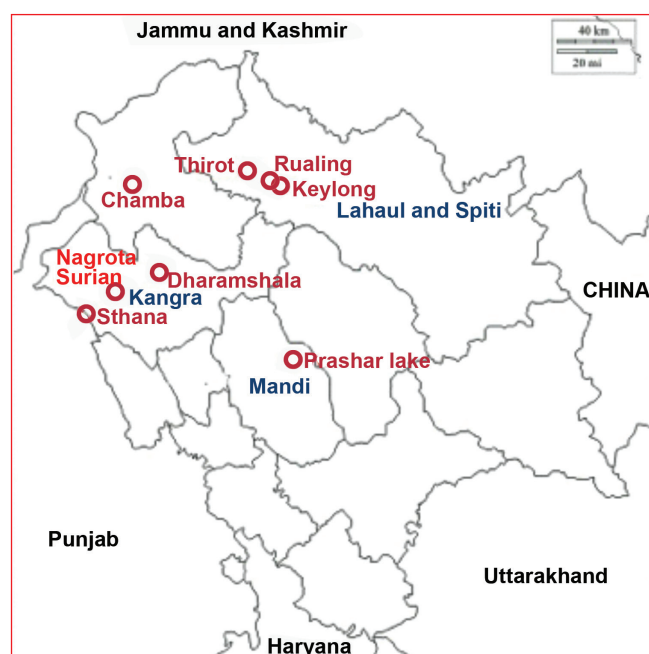


Fig. 1. Records of Red-throated Thrush from Himachal Pradesh (except Tsokang Nalla record).

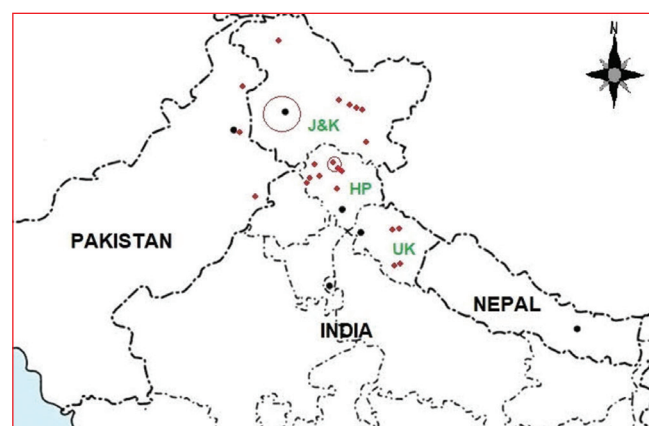


Fig. 2. Records of Red-throated Thrush from the northern Indian Subcontinent. (Red dot=individual sightings; Red circle=showing record from Kashmir Valley and Tsokang Nalla; J&K=Jammu and Kashmir; HP=Himachal Pradesh; UK=Uttarakhand).

## Discussion

Rasmussen & Anderton (2012) mention its regional range and status as, 'Himalayas from Nepal to Arunachal, South Assam Hills; rather common from Bhutan east and scarce elsewhere,' and describe it as a 'straggler, further west to eastern Afghanistan (pushut)'. Grimmett *et al.* (2011) show only two records, west of Nepal, in the distribution map; one from Lahoul and the other one is perhaps Whistler's (1930) Kallar, Rawalpindi record. Grimmett *et al.* (2011) do not show any record from

Uttarakhand, and Jammu & Kashmir. Roberts (1992) mentioned only two records from Pakistan, and Pakistan-occupied Kashmir, one by Biddulph (1881), and another by Whistler (1930). Both of these specimens are presently in The Natural History Museum (Roberts 1992). The records given in Table-1 provide a more wholistic picture of the distribution of this species in the region, clearly indicating that it frequents appropriate habitats all along the western Himalayas.

Red-throated Thrush has been listed for Uttarakhand by Mohan & Sondhi (2017). This inclusion was based on Sharma *et al.* (2003) and on the broad distribution range given by Ali & Ripley (1987) (Sanjay Sondhi *in litt.* e-mail dated 28 Mar 2018). Ali & Ripley (1987) do not specifically mention Uttarakhand region while describing the species' range but mention its distribution as "Winter visitor to the Himalayas from N.W.F.P. eastwards through Nepal, Sikkim, Bhutan and Arunachal Pradesh; the plains of the Brahmaputra, the Garo and Khasi hills, Bangladesh, Nagaland and Manipur." Sharma *et al.* (2003) included it on the authority of Grewal & Sahgal (1995), which is largely based on unconfirmed sightings and best ignored (Manoj Sharma *in litt.* e-mail dated 30 May 2018). Thus all the above inclusions of the species, do not represent any confirmed sighting from Uttarakhand. Perhaps for the same reason, contemporary works of Indian ornithology (Grimmett *et al.* 2011; Rasmussen & Anderton 2012) do not mention any records of the species from Uttarakhand. This makes the previously unpublished record by Pfister (2004), from Sitabani, the first confirmed record for Uttarakhand.

There has been an eruption of Red-throated Thrush sightings from Uttarakhand in 2019, as almost all (except one) records from the state occurred during February and March 2019; after the region experienced heavy snowfall on multiple occasions in winter. Few other sightings (Marshall 1884; Whistler 1926) also occurred after snowfall, as many species descend to lower elevations after snowfall. The Red-throated Thrush generally winters at high altitudes, e.g., between 2,400 and 3,900 m asl in Nepal (Clement & Hathway 2000). Most of the records from the region are also from an altitude of more than 1,500 m asl. However, birds may occur in the foothills, or even plains (Clement & Hathway 2000; Collar 2019), as in the case of the birds recorded from Pong Lake and Pakistan. Neither Dhadwal (2011) nor by den Besten (2004) mention the Red-throated Thrush from Pong Lake, and this record from Sthana, is the first record of this species from Pong Lake and the lowest altitude record from Himachal Pradesh. These two recent records reported by us, are an addition to the handful of records of this species from Himachal Pradesh.

As the Red-throated Thrush has been described as occasional winter visitor in Ladakh (Williams & Delany 1986; Pfister 2004) and Kashmir Valley (Ward 1906), and there are multiple records of this species from the Indian Subcontinent, west of Nepal, it is perhaps not a vagrant to the region, as described by Grimmett *et al.* (2011), and Rasmussen & Anderton (2012), but a more frequent visitor. Some records of Red-throated Thrush might have been missed because they were reported as Dark-throated Thrush. It could also be an overlooked species, as females, or first winter males can be confused with Black-throated Thrush, or easily missed if seen in a flock of Black-throated Thrush. Furthermore, higher altitudes, which are preferred by the species, are less frequently birded during winter. The presence of hybrids between Red-throated Thrush and Black-throated Thrush complicates the situation as they are difficult to identify and our knowledge regarding hybrids is limited.



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# Correspondence

## Ward's Trogon *Harpactes wardi* in Taal-Kharka, East Sikkim, India

Ward's Trogon *Harpactes wardi* is considered Near Threatened under the IUCN Red List of Threatened Species (BirdLife International 2019a). It breeds in the Himalayas from Bhutan westwards through Arunachal Pradesh, northern and eastern Myanmar to southern China and northern Vietnam (Collar 2019). The species is frequently reported from Arunachal Pradesh (Rahmani 2012). However, it is very rare in Sikkim and there have not been any historical specimens, or recent photographs from the region (Ali 1962; Acharya & Vijayan 2010; Rahut 2013).

On 18 May 2018, we were birding and travelling towards Taal-kharka (27.17°N, 88.72°E) in East Sikkim, near the Pangolakha Wildlife Sanctuary, for the day. The forests of Bhutan and West Bengal border the village. It was a tough trek and we occasionally stopped for birds such as Yellow-cheeked Tits *Macholophus spilnotus*, Ferruginous Flycatcher *Muscicapa ferruginea*, Black-throated Sunbird *Aethopyga saturata*, and Black-throated Parrotbill *Suthora nipalensis*. While returning, we heard the call of a bird and, suddenly, a trogon appeared in front of us on a nearby *Castanopsis* sp., tree, at a distance of about c. 100 m. We instantly photographed it [104] and confirmed its identification as a male Ward's Trogon, using Grimmett *et al.* (2011). We were at 2,321 m asl, in Taal-kharka forest, approximately 15 km from the main village.



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104. A male Ward's Trogon at Taal-kharka.

There are very few sight records of Ward's Trogon from the Sikkim Himalayas. It has been reported from Baguwa and Jorethang, South Sikkim District, in October 1996 (Ganguli-Lachungpa 1996); however, these areas are at a lower altitude (<1000 m) than preferred by Ward's Trogon and also of a different biotope. Hence, these records should be treated as tentative even though it is included in Rahmani *et al.* (2016). Rahmani *et al.* (2016) also list this species for Pangolakha Wildlife Sanctuary (BirdLife International 2019b), but without any details. Pangolakha is close to the area where we saw the species, and they must have relied on some unpublished records. Grimmett *et al.* (2019) map three disjunct areas in Sikkim (one each in western, southern, and eastern Sikkim) where the species has been reported; – two of them being the references mentioned

above. The record from western Sikkim could be Majumdar's (2011), but the associated description is very scarce, and the same is not made public in eBird maps. There are no records of this species from the adjoining Singalila National Park in West Bengal where birders frequent.

In any case, this appears to be the first photographic documentation of this species from Sikkim. This is not unexpected as the area is adjacent to Lava, and Neora Valley National Park in West Bengal from where some records *post* 2000 exist (Birdwatchers Society of Bengal 2001; Rahut & Dutta 2013; Rahut 2013; Mitra 2017; Ravindra 2017). It is not clear whether the species occurs further westwards as reports from other parts of Sikkim appear dubious. We propose that the Neora Valley–Pangolakha section to be considered the westwards distribution limit of this species.

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### Nesting of Asian Brown Flycatcher *Muscicapa dauurica* in Goa, India and a review of breeding records from peninsular India

The Asian Brown Flycatcher *Muscicapa dauurica* is known to winter in peninsular India, south of the Vindhya Range. It is a summer visitor to the Himalayan foothills, and in the hills of central India, breeding at 1,200–2,600 m asl. In the Western Ghats and its associated ranges, and probably the Satpura Hills and the Eastern Ghats, a resident (or summer visitor) population breeds (Rasmussen & Anderton 2012). However, due to paucity of reports the breeding range is poorly known.

On 29 April, 2018, at 1700 h, a nesting pair of the Asian Brown Flycatcher was observed in Bhagwan Mahaveer Wildlife Sanctuary, Goa, at c.100 m asl at roughly two kilometers from location 15.38°N, 74.23°E. While both birds were actively hunting insects, by making short aerial sorties, one of the birds sat intermittently in a cup-shaped nest on a completely leafless (unidentified) tree that was about 17–18 m tall [105–107]. The tree stood next to the motorable dirt road that passes through the sanctuary. We observed and photographed the nest from this dirt road, standing a considerable distance away from the site. The nest was situated 11–12 m above the ground, wedged between the main trunk and a branch, like that reported by Sangha *et al.* (2009). We measured the heights with a Hypsometer, and by applying trigonometry. The nest seemed to be made of some unidentified hardened material. Both the birds were singing from time to time and moving around in a radius of about eight to ten meters from the nest site. During our 30 min of observation, substantial activity was observed in the vicinity of the nest. Other birds that were observed, actively feeding, in a 10–15 m vicinity of the nest included three Common Woodshrikes *Tephrodornis pondicerianus*, two Drongos *Dicrurus* sp., two Purple Sunbirds *Cinnyris asiaticus*, a Black-hooded Oriole *Oriolus xanthornus*, and two Lesser Golden-backed Woodpeckers *Dinopium benghalense*.



105



106



107

105–107. Asian Brown Flycatcher *Muscicapa dauurica* sitting and probing its nest, Goa, April 2018.



108

109

110

108–110. Asian Brown Flycatcher calling very close to a nest, Goa, April 2019.

One year later, on 17 and 18 April 2019, we revisited the above mentioned nesting site. At 1130 h on 17 April, we reached the site and found the nest at exactly the same spot. There was almost no bird activity in its vicinity, apart from calls of a Greater Racket-tailed Drongo *Dicrurus paradiseus*. Upon comparing the picture of the 2018 nest with the 2019 nest, we saw that the shape and structure of the nest had changed [108–110]. The 2019 nest contained a greenish lichen that was seen growing elsewhere on the tree. The material of the 2018 nest could not be identified, but it seemed more rigid and overall very brown. It is difficult to say whether the nest was rebuilt. No Asian Brown Flycatcher was seen in the 30 min of observation time. We revisited the same site next morning at around 0900 h. This time we observed two Asian Brown Flycatchers. These birds did not sit on the nest, nor did they approach it. They were observed feeding at some distance (10–15 m), and then they moved away gradually, out of sight, and did not return during the 30 min we were there. The other birds that were observed in a 10–15 m vicinity from the location from which the nest was being inspected included a Bronzed Drongo *D. aeneus*, a Common Iora *Aegithina tiphia*, and two Greater Golden-backed Woodpeckers *Chrysocolaptes guttacristatus*. At 0800 h the same morning, about one kilometre away from the previously mentioned nesting site, we sighted two Asian Brown Flycatchers, one of which was constantly calling. One of the birds was perched on top of an almost leafless tree, and calling, and the other was feeding on a nearby tree [111–113]. On inspecting

the site further, we found a nest that was six to seven meters up on the same tree, right above the path. The height of the tree was about nine to ten meters tall. This nest was quite different from the previous one, and was positioned in the middle of an almost horizontal branch. It comprised greenish lichen and small twigs and was much larger and flatter than the first nest. One of the birds was perching on branches that were about two to three meters from the nest, and was calling. It is highly probable that this pair was building the nest. The other birds that were observed from the location from which the nest was being inspected included two Thick-billed Flowerpeckers *Dicaeum agile*, two Yellow-throated Sparrows *Gymnoris xanthocollis*, three Chestnut-tailed Starlings *Sturnia malabarica*, two Red-rumped Swallows *Cecropis daurica*, and two Bronzed Drongos.



111–113. Nest of Asian Brown Flycatcher; view from opposite sides, Goa, April 2019.

According to Cramp & Perrins (1993), the Asian Brown Flycatcher breeds between 900 m and 1,800–1,900 m asl in hill forests. An account of previous breeding/nesting reports from India can be found in Sangha et al. (2009). Here, to put our observations in perspective we have tabulated a summary of the

observations from all available literature on the breeding of this bird in India, and classified them into two kinds, namely, nesting/mating observations, and juvenile/immature bird observations. The nesting during April, reported here, falls within the period of previous nesting/mating observations and seems consistent with reports of juvenile birds. The altitude of the nesting reported here is 100 m asl, which is on the lower side compared to previous breeding reports. However, considering that juvenile birds have been reported from as low as sea level, one must look out for breeding in such locations as well.

Ours is the first record from the state of Goa and it is important, considering the dearth of breeding/nesting reports and the lack of clarity in the breeding range of this flycatcher in India.

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**Table 1.** Nesting observations

Year	Month	Place	Altitude (m asl)	Reference	Observation, Nest Height
1894	May, June	Vindhya Range, Madhya Pradesh	-	Shelley (1894) (observers: Shelley, Kemp) Baker (1933)	Many nests collected (average height 5.5 m)
1893, 1895	early May	Birchi, North Kanara	-	Davidson, J. A. G. 1898.	4.5 m
1909	June, July	Vindhya Range, Madhya Pradesh	-	Baker (1933). (observer: Betham)	Several nests taken (average height 9 m)
1971	March, April, May	Vandiperiyar-Peermade, Kerala	900	Jackson (1971)	Multiple nests observed "high up in the trees"
1976	April	Periyar Tiger Reserve, Kerala	-	Sashikumar et al. (2011); Observer: Neelakantan	A nest
1991	February	Peechi-Vazani Wildlife Sanctuary, Kerala	-	Sashikumar et al. (2011);	A nest
1992	March	Chimmony Wildlife Sanctuary	-	Observers: Nameer & Raveendran	A nest
1993	March	Peechi-Vazani Wildlife Sanctuary, Kerala	100	Santharam (2003)	17 m
1993, 1994, 1995	April	Wayanad, Kerala	900	Sashikumar et al. (2011); Observer: Uthaman	Same nest reused for three years
2007	March	Aralam Wildlife Sanctuary and Kottiyoor Reserve Forest, Kerala	100 & 200	Sashikumar et al. (2011); Observer: Sashikumar & Palot	Nest-building observed
2007	May	Kurchiyat Range, Kerala	-	Sashikumar et al. (2011); Observer: Sashikumar	Nest with three chicks being fed
2009	June, July	Sitamata Wildlife Sanctuary, Rajasthan	600	Sangha et al. (2009)	5–5.5 m
2017	May	Salem, Tamil Nadu	800	Natarajan et al. (2017)	-
2017	April	Biligiri Rangan Hills, Karnataka	1100	Jacob (2017); Observer: A. Jacob	Mating observation



**Table 2.** Juvenile bird observations

Year	Month	Place	Altitude (m asl)	Reference/Observer	Observation
1971	June	Kerala	—	Jackson (1971)	Adult feeding young
1984, 1990	July	Chennai, Tamil Nadu	0	Santharam (2003); Rau & Santharam (2016)	Juvenile birds with spotted plumage
1991	August	Mannuthy, Kerala	20		Juvenile with spots
1999, 2000	June, July, August	Chittoor, Andhra Pradesh	700		Juvenile birds
2016	August				One immature
1983, 1984	June, August	Hyderabad, Telangana	515	Pittie (2003)	One immature
1986	July	Narsapur, Medak District, Telangana	560		
1988	May	Gir, Gujarat	0	Mundkur (1990)	Adult feeding young
1993	July	Hyderabad, Telangana	515	Pittie (2000)	An immature
2000	June, July	Hyderabad, Telangana	515	Pittie (2000)	An immature
1997	May	Nelliampathy, Kerala	1,000	Praveen (1997); Sashikumar <i>et al.</i> (2011); Observer: Raveendran	One pair and recently fledged young
2007	May	Tholpetty Range, Kerala	900	Sashikumar <i>et al.</i> (2011); Observer: Sashikumar	Two juveniles being fed
2008	July	Chittoor, Andhra Pradesh	700	Champhekar (2008)	One juvenile
2011	July	Thane, Maharashtra	0	Mane (2011)	One immature
2015	July	Top-slip, Tamil Nadu	750	Natarajan <i>et al.</i> (2015)	One juvenile
2015	July	Thrissur, Kerala	0	Polpakkara <i>et al.</i> (2015)	One juvenile
2015	July	Bangalore, Karnataka	800	Sinha <i>et al.</i> (2015)	One juvenile
2015	July	Faridabad, Haryana	200	Gupta (2015); Khanna (2015); Sethi (2016); Kirola (2016); Nanda (2016)	One immature
2016	June	Valparai, Tamil Nadu	1,100	Jeganathan (2016)	One adult feeding two juveniles
2016	June	Pench, Madhya Pradesh	500	Phadke (2016)	One adult, one juvenile
2016	May	Top-slip, Tamil Nadu	750	Amritharaj (2016)	One juvenile
2016	July	Sirumugai, Tamil Nadu	300	Vijayaraghavan (2016)	One juvenile
2016	June	Wayanad, Kerala	950	George <i>et al.</i> (2016)	Two juveniles, one adult
2016	August	Bidar, Karnataka	600	Praveen (2016)	One juvenile
2016	August	Okhla, Delhi	200	Parashar (2016)	One immature
2017	May	Palakkad, Kerala	200	Kallaettumkara <i>et al.</i> (2017)	Two adults, one juvenile
2017	June, July	Bangalore, Karnataka	900	Jacob <i>et al.</i> (2017)	One juvenile
2017	June	Nagpur, Maharashtra	300	Bhattacharjee (2017)	One immature
2017	June	Vikarabad, Telangana	700	Supekar <i>et al.</i> (2017)	One immature
2017	August	Faridabad, Haryana	200	Panjeta (2017)	One immature
2018	July	Palakkad, Kerala	100	Venu (2018)	One juvenile
2018	May	Anaikatti, Tamil Nadu	700	Ignatius (2018)	Two juveniles
2018	July	Dapoli, Maharashtra	100	Khopkar (2018)	Two juveniles

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## Cinereous Vulture *Aegypius monachus* in Mudumalai Tiger Reserve, Western Ghats, and its status in southern India

The Cinereous Vulture *Aegypius monachus* is classified as Near Threatened under the IUCN Red List of threatened species (BirdLife International 2019). The species is a partial migrant, and a nomad (Bildstein 2006). Cinereous Vultures adults are mostly sedentary while the juvenile birds disperse over larger areas (Del Moral & De la Puente 2005). In South Asia the Cinereous Vulture is resident in arid to semi-arid mountains of Pakistan, and at lower altitudes in the Himalayas. It is only a winter visitor in the north-western parts of India and a straggler to peninsular India up to Dhulia, Khandesh, Maharashtra (Ali & Ripley 2007). In this note we record the occurrence of the Cinereous Vulture in Mudumalai Tiger Reserve, Western Ghats, and reviews its status in southern India.

Mudumalai Tiger Reserve (*henceforth*, MTR) (11.53°–11.71°N, 76.37°–76.75°E) lies on the northern flank of the Nilgiri Mountain Range in the Western Ghats and is contiguous with Wayanad Wildlife Sanctuary (*henceforth*, WWS) on its western side, Bandipur Tiger Reserve (*henceforth*, BTR) on its northern side, and Nilgiri North Forest Division (*henceforth*, NNFD) on its southern side. MTR also forms part of the Nilgiri Biosphere Reserve (*henceforth*, NBR).

On 18 March 2019, at 1030 h, we are monitoring the vultures at the constructed waterhole of Sigur range in MTR (11.53°N, 76.72°E; 952m asl). Among the thirty to fifty vultures were White-rumped Vultures *Gyps bengalensis*, Indian Vultures *G. indicus*, and Red-headed Vultures *Sarcogyps calvus*. Along with this flock, a completely dark, black vulture was observed circling above the water hole and suddenly it disappeared from that place. Our camera trap showed a huge, dark-bodied bird, with a uniformly dark blackish plumage, paler on the head and neck, with dark irises, and a bluish-grey cere; confirming that the bird was a juvenile Cinereous Vulture [114]. This bird utilized the waterhole multiple times, for bathing and drinking, till 27 April 2019.



114. Cinereous Vulture near the water hole of Mudumalai Tiger Reserve.

To view our record in perspective, we assessed the status of Cinereous Vultures in southern India (Table 1), and marked the sighting points on a map (Fig. 1).

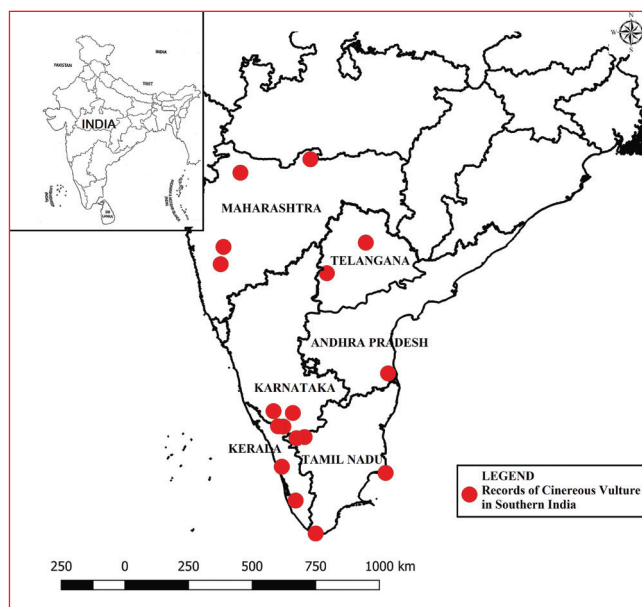


Fig. 1. Sighting records of Cinereous Vulture in Southern Indian Region.

**Table 1.** Consolidated details of Cinereous Vulture records in southern India (Maharashtra, Andhra Pradesh, Karnataka, Kerala, and Tamil Nadu)

Date	Place	State	Reported by	Status of bird	Reference
12 February 1986	Karimnagar	Telangana	B. C. Choudhury	E	Choudhury (1990)
01 December 1988	Kanjirappara, Mallapuzhasry, Pathanamthitta	Kerala	R. S. Shree Kumar	E	Kumar (1991)
11 January 1988	Nelapattu Wildlife Sanctuary, Nellore District	Andhra Pradesh	C. Perennou & V. Santharam	S	Perennou & Santharam (1990)
Last week of December 1992	Khandobachi Pali, Satara District	Maharashtra	Rahul Purandare, Sajeev Nalavade	E	Prasad (2006), Naoroji (2006)
20 December 1994	Kole Wetlands, Enamavu, Thrissur	Kerala	Nameer P. O.	S	Nameer (1994)
21 December 1998	Harangi Dam, Kodagu	Karnataka	S. Subramanya	S	Subramanya (2001)
20 January 2001	Rangareddi	Telangana	Pranay Rao	S	Rao (2006)
20 January 2002	Krishnarajasagar Reservoir, Mysore	Karnataka	T. Shivanand	S	Shivanand (2004)
21 December 2008	Point Calimere Wildlife Sanctuary, Nagappattinam	Tamil Nadu	Gnanskandan K.	P	Gnanskandan (2008)
11 February 2012	Melghat Tiger Reserve, Amravathi	Maharashtra	Nandkishore Dudhe	P	Dudhe (2012)
01 January 2013	Jejuri Rural, Pune	Maharashtra	Yash Deshpande	P	Deshpande (2013)
December 2016–January 2017	Kabini, Naharhole Tiger Reserve	Karnataka	Biddappa	P	Biddappa (2017)
17 February 2017	Thalamalai Reserve Forest, Sathiyamangalam Tiger Reserve	Tamil Nadu	S. Bharathidhasan	P	Bharathidhasan (2017)
21 December 2017	Tholpetty Forest Range, Wayanad Wildlife Sanctuary	Kerala	Vishnu Omanakuttan	P	Rajeev (2017)
28 December 2017	Aasaripallam, Kanyakumari	Tamil Nadu	Raja Lingam & Prasanth	P, E	Tamilbirds (2017)
18 March 2019	Mudumalai Tiger Reserve	Tamil Nadu	Samson A.	P	Present record

Note: E=Exhausted or dead individual; P=Photographed; S=Sighting with description



The Cinereous Vulture has been reported 16 times post 1986, thrice in each decade till 2010, from all southern Indian states, except Goa. All past records are from winter, between December and February (earliest sighting 01 December, last, 17 February), except ours, which is in March–April. Four birds, out of the 17, were cases of exhausted birds. There are reports of the Cinereous Vulture from northern Maharashtra, without explicit sighting details: Vyawahare (1992) reported it was occasionally observed in flight at Dhule and Sakri, and Ali & Ripley (1987), southwards to about the latitude of Dhulia in Khandesh. A record of the Cinereous Vulture from Pondicherry mentioned in Naoroji (2006), and Rahmani (2012), citing Perennou (1988), appears to be an error, as the latter does not list the bird! We admit that we may have missed some records from northern Maharashtra, which was considered within the wintering range of this species, as observers may not have put their records in public circulation.

The Cinereous Vulture appears to be an erratic straggler in southern India. An increase in the number of birders might be the only reason that it has been increasingly reported in this decade.

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## White-tailed Flycatcher *Cyornis concretus* from Dzuleke, Nagaland

On the 21 February 2019, I visited a forest tract in Dzuleke village (25.62°N, 93.94°E), between Khonoma and Poilwa, in Kohima District, Nagaland. Adjacent to the ground that is Dzuleke's picnic-spot I observed a White-tailed Flycatcher *Cyornis concretus* on a bush beside a stream, at an altitude 1,760 m.

Kazmierczak (2000), and Grimmett *et al.* (2011) state that this flycatcher can be distinguished from others by its white belly, white spots on tail feathers when the tail is spread, and pale colouration of legs. It could be misidentified as a White-tailed Robin *Myiomela leucura*, however, the latter male has an entirely dark blue body. I photographed the bird [115, 116], and later identified it as a White-tailed Flycatcher.



115. The White-tailed Flycatcher clearly showing white belly, flank, pale legs, and white splash on spread tail.



116. Another view of the spread tail showing white patches from behind.

Both: Divyendu Ash

The White-tailed Flycatcher is not a widespread species in the Eastern Himalayas; possibly breeding in south-eastern Arunachal and wintering in adjacent Upper Assam and the Patkai Hills. It has been reported from Meghalaya, Manipur, and Mizoram (Ali & Ripley 1987; Grimmett *et al.* 2011; Rasmussen & Anderton 2012; Clement 2019; eBird 2019). It is listed for Nagaland in Choudhury (2001) without any details of status and abundance, as well as Choudhury (2003) with status given as 'unknown'. Its presence in the Patkai Hills and further southwards, in the Mizo Hills might have led to the speculation that it would occur in the Naga Hills as well. Choudhury (2003, 2005) must have been the source of this being listed in several online checklists for Nagaland (Grewal 2010; Lepage 2019).

Hence, this appears to be the first definitive evidence of it occurring in the Naga Hills.

I would like to thank Rajneesh Suvarna for confirmation the identification of the bird on a private WhatsApp Web group, my wife, Nisha Sharma, who pointed out the bird to me, and GoingWild LLP for logistic support during my tour.

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## 'East Siberian Wagtail' (White Wagtail) *Motacilla alba ocularis* in Rajasthan

In the afternoon of 29 January 2019, Frank Dorel, Henk Hendriks, Peter de Rouw, Mahendra Singh, and Roland van der Vliet were enjoying the spectacle of the Demoiselle Cranes *Grus virgo* at Kheechan, Rajasthan, India. Several other species frequented the lake's edge including several White Wagtails *Motacilla alba*. Most of them were Masked Wagtails *M. a. personata* and Siberian White Wagtails *M. a. alba* ('*dukhunensis*'), but one was clearly different. We identified it as an East Siberian Wagtail *M. a. ocularis*

(de Rouw 2019). It was not shy, enabling PdR to digiscope it [117]. We did not realize the importance of the sighting until later in the evening, when, while reviewing our daily sightings against Grimmett *et al.* (1998) and Rasmussen & Anderton (2012), we realized that *ocularis* is only supposed to winter in Northeast-India. From the only digiscoped image available, our bird can be seen to be grey-backed and to have a distinct eye-stripe, amongst other features. The bird is a male but its age cannot be determined with certainty.



Peter W. de Rouw

117. East Siberian Wagtail.

The subspecies *ocularis* breeds in Siberia eastwards into Alaska. It winters from north-eastern India, eastwards to the Philippines (Tyler 2019). However, knowledge of the occurrence, and present distribution, of *ocularis* in India is not well known, probably because many observers do not distinguish between subspecies of White Wagtail. In general, the main field guides to the birds of the Indian Subcontinent generally state its wintering distribution as 'North' and/or 'Northeast-India' (Grimmett *et al.* 1998; Rasmussen & Anderton 2012; Arlott 2015). Ali & Ripley (1998) are more specific, mentioning Assam, Nagaland, Manipur, and Bangladesh as its wintering grounds, as well as a rare occurrence westwards, to Harike Lake, Punjab, based on a bird trapped on 31 March 1985 (Akhtar & Prakash 1989). Vyas (2019) does not mention it for the well-watched Delhi area. Outside its regular wintering areas in north- and north-eastern India, we found only one other Indian record supported by photographs: on 15 October 2018, a bird was present at Mattu, Udupi County, Karnataka (Manimoolle & Lakshmiis 2019). Therefore, our bird would be the first documented record of this subspecies in Rajasthan. We should note though that Alström & Mild (2003) mention *ocularis* to rarely winter west to Rajasthan, based on their own observations although not corroborated by any documentation.

Outside the Indian Subcontinent, *ocularis* is predominantly a spring migrant northwards of India, in both the Kathmandu Valley, Nepal (Proud 1955; Inskipp & Inskipp 1991), and eastern Kazakhstan (Wassink 2010). It has, furthermore, been recorded as a rare winter visitor to Seistan, Iran (Sarudny 1911). Vagrants are increasingly being reported, not only in Japan, Australia, and North America (Alström & Mild 2003; Dunn & Alderfer 2006), but also in the Western Palearctic. After the first Western Palearctic record in the United Arab Emirates on 07 November 2017 (Partridge 2018), others were reported in Cyprus (28 March–14 April 2018), Oman (18 November 2018), Sweden (25 November 2018), and again Cyprus (30 March–11 April 2019), probably due to a greater interest in the identification of White Wagtail subspecies. We hope that this note will result in a higher awareness of this subspecies in the Indian Subcontinent, leading to a better understanding of its occurrence there.



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## Northern Wheatear *Oenanthe oenanthe* in Bhutan

The Northern Wheatear nests widely across northern Eurasia, southwards to the Middle East and North Africa, and its breeding range includes north-eastern Canada and western Alaska. Birds from its north-easternmost breeding grounds cross the Middle East and central Asia en route to winter in Africa (Kren & Zoerb 1997). Alaskan breeding wheatears, fitted with geolocators, have been documented to fly 14,500 km both ways, to and from wintering grounds in northern sub-Saharan Africa (Bairlein *et al.* 2012).

On a birding trip with Rockjumper Birding Tours to Bhutan, in March–April 2019, led by DE and André Bernon, and with Roberson among ten mostly American participants, we spent a couple of days birding the Puna Tsang Chhu from Punakha,

Punakha Province, downstream ten kilometers to Wangdu Phodrang. This stretch of river is now famed for its vagrant waders and waterfowl: Eight of the rarities discussed in Bishop (1999); 38 species of ducks, waders, and gulls mentioned in Tobgay (2017), many of them rare for Bhutan. A primary viewing spot is just north of Wangdu Phodrang, where the river's inlets and islets are just opposite Hotel Pema Karpo. We had excellent waterbirds at this site, including 51 Pallas's Gull *Ichthyophaga ichthyophaga*, on 31 March 2019. Yet, our initial stop on 30 March 2019 was 200 m southwards where barren agricultural fields and bits of scrub were across the road from the Puna Tsang Chhu.

We stopped at those dry fields to look for an Isabelline Wheatear *Oenanthe isabellina*, another Bhutan rarity, which had recently been discovered by others. We relocated and photographed it, and decided to see if other migrant land birds might be present. A nearby scrubby patch had at least 20 Little Bunting *Emberiza pusilla* and two Bluethroat *Luscinia svecica* (rare in Bhutan). Then DE spotted a Northern Wheatear *Oenanthe oenanthe* on an adjacent boulder. He sees many Northern Wheatears annually in his Swedish homeland, and immediately identified it. This female wheatear was smaller and shorter-legged than the Isabelline Wheatear present nearby, and was pale grey from crown to lower back, had contrastingly dark wings, and a very long primary projection. It was creamy-whitish below with a buffy throat and a white supercilium that was broader behind the eye. It disappeared shortly after everyone saw it and some obtained photos [118, 119].



118. Female Northern Wheatear, 30 March 2019, Punakha Province, Bhutan.

D. Roberson



119. Another view of the female Northern Wheatear, 30 March 2019, Punakha Province, Bhutan.

D. Eterius

After scrutinizing the record shots that were obtained on site, we conclude the following: This bird has, prior to its spring migration, renewed a few tertials and greater coverts whereas the rest of the plumage is very worn. This appearance indicates the second calendar year. Northern Wheatears of all ages undergo a partial winter moult and moult limits, as seen in this bird, can possibly be seen in both adult and second year individuals. However, adults are usually more uniform and fresh in plumage. These details suggest the wheatear was on its first spring migration northwards.

We knew at the time that the Northern Wheatear was rare but research showed it to be a first record for Bhutan (Spierenburg 2005; Rasmussen & Anderton 2012; Damle & Inskipp 2014). Given its long migration routes, vagrants have occurred widely on migration, both in North America and outside its usual routes in Eurasia (Roberson 1980; Cramp 1988). Damle & Inskipp (2014) reviewed all previous published reports from the Indian Subcontinent through 2013, and found about a half-dozen verifiable records for India, based on specimens or photos, and one from Nepal. A review of eBird found two recent spring records from north-eastern India: Arunachal Pradesh (14 March 2014) and Sikkim (30 April 2016). Our Bhutan record is geographically between these locations.

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# Letter to the Editor

## Radde's Warbler *Phylloscopus schwarzi* from the Indian Subcontinent—withdrawal of records

Praveen *et al.* (2017) reviewed the sight records for Radde's Warbler *Phylloscopus schwarzi* from Nepal and Bangladesh to assess the evidence for including it in the checklist of the birds of the Indian Subcontinent. The species was accepted into the subcontinental list based upon the two detailed notes of the sight records from Nepal, and multiple individuals recorded in Bangladesh in 1986 for which the context was available. Subsequently, Pamela Rasmussen wrote to Praveen J., about the possibility that those birds were Yellow-streaked Warblers *P. armandi*—a species that could occur in both, Nepal, and Bangladesh, and could look nearly identical, except for its calls. We contacted the observers once more to discuss their notes in this new light. All observers admitted that the Yellow-streaked Warbler was not considered while identifying those birds as Radde's Warblers. The only record for which calls were available was the one from Charali (Nepal) and the observer said that he "... would be surprised (and very disappointed) if I'd identified a bird calling like that as a Radde's back in 1979"; but he agreed that it is "... looking rather thin for a first and is probably best left boxed" (Richard Fairbank, *in litt.*, e-mail dated 15 March 2019). For the Pokhara (Nepal) record, considering the circumstances, the observer felt "... it's best I withdraw the record," (Tony Baker, *in litt.*, e-mail dated 17 March 2019). For the Gulshan (Bangladesh) record, the observer had noted the stubby bill, which is considered diagnostic in literature (vis-à-vis a Yellow-streaked Warbler) but for consistency, was "prepared to withdraw my records" (Bill Harvey, *in litt.*, e-mail dated 29 June 2019).

With a large number of photographers in the region, Radde's—as well as Yellow-streaked Warblers are expected to turn up eventually—until then, we withdraw this species from the list of birds of the Indian Subcontinent.

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