

# Avifaunal Diversity and Conservation Strategies: A Preliminary Survey of Birds in Ramganj Mandi, Rajasthan, India

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**Abstract:** Present study aims to assess and document the avian diversity in and around Ramganj Mandi, a city located at 24° 38' 50" N and 75° 56' 40" E in Kota district, Rajasthan, India. The research focuses on compiling a comprehensive checklist of bird species and evaluating their residential status, while also emphasizing the importance of habitat conservation for sustaining avian populations. total of 75 bird species, representing 45 families, were recorded during the study period. Among these, 59 species were categorized as residents, while 16 species were identified as migratory. Notably, several species of global conservation concern, as per the IUCN Red List, were documented, including the Egyptian Vulture (*Neophron percnopterus*), Sarus Crane (*Grus antigone*), and Painted Stork (*Mycteria leucocephala*). findings highlight the ecological significance of Ramganj Mandi as a critical habitat for both resident and migratory birds. The study underscores the urgent need for conservation strategies, including habitat protection, sustainable land-use practices, and community awareness programs, to mitigate potential threats and ensure the long-term persistence of avian biodiversity in the region.

**Keywords:** avian diversity, species status, conservation, Ramganj Mandi, Rajasthan, India.

## 1. Introduction

Birds are integral components of ecosystems and serve as important environmental bio-indicators, providing insights into the health and stability of habitats they occupy (Blair, 1999). Globally, approximately 9,990 bird species have been recorded, with the Indian subcontinent supporting a diverse avifauna of 1,313 species (Grimmett et al., 2011). The present study marks the first scientific effort to assess the bird fauna of Ramganjamandi, aiming to establish comprehensive baseline data. By understanding the ecological requirements and favorable conditions for various species in this region, the study provides crucial information that will inform the development of targeted conservation strategies to protect the local bird populations and their habitats.

## 2. Study Area

Ramganj Mandi is a prominent city and municipality in the Kota district of Rajasthan, India, geographically positioned at

24° 38' 50" N and 75° 56' 40" E. The city is widely recognized for two major distinctions—it is famously known as the "Stone City" due to its abundant limestone and sandstone reserves, and it is also referred to as the "Coriander City" because of its immense role in the production and trade of coriander seeds. Ramganj Mandi boasts one of the largest grain markets for coriander in India, with a staggering 6,500 tons of coriander seeds arriving on a single day during the peak season. This market serves as a crucial trading center for farmers, traders, and exporters, significantly contributing to both the local and national spice trade. The coriander produced here is known for its high quality, aroma, and strong demand in both domestic and international markets.

Apart from its commercial significance, Ramganj Mandi is also a paradise for nature enthusiasts and bird watchers, owing to its rich avian biodiversity. The region attracts a wide variety of migratory birds, making it a sought-after destination for ornithologists and wildlife photographers. Some of the most notable birdwatching hotspots in and around Ramganj Mandi include: Kumbhakot Village – A serene location known for its natural landscape and a thriving habitat for diverse bird species. Morak Thakur Ji Temple – A religious and historical site that also serves as a peaceful retreat for birdwatchers. Undava Village (Undava Ka Talaab) – A picturesque waterbody that remains a prime location for migratory birds, especially during the winter months when flocks of seasonal visitors arrive, adding to the area's ecological significance. These locations not only enhance the city's scenic beauty but also play a vital role in supporting the regional ecosystem, offering shelter and sustenance to various bird species throughout the year.

## 3. Methodology

The present study was conducted from February 2018 to January 2019 in and around Ramganj Mandi, Kota district, Rajasthan, India. The research covered six study sites: Kherabaad, Kudaila, Satalkhedi, Undava, Banda, and Kumbhkot, selected based on their ecological significance and avian diversity.

Field surveys were conducted continuously for three to four

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days per visit at each site. Observations were carried out twice daily: Morning sessions: From sunrise to 10:00 AM, Evening sessions: From 3:00 PM to sunset Bird surveys were performed using the point count method and direct sighting technique. Two independent observers systematically recorded bird species using binoculars and Canon cameras for photographic documentation, aiding in subsequent species identification. Dominant bird species were documented through photographic plates.

Bird species were identified using standard ornithological field guides, including Ali & Ripley (2007), Grimmett *et al.* (1999) and Amano Samarpan (2006). The residential status of recorded bird species was classified into four categories: Resident (R) Winter Visitors (WV) Summer Visitors (SV) Passage Visitors (PV) The total number of bird species was estimated, and data collection was systematically documented using standardized data sheets to ensure scientific accuracy and consistency.

#### 4. Result

During Present study we observe total 75 species of birds belongs from 45 Different Families in which 59 species are Resident and 16 species are Migratory we observe in Ramganjmandi, Kota, Rajasthan, during our this one year study we captured a number of pictures of birds, from which some are presented in the colored plates Among the resident birds most abundant species were - house sparrows, warblers, lapwings, peafowl, parakeet, pigeon, dove, quail, francolin, egret, coucal, bulbul, myna, owl. The abundant migratory species were- Western yellow wagtail, Southern grey shrike, Ruddy shelduck, Eurasian wryneck, Sarus crane, the ruff, Painted stork, Little grebe, Common teal, Northern, shoveler Greater flamingo. According to International Union for Conservation of Nature (IUCN) most of birds species comes under the very common (VC) category including White throated kingfisher, Indian pond heron, Ashy prinia, Black winged stilt and Brahminy starling *etc.*, the common (C) category includes plum-headed parakeet, Eurasian collard dove, Indian roller, Small, Black drongo, Common sandpiper *etc.*, Occasional (O) includes species, Indian thick-knee, Ruddy shelduck, Zitting cisticola, Common hoopoe, Yellow-footed green pigeon, *etc.*, and the last category Rare (RR) includes species, Painted stork, Greater flamingo, Eurasian wryneck, Northern shoveler, Egyptian vulture.

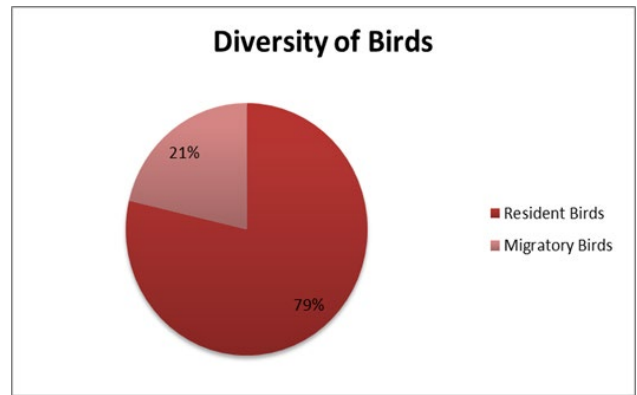


Fig. 2. Representing the residential and migratory status of avian diversity in Ramganj Mandi

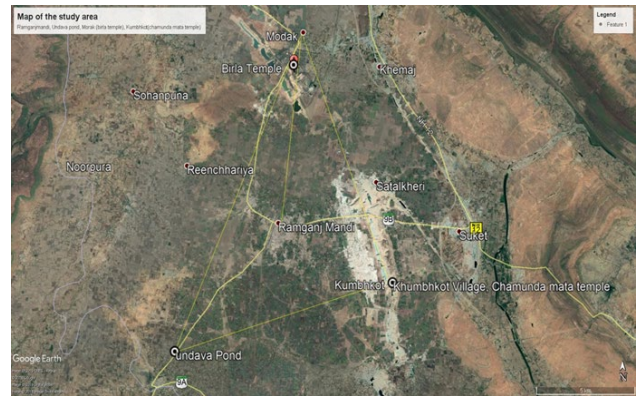


Fig. 3. Google image of study area Ramganj Mandi



Fig. 4. A photographic chart representing the avian diversity of the study area Ramganj Mandi, Kota, Rajasthan

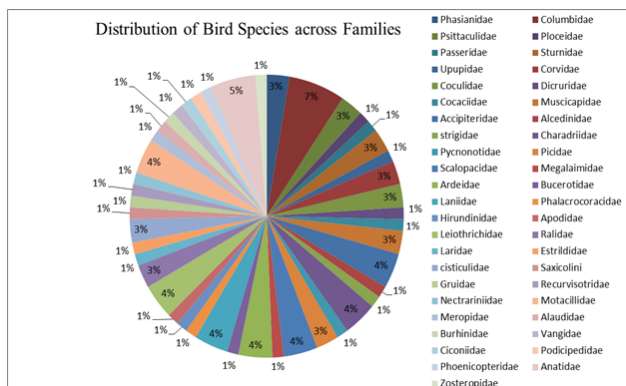


Fig. 1. Representing distribution of bird species across families

Table 1  
Checklist of bird species recorded in Ramganj Mandi

Serial No.	Family	Scientific Name	English Name	Status
1	Phasianidae	<i>Pavo cristatus</i>	Indian Peafowl	R
2	Columbidae	<i>Columba livia</i>	Indian Rock pigeon	R
3	Psittaculidae	<i>Psittacula krameri</i>	Rose ringed parakeet	R
4	Passeridae	<i>Passer domesticus</i>	House sparrow	R
5	Ploceidae	<i>Ploceus philippinus</i>	Baya weaver	R
6	Sturnidae	<i>Acridotheres tristis</i>	Common Myna	R
7	Sturnidae	<i>Sturnus contra</i>	Asian pied starling	R
8	Upupidae	<i>Upupa epops</i>	Common hoopoe	R
9	Corvidae	<i>Corvus splendens</i>	House crow	R
10	Cuculidae	<i>Eudynamis scolopacea</i>	Asian koel	R
11	Dicruridae	<i>Dicrurus macrocerus</i>	Black drongo	R
12	Coraciidae	<i>Coracias benghalensis</i>	Indian roller	R
13	Muscicapidae	<i>Saxicoloides fulicata</i>	Indian robin	R
14	Accipiteridae	<i>Accipiter badius</i>	Shikra	R
15	Alcedinidae	<i>Halcyon smyrnensis</i>	White throated kingfisher	R
16	Strigidae	<i>Athene brama</i>	Spotted owl	R
17	Leiothrichidae	<i>Argya striata</i>	jungle babbler	R
18	Columbidae	<i>Streptopelia senegalensis</i>	Laughing dove	R
19	Charadriidae	<i>Vanellus indicus</i>	Red wattled lapwing	R
20	Pycnonotidae	<i>Pycnonotus cafer</i>	Red vented bulbul	R
21	Corvidae	<i>Corvus culminatus</i>	Indian jungle crow	R
22	Accipiteridae	<i>Neophron percnopterus</i>	Egyptian vulture	R
23	Phasianidae	<i>Francolinus podicerianus</i>	Grey francolin	R
24	Cisticolidae	<i>Cisticola juncidis</i>	Zitting cisticola	R
25	Sturnidae	<i>Sturnia pagodarum</i>	brahmny starling	R
26	Scolopacidae	<i>Actitis hypoleucos</i>	Common sandpiper	M
27	Megalaimidae	<i>Psilopogon haemacephalus</i>	Coppersmith barbet	R
28	Columbidae	<i>Treron phoenicoptera</i>	Yellow-footed green pigeon	R
29	Bucerotidae	<i>Ocyeros birostris</i>	Indian grey hornbill	R
30	Ardeidae	<i>Egretta garzetta</i>	Little egret	R
31	Laniidae	<i>Lanius meridionalis</i>	Southern grey shrike	M
32	Ardeidae	<i>Ardeola grayii</i>	Indian pond heron	R
33	Phalacrocoracidae	<i>Microcarbo niger</i>	Little cormorant	R
34	Hirundinidae	<i>Hirundo smithii</i>	Wire-tailed swallow	R
35	Apodidae	<i>Apus apus</i>	Common swift	R
36	Charadriidae	<i>Vanellus malabaricus</i>	Yellow-wattled lapwing	R
37	Cuculidae	<i>Centropus sinensis</i>	Greater coucal	R
38	Leiothrichidae	<i>Argya malcolmi</i>	Large grey babbler	R
39	Leiothrichidae	<i>Turdoides caudate</i>	Common babbler	R
40	Ardeidae	<i>Ardea alba</i>	Great egret	R
41	Rallidae	<i>Amaurornis phoenicurus</i>	White-breasted waterhen	R
42	Charadriidae	<i>Charadrius dubius</i>	Little ringed plover	M
43	Anatidae	<i>Tadorna ferruginea</i>	Ruddy shelduck	M
44	Muscicapidae	<i>Oenanthe fusca</i>	Brown rock chat	R
45	Laridae	<i>Sterna aurantia</i>	River tern	R
46	Picidae	<i>Jynx torquilla</i>	Eurasian wryneck	M
47	Estrildidae	<i>Euodice malabarica</i>	Indian silverbill	R
48	Cisticolidae	<i>Prinia socialis</i>	Ashy prinia	R
49	Saxicolini	<i>Copsychus saularis</i>	Oriental magpie-robin	R
50	Gruidae	<i>Antigone Antigone</i>	Sarus crane	M
51	Scolopacidae	<i>Calidris pugnax</i>	The ruff	M
52	Recurvirostridae	<i>Himantopus himantopus</i>	Black-winged stilt	R
53	Nectariniidae	<i>Cinnyris asiaticus</i>	purple sunbird	R
54	Motacillidae	<i>Anthus rufulus</i>	Paddyfield pipit	R
55	Laniidae	<i>Lanius schach</i>	Long-tailed shrike	R
56	Meropidae	<i>Merops orientalis</i>	green bee-eater	R
57	Alaudidae	<i>Eremopterix griseus</i>	Ashy-crowned sparrow-lark	R
58	Motacillidae	<i>Motacilla flava</i>	Western yellow wagtail	M
59	Scolopacidae	<i>Tringa tetanus</i>	Common redshank	M
60	Burhinidae	<i>Burhinus indicus</i>	Indian thick-knee	R
61	Vangidae	<i>Tephrodornis pondicerianus</i>	Common woodshrike	R
62	Columbidae	<i>Spilopelia chinensis</i>	Spotted dove	R
63	Columbidae	<i>Streptopelia decaocto</i>	Eurasian collared dove	R
64	Ciconiidae	<i>Mycteria leucocephala</i>	Painted stork	M
65	Podicipedidae	<i>Tachybaptus ruficollis</i>	Little grebe	M
66	Anatidae	<i>Anas crecca</i>	Common teal	M
67	Anatidae	<i>Spatula clypeata</i>	Northern shoveler	M

Serial No.	Family	Scientific Name	English Name	Status
68	Phoenicopteridae	<i>Phoenicopterus roseus</i>	Greater flamingo	M
69	Zosteropidae	<i>Zosterops palpebrosus</i>	The Indian white-eye	R
70	Anatidae	<i>Anser indicus</i>	Bar-headed goose	M
71	Picidae	<i>Dinopium benghalense</i>	Black-rumped flameback	R
72	Rallidae	<i>Gallinula chloropus</i>	Common moorhen	R
73	Accipiteridae	<i>Elanus caeruleus</i>	Black winged Kite	R
74	Motacillidae	<i>Motacilla alba</i>	white wagtail	M
75	Psittaculidae	<i>Psittacula cyanocephala</i>	plum-headed parakeet	R

Legend for status: (R) residence, (M) migratory

## 5. Conclusion and Recommendation

The study recorded a total of 75 bird species from 45 different families, showcasing the rich avian biodiversity of Ramganj Mandi and its surrounding regions. The 59 resident species form the core avifauna of the region, while the 16 migratory species use this habitat seasonally for feeding and resting. By classifying species into very common, common, occasional, and rare categories, this research highlights the status and abundance of birds in the region. Conservation efforts should focus on preserving the wetlands, agricultural fields, and forested areas that support these species. This study contributes valuable data for future ecological monitoring, helping in biodiversity conservation and raising awareness about the importance of bird habitats in Ramganj Mandi. It is necessary to conserve Undwa pond that is the only place where the migratory birds can be seen and studied, the effort should be made to preserve the pond.

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