

EXPLORING AVIAN DIVERSITY IN MANDI DISTRICT, HIMACHAL PRADESH, INDIA: A REVIEW

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ABSTRACT

*Birds have worldwide distribution and contribute crucial role in preserving biological diversity and maintaining environmental health. The Himalayas are famous for its unique biodiversity and terrain. Himachal Pradesh is gifted with rich flora and fauna and situated in the western Himalayas. The current study focuses on the Avian diversity of the Mandi district (Choti Kashi) located in Himachal Pradesh. During the present study, 114 bird species represented by 31 families and 12 orders were reviewed. Order Passeriformes was represented by maximum species diversity. Among the 31 families, a maximum number of species were found in the family Muscicapidae. The migratory status of avian diversity was categorized as either resident or migratory species. According to the IUCN (International Union of Conservation of Nature), 113 species fall under least concern category while the Egyptian vulture (*Neophron percnopterus*) is classified as an endangered species.*

Keywords

Avian Diversity, Mandi, IUCN status, Himachal Pradesh.

INTRODUCTION

The Himalayas contain mountains, valleys and extensive riverine system due to different altitude variation and climatic diversity it harbors unique flora and fauna. From Arunachal Pradesh to Jammu and Kashmir, it extends over a length of 2400km (Rawal et al., 2018; White et al., 2019; Thakur and Banyal, 2023).

Himalayas are divided into Eastern, Central and Western Himalayas and Himachal Pradesh is a part of Western Himalayas, span an area of 55,673 km², with an elevation varies from 350 to 6975 m asl. The geographical coordinates of Himachal ranging from 30° 22'40" and 33° 12'20" N Latitude and 75° 47'55" and 79° 04'20" E longitude. It holds towering snow-laden mountains, Intermediate hills, and lower hills due to which wide variety of flora and fauna inhabit Himachal Pradesh (Radotra et al., 2015; Banyal et al., 2023).

Around 12% of the world's Avian species are inhabited in India belonging to 432 genera, 88 families, and 21 orders. 44% of Indian bird species were reported from Himachal Pradesh, belonging to 81 families and 20 orders (Banerjee et al., 2022; Kaur et al., 2023). Avian species are found worldwide and play a vital role in sustainable Agricultural fields, maintaining Biodiversity and conserving Ecosystem health. Avian populations aids in decoding complex ecological dynamics among various species and their habitats which helps in essential conservation efforts.

The ornithological knowledge of Himachal Pradesh state is mainly based on the work of Anil Mahabal (2000); Besten (2004); Singh and Banyal (2013); Diljeet Singh (2015)²; Paliwal et al. (2019); Praveen Kumar (2021); Maheswaran et al. (2021); Thakur and Banyal (2023); Banyal et al. (2023) Kaur et al. (2023).

Study area:

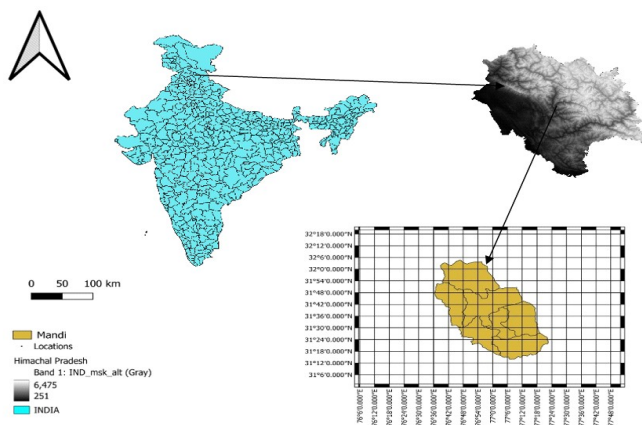


Fig:1- Map of Mandi District of Himachal Pradesh

Mandi, situated at the centre of Himachal Pradesh, spans an area of 3,950 sq. km located between 31° 42'29" N latitude and 76° 55'52" E longitude. Mandi possesses a landscape adorned with snow-loaded peaks and plains which enhances the beauty of Mandi district. Bandali, Nagru, and Shikari Devi are 3 Wildlife sanctuaries of the Mandi district, and the diverse vegetation, climatic conditions, and terrain make this area more suitable for a wide variety of flora and fauna. Many animals like a leopard (*Panthera uncia*), black bear (*Ursus thibetanus*), barking deer (*Muntiacus muntjak*), and Golden mahseer (*Tor putitora*) etc. are recorded from this area. Forest type in Mandi district comprises temperate, deciduous, and sub-tropical varieties making it the best habitat for medicinal plants (Bodh et al., 2018; Verma and Kapoor, 2019, Bargali et al., 2021, Thakur and Banyal, 2023).

Material and Method:

The present study draws upon a variety of literature sources (Research papers and Books), focusing on the avian species found in Mandi district.

Result and Discussion:

During the present study, 114 bird species represented by 31 families and 12 orders were reviewed. Twelve orders are Passeriformes, Columbiformes, Psittaciformes, Coraciiformes, Galliformes, Piciformes, Upupiformes, Bucerotiformes, Cuculiformes, Apodiformes, Strigiformes, and Ciconiiformes. Order Passeriformes was represented by maximum species diversity (Table-1).

Among the 31 families, a maximum number of species were found in the family Muscicapidae. The migratory status of avifauna was classified into migratory and resident species. Out of 114 bird species, 99 were recorded as residents, 11 as summer migrants, and 6 as winter migrants. According to the IUCN (International Union of Conservation of Nature), 113 species fall under least concern category while only the Egyptian vulture (*Neophron percnopterus*) is classified as an endangered species (Table-1).

Order Passeriformes is most dominant order, with highest number of 15 families and around 74 species. Following Passeriformes, the order Coraciiformes exhibits 4 families with 4 species. Piciformes and Ciconiiformes each have 2 families, while Columbiformes, Psittaciformes, Galliformes, Upupiformes, Bucerotiformes, Cuculiformes, Apodiformes, and Strigiformes each have 1 family. Piciformes have 8 species, Columbiformes have 6 species, Ciconiiformes have 5 species, Psittaciformes and Coraciiformes have 4 species each, Galliformes have 3 species, and Apodiformes and Strigiformes have 2 species each, while Upupiformes and Bucerotiformes have 1 species each (Fig-1).

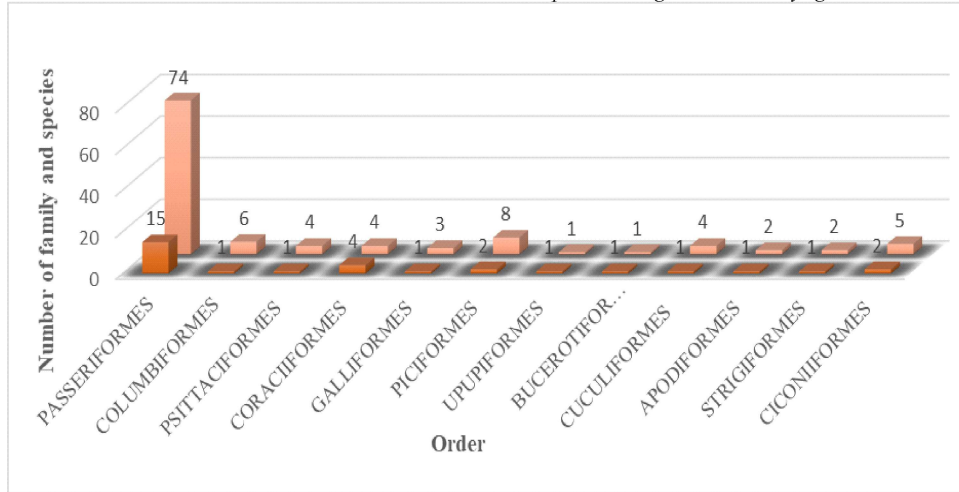


Fig-1: Representing number of family and bird species under different order of Mandi District.

S.No.	Scientific Name	Common Name	Conservation Status (IUCN)	Migratory status
Order: PASSERIFORMES				
Family: Cinclidae				
1.	<i>Cinclus pallasii</i>	Brown Dipper	LC	R
Family: Laniidae				
2.	<i>Lanius schach</i>	Long-tailed Shrike	LC	R
3.	<i>Lanius vittatus</i>	Bay backed shrike	LC	R
Family: Zosteropidae				
4.	<i>Zosterops palpebrosus</i>	Oriental White Eye	LC	R
Family: Cisticolidae				
5.	<i>Prinia hodgsonii</i>	Grey-breasted Prinia	LC	R
6.	<i>Cisticola juncidis</i>	Zitting cisticola	LC	R
7.	<i>Prinia socialis</i>	Ashy prinia	LC	R
8.	<i>Prinia sylvatica</i>	Jungle prinia	LC	R
9.	<i>Prinia inornata</i>	Plain prinia	LC	R
10.	<i>Prinia criniger</i>	Striated Prinia	LC	R

Family: Hirundinidae				
11.	<i>Hirundo rustica</i>	Barn Swallow	LC	R
12.	<i>Riparia paludicola</i>	Plain Martin	LC	R
Family: Nectariniidae				
13.	<i>Nectarinia asiatica</i>	Purple Sunbird	LC	R
14.	<i>Aethopyga siparaja</i>	Crimson Sunbird	LC	SM, R
Family: Pycnonotidae				
15.	<i>Hypsipetes leucocephalus</i> (Gmelin, 1789)	Black Bulbul	LC	R
16.	<i>Pycnonotus cafer</i>	Red-vented Bulbul	LC	R
17.	<i>Pycnonotus leucogenys</i> (Gray, 1835)	Himalayan Bulbul	LC	R
Family: Paridae				
18.	<i>Parus monticolus</i>	Green-backed Tit	LC	R
19.	<i>Parus major</i>	Great Tit	LC	R
20.	<i>Parus xanthogenys</i>	Black-lored Tit	LC	WM
21.	<i>Remiz coronatus</i>	Whitecrowned penduline tit	Lc	WM
22.	<i>Parus spilonotus</i>	Yellow cheeked tit	LC	SM
Family: Sturnidae				
23.	<i>Acridotheres tristis</i> (Linnaeus, 1766)	Common Myna	LC	R
24.	<i>Acridotheres ginginia</i> nus (Latham, 1790)	Bank Myna	LC	R
25.	<i>Acridotheres fuscus</i>	Jungle Myna	LC	R
26.	<i>Sturnus pagodarum</i>	Brahminy Starling	LC	R
Family: Fringillidae				
27.	<i>Serinus pusillus</i>	Fire-fronted Serin	LC	SM, R
28.	<i>Carduelis spinoides</i>	Yellow-breasted Greenfinch	LC	R
29.	<i>Carduelis carduelis</i>	European Goldfinch	LC	R
30.	<i>Leucosticte nemoricola</i>	Plain mountain finch	LC	R
31.	<i>Carpodacus vinaceous</i>	Vinaceous rosefinch	LC	R
Family: Emberizidae				

32	<i>Emberiza stewarti</i>	White-capped Bunting	LC	R
33	<i>Emberiza cia</i> (Linnaeus, 1766)	Rock Bunting	LC	R
Family: Passeridae				
34.	<i>Passer domesticus</i>	House Sparrow	LC	R
35.	<i>Passer rutilans</i>	Russet sparrow	LC	R
36.	<i>Motacilla cinerea</i>	Grey Wagtail	LC	R
37.	<i>Motacilla alba</i>	White Wagtail	LC	SM
38.	<i>Lonchura punctulata</i>	Scaly-breasted Munia	LC	R
39.	<i>Anthus similis</i>	Long-billed Pipit	LC	R
40.	<i>Anthus rufulus</i>	Paddy field Pipit	LC	SM, R
Family: Sylviidae				
41.	<i>Orthotomus sutorius</i>	Common Tailorbird	LC	R
42.	<i>Seicercus xanthoschistos</i>	Grey-hooded Warbler	LC	R
43.	<i>Garrulax lineatus</i>	Streaked Laughingthrush	LC	R
44.	<i>Stachyris pyrrhops</i>	Black-chinned Babbler	LC	R
45.	<i>Chrysomma sinense</i>	Yellow-eyed Babbler	LC	R
46.	<i>Turdoides caudatus</i>	Common Babbler	LC	R
47.	<i>Turdoides striatus</i>	Jungle Babbler	LC	R
48.	<i>Yuhina flavicollis</i>	Whiskered Yuhina	LC	SM
Family: Muscicapidae				
49.	<i>Eumyias thalassina</i> (Swainson,1838)	Verditer Flycatcher	LC	SM
50.	<i>Muscicapa sibirica</i> (Gmelin,1789)	Dark-sided Flycatcher	LC	R
51.	<i>Turdus ruficollis</i>	Dark-throated Thrush	LC	R
52.	<i>Myophonus caeruleus</i> (Scopoli,1786)	Blue Whistling Thrush	LC	R
53.	<i>Niltava Sundara</i>	Rufous-bellied Niltava	LC	SM, R
54.	<i>Saxicoloides fulicata</i>	Indian Robin	LC	R
55.	<i>Copsychus saularis</i> (Linnaeus,1758)	Oriental Magpie Robin	LC	R
56.	<i>Chaimarrornis leucocephalus</i> (Vigors 1831)	White-capped Redstart	LC	R
57.	<i>Phoenicurus erythrogastrus</i>	Guldenstadt's redstart	LC	R
58.	<i>Oenanthe fusca</i>	Brown rockchat	LC	R
59.	<i>Saxicola ferrea</i> (Gray,1846)	Grey Bushchat	LC	R

60.	<i>Saxicola caprata</i> (Linnaeus, 1758)	Pied Bushchat	LC	R
61.	<i>Saxicola torquata</i>	Common Stonechat	LC	R
62.	<i>Rhyacornis fuliginosus</i>	Plumbeous Water Redstart	LC	R
63.	<i>Ficedula superciliaris</i> (Jerdon, 1840)	Ultramarine flycatcher	LC	R
64.	<i>Monticola cinclorhyncha</i> (Vigors, 1831)	Blue Capped Rock Thrush	LC	R
Family: Corvidae				
65.	<i>Terpsiphone paradise</i>	Asian Paradise-flycatcher	LC	R
66.	<i>Dicrurus macrocercus</i> (Vieillot, 1817)	Black Drongo	LC	R
67.	<i>Dicrurus leucophaeus</i> (Vieillot, 1817)	Ashy Drongo	LC	R
68.	<i>Rhipidura albicollis</i>	White-throated Fantail	LC	R
69.	<i>Corvus macrorhynchos</i> (Wagler, 1827)	Large-billed Crow	LC	R
70.	<i>Dendrocitta vagabunda</i>	Rufous Treepie	LC	R
71.	<i>Dendrocitta formosae</i>	Grey Treepie	LC	R
72.	<i>Urocissa erythrorhyncha</i> (Boddaert, 1783)	Red-billed Blue Magpie	LC	R
73.	<i>Garrulus lanceolatus</i> (Vigors, 1830)	Black-headed Jay	LC	R
74.	<i>Pericrocotus ethologus</i>	Long-tailed Minivet	LC	R
Order: COLUMBIFORMES				
Family: Columbidae				
75.	<i>Columba livia</i> (Gmelin, JF 1789)	Rock Pigeon	LC	R
76.	<i>Streptopelia decaocto</i> (Frivaldszky, I 1838)	Eurasian Collared Dove	LC	R
77.	<i>Treron phoenicoptera</i>	Yellow-footed Green Pigeon	LC	R
78.	<i>Streptopelia chinensis</i> (Scopoli, 1786)	Spotted Dove	LC	R
79.	<i>Streptopelia orientalis</i>	Oriental Turtle Dove	LC	R
80.	<i>Streptopelia senegalensis</i>	Laughing Dove	LC	R
Order: PSITTACIFORMES				
Family: Psittacidae				

81.	<i>Psittacula cyanocephala</i> (Linnaeus, 1766)	Plum-headed Parakeet	LC	R
82.	<i>Psittacula eupatria</i> (Linnaeus, 1766)	Alexandrine Parakeet	LC	SM
83.	<i>Psittacula krameria</i> (Scopoli, 1769)	Rose-ringed Parakeet	LC	R
84.	<i>Psittacula himalayana</i>	Slaty-headed Parakeet	LC	R
Order: CORACIIFORMES				
Family: Alcedinidae				
85.	<i>Megaceryle lugubris</i> (Temminck, 1834)	Crested Kingfisher	LC	R
Family: Meropidae				
86.	<i>Merops orientalis</i>	Green Bee-eater	LC	R
Family: Halcyonidae				
87.	<i>Halcyon smyrnensis</i>	White-throated Kingfisher	LC	WM
Family: Coraciidae				
88.	<i>Coracias benghalensis</i>	Indian Roller	LC	R
Order: GALLIFORMES				
Family: Phasianidae				
89.	<i>Gallus gallus</i> (Linnaeus, C 1758)	Red Jungle Fowl	LC	R
90.	<i>Lophura leucomelanos</i> (Latham, J 1790)	Kalij Pheasant	LC	R
91.	<i>Francolinus francolinus</i> (Linnaeus, C 1766)	Black Francolin	LC	R
Order: PICIFORMES				
Family: Megalaimidae				
92.	<i>Megalaima asiatica</i>	Blue-throated Barbet	LC	R
93.	<i>Megalaima haemacephala</i>	Coppersmith barbet	LC	R
94.	<i>Megalaima virens</i> (Boddaert, 1783)	Great Barbet	LC	R
95.	<i>Megalaima zeylanica</i>	Brown-headed Barbet	LC	R
Family: Picidae				
96.	<i>Dendrocopos auriceps</i> (Vigors, 1831)	Brown-fronted Woodpecker	LC	R

97.	<i>Dendrocopos nanus</i>	Brown-capped Pygmy Woodpecker	LC	WM, R
98.	<i>Dinopium benghalense</i>	Lesser golden backed woodpecker	LC	R
99.	<i>Dendrocopos macei</i>	Fulvous-breasted Woodpecker	LC	R
Order: UPUPIFORMES				
Family: Upupidae				
100.	<i>Upupa epops</i> (Linnaeus, 1758)	Common Hoopoe	LC	R
Order: BUCEROTIFORMES				
Family: Bucerotidae				
101.	<i>Ocyrceros birostris</i>	Indian Grey Hornbill	LC	WM
Order: CUCULIFORMES				
Family: Cuculidae				
102.	<i>Cuculus canorus</i>	Eurasian Cuckoo	LC	R
103.	<i>Eudynamys scolopacea</i>	Asian Koel	LC	R
104.	<i>Centropus sinensis</i>	Greater coucal	LC	R
105.	<i>Clamator jacobinus</i>	Pied Cuckoo	LC	R
Order: APODIFORMES				
Family: Apodidae				
106.	<i>Apus affinis</i>	House Swift	LC	R
107.	<i>Aerodramus brevirostris</i>	Himalayan swiftlet	LC	R
Order: STRIGIFORMES				
Family: Strigidae				
108.	<i>Athene brama</i>	Spotted Owlet	LC	R
109.	<i>Glaucidium cuculoides</i>	Asian Barred Owlet	LC	WM
Order: CICONIIFORMES				
Family: Accipitridae				
110.	<i>Gyps himalayensis</i> (Hume, AO 1869)	Himalayan Griffon	LC	R
111.	<i>Accipiter badius</i>	Shikra	LC	SM
112.	<i>Neophron percnopterus</i>	Egyptian Vulture	EN	R
113.	<i>Milvus migrans</i> (Boddaert, 1783)	Black Kite	LC	SM
Family: Ardeidae				
114.	<i>Ardeola grayii</i>	Indian Pond Heron	LC	R

Table 1: Status of Birds In Mandi District, Himachal Pradesh.

Maheswaran et al. (2021) studied 81 families and 20 orders of avian species which have 604 species. Diljeet Singh (2015)¹ has documented 94 species of Aves from the Mandi, district of Himachal Pradesh. Paliwal et al. (2019) studied Bandali Wildlife Sanctuary of Mandi district and detailed 70 bird species belonging to 9 orders. Praveen Kumar (2021) observed Shahpur campus of Central University and found 114 bird species belonging to 12 orders. Thakur and Banyal (2023) observed 53 birds species belonging to 27 families and 09 orders from Shikari Devi Wildlife Sanctuary, Mandi.

CONCLUSION

This study helps in compiling information on the bird diversity of the Mandi area, aimed at establishing baseline data for future ecological research.

This study indicate that the Mandi region boasts a significant diversity of bird species, making it an important area for conserving Himalayan avian fauna such as the Alexandrine Parakeet and endangered species Egyptian vulture (*Neophron percnopterus*). Despite its rich bird population, the area faces challenges like encroachment of human activities, pollution and habitat destruction. These activities threaten both the survival of birds and their habitat utilization patterns.

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