

Avifaunal Diversity of Solan District, Himachal Pradesh, India

Diljeet Singh

Department of Zoology, Government College Shahpur (Kangra), Himachal Pradesh, 176206, India

Abstract: The avifaunal diversity at five study sites (Solan-Shilli Conservation Reserve, Kandaghat, Chail, Kasauli, and Parwanoo) of Solan district in Himachal Pradesh was explored during two visits (summer and winter) in 2010-2011. In total, 93 species of birds belonging to 9 orders and 26 families were observed (83: Solan, 59: Kandaghat, 36: Chail, 47: Kasauli and 31: Parwanoo). The highest number of species were found in order Passeriformes (66)70.9% followed by Piciformes (9) 9.6% and least number (1) 1.0% in other 3 orders. The highest number of species were found in family Muscicapidae (16) 17.2% followed by Corvidae (12) 12.9% and Silviidae (10) 10.7% and least number (1) 1.0% in other 8 families. The relative abundance of species was Very Common (13), Common (32), Uncommon (38) and Rare (10). The seasonal status of species was Summer (57) and Winter (73). Five species (Blue-capped Rock Thrush *Monticola cinclorhynchus*, Chestnut-bellied Nuthatch *Sitta castanea*, Dusky Crag Martin *Hirundo concolor*, Whiskered Yuhina *Yuhina flavicollis*, and Spot-winged Grosbeak *Mycerobas melanozanthos*) were found further additions to birdlist of Solan district.

Keywords: Avifaunal, Diversity, Birds, Solan, Himachal Pradesh

1. Introduction

There are about 10,000 living species of birds in the world. Birds vary in their diversity, habitats, abundance and distribution throughout the world. Bird diversity varies greatly from one place to another and more diversity is often found in tropics than temperate, alpine or polar regions. Their habitat preferences are more or less specialized. They occupy higher trophic levels in food webs. They vary in their abundance, as some species occur in large numbers while others are represented by few individuals only. Some birds have small breeding ranges restricted to particular region only whereas others undertake long distance annual migrations throughout the world. Their distribution reflects many other wildlife groups. Birds serve as valuable indicators of changes in biodiversity and environment of the world [1].

India has more than 1250 species of birds; Grimmett et al. [2], Kazmierczak and Perlo [3]. Himachal Pradesh is credited with more than 500 species of birds; Grimmett and Inskipp [4], Besten [5], Mahabal [6].

The avifauna of Solan district has been studied in past; Ganguli [7], Mukherjee and Chandra [8], Narang and Singh [9], Sharma and Mahabal [10], Mishra [11], Akhtar and Narang [12], Mahabal [6], Thakur et al. [13], Thakur et al. [14]. Despite these works, some areas of Solan district remained unexplored, therefore present study was undertaken. A preliminary checklist of this area has already been reported by author; Singh [15], Singh [16] and present study aims to give further information about relative abundance, seasonal status and habitat of birds.

2. Material and Methods

2.1 Study Area

Solan district (30.05° to 31.15° N, 76.42° to 77.20° E) lies in Humid-subtropical zone (lower elevations) and Humid-sub temperate zone (higher elevations) of Himalayas in Himachal Pradesh. Solan district has total area of 1936 km² and is bounded in the south by Punjab and Haryana states

(Figure 1). The temperature of Solan district varies from -4 °C (winter) to 32 °C (summer) and has an average annual rainfall of 1250 mm. Shilli Wildlife Sanctuary (Solan) with an area of 2.14 km², upon rationalization of its boundaries in June 2013, remained only 1.49 km² as Shilli Conservation Reserve. An area of 0.65 km² (comprising 7 villages) of Shilli Wildlife Sanctuary was denotified. Then, Chail is also a famous place, as it includes a part of Chail Wildlife Sanctuary and has highest cricket ground in the world. Kasauli cantonment was established by Britishers as colonial hill station in 1842. Parwanoo is an industrial town of Himachal Pradesh in Shiwalik range. [17], [18], [19].



Figure 1: Map showing location of Study Sites (S: Solan, Kd: Kandaghat, C: Chail, K: Kasauli, P: Parwanoo) in Solan district of Himachal Pradesh (Map source: www.mapsofindia.com)

The vegetation and habitats of Solan district mainly consists of subtropical broadleaved forests, temperate forests (deodar, ban, oak etc.), pine forests, grassy slopes, scrubs,

gardens, streams, waterfalls and agricultural lands. The sites located within an altitudinal range of about 760 meters to 2200 meters above mean sea level were selected for observation of birds: (1450 m- Solan including Shilli Conservation Reserve, Bajrol, Shilli, Dhamkari, Chachar, Chambaghat and Ghatti; 1430 m- Kandaghat surroundings; 2200 m- Chail including Chail Wildlife Sanctuary area; 1900 m- Kasauli town surroundings; and 760 m- Parwanoo town surroundings. From central point of Solan, distances of these sites are: 15 km (Kandaghat), 35 km (Chail), 26 km (Kasauli) and 41 km (Parwanoo).

2.2 Methods

Because of large area of study sites, stratified sampling technique was adopted to include all different kinds of habitats of study area by selecting a representative sample of each habitat. Each site was searched along routes of roads, paths and other accessible ways in the periphery of about 5-6 km. Two visits (summer and winter) were made to five study sites of Solan district during 2010-2011. About 4-5 days were given to each site during any visit. The observations were done during morning (7.00-11.00 hrs) and evening times (15.00-17.00 hrs) in sufficient sunlight at local time. The relative abundance of bird species was estimated on the basis of frequency of sightings and number of birds seen. The seasonal status of birds was evaluated on the basis of presence or absence of birds during different seasons. The birds were observed visually by binocular (7x35mm) and sometimes photographed for aid in identification by digital camera (12x optical zoom). The birds were identified with the help of field guides: Pocket Guide to the Birds of the Indian Subcontinent [2]; and A Field Guide to the Birds of India, Srilanka, Pakistan, Nepal, Bhutan, Bangladesh and the Maldives [3]. Nomenclature and classification follows An Annotated Checklist of the Birds of the Oriental Region [20].

3. Results and Discussion

In total, 93 species of birds belonging to 9 orders and 26 families were observed (Table). The total number of species found in 26 families were (Figure 2): Phasianidae (3) 3.2%, Picidae (7) 7.5%, Megalaimidae (2) 2.1%, Upupidae (1) 1.0%, Cuculidae (1) 1.0%, Psittacidae (4) 4.3%, Strigidae (1) 1.0%, Columbidae (4) 4.3%, Accipitridae (3) 3.2%, Ardeidae (1) 1.0%, Laniidae (1) 1.0%, Corvidae (12) 12.9%, Muscicapidae (16) 17.2%, Sturnidae (2) 2.1%, Sittidae (2) 2.1%, Certhiidae (1) 1.0%, Paridae (3) 3.2%, Aegithalidae (1) 1.0%, Hirundinidae (2) 2.1%, Pycnonotidae (3) 3.2%, Cisticolidae (3) 3.2%, Zosteropidae (1) 1.0%, Silviidae (10) 10.7%, Nectariniidae (2) 2.1%, Passeridae (3) 3.2%, and Fringillidae (4) 4.3%.

The highest number of species were found in order Passeriformes (66) 70.9% followed by Piciformes (9) 9.6% and least number (1) 1.0% in other 3 orders. The highest number of species were found in family Muscicapidae (16) 17.2% followed by Corvidae (12) 12.9% and Silviidae (10) 10.7% and least number (1) 1.0% in other 8 families (Table).

The total number of species found in five study sites were (Table): 83 (Solan), 59 (Kandaghat), 36 (Chail), 47 (Kasauli) and 31 (Parwanoo).

The relative abundance of species was (Figure 3): Very Common (13), Common (32), Uncommon (38) and Rare (10). The highest number of species were found in uncommon followed by common, very common and rare.

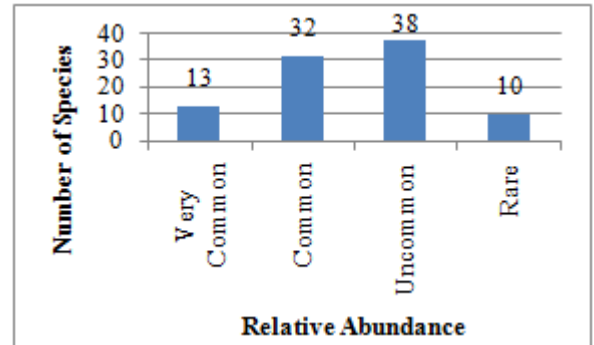


Figure 3: Relative Abundance of bird species in Solan district

The seasonal status of species was (Figure 4) Summer (57) and Winter (73). Thus, winter season was found dominant for bird diversity than summer.

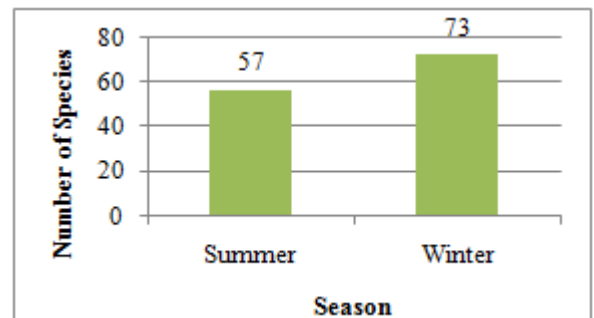


Figure 4: Seasonal Status of bird species in Solan district

Of 93 species, 12 species (Rock Pigeon, Spotted Dove, Black Kite, Large-billed Crow, Blue Whistling Thrush, Grey Bushchat, Common Myna, Great Tit, Himalayan Bulbul, Oriental White Eye, Grey-hooded Warbler and House Sparrow) were found common in all study sites (Solan, Kandaghat, Chail, Kasauli and Parwanoo). This indicates that these species have common occurrence in Solan district.

Of 93 species, 88 species were found common with previous records of Solan district; Narang and Singh [9], Sharma and Mahabal [10], Mishra [11], Mahabal [6], Thakur et al. [13], Thakur et al. [14] and other 5 species (Blue-capped Rock Thrush (Figure 5) Chestnut-bellied Nuthatch (Figure 6), Dusky Crag Martin, Whiskered Yuhina (Figure 7) and Spot-winged Grosbeak (Figure 8) were found further additions to birdlist of Solan district. The rare species Emerald Dove (Figure 9) was reported in Solan (Shilli Conservation Reserve).



Figure 5: Blue-capped Rock Thrush *Monticola cinclorhynchus* - Female (Solán)



Figure 8: Spot-winged Grosbeak *Mycerobas melanozanthos* (Solán)



Figure 6: Chestnut-bellied Nuthatch *Sitta castanea* (Solán)



Figure 9: Emerald Dove *Chalcophaps indica* (Solán)



Figure 7: Whiskered Yuhina *Yuhina flavicollis* (Solán)

References

- [1] BirdLife International., "Birds help us understand the natural world, Birds are very useful indicators for other kinds of biodiversity," Available: <http://www.birdlife.org/datazone/sowb/introduction/INTRO2><http://www.birdlife.org/datazone/sowb/casestudy/79> [Accessed: September 2015].
- [2] R. Grimmett, C. Inskipp, T. Inskipp, Pocket guide to the Birds of the Indian Subcontinent. Oxford University Press, New Delhi, 1999.
- [3] K. Kazmierczak, B. van Perlo, A Field Guide to the Birds of the India, Srilanka, Pakistan, Nepal, Bhutan, Bangladesh and the Maldives, OM Book Service, New Delhi, 2000.
- [4] R. Grimmett, T. Inskipp, Birds of Northern India, Oxford University Press, New Delhi, 2003.
- [5] J.W. den Besten, Birds of Kangra, Moonpeak Publisher, Dharamsala, Himachal Pradesh, 2004.
- [6] A. Mahabal, "Aves" in Fauna of Western Himalaya (Part-2), the Director (ed.), Zoological Survey of India, Kolkata, pp. 275-339, 2005.
- [7] U. Ganguli, "Some notes on the nest behaviour of the Baybacked Shrike at Kasauli, Simla Hills," Newsletter for Birdwatchers 4(3): 2-4, 1964.
- [8] R. Mukherjee, M. Chandra, "Birds of Sili Forest, Solán, H.P.," Newsletter for Birdwatchers 24(5-6): 14-15, 1984.
- [9] M.L. Narang, A.P. Singh, "Birds of Nauri Campus of University of Horticulture and Forestry, Solán,

Himachal Pradesh,” Newsletter for Birdwatchers 35: 106-108, 1995.

[10] T.R. Sharma, A. Mahabal, “Seasonal change of bird species in two different altitudinal locations of Solan District, Himachal Pradesh,” Records of the Zoological Survey of India 96 (1-4): 151-166, 1997.

[11] C. Mishra, “Pheasants and other birds of Majhatal Harsang Wildlife Sanctuary, Himachal Pradesh, India,” Forktail 12: 1-6, 1997.

[12] N. Akhtar, M.L. Narang,” Status, Distribution and Conservation of Galliformes in Chail Wildlife Sanctuary, Himachal Pradesh,” Proceedings of National Seminar on Galliformes, AVC College, Mayiladuturai, 2002.

[13] M.L.Thakur, V.K.Mattu, V. Thakur, V. Sharma, “Avifauna of Nalagarh Valley of Himachal Pradesh, India,” Himalayan Studies Journal 3 (1): 36-48, 2010 a.

[14] M.L. Thakur, V.K. Mattu, Hira Lal, V. Sharma, Hem Raj,V. Thakur, “Avifauna of Arki Hills, Solan (Himachal Pradesh), India,” Indian Birds 5(6): 162-166, 2010 b.

[15] D. Singh, Investigation on the Avian Biodiversity of Himachal Pradesh, PhD Thesis, Kurukshetra University Kurukshetra, India, 2011.

[16] D. Singh, Birds Recorded during a Study in Himachal Pradesh, Renu Publishers, New Delhi, 2015.

[17] J.M. Balokhra, The wonderland Himachal Pradesh, H.G. Publications, New Delhi, 2010.

[18] Department of Forests, H.P.Govt., “Department Notification to declare Shilli Wildlife Santuary as Shilli Conservation Reserve, 7th June 2013”. Available: hpforest.nic.in/files/ShilliConservationReserve_A1b_2.pdf [Accessed: September 2015].

[19] Wikipedia, “Solan, Kasauli, Parwanoo” Available: <https://en.wikipedia.org/wiki/Solan/Kasauli/Parwanoo>[Accessed: September 2015].

[20] T. Inskipp, N. Lindsey, W. Duckworth, An Annotated Checklist of the Birds of the Oriental Region, Oriental Bird Club, Sandy, U.K., 1996.

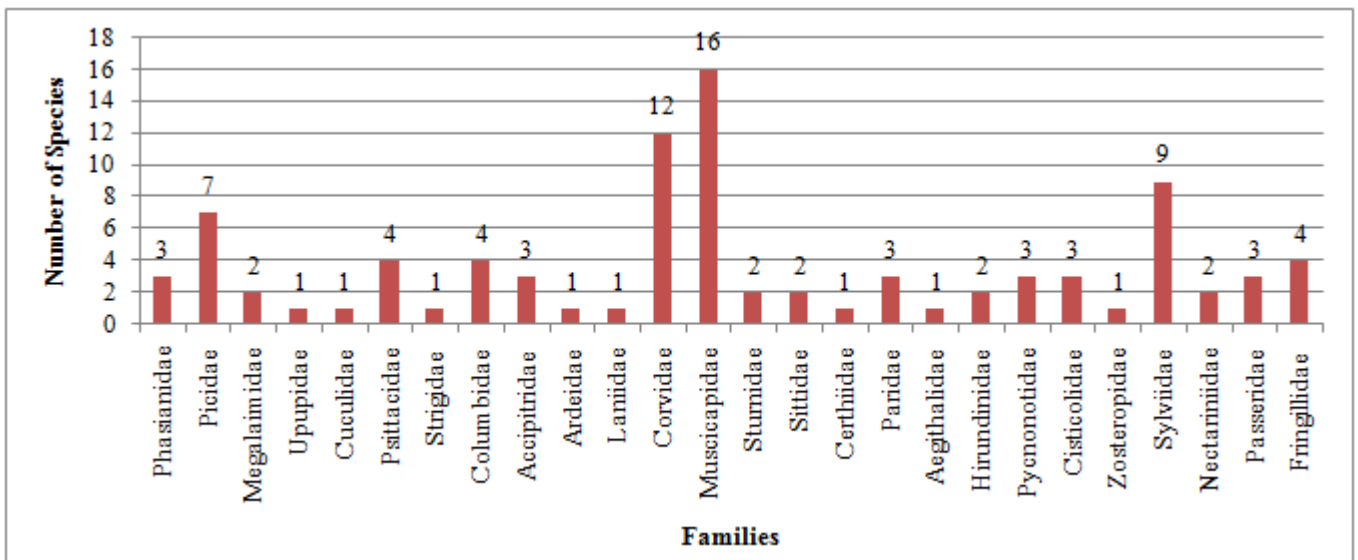


Figure 2: Family-wise distribution of bird species in Solan district

Table: Systematic List of birds of Solan district

SN	Common and Scientific names (with orders and families)	Study Sites	Habitats	Seasonal Status	Rel. Abu.
	GALLIFORMES Phasianidae				
1	Black Francolin <i>Francolinus francolinus</i>	S, Kd, C, K	GS	S	UC
2	Red Jungle Fowl <i>Gallus gallus</i>	S, Kd, C, K	MF, Bu	SW	C
3	Kalij Pheasant <i>Lophura leucomelanos</i>	S, Kd, C, K	MF	SW	C
	PICIFORMES Picidae				
4	Speckled Piculet <i>Picumnus innominatus</i>	S	MF	W	UC
5	Brown-fronted Woodpecker <i>Dendrocopos auriceps</i>	S, Kd, C, K	CF	SW	C
6	Fulvous-breasted Woodpecker <i>Dendrocopos macei</i>	S, Kd	MF, Gr	W	UC
7	Himalayan Woodpecker <i>Dendrocopos himalayensis</i>	C	MF	S	UC
8	Lesser Yellownape <i>Picus chlorolophus</i>	S, Kd, C	MF	W	UC
9	Scaly-bellied Woodpecker <i>Picus squamatus</i>	K	CF	W	UC
10	Grey-headed Woodpecker <i>Picus canus</i>	S, Kd	MF, Gr, Ga	W	UC
	Megalaimidae				

11	Great Barbet <i>Megalaima virens</i>	S, Kd, C, K	MF, Ga, Gr	SW	VC
12	Blue-throated Barbet <i>Megalaima asiatica</i>	S, Kd, P	Ga, Gr, Al	SW	UC
	UPUPIFORMES Upupidae				
13	Common Hoopoe <i>Upupa epops</i>	S, P	Ga, MF	S	UC
	CUCULIFORMES Cuculidae				
14	Asian Koel <i>Eudynamis scolopacea</i>	S, Kd, P	Ga, Gr	S	C
	PSITTACIFORMES Psittacidae				
15	Alexandrine Parakeet <i>Psittacula eupatria</i>	S, K	CF, MF	W	UC
16	Rose-ringed Parakeet <i>Psittacula krameri</i>	S, Kd, K, P	Ga, Gr, HH, Al	W	C
17	Slaty-headed Parakeet <i>Psittacula himalayana</i>	S, Kd, C, K	MF, Gr	W	UC
18	Plum-headed Parakeet <i>Psittacula cyanocephala</i>	S, Kd	HH, Ga, Gr, Al	S	C
	STRIGIFORMES Strigidae				
19	Asian Barred Owlet <i>Glaucidium cuculoides</i>	S, Kd	CF, MF, Gr	W	UC
	COLUMBIFORMES Columbidae				
20	Rock Pigeon <i>Columba livia</i>	S, Kd, C, K, P	HH, MF, La, Al	SW	VC
21	Oriental Turtle Dove <i>Streptopelia orientalis</i>	S, C	MF	W	UC
22	Spotted Dove <i>Streptopelia chinensis</i>	S, Kd, C, K, P	HH, Ga, Gr, MF, Al	SW	VC
23	Emerald Dove <i>Chalcophaps indica</i>	S	MF	W	SC
	CICONIIFORMES Accipitridae				
24	Black Kite <i>Milvus migrans</i>	S, Kd, C, K, P	HH, MF, DS	SW	C
25	Himalayan Griffon <i>Gyps himalayensis</i>	S, K	MF	W	UC
26	Shikra <i>Accipiter badius</i>	S, P	CF, Gr	S	SC
	Ardeidae				
27	Little Egret <i>Egretta garzetta</i>	P	St	W	UC
	PASSERIFORMES Laniidae				
28	Long-tailed Shrike <i>Lanius schach</i>	P	Sl	S	SC
	Corvidae				
29	Eurasian Jay <i>Garrulus glandarius</i>	S, C	MF	SW	C
30	Black-headed Jay <i>Garrulus lanceolatus</i>	S, Kd, C	MF	SW	C
31	Red-billed Blue Magpie <i>Urocissa erythrorhynchos</i>	S, Kd, C, K	MF, Gr, CF	SW	VC
32	Rufous Treepie <i>Dendrocitta vagabunda</i>	P	Gr, Ga, BF	SW	C
33	Grey Treepie <i>Dendrocitta formosae</i>	S, Kd, C	MF, CF, Ga, Gr	SW	VC
34	Large-billed Crow <i>Corvus macrorhynchos</i>	S, Kd, C, K, P	HH, MF, CF, DS, Al, Sl	SW	VC
35	Eurasian Golden Oriole <i>Oriolus oriolus</i>	S	Gr, Ga	S	UC
36	Small Minivet <i>Pericrocotus cinnamomeus</i>	S	Gr, MF	W	UC
37	Long-tailed Minivet <i>Pericrocotus ethologus</i>	S, Kd, K	CF	S	UC
38	White-throated Fantail <i>Rhipidura albicollis</i>	S, Kd, K	Bu, CF	W	UC
39	Black Drongo <i>Dicrurus macrocerus</i>	P	Sl, Ga	S	UC
40	Ashy Drongo <i>Dicrurus leucophaeus</i>	S, Kd, K	MF, Sl, Ga, Al	S	C
	Muscicapidae				
41	Blue-capped Rock Thrush <i>Monticola cinclorhynchus</i>	S, K	CF	S	UC
42	Chestnut-bellied Rock Thrush <i>Monticola rufiventris</i>	S, Kd	CF	W	SC
43	Grey-winged Blackbird <i>Turdus boulboul</i>	S, C	MF, Ga	SW	UC
44	Blue Whistling Thrush <i>Myophonus caeruleus</i>	S, Kd, C, K, P	St, MF	SW	C
45	Dark-throated Thrush <i>Turdus ruficollis</i>	S, C, K	CF, Ga	W	C
46	Dark-sided Flycatcher <i>Muscicapa sibirica</i>	S	CF	W	SC
47	Verditer Flycatcher <i>Eumyias thalassina</i>	S, Kd, K	CF	S	UC
48	Orange-flanked Bush Robin <i>Tarsiger cyanurus</i>	S, C	MF, Bu	W	C
49	Oriental Magpie Robin <i>Copsychus saularis</i>	S, Kd, K	Ga, Al, HH	S	UC
50	Indian Robin <i>Phoenicurus coeruleocephalus</i>	S, Kd, K, P	Sl, Bu	SW	C
51	Blue-capped Redstart <i>Phoenicurus coeruleocephalus</i>	S, Kd, K	CF	W	C
52	White-capped Water Redstart <i>Chaimarrornis leucocephalus</i>	S	St	SW	UC
53	Spotted Forktail <i>Enicurus maculates</i>	S	St, WF	W	UC
54	Common Stonechat <i>Saxicola torquata</i>	K	Sl, He	S	UC
55	Pied Bushchat <i>Saxicola caprata</i>	S, Kd, P	Sl, He	S	UC
56	Grey Bushchat <i>Saxicola ferrea</i>	S, Kd, C, K, P	Sl, He, Ga, Bu	W	C

	Sturnidae				
57	Common Myna <i>Acridotheres tristis</i>	S, Kd, C, K, P	HH, Al, Ga, Sl, La	SW	VC
58	Jungle Myna <i>Acridotheres fuscus</i>	S, Kd, P	HH, Ga, Sl	S	C
	Sittidae				
59	Chestnut-bellied Nuthatch <i>Sitta castanea</i>	S, K	CF	SW	UC
60	Wall Creeper <i>Tichodroma muraria</i>	S	Ro/So	W	SC
	Certhiidae				
61	Bar-tailed Treecreeper <i>Certhia himalayana</i>	S, C, K	MF, CF	SW	C
	Paridae				
62	Great Tit <i>Parus major</i>	S, Kd, C, K, P	HH, Ga, MF, CF, Al, Sl	SW	VC
63	Green-backed Tit <i>Parus monticolus</i>	S, C, Kd, K	MF, Bu	SW	C
64	Black-lored Tit <i>Parus xanthogenys</i>	S, Kd, K	MF, Bu	SW	C
	Aegithalidae				
65	Black-throated Tit <i>Aegithalos concinnus</i>	S, Kd, C, K	MF, Bu	SW	C
	Hirundinidae				
66	Dusky Crag Martin <i>Hirundo concolor</i>	P	HH, St	W	UC
67	Barn Swallow <i>Hirundo rustica</i>	S, Kd, K	HH, La	S	C
	Pycnonotidae				
68	Himalayan Bulbul <i>Pycnonotus leucogenys</i>	S, Kd, C, K, P	MF, Sl, Bu, CF, Al	SW	VC
69	Red-vented Bulbul <i>Pycnonotus cafer</i>	S, Kd, K, P	CF, Sl, MF, Bu, Al	SW	C
70	Black Bulbul <i>Hypsipetes leucocephalus</i>	S, Kd, C	MF, CF	SW	UC
	Cisticolidae				
71	Striated Prinia <i>Prinia criniger</i>	S, Kd, K	GS, Sl, He	SW	UC
72	Grey-breasted Prinia <i>Prinia hodgsonii</i>	S, Kd, K, P	He, Bu, Sl	SW	C
73	Ashy Prinia <i>Prinia socialis</i>	P	He, Bu	W	UC
	Zosteropidae				
74	Oriental White Eye <i>Zosterops palpebrosus</i>	S, Kd, C, K, P	MF, BF, Bu, Ga, Gr	SW	C
	Sylviidae				
75	Common Tailorbird <i>Orthotomus sutorius</i>	S, Kd, K, P	Ga, Bu	SW	UC
76	Grey-hooded Warbler <i>Seicercus xanthoschistos</i>	S, Kd, C, K, P	MF, BF, Bu, Ga, Gr	SW	VC
77	Streaked Laughingthrush <i>Garrulax lineatus</i>	S, Kd, C, K	MF, Ga	SW	VC
78	Variegated Laughingthrush <i>Garrulax variegatus</i>	S, C	MF	W	C
79	Rusty-cheeked Scimitar Babbler <i>Pomatorhinus erythrocythrus</i>	S, Kd	MF, Bu	W	UC
80	Black-chinned Babbler <i>Stachyris pyrrhops</i>	S, Kd, K	Bu, MF, BF	SW	C
81	Yellow-eyed Babbler <i>Chrysomma sinense</i>	P	Bu, He	W	C
82	Jungle Babbler <i>Turdoides striatus</i>	S, Kd, K, P	MF, BF, Sl, Ga, Gr, Al	SW	VC
83	Whiskered Yuhina <i>Yuhina flavicollis</i>	S, Kd	MF, WF, Ga	W	SC
84	Rufous Sibia <i>Heterophasia capistrata</i>	S, Kd	CF, Ga	W	UC
	Nectariniidae				
85	Fire-breasted Flowerpecker <i>Dicaeum ignipectus</i>	S	Ga	W	SC
86	Purple Sunbird <i>Nectarinia asiatica</i>	S, Kd, K	He, Bu, Sl	S	UC
	Passeridae				
87	House Sparrow <i>Passer domesticus</i>	S, Kd, C, K, P	HH, Ga, Bu, La	SW	VC
88	Russet Sparrow <i>Passer rutilans</i>	S, Kd, C, K	Bu, La, Ga	W	C
89	Scaly-breasted Munia <i>Lonchura punctulata</i>	S, Kd, K	He, GS, La	S	UC
	Fringillidae				
90	Pink-browed Rosefinch <i>Carpodacus rodochrous</i>	S	Bu, MF	W	SC
91	Spot-winged Grosbeak <i>Mycerobas melanozanthos</i>	S	MF	W	SC
92	Rock Bunting <i>Emberiza cia</i>	S, Kd, C, K	MF, GS, La	W	C
93	White-capped Bunting <i>Emberiza stewarti</i>	S, Kd, C	MF, GS, La	W	C

Abbreviations

Table

SN: Serial Number, Rel. Abu.: Relative Abundance

Seasonal Status

S: Summer (May to August), W: Winter (December to February)

Study Sites

S: Solan, Kd: Kandaghat, K: Kasauli, C: Chail, P: Parwanoo

Relative Abundance

VC: Very Common (Abundant number of sightings/ Sightings in 80-100 % of field visits)/Abundant number of birds seen

C: Common (Regular sightings but less than VC/ Sightings in 50-79 % of field visits)/Moderate number of birds seen

UC: Uncommon (Occasional sightings/ Sightings in 6-49 % of field visits)/Less number of birds seen

SC: Scarce/ Rare (Hardly visible/ Sightings in 1-5 % of field visits)/ Few birds seen

Habitats

Al: Agricultural Land, Sl: Scrub Land, MF: Mixed Forest (temperate broadleaved and coniferous- ban, oak, deodar etc), BF: Broadleaved Forest (subtropical), CF: Coniferous

Forest (pine), HH: Human Habitations, Ga: Garden, Gr: Grove, GS: Grassy slope, DS: Dumping Site, He: Herb, Bu: Bush, Ri/St: River/Stream, La: Lawn, WF: Waterfall, Ro/So: Rock/Stone.

Author Profile



Diljeet Singh is presently working as Assistant Professor in Department of Zoology, Government College Shahpur, District Kangra, Himachal Pradesh, India. He is MSc, PhD (Zoology). He has been teaching in college since 2006. He has written a book „Birds Recorded during a Study in Himachal Pradesh“ in 2015.