

INTERNATIONAL JOURNAL OF SCIENCE AND NATURE

© 2004 - 2014 Society for Science and Nature (SFSN). All rights reserved

www.scienceandnature.org

AVIFAUNA OF SHIMLA AREA OF HIMACHAL PRADESH, INDIA

¹Thakur, M.L., ²Mattu, V.K., ³Vanita Thakur & ⁴Ramesh Kataria
 ¹HP State Biodiversity Board; Deptt. of Environment, Science & Technology, Shimla-171 001 (HP), India.
 ²Department of Biosciences, Himachal Pradesh University, Shimla-171 005, India.
 ³Dravidian University, Srinivasa Vanam, Kuppam-517 425, Chittoor Dist. (A.P.), India.
 ⁴Govt. College Padhar, Mandi, Himachal Pradesh, India.

ABSTRACT

Explorations of avifauna in Shimla area revealed the presence of 134 species of resident and migrant birds belonging to 92 genera spread over 36 families and 11 orders. Analyses of data on residential status revealed that of the 134 species reported from Shimla area of Himachal Pradesh, 10 species were resident, 64 were seasonal-local migrants, 19 showed summer influx, population of 6 species was augmented during winters, 28 were purely summer visitors and 7 were winter migrants to the area. It was further analyzed that 48 species each came in the categories of common and uncommon, 34 were very common and only 4 species were rare. In addition, 3 species of globally threatened species viz., Indian Whitebacked Vulture and Red-head Vulture (Critically threatened) and Egyptian Vulture (Endangered) were also reported from Shimla area.

KEY WORDS: Avifauna, Shimla area, residential status, relative abundance, threatened species.

INTRODUCTION

Birds are one of the most fascinating creatures of the nature which are cosmopolitan in distribution and are of great importance to mankind. Their role as messengers is well known from times immemorial and has also been a great source of inspiration to artisans' and ornamentalists. They not only act as destroyers of insect pests and vermin, scavengers, food for man, seed dispersers, but also play an important role as biocontrol agents and efficient pollinators of crops. The pollination activity of birds is an important integration function, as they contribute to the sustainability and diversity of agricultural and botanical resources thereby contributing to increased productivity, environmental health and maintenance of biological diversity (Bruford, 2002). The Himalayas due to its multifold attractions such as scenic beauty, forested hilly terrains, variety of plant and animal life, coupled with a healthy climate have always attracted man. There are a number of hill stations throughout the Himalayan range and Shimla is one of them. Shimla is situated on hilly terrain at 31° 6' N latitude, 77° 10' E longitude and 2150 m altitude. This area falls in the northwest sector of the Himalayas, has a typical hilly tract, supports moist temperate forests and has some lush green spurs surrounded by tall deodars, pines, rhododendrons and oaks, warmly looking snow clad mountain ranges (Mattu and Thakur, 2006). The forests of the area can broadly be divided into two subtypes, viz., open Oak-Rhododendron and Conifer forests. Flora is dominated by trees like Cedrus deodara, Pinus roxburghii, P. wallichiana, Quercus spp., Aesculus indica, Rhododendron arboreum, and shrubs like Berberis aristata, B. lycium, Prinsepia utilis, Urtica dioca, Geradiana heterophylla, Desmodium floridundun, Hedera nepalensis, Ricinus communis etc. Some small seasonal and perennial streams flowing in the area support some of the stream loving birds. In addition, good vegetation in and around the human settlements is a

characteristic feature of the study area. Earlier studies on the birds of Himachal Pradesh started during the British administration because of the presence of the Imperial summer capital at Shimla and the development of several other popular hill stations like Dalhlousie, Dharamsala and Kullu. Earliest record of the study of birds of Himachal Pradesh refers to Theobald (1862) who travelled from Shimla to the Spiti valley and Chomoriri (Tshomoriri) Lake in 1861 and showed a keen interest in avian fauna of this region. Afterwards a number of field studies expeditions were undertaken by different workers like Tytler (1868) who observed the birds during a march from Shimla to Mussoorie. Anderson (1889) laid a stress on habitat management of different pheasant species and red jungle fowl. Dodsworth (1910-14) reported many birds in and around Shimla including thrushes, woodpeckers, Doves, Kites and Great Himalayan Barbet. Frome (1946) studied avifauna of Mahasu-Narkanda Baghi area, and perhaps, it was Jones (1947-48) who made available a comprehensive picture on pre-independence records on population of birds from Shimla and adjoining areas and presented a list of as many as 199 bird species. In the recent past, some research workers have worked on different aspects of pheasants in Shimla hills (Anonymous, 1988; Sharma and Pandey, 1989; Sharma et al., 1990; Sharma, 2000), but a little is known about bird diversity of Shimla and adjoining areas (Ganguli, 1967; Mattu and Thakur, 2006; Thakur et al., 2006). Keeping in view, present studies were undertaken to explore the diversity, status and abundance of the birds of Shimla area of Himachal Pradesh.

METHODOLOGY

Specific sampling strategies based upon the principle of exploration of a portion of the individuals in the whole population were employed for exploration of avifauna of Shimla area. Thus, stratified random sampling technique (Snedecore and Cochran, 1993) was followed for studying

the birds of the area, which involved the division of the present study area into different strata, based upon habitat type. Various habitat types like forests, streams, human settlements etc., spread over different parts of Shimla area were selected for the present studies. These investigations were conducted during different seasons of the years 2003-2010 in Annandale, Bhrari, Chota Shimla, Chrabra, Dhalli, Jakhu, Lakkar Bazaar, Mashobra, New Shimla, Sanjauli, Shimla city, Summer Hill and Totu areas. The other most important aspect kept in consideration was the activity of birds. Since the peak activity in most birds lasts for 1 or 2 hours after sunrise or before sunset, so monitoring of birds was done either in early morning or late evening hours as used by Thakur (2008). Birds were observed with the aid of 10 x 42 Nikon field binoculars and Fujinon Super 60 S Field Scope. Field identifications were carried out with the help of various field guides (Ali and Ripley, 1983; Grimmett et. al, 1999; Kazmierczak, 2000). The nomenclature followed here is after Manakadan and Pittie (2001). The data recorded in each survey from different habitat types of Shimla area was kept separate and analysed for relative abundance on the basis of frequency of sightings (McKinnon and Philips, 1993). Based upon these, different categories assigned were: Very Common (recorded in more than 45 % of data sheets), Common (between 25-45 % of data sheets), Uncommon (between 10-24 % of data sheets) and Rare (recorded once or twice). The relative frequency scale was fixed in such a way so as to include the migrant species sighted seasonally in good numbers (which visited the area for a brief period of time) to their respective category (Kumar et al., 2006; Mattu and Thakur, 2006; Thakur et al., 2010). Residential status of the birds has been worked out and different categories like resident, winter visitor, summer visitor etc., have been assigned strictly with reference to the study area on the basis of presence or absence method (Thakur et al., 2003, 2006, 2010, 2011 a & b). The birds that showed irregular trend of sighting and population fluctuations (non-seasonal) in the Shimla area have been placed under resident with local movements (R/LM) category.

RESULTS & DISCUSSION

Bird explorations in Shimla area revealed the presence of 134 species of resident and migrant birds belonging to 92 genera spread over 36 families and 11 orders. Family-wise analysis showed that Muscicapidae was the most predominant family with 37 species belonging to 26

genera, followed by Accipitridae (11 species), Fringillidae and Corvidae (7 each), Paridae (6) and Columbiae (5 species). Moreover, families with single species were Falconidae, Caprimulgidae, Upupidae, Capitonidae. Cinclidae, Laniidae. Troglodytidae, Prunellidae. Aegithalidae, Remizidae, Nectariniidae, Zosteropidae, Emberizidae, Estrildidae and Dicruridae (Table 1). Previously, Mahabal (2005) reported maximum number of birds (105 species) under this family. Similarly, Thakur et al. (2010) also found Muscicapidae as the biggest family of birds with family 23 species from Sarkaghat valley of Himachal Pradesh. Analyses of data on residential status revealed that of the 134 species reported from Shimla area of Himachal Pradesh. 10 species were resident, 64 were seasonal-local migrants, 19 showed summer influx, population of 6 species was augmented during winters, 28 were purely summer visitors and 7 were winter migrants to the area (Table 1; Figure 1). Further analysis of residential status and relative abundance indicated that of the 10 resident species, 3 species each were very common, common and uncommon, and 1 was rare. Of the seasonallocal migrants, 22 species were common, 21 were very common, 18 were uncommon and 3 were rare. Categorization of long-range migrants revealed that out of 28 summer visitors, 13 were uncommon, 12 were common and 3 were very common in Shimla area of Himachal Pradesh. Of the 7 winter visitors, 4 species were uncommon, 2 were common and 1 was very common. Of the 19 species with summer influx, 7 were uncommon and 6 each were very common and common. Of the 6 species which showed winter influx, 3 each were common and uncommon. Therefore, it was further analyzed that 48 species each came in the categories of common and uncommon, 34 were very common and only 4 species were rare (Table 1; Figure 1). The present work is in conformity with the earlier works of Mattu and Thakur (2006) and Thakur et al. (2006) in Summer hill and Tara devi areas respectively of Shimla, who also reported resident, summer and winter visitor birds in these areas of Himachal Pradesh. Present study revealed the presence of three such species of birds in Shimla area which are struggling for their existence throughout their distributional range and therefore placed under different threat categories by IUCN (BirdLife International, 2011). Of these, Indian White-backed Vulture and Red-head Vulture have been placed under Critical category and Egyptian Vulture under Endangered category (Table 1).

S.No.	Taxon		Res. St.	Rel. Abd.
	Order: Falconiformes			
	Family: Accipitridae			
1	Black Kite Milvus migrans (Boddaert, 1783)		R/LM	VC
2	Bearded Vulture Gypaetus barbatus (Linnaeus, 1758)		R/LM	С
3	Egyptian Vulture Neophron percnopterus (Linnaeus, 1758)	EN	R/SV	UC
4	Indian White-backed Vulture Gyps bengalensis (Gmelin, 1788)	CR	R/LM	Ra
5	Himalayan Griffon Gyps himalayensis Hume, 1869		R	VC
6	Eurasian Griffon Gyps fulvus (Hablizl, 1783)		WV	С
7	Red-headed Vulture Sarcogyps calvus (Scopoli, 1786)	CR	R/LM	UC
8	Pallid Harrier Circus macrourus (S.G. Gmelin, 1770)		WV	UC
9	Eurasian Sparrowhawk Accipiter nisus (Linnaeus, 1758)		R/SV	UC
10	Black Eagle Ictinaetus malayensis (Temminck, 1822)		R/LM	Ra
11	Steppe Eagle Aquila nipalensis Hodgson, 1833		WV	VC

TABLE 1: Systematic list of Avifauna of Shimla area of Himachal Pradesh

		·	
10	Family: Falconidae	рды	NG
12	Common Kestrel Falco tinnunculus Linnaeus, 1758	R/LM	VC
	Order: Galliformes		
10	Family: Phasianidae	D (CL	C
13	Black Francolin Francolinus francolinus (Linnaeus, 1766)	K/SV	C
14	Koklass Pheasant Pucrasia macrolopha (Lesson, 1829)	K/WV	UC UC
15	Ked Junglerowi Gallus gallus (Linnaeus, 1758)	R/LM D	UC
16	Kaleej Pheasant Lophura leucometanos (Latham, 1790)	ĸ	VC
	Order: Columbiformes		
17	Family: Columbidae	рдм	NC
1/	Blue Rock Pigeon Columba livia Gmelin, 1789	R/LM D/LM	VC
18	Oriental Turtle-Dove Streptopella orientalis (Latham, 1790)	R/LM D/CV	VC
19	Spotted Dove Streptopella chinensis (Scopoli, 1786)	R/SV	UC
20	Eurasian Conared-Dove Streptopella decaocio (Frivaluszky, 1858)	R/LNI D/SV	
21	Order: Baittooiformoo	K/5 V	C
	Family: Doittooidoo		
22	Fainny, I Shtachae Alexandrine Derekoet, <i>Psittaeula euratria</i> (Linneeus, 1766)	D/SV	UC
22	Poso ringed Derekoet, <i>Psittacula krameri</i> (Soopoli, 1760)	N/SV SV	
23	Sloty booded Perekoot <i>Psittacula himalayana</i> (Loscop 1822)	D/SV	VC
24	Plum headed Parakeet <i>Psittacula ayanocanhala</i> (Linnaus 1766)	R/SV P/SV	VC
23	Order: Cuculiformes	K/5 V	ve
	Family : Cuculidae		
26	Indian Cuckoo Cuculus micropterus Gould 1838	SV	C
27	Common Cuckoo <i>Cuculus canorus</i> Linnaeus 1758	SV	C
28	Asian Koel Eudynamys scolopacea (Linnaeus, 1758)	SV	ŬĊ
	Order: Strigiformes	~ .	
	Family: Strigidae		
29	Asian Barred Owlet <i>Glaucidium cuculoides</i> (Vigors, 1831)	R/LM	С
30	Jungle Owlet Glaucidium radiatum (Tickell, 1833)	R	С
	Order: Caprimulgiformes		
	Family : Caprimulgidae		
31	Large-tailed Nightjar Caprimulgus macrurus Horsfield, 1821	SV	С
	Order: Apodiformes		
	Family: Apodidae		
32	Himalayan Swiftlet Collocalia brevirostris (Horsfield, 1840)	R/LM	VC
33	White-throated Needletail-Swift <i>Hirundapus caudacutus</i> (Latham, 1802)	SV	UC
34	Common Swift Apus apus (Linnaeus, 1758)	SV	С
35	House Swift Apus affinis (J.E. Gray, 1830)	R/LM	VC
	Order: Coraciiformes		
26	Failing: Alceonnoae White breasted Kingfisher, Halayan group angis (Linnacus, 1759)	рлм	UC
27	Croater Died Kingfisher Maggaarda luguhrig (Tempinal, 1924)	R/LWI D	C C
57	Family: Ununidae	ĸ	C
38	Common Hoopoe Unung enons Linnaeus 1758	R/I M	C
50	Order: Piciformes	IC LIVI	e
	Family: Capitonidae		
39	Great Barbet Megalaima virens (Boddaert, 1783)	R/LM	VC
	Family: Picidae		
40	Brown-fronted Pied Woodpecker Dendrocopos auriceps (Vigors, 1831)	R	С
	Himalayan Pied Woodpecker Dendrocopos himalayensis (Jardine & Selby,		
41	1831)	R/LM	VC
42	Large Scaly-bellied Green Woodpecker Picus squamatus Vigors, 1831	R	UC
43	Black-naped Green Woodpecker Picus canus Gmelin, 1788	R	VC
	Order: Passeriformes		
	Family: Hirundinidae		
44	Plain Martin <i>Riparia paludicola</i> (Vieillot, 1817)	R/LM	UC
45	Common Swallow <i>Hirundo rustica</i> Linnaeus, 1758	SV	UC
46	Red-rumped Swallow Hirundo daurica Linnaeus, 1771	SV D/CV	C
47	Asian House-Martin Delichon dasypus (Bonaparte, 1850)	R/SV	VC
10	ranny: Motacilla alka Linnova 1759	D/IM	UC
48 40	winte wagtan <i>Motacula alba</i> Linnaeus, 1/58 Lorgo Diod Wootoil <i>Motacilla wadayaanatansia</i> Crealin, 1790	K/LIVI D/IM	
49 50	Grey Wagtail Motacilla cinerea Tupstall 1771	R/LM	UC
51	Oriental Tree Pinit Anthus hodosoni Richmond 1907	R/LM	UC
51	Family: Campenhagidae	1. 1/111	
52	Black-winged Cuckoo-Shrike <i>Coracina melaschistos</i> (Hodgson, 1836)	SV	UC
53	Long-tailed Minivet <i>Pericrocotus ethologus</i> Bangs & Phillips. 1914	SV	C
54	Scarlet Minivet Pericrocotus flammeus (Forster, 1781)	R/LM	С

	Family: Pycnonotidae	D / 1 /	G
55	Himalayan Bulbul Pycnonotus leucogenys (Gray, 1835)	R/LM	C
50	Red-vented Bulbul <i>Pychonotus cafer</i> (Linnaeus, 1766)	SV	C
57	English Loniidae	5 V	C
58	Family: Lanidae Pufous backed Shrika, Lanius schach Lippeous, 1758	SV	С
20	Family Cinclidee	31	C
50	Family: Cinclude Brown Dipper, <i>Cinclus pallasii</i> Temminek, 1820	D	Pa
39	Family: Troglodytidae	K	Ka
60	Winter Wren, Tragladytas tragladytas (Linnens, 1758)	WV	UC
00	Family: Prundellidae		00
61	Altai Accentor Prunella himalayana (Blyth 1842)	WV	UC
01	Family: Muscicanidae		00
	Subfamily: Turdinae		
62	Chestnut-bellied Rock-Thrush <i>Monticola rufiventris</i> (Jardine & Selby, 1833)	R/LM	С
63	Blue Rock-Thrush Monticola solitarius (Linnaeus, 1758)	R/SV	UC
64	Blue Whistling-Thrush Mviophonus caeruleus (Scopoli, 1786)	R/LM	VC
65	Scaly Thrush Zoothera dauma (Latham, 1790)	R/LM	UC
66	White-collared Blackbird Turdus albocinctus Royle, 1840	R/LM	UC
67	Grey-winged Blackbird Turdus boulboul (Latham, 1790)	R/LM	VC
68	Dark-throated Thrush Turdus ruficollis Pallas, 1776	WV	С
69	Mistle Thrush Turdus viscivorus Linnaeus, 1758	R/LM	UC
70	Orange-flanked Bush-Robin Tarsiger cyanurus (Pallas, 1773)	R/WV	UC
71	Black Redstart Phoenicurus ochruros (Gmelin, 1774)	R/SV	UC
72	Blue-fronted Redstart Phoenicurus frontalis (Vigors, 1832)	R/LM	С
73	White-capped Redstart Chaimarrornis leucocephalus (Vigors, 1831)	R/LM	С
74	Plumbeous Redstart Rhyacornis fuliginosus (Vigors, 1831)	R/LM	С
75	Little Forktail Enicurus scouleri Vigors, 1832	R/LM	С
76	Spotted Forktail Enicurus maculatus Vigors, 1831	R/LM	С
77	Common Stonechat Saxicola torquata (Linnaeus, 1766)	SV	UC
78	Grey Bushchat Saxicola ferrea Gray, 1846	R/LM	С
	Subfamily: Timaliinae		
79	Streaked Laughingthrush Garrulax lineatus (Vigors, 1831)	R/LM	VC
80	Variegated Laughingthrush Garrulax variegatus (Vigors, 1831)	R/LM	VC
81	Rusty-cheeked Scimitar-Babbler Pomatorhinus erythrogenys Vigors, 1832	R	UC
82	Black-chinned Babbler Stachyris pyrrhops Blyth, 1844	R/SV	UC
83	Red-billed Leiothrix Leiothrix lutea (Scopoli, 1786)	R/LM	С
84	Bar-throated Minla Minla strigula (Hodgson, 1838)	R/LM	С
85	Rufous Sibia Heterophasia capistrata (Vigors, 1831)	R/LM	VC
86	Yellow-naped Yuhina Yuhina flavicollis Hodgson, 1836	R/LM	С
	Subfamily: Sylviinae		
87	Brown Prinia Prinia crinigera Hodgson, 1836	R/SV	С
88	Olivaceous Leaf-Warbler Phylloscopus griseolus Blyth, 1847	SV	UC
	Lemon-rumped Warbler Phylloscopus chloronotus (G.R. Gray & J.E. Gray,		
89	1846)	R/LM	UC
	Grey-headed Flycatcher-Warbler Seicercus xanthoschistos (G.R. Gray & J.E.		
90	Gray, 1846)	SV	С
	Subfamily: Mussicaninae		
91	Sooty Elycatcher, Muscicana sibirica Gmelin, 1789	SV	С
92	Little Pied Elycatcher <i>Ficadula wastermanni</i> (Sharpe 1888)	SV	
93	Illtramarine Elycatcher, <i>Ficedula superciliaris</i> (Jerdon, 1840)	SV	VC
9/	Slaty-blue Elycatcher, <i>Ficadula tricolor</i> (Hodgson, 1845)	R/IM	
95	Verditer Elycatcher, Fumvias thalassina (Swainson, 1838)	SV	VC
96	Rufous-bellied Niltava Niltava sundara (Hodoson 1837)	SV	C
97	Grey-headed Elycatcher, Culicicana caylonansis (Swainson, 1820)	R/IM	
)/	Subfamily: Rhinidurinae	IC/LIVI	00
98	Vellow-bellied Fantail-Elycatcher, <i>Rhinidura hypoxantha</i> Blyth 1843	R/W/V	С
70	Family: Aggithalidae	10.00	C
99	Red-beaded Tit Agaithdlos concinnus (Gould 1855)	R/I M	VC
,,	Family: Remizidae	17/12/191	, C
100	Fire-canned Tit Cenhalopyrus flammicens (Burton 1836)	SV	UC
100	Family: Paridae	5,	
101	Simla Crested Tit Parus rufonuchalis Rlyth 1849	R/LM	С
102	Spot-winged Crested Tit Parus melanolophus Vigors 1831	R/LM	č
102	Brown Crested Tit Parus dichrous Blyth 1844	R	ŬC
104	Great Tit Parus major Linnaeus 1758	R/LM	VC
105	Green-backed Tit Parus monticolus Vigors 1831	R/LM	VC
106	Black-lored Yellow Tit Parus xanthogenys Vigors 1831	R/LM	vc
100	Family: Sittidae		. 0
	······································		

107	White-tailed Nuthatch Sitta himalayensis Jardine & Selby, 1835	R/LM	С
108	White-cheeked Nuthatch Sitta leucopsis Gould, 1850	R/WV	С
109	Wallcreeper Tichodroma muraria (Linnaeus, 1766)	R/LM	С
110	Family: Certhidae	D/CV	C
110	Eurasian Tree-Creeper Certific Linual sum Nicore 1822	K/SV D/SV	
111	Bar-talled Tree-Creeper Cerinia nimalayana Vigors, 1852	K/S V	vc
112	Mrs. Gould's Sunbird Aethonyga gouldiae (Gould, 1831)	R/LM	Ra
	Family: Zosteropidae	10,2101	
113	Oriental White-eye Zosterops palpebrosus (Temminck, 1824)	SV	С
	Family: Emberizidae		
	Subfamily: Emberizinae		
114	Rock Bunting Emberiza cia Linnaeus, 1766	R/SV	С
115	Family: Fringillidae	D/IM	VC
115	Serinus pusillus (Pallas, 1811) Eiro fronted Serin	R/LM	VC
116	Carduelis spinoides Vigors 1831	SV	VC
110	Yellow-breasted Greenfinch	51	ve
117	Carduelis carduelis (Linnaeus, 1758)	WV	UC
	Eurasian Goldfinch		
118	Carpodacus erythrinus (Pallas, 1770)	R/LM	С
	Common Rosefinch		
119	Carpodacus rhodochlamys (Brandt, 1843)	R/LM	UC
1.00	Red-mantled Rosefinch		
120	Mycerobas icterioides (Vigors, 1831)	R/WV	UC
121	Black-and-Yellow Grosbeak	DAVA	UC
121	Spotted-winged Grosbeak	K/ W V	UC
	Family: Estrildidae		
122	Lonchura punctulata (Linnaeus, 1758)	SV	UC
	Spotted Munia		
	Family: Passeridae		
	Subfamily: Passerinae		
123	Passer domesticus (Linnaeus, 1758)	R/LM	С
104	House Sparrow	D/CV	VC
124	Cinnamon Tree Sparrow	K/5 V	vc
	Family: Sturnidae		
125	Acridotheres tristis (Linnaeus, 1766)	R/LM	С
	Common Myna		
126	Acridotheres fuscus (Wagler, 1827)	SV	UC
	Jungle Myna		
	Family: Dicruridae		
127	Dicrurus macrocercus Vieillot, 1817	SV	UC
	Black Drollgo		
128	Garrulus glandarius (Linnaeus, 1758)	R/LM	VC
120	Eurasian Jav	IC LIVI	ve
129	Garrulus lanceolatus Vigors, 1831	R/LM	VC
	Black-headed Jay		
130	Urocissa flavirostris (Blyth, 1846)	R/LM	UC
	Yellow-billed Blue Magpie		
131	Urocissa erythrorhyncha (Boddaert, 1783)	R/SV	VC
122	Ked-Dilled Blue Magpie	D/CV	C
152	Grev Treenie	r/3v	U
133	Nucifraga carvocatactes (Linnaeus, 1758)	R/LM	UC
	Spotted Nutcracker		~~
134	Corvus macrorhynchos Wagler, 1827	R/LM	VC
	Jungle Crow		

Res. St.= Residential status, R= Resident, R/LM= Resident with local movements, R/WV= Resident, with winter influx, R/SV= Resident with summer influx, WV= Winter visitor, SV= Summer visitor

Rel. Abd.= Relative abundance, VC= Very common, C= Common, UC= Uncommon, Ra= Rare

CR=Critically threatened; EN=Endangered



FIGURE 1: Comparative Residential Status and Relative Abundance of Birds of Shimla area

ACKNOWLEDGEMENTS

The authors are grateful to the Chairman, Department of Biosciences, Himachal Pradesh University, Shimla, for providing the necessary facilities and encouragements.

REFERENCES

Ali, S. and Ripley, D. S. (1983) A Pictorial Guide to the Birds of the Indian Subcontinent. Oxford University Press, New Delhi. 177 pp.

Anderson, J.C. (1889) Sporting rambles round about Simla. J. Bombay Nat. Hist. Soc. 4 (1): 56-66.

Anonymous (1988) Western Horned Tragopan. *NLBW*, 28 (3-4): 2-4.

BirdLife International (2011) IUCN Red List for birds (www.birdlife.org downloaded on 26/12/2011)

Bruford, M.W. (2002) Biodiversity-Evolution, Species, Genes. In: Conserving Birds Biodiversity-General Principals and their Application (Eds.: Norris, K. and Pain, D.J.). Cambridge University Press, U.K., 1-19.

Dodsworth, P.T.L. (1910) Notes relating to the distribution, habits and nidification of *Certhia himalayana* Vigors (The Himalayan Tree-creeper) in and around Simla and the adjacent ranges. *J. Bombay Nat. Hist. Soc.* 20 (2): 463-467.

Dodsworth, P.T.L. (1911) Occurrence of *Hemilophus pulverulentus* Temm, the Great Slaty Woodpecker in the neighbourhood of Simla, N.W. Himalayas. *J. Bombay Nat. Hist. Soc.* 21 (1): 263.

Dodsworth, P.T.L. (1912) Occurrence of the Common Peafowl, *Pavo cristatus* Linnaeus in the neighbourhood of Simla, N.W. Himalayas *J. Bombay Nat. Hist. Soc.* 21 (3): 1082-1083.

Dodsworth, P.T.L. (1913 a) Notes on the Vultures found in the neighbourhood of Simla and adjacent ranges of the Himalayas. *Ibis* (10) 1 (4): 534-544.

Dodsworth, P.T.L. (1913 b) Occurrence of the Red-tailed Chat, *Saxicola chrysopygia* De Filippi in the vicinity of Simla. *J. Bombay Nat. Hist. Soc.* 22 (1): 196.

Dodsworth, P.T.L. (1913 c) Occurrence of the Emerald Dove, *Chalcophaps indica* (Linn.) in the Simla District. *J. Bombay Nat. Hist. Soc.* 22 (2): 398.

Dodsworth, P.T.L. (1914) Occurrence of the Whitebrowed Bush-Robin, *Ianthia indica* (Vieill.) in the North-West Himalayas. *J. Bombay Nat. Hist. Soc.* 22 (4): 795-796.

Frome, N.F. (1946) Birds noted in the Mahasu-Narkanda-Baghi area of the Simla Hills. *J. Bombay Nat. Hist. Soc.* 46 (2): 308-316.

Ganguli, U. (1967) Birds of Simla in autumn. *NLBW*, 7 (3): 4-6.

Grimmett, R.; Inskipp, C. and Inskipp, T. (1999) *Pocket Guide to the Birds of the Indian Subcontinent*. Oxford University Press, New Delhi. 384 pp.

Jones, A.E. (1947-1948) The Birds of Simla and adjacent Hills. *J. Bombay Nat. Hist. Soc.*, 47: 117-125, 219-249, 409-432.

Kazmierczak, K. (2000) A Field Guide to the Birds of India, Sri Lanka, Pakistan, Nepal, Bhutan, Bangladesh and Maldives. Om Book Service, New Delhi. 352 pp.

Kumar, A.; Mehta, H.S.; Mahabal, A.; Lal M.; Nautiyal, A.K. and Sharma, G. (2006) Aves. In: *Biodiversity in the Shiwalik Ecosystem of Punjab, India* (ed.: Anonymous). Bishan Singh Mahender Pal Singh, Dehra Dun, 710-806.

Mahabal, A. (2005) Aves. In: *Fauna of Western Himalaya*. (ed.: The Director) Zoological Survey of India, Kolkata, 275-339.

Manakadan, R. and Pittie, A. (2001) Standardized common and scientific names of the birds of the Indian subcontinent. *Buceros*, 6 (1): 1- 37.

Mattu, V.K. and Thakur, M.L. (2006) Bird Diversity and Status in Summer hill, Shimla (Himachal Pradesh). *Indian Forester* 132 (10): 1271-1281.

Mc Kinnon, J. and Philips, K. (1993) A Field Guide to birds of Sumatra, Java and Bali. Oxford University Press, Oxford.

Sharma, L. (2000) A Western Tragopan expedition in Shimla District. *WPA News*, 62: 68.

Sharma, V. and Pandey, S. (1989) Pheasant surveys in the Shimla Hills of Himachal Pradesh, India. *WPA Journal*, 14: 64-78.

Sharma, V.; Garson, P.J. and Khera, S. (1990) *Status surveys of Cheer and Western Tragopan in Simla Hills of Himachal Pradesh*. In: Pheasants in Asia, (Eds.: Hill, D.A., Garson, P.J. and Jetkins, D.). World Pheasant Association, U.K., 139-141.

Snedecore, G.W. and Cochran, W.G. (1993) *Statistical Methods*. Oxford and IBH Publ. Co., New Delhi.

Thakur, M.L. (2008) Studies on status and diversity of avifauna in Himachal Pradesh. *Ph.D. thesis, Himachal Pradesh University, Shimla, India.* 306 pp.

Thakur, M.L.; Paliwal, R.; Tak, P.C. and Mattu, V.K. (2003) Birds of Balh Valley, District Mandi, Himachal Pradesh, India. *Annals of Forestry* 11 (1): 113-126.

Thakur, M.L.; Mattu, V.K. and Sharma, R.M. (2006) Bird diversity and status in Tara Devi, Shimla, Himachal Pradesh. In: *Biodiversity and Environment* (Eds.: Pandey B.N. and Kulkarni G.K.). A.P.H. Pub., New Delhi.

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

Thakur, M.L. and Mattu, V.K. (2011 a) Avifauna of Kaza area of Spiti (Himachal Pradesh) India. *International Journal of Science and Nature*, 2 (3): 483-487.

Thakur, M.L., Mattu, V.K., Thakur, V. and Sharma, V. (2011 b) Avifauna of Nalagarh valley of Himachal Pradesh, India. *Himalayan Studies Journal* 3 (1): 36-48.

Theobald, W. (1862) Notes on a trip from Simla to the Spiti valley and Chomoriri (Tshomoriri) Lake during the months of July, August and September, 1861. *J. Asiatic Soc. Bengal* 31: 480-527.

Tytler, R.C. (1868) Notes on the birds observed during a march from Simla to Mussoorie. *Ibis* (2) 4: 190-203.