

Avifaunal Diversity of Una District, Himachal Pradesh, India

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Abstract: *The avifaunal diversity at five study sites (Una, Bangana, Amb, Gagret and Chintpurni) of Una district was explored during three visits (2 autumn and 1 winter) in 2008, 2009 and 2011. In total, 131 species of birds belonging to 12 orders and 39 families were recorded (Una : 100, Amb: 60, Bangana: 38, Gagret: 46 and Chintpurni: 38). The highest number of species were found in order Passeriformes (78) 59.5% followed by Ciconiiformes (21)16.0% and least number (1) 0.76% in other 2 orders. The highest number of species were found in family Muscicapidae (14) 10.6% followed by Silviidae (12) 9.1% and Passeridae (12) 9.1% and least number (1) 0.76% in other 16 families. The relative abundance of species was Very Common (10), Common (55), Uncommon (58) and Rare (9). The seasonal status of species was Autumn (105) and Winter (109). One globally threatened (IUCN status) species Egyptian Vulture *Neophron percnopterus* was reported to have relative abundance as Uncommon. Black-headed Munia *Lonchura malacca* was recorded as new addition to birdlist of Himachal Pradesh. The other interesting rare species found was Eurasian Wryneck *Jynx torquilla*.*

Keywords: *Avifaunal, Diversity, Birds, Una, District, Himachal Pradesh.*

1. INTRODUCTION

There are about 10,000 living species of birds in the world. They vary in their habitat, 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. Many bird species show clear preferences for one or more kinds of habitats while others are confined to particular habitat only within a single region or biome. Some birds have small breeding ranges in particular region only while others undertake long distance annual migrations throughout the world. Birds serve as valuable indicators of changes in biodiversity and environment of world [1].

India has rich diversity of more than 1250 species of birds; Grimmett et al. [2], Kazmierczak and Perlo [3]. In Himachal Pradesh more than 500 species are found; Grimmett and Inskipp [4], Mahabal [5].

The avifauna of Una district has been studied in past; Mahabal [6], Mahabal [5] and that of adjoining Kangra and Bilaspur districts; Whistler [7], Mahabal and Sharma [8], Mahabal and Sharma [9], Besten [10], Mahabal [5]. Beside these studies, some areas of Una district remained unexplored, therefore present study was undertaken. A preliminary checklist of this area has already been reported by author; Singh [11], Singh [12] and present study aims to give further information about relative abundance, seasonal status and habitat of birds.

2. MATERIALS AND METHODS

2.1. Study Area

Una district (31.17° to 31.52° N, 75.58° to 76.28° E) lies in Sub-humid tropical zone of Shiwalik Himalayas in Himachal Pradesh. It is bounded by Kangra district in north; Hamirpur and Bilaspur districts in north-east; and plains of Punjab in south-west (Fig.1). Una district has a total area of 1542 km². The terrain is generally plain with low hills. The elevation of district varies from 340 meters (south-east) to 1041 meters (east) above mean sea level. The climate is tropical to temperate and temperature varies from 4°C (minimum) in winter to 46°C (maximum) in summer. The average annual rainfall is about 1040 mm [13]. The vegetation and habitats of Una district mainly consists of scrubs, tall grasses, subtropical broadleaved forests, coniferous (pine) forests, agricultural lands, gardens, ponds, streams and rivers. Five study sites of Una district varying in altitude from 400 meters to 900 meters above mean sea level were selected for observation of birds: Una (400 m- Una

town surroundings and Swan river area); Bangana (570 m- Bangana , Satrukha, Hatali and Rajputan); Amb (485 m- Amb town surroundings); Gagret (475 m- Gagret, Shivbadi and Ambota); and Chintpurni (900 m- Chintpurni, Bharwai, Thanikpura, Barangwal and Doohl). From central point of Una, distances of these four study sites are: 35 km (Amb), 44 km (Gagret), 26 km (Bangana) and 52 km (Chintpurni).



Figure1. Map Showing location of Study Sites (U: Una, B: Bangana, A: Amb, G: Gagret, C: Chintpurni) in Una district of Himachal Pradesh. (Map Source: www.mapsofindia.com)

2.2. Methods

Due to large area of study sites, stratified sampling technique was adopted so as to include all different kinds of habitats of 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 4-5 km. Three visits (2 autumn and 1 winter) were made to Una district during 2008, 2009 and 2011. Una was covered for all three visits and other four sites (Amb, Bangana, Gagret and Chintpurni) were covered for two visits (1 autumn and 1 winter) only. Minimum 4 days were devoted to each site during any visit. The observations were done during morning (7.00-11.00 hrs) and evening times (15.00-17.30 hrs) in sufficient sunlight at local time. The relative abundance was estimated on the basis 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 (7x 35 mm) and some 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* [14].

3. RESULTS AND DISCUSSION

In total, 131 species of birds belonging to 12 orders and 39 families were recorded in Una district (Table). The total number of species found in 39 families were (Fig. 2): Phasianidae (6) 4.5% , Picidae (4) 3.0% , Megalaimidae (1) 0.76% , Bucerotidae (1) 0.76% , Upupidae (1) 0.76%,

Coraciidae (1) 0.76%, Alcedinidae (1) 0.76%, Halcyonidae (1) 0.76%, Meropidae (2) 1.5%, Cuculidae (2) 1.5%, Centropodidae (1) 0.76% , Psittacidae (2) 1.5%, Strigidae (2) 1.5%, Columbidae (5) 3.8%, Rallidae (3) 2.3% , Scolopacidae (6) 4.5%, Rostratulidae (1) 0.76%, Charadriidae (4) 3.0%, Accipitridae (4) 3.0%, Falconidae (1) 0.76%, Phalacrocoracidae (1) 0.76%, Ardeidae (3) 2.3%, Threskiornithidae (1) 0.76%, Laniidae (1) 0.76%, Corvidae (9) 6.8%, Muscicapidae (14) 10.6%, Sturnidae (6) 4.5%, Sittidae (2) 1.5%, Certhiidae (1) 0.76%, Paridae (1) 0.76%, Hirundinidae (3) 2.3%, Pycnonotidae (2) 1.5%, Cisticolidae (6) 4.5%, Zosteropidae (1) 0.76%, Sylviidae (12) 9.1%, Alaudidae (1) 0.76%, Nectariniidae (3) 2.3%, Passeridae (12) 9.1%, Fringillidae (4) 3.0%. The highest number of species were found in order Passeriformes (78) 59% followed by Ciconiiformes (21)15.9% and least number (1) 0.76% in other 2 orders. The highest number of species were found in family Muscicapidae (14) 10.6% followed by Silviidae (12) 9.1% and Passeridae (12) 9.1% and least number (1) 0.76% in other 16 families.

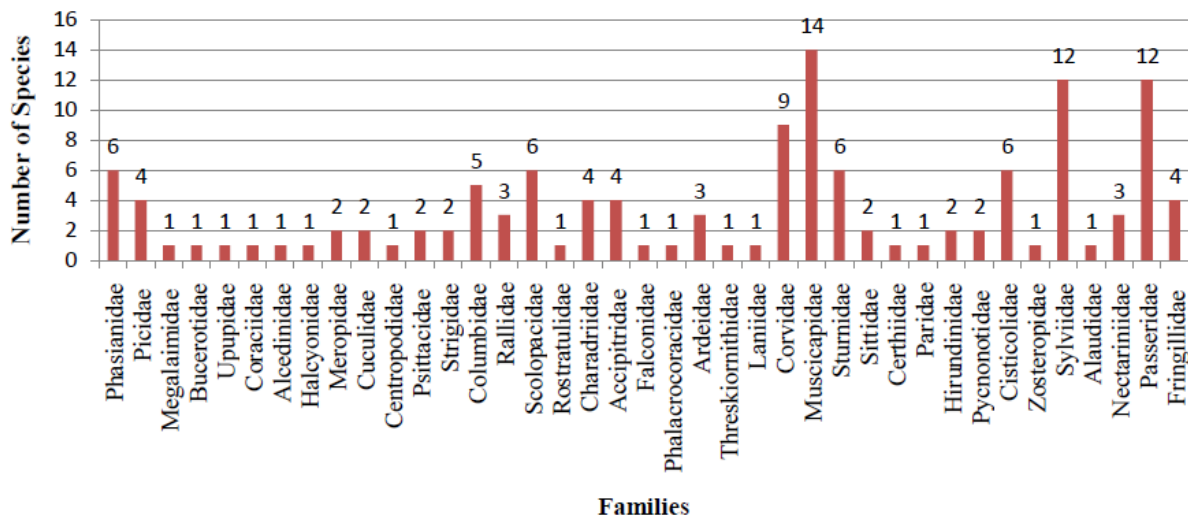


Figure2. Family-wise distribution of bird species in Una district.

The total numbers of species observed in five study sites of Una district were (Table): 100 (Una), 60 (Amb), 38 (Bangana), 46 (Gagret) and 38 (Chintpurni). Of 131 species , 21 species (Red Junglefowl, Rose-ringed Parakeet, Plum-headed Parakeet, Rock Pigeon, Spotted Dove, Black Kite, Rufous Treepie, Large-billed Crow, Oriental Magpie Robin, Indian Robin, Grey Bushchat, Common Myna, Great Tit, Himalayan Bulbul, Red-vented Bulbul, Grey-breasted Prinia, Oriental White Eye, Common Tailorbird, Grey-hooded Warbler, Jungle Babbler and House Sparrow) were found common in all study sites (Una, Bangana, Amb, Gagret, Chintpurni). This shows that these species have common occurrence almost everywhere in Una district .

The relative abundance (Table; Fig.3) of species was Very Common (10), Common (55), Uncommon (58) and Rare (9). Thus, highest number of species were found in uncommon followed by common, very common and rare.

The seasonal status (Table; Fig.4) of species was Autumn (105) and Winter (109). Thus, winter season was dominant for bird diversity than autumn season.

Further, 88 species out of 131 species (present study) were found common with previous records of 144 species [5] and therefore, remaining species of present study were found further additions to birdlist of Una district.

The globally threatened (IUCN status) species Egyptian Vulture *Neophron percnopterus* was found to have relative abundance as Uncommon and therefore, have scope of conservation in this area.

Black-headed Munia *Lonchura malacca* (Fig.5) was recorded for the first time as new addition to birdlist of Himachal Pradesh. A bird was seen foraging on crop plants in an agricultural land (Una, 29 September 2008). The other interesting rare species found was Eurasian Wryneck *Jynx torquilla* (Fig. 6) A bird was seen perching on a tree in scrub (scattered trees and bushes) adjoining agricultural land (Gagret, 25 January, 2011).



Figure5. Black-headed Munia *Lonchura malacca* (Una)



Figure 6. Eurasian Wryneck *Jynx torquilla* (Gagret)

Table. Systematic List of birds of Una District

SN	Scientific and Common Names (with orders and families)	Study Sites	Habitats	Seasonal Status	Rel. Abu.
	GALLIFORMES Phasianidae				
1	Black Francolin <i>Francolinus francolinus</i>	U,G	Sl, Al	AW	UC
2	Grey Francolin <i>Francolinus pondicerianus</i>	U,G	Al, Sl, Bu	AW	C
3	Jungle Bush Quail <i>Perdica asiatica</i>	U	Bu.Sl	AW	UC
4	Red Junglefowl <i>Gallus gallus</i>	U, A,B,G,C	MF, BF	AW	C
5	Kalij Pheasant <i>Lophura leucomelanos</i>	C	MF,CF	AW	C
6	Indian Peafowl <i>Pavo cristatus</i>	C	MF, BF	AW	UC
	PICIFORMES Picidae				
7	Eurasian Wryneck <i>Jynx torquilla</i>	G	Sl	W	SC
8	Grey-capped Pygmy Woodpecker <i>Dendrocopos canicapillus</i>	A	BF	AW	UC
9	Fulvous-breasted Woodpecker <i>Dendrocopos macei</i>	C	MF	AW	UC
10	Black-rumped Flameback <i>Dinopium benghalense</i>	C	BF	AW	C
	Megalaimidae				
11	Brown-headed Barbet <i>Megalaima zeylanica</i>	U, A	Ga, Gr, BF	AW	UC
	BUCEROTIFORMES Bucerotidae				
12	Indian Grey Hornbill <i>Ocyrceros birostris</i>	U, A, G	Ga, Gr, BF	AW	C
	UPUPIFORMES Upupidae				
13	Common Hoopoe <i>Upupa epops</i>	U, A, G	Al, La, Ga, Sl	AW	UC
	CORACIIFORMES Coraciidae				
14	Indian Roller <i>Coracias benghalensis</i>	U	Al, OA	A	UC
	Alcedinidae				
15	Common Kingfisher <i>Alcedo atthis</i>	G	St	AW	UC
	Halcyonidae				
16	White-throated Kingfisher <i>Halcyon smyrnensis</i>	U, B, A	St, IC	AW	C
	Meropidae				
17	Green Bee-eater <i>Merops orientalis</i>	U, A	BF, Al, Sl	A	C
18	Blue-tailed Bee-eater <i>Merops philippinus</i>	U	St, Al	A	UC
	CUCULIFORMES Cuculidae				
19	Pied Cuckoo <i>Clamator jacobinus</i>	U	Al, Sl	A	UC
20	Asian Koel <i>Eudynamis scolopacea</i>	U, A	Ga, Gr,Al	A	C
	Centropodidae				
21	Greater Coucal <i>Centropus sinensis</i>	U, A, G	Sl, TG, Ga	AW	UC

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	PSITTACIFORMES Psittacidae				
22	Rose-ringed Parakeet <i>Psittacula krameri</i>	U, B, A,G,C	Ga, Gr, HH, Al	AW	C
23	Plum-headed Parakeet <i>Psittacula cyanocephala</i>	U, B, A,G,C	Ga,Gr, HH, Al	AW	C
	STRIGIFORMES Strigidae				
24	Asian Barred Owlet <i>Glaucidium cuculoides</i>	B	Gr, BF	W	UC
25	Spotted Owlet <i>Athene brama</i>	G	Sl	W	SC
	COLUMBIFORMES Columbidae				
26	Rock Pigeon <i>Columba livia</i>	U, B, A,G,C	HH, Al, La, Ga, Sl	AW	VC
27	Laughing Dove <i>Streptopelia senegalensis</i>	U, A	Al, Sl	AW	C
28	Spotted Dove <i>Streptopelia chinensis</i>	U, A, B,G,C	Al, HH, Ga, Gr, BF, La	AW	VC
29	Red Collared Dove <i>Streptopelia tranquebarica</i>	U	Al, Sl	A	UC
30	Eurasian Collared Dove <i>Streptopelia decaocto</i>	U, A	Al, Sl, HH, Ga, La	AW	C
	GRUIFORMES Rallidae				
31	Brown Crake <i>Amaurornis akool</i>	U	St, IC	AW	UC
32	White-breasted Waterhen <i>Amaurornis phoenicurus</i>	U, B, A, G	Po, St, IC	AW	C
33	Common Moorhen <i>Gallinula chloropus</i>	U, G	Po	AW	C
	CICONIIFORMES Scolopacidae				
34	Common Redshank <i>Tringa tetanus</i>	U	St	W	UC
35	Common Greenshank <i>Tringa nabularia</i>	U, A	St	AW	UC
36	Green Sandpiper <i>Tringa ochropus</i>	U	St	AW	C
37	Wood Sandpiper <i>Tringa glareola</i>	U	St	A	UC
38	Common Sandpiper <i>Actitis hypoleucos</i>	U	St	W	UC
39	Temminck's Stint <i>Calidris temminckii</i>	U	St	W	UC
	Rostratulidae				
40	Greater Painted- snipe <i>Rostratula benghalensis</i>	U	St	A	SC
	Charadriidae				
41	Black-winged Stilt <i>Himantopus himantopus</i>	U	St, Po	AW	C
42	Little Ringed Plover <i>Charadrius dubius</i>	U	St	W	UC
43	River Lapwing <i>Vanellus duvaucelli</i>	U, A	Ri, St, La	W	UC
44	Red-wattled Lapwing <i>Vanellus indicus</i>	U, A, G	St, La,OG	AW	C
	Accipitridae				
45	Black-shouldered Kite <i>Elanus caeruleus</i>	U, A, G, C	OA, Al	AW	UC
46	Black Kite <i>Milvus migrans</i>	U, B, A,G,C	HH, Al, DS,OA	AW	C
47	Egyptian Vulture <i>Neophron percnopterus</i>	U, A	OA, Gl	AW	UC
48	Shikra <i>Accipiter badius</i>	U	OA, Sl	AW	UC
	Falconidae				
49	Common Kestrel <i>Falco tinnunculus</i>	G	OA, Al	W	UC
	Phalacrocoracidae				
50	Little Cormorant <i>Phalacrocorax niger</i>	U, A, G	St	AW	UC
	Ardeidae				
51	Little Egret <i>Egretta garzetta</i>	U, A	St	AW	C
52	Cattle Egret <i>Bubulcus ibis</i>	U, B, A, G	St, La, Al, Gl	AW	C
53	Indian Pond Heron <i>Ardeola grayii</i>	U, A	Po, St	AW	C
	Threskiornithidae				
54	Black Ibis <i>Pseudibis papillosa</i>	U	Al	W	SC
	PASSERIFORMES Laniidae				
55	Long-tailed Shrike <i>Lanius schach</i>	U, A, G, C	Sl, Bu	AW	UC
	Corvidae				
56	Rufous Treepie <i>Dendrocitta vagabunda</i>	U, B, A,G,C	Ga, Gr, HH, BF	AW	C
57	House Crow <i>Corvus splendens</i>	U, G	HH, DS, Al	AW	C
58	Large-billed Crow <i>Corvus macrorhynchos</i>	U, B, A,G,C	HH, DS, MF,Al	AW	VC

59	Eurasian Golden Oriole <i>Oriolus oriolus</i>	U	BF, Ga, Gr	A	UC
60	Small Minivet <i>Pericrocotus cinnamomeus</i>	B, A	Sl, Ga, Gr	W	UC
61	White-throated Fantail <i>Rhipidura albicollis</i>	U, B	Bu, BF	AW	UC
62	Black Drongo <i>Dicrurus macrocercus</i>	U, A, G	Al, Sl, He, Bu	AW	C
63	Asian Paradise-flycatcher <i>Terpsiphone paradisi</i>	U	Ga, Gr, Bu	A	C
64	Common Woodshrike <i>Tephrodornis pondicerianus</i>	A	BF	AW	UC
	Muscicapidae				
65	Blue Whistling Thrush <i>Myophonus caeruleus</i>	B, A, C	St, BF, MF	AW	C
66	Slaty-blue Flycatcher <i>Ficedula tricolor</i>	B	IC	AW	UC
67	Pale Blue flycatcher <i>Cyornis unicolor</i>	A	BF	W	SC
68	Bluethroat <i>Luscinia svecica</i>	U, G	La, Sl, Bu	W	UC
69	Oriental Magpie Robin <i>Copsychus saularis</i>	U, B, A,G,C	Ga, La, HH	AW	C
70	Indian Robin <i>Saxicoloides fulicata</i>	U, B, A,G,C	Sl, BF, Ga, Bu	AW	C
71	Blue-capped Redstart <i>Phoenicurus coeruleocephalus</i>	C	MF	W	UC
72	Black Redstart <i>Phoenicurus ochruros</i>	B	Ga	W	SC
73	White-capped Water Redstart <i>Chaimarrornis leucocephalus</i>	A	St	AW	C
74	Plumbeous Water Redstart <i>Rhyacornis fuliginosus</i>	B	St	AW	C
75	Common Stonechat <i>Saxicola torquata</i>	U, G	He, Sl, Al	W	C
76	Pied Bushchat <i>Saxicola caprata</i>	U, A, G	He, Sl, Al	AW	C
77	Grey Bushchat <i>Saxicola ferrea</i>	U, B, A, G, C	He, Sl, Al	W	C
78	Brown Rock Chat <i>Cercomela fusca</i>	U, B, C	HH	AW	UC
	Sturnidae				
79	Brahminy Starling <i>Sturnus pagodarum</i>	U, B	Sl, Al, Ga, La	AW	C
80	Common Starling <i>Sturnus vulgaris</i>	U, G	Al, La	W	C
81	Asian Pied Starling <i>Sturnus contra</i>	U, G	Al, La, Ga	AW	C
82	Common Myna <i>Acridotheres tristis</i>	U, B, A,G,C	HH, Al, Sl, La, Ga, Gl	AW	VC
83	Bank Myna <i>Acridotheres ginginianus</i>	U, G	HH, Al, La	AW	C
84	Jungle Myna <i>Acridotheres fuscus</i>	U, A	Al, Sl	A	UC
	Sittidae				
85	Chestnut-bellied Nuthatch <i>Sitta castanea</i>	C	BF	W	UC
86	Wall Creeper <i>Tichodroma muraria</i>	A, C	Ro/So, St	W	UC
	Certhiidae				
87	Bar-tailed Treecreeper <i>Certhia himalayana</i>	C	CF, MF	AW	UC
	Paridae				
88	Great Tit <i>Parus major</i>	U, B,A, G,C	MF, CF, HH, Al, Sl, Ga, Gr	AW	VC
	Hirundinidae				
89	Plain Martin <i>Riparia paludicola</i>	U, A, G	St	A	C
90	Wire-tailed Swallow <i>Hirundo smithii</i>	U	HH, Al	A	UC
	Pycnonotidae				
91	Himalayan Bulbul <i>Pycnonotus leucogenys</i>	U, B, A,G,C	Sl, BF, MF, Al, Bu	AW	VC
92	Red-vented Bulbul <i>Pycnonotus cafer</i>	U, B, A,G,C	Sl, BF, MF, Al, Bu	AW	C
	Cisticolidae				
93	Grey-breasted Prinia <i>Prinia hodgsonii</i>	U, B, A,G,C	He, Bu	AW	C
94	Jungle Prinia <i>Prinia sylvatica</i>	U	Sl, Bu	A	UC
95	Yellow-bellied Prinia <i>Prinia flaviventris</i>	G	TG	W	SC
96	Plain Prinia <i>Prinia inornata</i>	G	TG, He	AW	C
97	Ashy Prinia <i>Prinia socialis</i>	U	TG, He, Bu	A	C
98	Zitting Cisticola <i>Cisticola juncidis</i>	U, G	He, TG	AW	UC
	Zosteropidae				

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99	Oriental White Eye <i>Zosterops palpebrosus</i>	U, B,A,G, C	Ga, BF, MF, Bu	AW	VC
	Sylviidae				
100	Common Tailorbird <i>Orthotomus sutorius</i>	U, B, A,G,C	Ga, Bu	AW	C
101	Common Chiffchaff <i>Phylloscopus collybita</i>	U, B, A	Ga, Gr, BF	AW	C
102	Smoky Warbler <i>Phylloscopus fuligiventer</i>	U	He, Bu	A	SC
103	Grey-hooded Warbler <i>Seicercus xanthoschistos</i>	B, A, C	BF, MF, Ga, Gr, Sl, Bu	AW	VC
104	Puff-throated Babbler <i>Pellorneum ruficeps</i>	C	Ga, Bu, BF	AW	C
105	Rusty-cheeked Scimitar Babbler <i>Pomatorhinus erythrogastrus</i>	C	BF, MF	AW	UC
106	Black-chinned Babbler <i>Stachyris pyrrhops</i>	A	Bu, MF	AW	C
107	Yellow-eyed Babbler <i>Chrysomma sinense</i>	U, B, A	He, TG, Bu	AW	C
108	Common Babbler <i>Turdoides caudatus</i>	U	Bu, He	AW	UC
109	Striated Babbler <i>Turdoides earlei</i>	U, G	TG, He, Al	AW	C
110	Large Grey Babbler <i>Turdoides malcolmi</i>	U	TG, He, Al	AW	C
111	Jungle Babbler <i>Turdoides striatus</i>	U, B, A,G,C	MF, BF, Ga,Gr, Sl, Al, La, TG	AW	VC
	Alaudidae				
112	Sand Lark <i>Calandrella raytal</i>	U	Ri,OG	W	UC
	Nectariniidae				
113	Pale-billed Flowerpecker <i>Dicaeum erythrorhynchos</i>	C	BF, Sl	W	UC
114	Purple Sunbird <i>Nectarinia asiatica</i>	U	Sl, Bu	A	UC
115	Crimson Sunbird <i>Aethopyga siparaja</i>	C	Ga, BF	W	UC
	Passeridae				
116	House Sparrow <i>Passer domesticus</i>	U,B,A,G,C	HH, La, Al, Bu	AW	VC
117	White Wagtail <i>Motacilla alba</i>	U, B, A	St, OG	AW	C
118	White-browed Wagtail <i>Motacilla maderaspatensis</i>	U, A	St, OG	AW	C
119	Yellow Wagtail <i>Motacilla flava</i>	U	St, OG	AW	UC
120	Grey Wagtail <i>Motacilla cinerea</i>	U, B, A	St, OG	AW	UC
121	Paddyfield Pipit <i>Anthus rufulus</i>	U, G	La, OG	AW	C
122	Buff-bellied Pipit <i>Anthus rubescens</i>	U	La	W	UC
123	Baya Weaver <i>Ploceus philippinus</i>	U	Al, Sl	A	UC
124	Red Avadavat <i>Amandava amandava</i>	U, A, G	TG	AW	C
125	Indian Silverbill <i>Lonchura malabarica</i>	U, B, A	TG, He, La	AW	C
126	Scaly-breasted Munia <i>Lonchura punctulata</i>	U, C	He, La, TG	AW	UC
127	Black-headed Munia <i>Lonchura malacca</i>	U	Al	A	SC
	Fringillidae				
128	Red-mantled Rosefinch <i>Carpodacus rhodochlamys</i>	U	Bu, Sl, Al	A	UC
129	Crested Bunting <i>Melophus lathami</i>	U	Sl, Al	A	UC
130	Rock Bunting <i>Emberiza cia</i>	C	MF, CF, La	W	C
131	White-capped Bunting <i>Emberiza stewarti</i>	C	MF, La	W	UC

Abbreviations:

Table

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

Study Sites

U: Una, B: Bangana, A: Amb, G: Gagret, C: Chintpurni

Seasonal Status

A: Autumn (September to November), W: Winter (December to February)

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 , Gl: Grazing Land, Sl: Scrub Land, MF: Mixed forest (broadleaved and coniferous) BF: Broadleaved Forest, CF: Coniferous Forest, HH: Human Habitations, Ga: Garden, Gr: Grove, TG: Tall Grass, OA: Open Area, DS: Dumping Site, He: Herb, , Bu: Bush, Po: Pond, Ri/St: River/Stream, La: Lawn , OG: Open Gound, IC: Irrigation Channel, Ro/So: Rock/Stone.

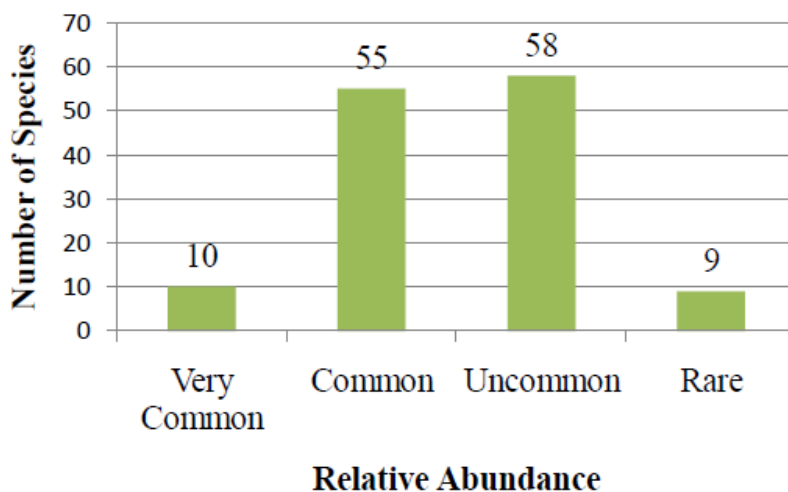


Figure3. Relative Abundance of bird species in Una district.

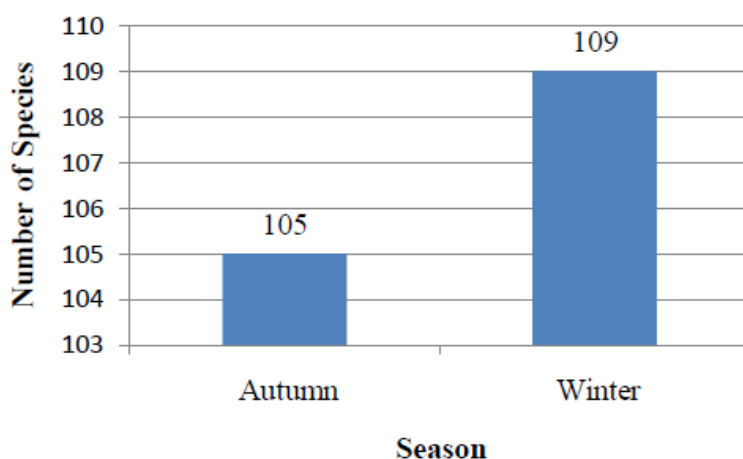


Figure4. Seasonal status of bird species in Una district

4. CONCLUSION

The present study revealed the addition of new species to previous records (144 species) of Una district in Himachal Pradesh. The presence of globally threatened species Egyptian vulture informs about conservation issue in this area. New record of bird species Black-headed Munia to birdlist of Himachal Pradesh recommends further studies to assign its status. Presence of some peculiar and rare species in Una district also suggests the need of further explorations.

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