

**ORNITHO-FAUNA OF CITY AND RAVI CAMPUSES OF UNIVERSITY OF
VETERINARY AND ANIMAL SCIENCES, LAHORE-PAKISTAN.**

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ABSTRACT

Ornitho-fauna of University of Veterinary and Animal Sciences has been studied from 2009 to 2010, that is one of the oldest veterinary institution in Asia and constitute two campuses. City campus lies within urban congestion of Lahore and Ravi campus that is 80 kilometer towards southwest of city campus. Surveys were conducted from dawn to dusk and nocturnal observations were also made. A total of 123 bird species were observed, 53 species from city campus and 70 species from Ravi campus. In the literature the area can possibly have 195 bird species. The reasons why less number of species was observed can be the highly fragmented landscapes at present. Fragmentation that also leads to edge effects, which, when compounded by habitat degradation, may alter the intensity of a number of ecological processes. This study proposes further research that tests the importance of some of these ecological processes in causing the decline and loss of bird species in urban areas. Although management should proceed immediately, including a cessation of any further clearing of native vegetation, it should be conducted in conjunction with research on avifauna and their role in ecosystem.

Keywords: Bird's of Lahore; habitat loss; habitat fragmentation; UVAS ornitho-fauna.

INTRODUCTION

Pakistan is home to an amazing 786 species of birds. This rich bird biodiversity is a result of a large variety of habitats varying in topographical factors throughout the country. Pakistan hosts permanent snow zone in the mountains, alpine and sub-alpine plateaus, hill slopes in the north, sandy deserts and alluvial plains in the south. River Indus with all its tributaries form a rich fertile basin in Punjab and Sindh province and this is also known as the bird migration route No 4 or the Indus flyway (Explore Pakistan, 2010; Bibi and Ali, 2013).

In the last five decades the number and diversity of birds in the area has gradually decreased due to population and pollution increase and thus climate change being one of the major factors. Man-made factors have also played their part like the Diclofenac sodium an anti-inflammatory drug given to animals has decreased the population of vultures who feed on the dead carcass of animals to about 99.9 per cent for oriental white-backed vultures since 1992 Numbers of long-billed and slender-billed vultures together, have fallen by almost 97 per cent in the same period and according to the

Zoological Survey London it might go extinct in the next ten years Cunningham, (1998).

Lahore and Pattoki both being riverine habitats due to the River Ravi flowing through them host a perfect habitat for birds like piscivorous, grainivorous, insectivorous, frutivorous, omnivorous, raptors and scavengers. The University of Veterinary and Animal Sciences, Lahore, being one of the oldest Veterinary Institutions in Asia from its inception in 1882 as a veterinary college was raised to a university in 2002. Area of city campus is 52 acres and location is near river Ravi in north-west of Lahore (Figure -1). Pattoki campus also known as the Ravi Campus which is 80 kilometers from the city campus on Multan road towards south west and is 1086 acres of land divided into four campuses A,B,C, and D (Figure-2). As compared to city campus situated in the walled city of Lahore. Pattoki Campus is on the main Multan Road and a large tract of untouched land with natural fauna and flora. The main objective of the study was to observe the birds of both the stations as a comparison and to note the bird diversity that has decreased due to human interventions and changed climatic conditions.

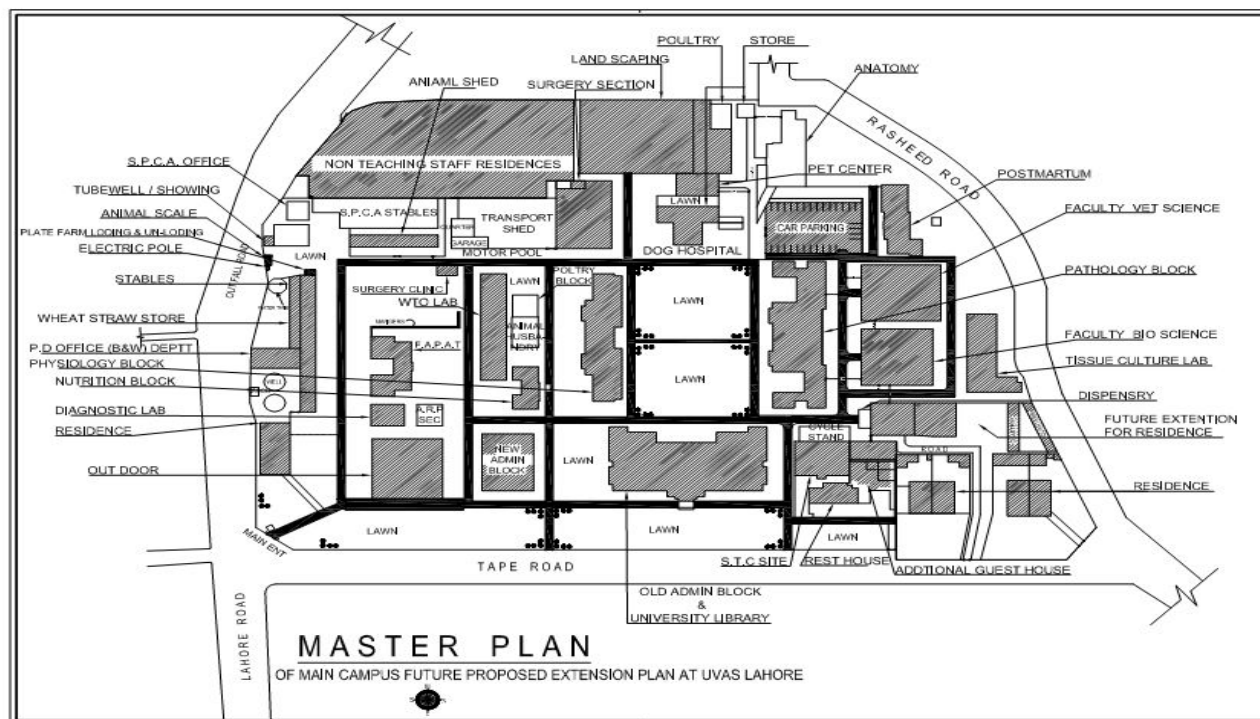


Figure: 1 Map of City Campus, UVAS, Lahore.

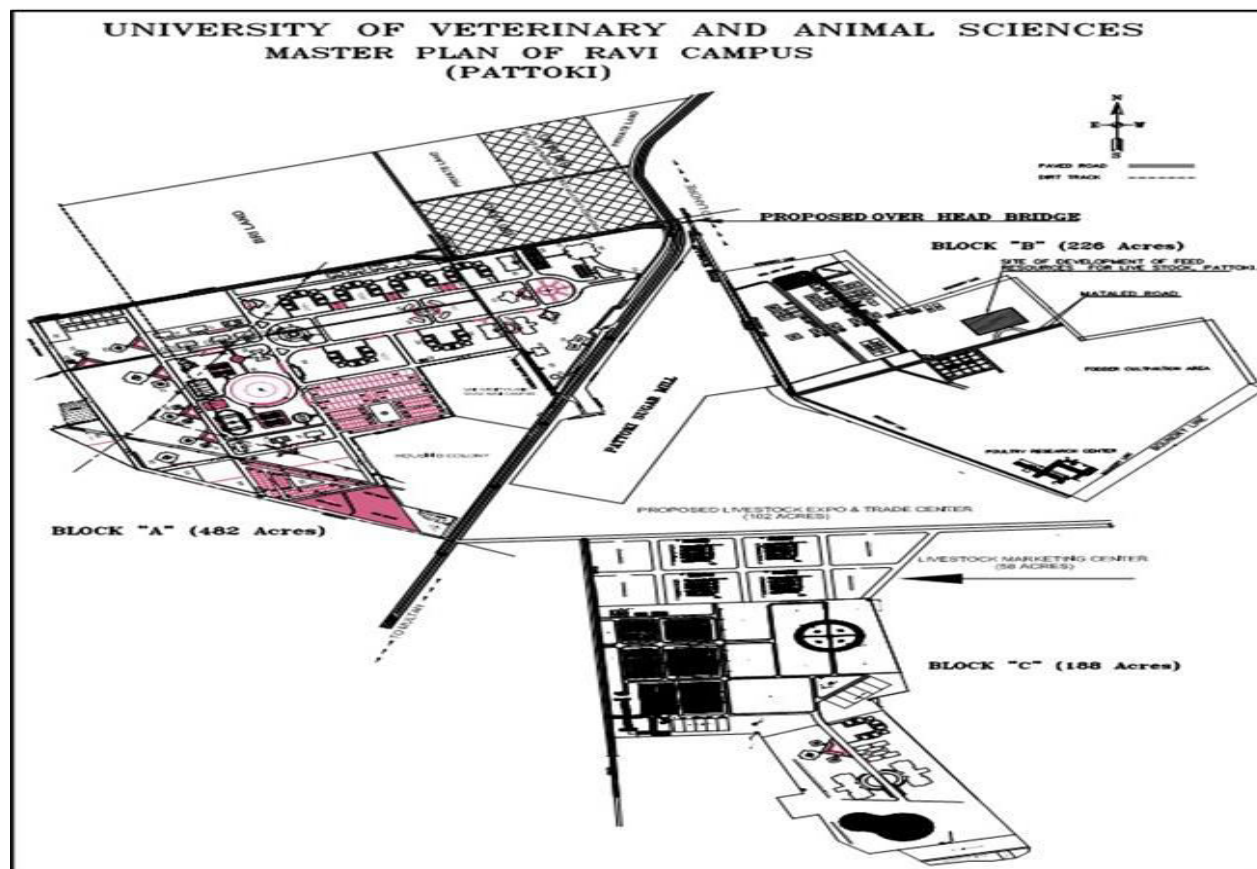


Figure: 2 Map of UVAS Ravi Campus, Pattoki.

MATERIALS AND METHODS

Birds were observed at both the campuses with the help of binoculars (10x50) and spotting scopes of varying magnifications from 6:00 am in the morning to 6:00pm in the evening, Nocturnal birds were observed during the night surveys at both the stations. The period of study was from September 2009 to December 2010. These birds were identified by using field guides and books like Mirza and Wasiq, (2007), Grimmitte *et al.*, (1998), and Roberts, (1991, 1992).

RESULTS

Bird fauna observed in both the campuses include 123 species out of which 70 species were found in Pattoki campus, 21 bird species were exclusive for city campus and 32 bird species were recorded in both the campuses. Out of these 79 were resident bird species, whereas 24 species were winter visitors, 12 species were passage migrants and 8 species were summer migrants, *Streptopelia tranquebarica* being the only species as the summer visitor and *Accipiter badius* the year round visitor in the area. These birds were compared to Mirza and Wasiq, (2007) which possibly lists 195 species of birds in the area.

No	Common Name	Scientific Name	Distribution	City Campus	Ravi Campus	UVAS Birds 2010	Mirza and Wasiq (2007)
1	Rose Ringed Parakeet	<i>Psittacula krameri</i>	Resident	+	-	+	+
2	Indian Kite	<i>Milvus migrans</i>	Resident	+	+	+	+
3	House Crow	<i>Corvus splendens</i>	Resident	+	+	+	+
4	Red Vented Bulbul	<i>Pycnonotus cafer</i>	Resident	+	+	+	+
5	Little Brown Dove	<i>Streptopelia senegalensis</i>	Resident	+	+	+	+
6	Pied Myna	<i>Sturnus contra</i>	Resident	+	+	+	+
7	Common Myna	<i>Acredotheres tristis</i>	Resident	+	+	+	+
8	Blue Rock Pigeon	<i>Columba livia</i>	Resident	+	+	+	+
9	Indian Magpie Robin	<i>Copsychus saularis</i>	Resident	+	+	+	+
10	Common House Sparrow	<i>Passer domesticus</i>	Resident	+	+	+	+
11	Golden Back Woodpecker	<i>Dinopium benghalense</i>	Resident	+	-	+	+
12	Bar-tailed Tree Creeper	<i>Certhia himalayana</i>	Winter Visitor	+	-	+	+
13	Hoopoe	<i>Upupa epops</i>	Resident	+	+	+	+
14	Indian Ring Dove	<i>Streptopelia decaocto</i>	Resident	+	+	+	+
15	Spotted Owlet	<i>Athene brama</i>	Resident	+	-	+	+
16	Cattle Egret	<i>Bubulcus ibis</i>	Resident	+	+	+	+
17	Koel	<i>Eudynamis scolopacea</i>	Summer Breeder	+	-	+	+
18	Black Redstart	<i>Phoenicurus ochruros</i>	Winter Visitor	+	-	+	+
19	White Breasted Kingfisher	<i>Halcyon smyrnensis</i>	Resident	+	+	+	+
20	House Swift	<i>Apus affinis</i>	Resident	+	+	+	+
21	Red-wattled Lapwing	<i>Hoplopterus indicus</i>	Resident	+	+	+	+
22	Grey Hornbill	<i>Tockus nasutus</i>	Resident	+	-	+	+
23	Shikra	<i>Accipiter badius</i>	Year Round Visitor	+	-	+	+
24	Large Pied Wagtail	<i>Motacilla maderaspatensis</i>	Resident	+	+	+	+
25	Purple Sunbird	<i>Nectarinia asiatica</i>	Winter Visitor	+	-	+	+
26	Crimson- Breasted Barbet	<i>Megalaima haemacephala</i>	Resident	+	-	+	+
27	Indian Plain Martin	<i>Riparia paludicola</i>	Resident	+	+	+	+
28	Collared Sand Martin	<i>Riparia riparia</i>	Winter Visitor	+	+	+	+
29	Indian Robin	<i>Saxicoloides fulicata</i>	Resident	+	+	+	+
30	Black Drongo	<i>Dicrurus macrocercus</i>	Resident	+	+	+	+
31	Yellow-footed Green	<i>Treron phoenicoptera</i>	Resident	+	-	+	+

	Pigeon						
32	Eurasian Kestrel (female)	<i>Falco tinnunculus</i>	Winter Visitor	+	-	+	+
33	White-browed Fantail Flycatcher	<i>Rhipidura aureola</i>	Winter Visitor	+	-	+	+
34	Red-breasted Flycatcher	<i>Ficedula parva</i>	Resident	+	-	+	+
35	Indian Tree Pie	<i>Dendrocitta vagabunda</i>	Resident	+	+	+	+
36	Tailor Bird	<i>Orthotomus sutorius</i>	Resident	+	-	+	+
37	Bank Myna	<i>Acredothores ginginianus</i>	Resident	+	+	+	+
	White throated						
38	Munia/Indian Silverbill	<i>Lonchura malabaricia</i>	Resident	+	-	+	+
39	Spanish Sparrow	<i>Passer hispaniolensis</i>	Winter Visitor	+	-	+	+
40	Rosy Pastor	<i>Sturnus roseus</i>	Winter Visitor	+	-	+	+
		<i>Streptopelia</i>	Summer				
41	Red Turtle Dove	<i>tranquebanca</i>	Visitor	+	-	+	+
42	Blue- Throat	<i>Luscinias vecica</i>	Winter Visitor	+	-	+	+
43	Long tailed Minivet	<i>Pericrocotus ethologus</i>	Winter Visitor	+	-	+	+
44	Alexandrine Parakeet	<i>Psittacula euparia</i>	Resident	+	+	+	+
45	Black Shouldered Kite	<i>Elanus caeruleus</i>	Resident	+	+	+	+
		<i>Pericrocotus</i>					
46	Small Minivet	<i>cinnamomeus</i>	Resident	+	+	+	+
47	Crested Lark	<i>Galerida cristata</i>	Resident	+	+	+	+
		<i>Stigmatopelia</i>					
48	Laughing Dove	<i>sengalensis</i>	Resident	+	+	+	+
			Passage				
49	Common Quail	<i>Coturnix coturnix</i>	Migrant	-	+	+	+
			Summer				
50	Small Button Quail	<i>Turnix sylvatica</i>	Breeder	-	+	+	+
	Yellow Legged Button		Summer				
51	Quail	<i>Turnix tanki</i>	Breeder	-	+	+	+
		<i>Francolinus</i>					
52	Grey Francolin	<i>pondicerianus</i>	Resident	-	+	+	+
53	Black Francolin	<i>Francolinus francolinus</i>	Resident	-	+	+	+
	Yellow Crowned	<i>Dendrocopos</i>					
54	Woodpecker	<i>mahrattensis</i>	Resident	-	+	+	+
55	Sind Woodpecker	<i>Dendrocopos assimilis</i>	Resident	-	+	+	+
			Passage				
56	European Roller	<i>Coracias garrulus</i>	Migrant	-	+	+	+
57	Indian Roller	<i>Coracias benghalensis</i>	Resident	-	+	+	+
58	Pied Kingfisher	<i>Ceryle rudis</i>	Resident	-	+	+	+
			Summer				
59	Blue-cheeked Bee-eater	<i>Merops persicus</i>	Breeder	-	+	+	+
60	Green Bee-eater	<i>Merops orientalis</i>	Resident	+	+	+	+
			Summer				
61	Pied Cuckoo	<i>Clamator jacobinus</i>	Breeder	-	+	+	+
			Summer				
62	Common Hawk Cuckoo	<i>Hierococcyx varius</i>	Breeder	-	+	+	+
63	Greater Coucal	<i>Centropus sinensis</i>	Resident	-	+	+	+
64	Pallid Scops Owl	<i>Otus brucei</i>	Resident	-	+	+	+
65	Short Eared Owl	<i>Asio flammeus</i>	Resident	-	+	+	+
66	Eurasian Curlew	<i>Numenius arquata</i>	Resident	-	+	+	+
67	Common Coot	<i>Fulica atra</i>	Resident	-	+	+	+
		<i>Cursorius</i>					
68	Indian Courser	<i>coromandelicus</i>	Resident	-	+	+	+
69	Brahminey Kite	<i>Halia sturindus</i>	Resident	-	+	+	+
70	Egyptian Vulture	<i>Neophron percnopterus</i>	Resident	-	+	+	+
71	Marsh Harrier	<i>Circus aeruginosus</i>	Resident	-	+	+	+

72	Eurasian Sparrowhawk	<i>Accipiter nisus</i>	Resident	-	+	+	+
73	Steppe Eagle	<i>Aquila nipalensis</i>	Resident	-	+	+	+
			Passage				
74	Black Winged Stilt	<i>Himantopus himantopus</i>	Migrant	-	+	+	+
			Summer				
75	Pied Avocet	<i>Recurvirostra avosetta</i>	Breeder	-	+	+	+
			Passage				
76	White Eyed Buzzard	<i>Butastur teesa</i>	Migrant	-	+	+	+
77	Common Buzzard	<i>Buteo buteo</i>	Resident	-	+	+	+
78	Little grebe	<i>Tachybaptus ruficollis</i>	Resident	-	+	+	+
79	Little Egret	<i>Egretta garzetta</i>	Resident	-	+	+	+
80	Grey Heron	<i>Ardea cinerea</i>	Resident	-	+	+	+
			Passage				
81	Great Egret	<i>Ardea alba</i>	Migrant	-	+	+	+
82	Cinnamon Bittern	<i>Ixobrychus cinnamomeus</i>	Resident	-	+	+	+
83	Long Tailed Shrike	<i>Lanius schach</i>	Resident	-	+	+	+
84	Long-tailed Minivet	<i>Pericrocotus ethologus</i>	Resident	-	+	+	+
	Asian Paradise						
85	Flycatcher	<i>Terpsiphone paradisi</i>	Resident	-	+	+	+
			Passage				
86	Pied Bushchat	<i>Saxicola caprata</i>	Migrant	-	+	+	+
87	Variable Wheatear	<i>Oenanthe picata</i>	Resident	-	+	+	+
88	Great Tit	<i>Parus major</i>	Winter Visitor	-	+	+	+
89	Wire Tailed Swallow	<i>Hirundo smithii</i>	Winter Visitor	-	+	+	+
			Passage				
90	White-eared Bulbul	<i>Pycnonotus leucotis</i>	Migrant	-	+	+	+
91	Ashy Prinia	<i>Prinia socialis</i>	Resident	-	+	+	+
92	Streaked Fantail Warbler	<i>Zitting cisticola</i>	Resident	-	+	+	+
93	Oriental White eye	<i>Zosterops palpebrosus</i>	Resident	-	+	+	+
94	Common Tailor Bird	<i>Orthotomus sutorius</i>	Resident	-	+	+	+
95	Graceful Prinia	<i>Prinia gracilis</i>	Resident	-	+	+	+
96	Lesser Whitethroat	<i>Sylvia curruca</i>	Resident	-	+	+	+
		<i>Acrocephalus</i>					
97	Moustached Warbler	<i>melanopogon</i>	Winter Visitor	-	+	+	+
98	Blyth's Reed Warbler	<i>Acrocephalus dumetorum</i>	Winter Visitor	-	+	+	+
	Clamorous Reed		Passage				
99	Warbler	<i>Acrocephalus stentoreus</i>	Migrant	-	+	+	+
100	Booted Warbler	<i>Iduna caligata</i>	Winter Visitor	-	+	+	+
101	Common Chiffchaff	<i>Phylloscopus collybita</i>	Winter Visitor	-	+	+	+
102	Sulphur Bellied Warbler	<i>Phylloscopus griseolus</i>	Winter Visitor	-	+	+	+
			Passage				
103	Hume's Warbler	<i>Phylloscopus humei</i>	Migrant	-	+	+	+
		<i>Phylloscopus</i>					
104	Greenish Warbler	<i>trochiloides</i>	Winter Visitor	-	+	+	+
105	Common Babbler	<i>Turdoides caudata</i>	Resident	+	+	+	+
106	Striated Babbler	<i>Turdoides earlei</i>	Resident	-	+	+	+
107	Jungle Babbler	<i>Turdoides striata</i>	Resident	-	+	+	+
108	Eurasian Skylark	<i>Alauda arvensis</i>	Resident	-	+	+	+
109	Oriental Skylark	<i>Alauda gulgula</i>	Winter Visitor	-	+	+	+
	Chestnut Shouldered						
110	Petronia	<i>Petronia xanthocollis</i>	Resident	-	+	+	+
			Summer				
111	White Wagtail	<i>Motacilla alba</i>	Breeder	+	+	+	+
112	Citrine Wagtail	<i>Motacilla citreola</i>	Resident	-	+	+	+
113	Yellow Wagtail	<i>Motacilla flava</i>	Winter Visitor	-	+	+	+
			Passage				
114	Grey Wagtail	<i>Motacilla cinerea</i>	Migrant	-	+	+	+

115	Paddyfield Pipit	<i>Anthus rufulus</i>	Winter Visitor	-	+	+	+
116	Rosy Pipit	<i>Anthus roseatus</i>	Winter Visitor	-	+	+	+
117	Tree Pipit	<i>Anthus trivialis</i>	Winter Visitor	-	+	+	+
			Passage				
118	Streaked Weaver	<i>Ploceus manyar</i>	Migrant	-	+	+	+
119	Baya Weaver	<i>Ploceus philippinus</i>	Resident	-	+	+	+
120	Common Rose Finch	<i>Carpodacus erythrurus</i>	Resident	-	+	+	+
			Passage				
121	Red headed Bunting	<i>Emberiza bruniceps</i>	Migrant	-	+	+	+
			Year Round				
122	Javanese Cormorant	<i>Phalacro coraxniger</i>	Visitor	-	-	-	+
			Year Round				
123	Snake Bird	<i>Anhinga melanogaster</i>	Visitor	-	-	-	+
			Summer				
124	Night Heron	<i>Nycticorax nycticorax</i>	Breeder	-	-	-	+
125	Pond Heron	<i>Ardeola grayii</i>	Resident	+	+	+	+
126	Bar Headed Goose	<i>Anser indicus</i>	Winter Visitor	-	-	-	+
127	Ruddy Shelduck	<i>Tadorna ferruginea</i>	Winter Visitor	-	-	-	+
128	Common Shelduck	<i>Tadorna tadorna</i>	Winter Visitor	-	-	-	+
129	Wigeon	<i>Anas penelope</i>	Winter Visitor	-	-	-	+
130	Gadwall	<i>Anas strepera</i>	Winter Visitor	-	-	-	+
131	Common Teal	<i>Anas crecca</i>	Winter Visitor	-	-	-	+
132	Mallard	<i>Anas platyrhynchos</i>	Winter Visitor	-	-	-	+
133	Pintail Duck	<i>Anas acuta</i>	Winter Visitor	-	-	-	+
134	Shoveler	<i>Anas clypeata</i>	Winter Visitor	-	-	-	+
135	Common Pochard	<i>Aythya ferina</i>	Winter Visitor	-	-	-	+
			Summer				
136	Crested Honey Buzzard	<i>Pernis ptilorhynchus</i>	Breeder	-	-	-	+
	Oriental White backed						
137	Vulture	<i>Gyps bengalensis</i>	Resident	-	-	-	+
138	Eurasian Griffon Vulture	<i>Gyps fulvus</i>	Winter Visitor	-	-	-	+
139	Pallid Harrier	<i>Circus macrorus</i>	Winter Visitor	-	-	-	+
140	Long legged Buzzard	<i>Buteo rufinus</i>	Winter Visitor	-	-	-	+
141	Greater Spotted Eagle	<i>Aquila clanga</i>	Winter Visitor	-	-	-	+
142	Tawny Eagle	<i>Aquila rapaxvindhiana</i>	Resident	-	-	-	+
143	Bonnelli's Eagle	<i>Hieraaetus fasciatus</i>	Winter Visitor	-	-	-	+
144	Red-headed Merlin	<i>Falco chiquera</i>	Resident	-	-	-	+
			Summer				
145	Rain Quail	<i>Coturnix coromandelica</i>	Breeder	-	-	-	+
146	Common Moorhen	<i>Gallinula chloropus</i>	Resident	-	-	-	+
			Passage				
147	Common Crane	<i>Grus grus</i>	Migrant	-	-	-	+
			Passage				
148	Demoiselle Crane	<i>Anthropoides virgo</i>	Migrant	-	-	-	+
149	Painted Snipe	<i>Rostratula benghalensis</i>	Resident	-	-	-	+
150	Peewit	<i>Vanellus vanellus</i>	Winter Visitor	-	-	-	+
151	Timminck's Stint	<i>Calidris temminckii</i>	Winter Visitor	-	-	-	+
152	Ruff	<i>Philomachus pugnax</i>	Winter Visitor	-	-	-	+
153	Jack Snipe	<i>Lymnocyrtus minimus</i>	Winter Visitor	-	-	-	+
154	Common Snipe	<i>Gallinago gallinago</i>	Winter Visitor	-	-	-	+
155	Redshank	<i>Tringato tanus</i>	Winter Visitor	-	-	-	+
156	Greenshank	<i>Tringa nebularia</i>	Winter Visitor	-	-	-	+
157	Green Sandpiper	<i>Tringa ochropus</i>	Winter Visitor	-	-	-	+
158	Wood Sandpiper	<i>Tringa glareola</i>	Winter Visitor	-	-	-	+
159	Common Sandpiper	<i>Actitis hypoleucos</i>	Winter Visitor	-	-	-	+
	Blossom headed						
160	Parakeet	<i>Psittacula cyanocephala</i>	Winter Visitor	-	-	-	+
161	Indian Scops Owl	<i>Otus lettia</i>	Resident	-	-	-	+

162	Savanna Nightjar	<i>Caprimulgus affinis</i>	Winter Visitor	-	-	-	+
163	European Nightjar	<i>Caprimulgus europaeus</i>	Winter Visitor	-	-	-	+
164	Common Kingfisher	<i>Alcedo atthis</i>	Resident	-	-	-	+
			Summer				
165	Wryneck	<i>Jynx torquilla</i>	Breeder	-	-	-	+
	Ashy crowned Finch						
166	Lark	<i>Eremopterix grisea</i>	Resident	-	-	-	+
167	Eastern Calandra Lark	<i>Melanocorypha calandra</i>	Winter Visitor	-	-	-	+
168	Barn Swallow	<i>Hirundo rustica</i>	Winter Visitor	-	-	-	+
169	Indian Cliff Swallow	<i>Petrochelidon fluvicola</i>	Resident	-	-	-	+
170	Richard's Pipit	<i>Anthus richardi</i>	Resident	-	-	-	+
171	Tawny Pipit	<i>Anthus campestris</i>	Winter Visitor	-	-	-	+
	Yellow Headed grey						
172	backed wagtail	<i>Motacilla werae</i>	Winter Visitor	-	-	-	+
173	Hodgeson's pied Wagtail	<i>Motacilla albaoides</i>	Winter Visitor	-	-	-	+
		<i>Tephrodornis</i>					
174	Common Wood Shrike	<i>pondicerianus</i>	Resident	-	-	-	+
175	White cheeked Bulbul	<i>Pycnonotus leucogenys</i>	Resident	-	-	-	+
176	Blue-throat	<i>Luscinia svecica</i>	Winter Visitor	-	-	-	+
177	Indian Blue Chat	<i>Luscinia brunnea</i>	Winter Visitor	-	-	-	+
178	Stone Chat	<i>Saxicolator quatta</i>	Winter Visitor	-	-	-	+
179	Fan-tailed Warbler	<i>Cisticola juncidis</i>	Resident	-	-	-	+
	Rufous-fronted Wren						
180	warbler	<i>Prinia buchanani</i>	Resident	-	-	-	+
181	Tawny Prinia	<i>Prinia inornata</i>	Resident	-	-	-	+
	Long-tailed Grass						
182	Warbler	<i>Prinia burnesii</i>	Resident	-	-	-	+
183	Brook's Leaf Warbler	<i>Phylloscopus subvirdis</i>	Winter Visitor	-	-	-	+
	Yellow-browed Leaf						
184	Warbler	<i>Phylloscopus inornatus</i>	Winter Visitor	-	-	-	+
185	Yellow-eyed Babbler	<i>Chrysomma sinense</i>	Resident	-	-	-	+
186	Sindh Babbler	<i>Chrysomma altirostre</i>	Resident	-	-	-	+
	Chestnut bellied						
187	Nuthatch	<i>Sitta castanea</i>	Winter Visitor	-	-	-	+
188	Golden Oriole	<i>Oriolus oriolus</i>	Winter Visitor	-	-	-	+
189	Bay-backed Shrike	<i>Lanius vittatus</i>	Resident	-	-	-	+
190	Great Grey Shrike	<i>Lanius excubitor</i>	Resident	-	-	-	+
191	Raven	<i>Corvus corax</i>	Resident	-	-	-	+
192	Brahminey Myna	<i>Sturnus pagodarum</i>	Resident	+	-	+	+
193	Common Starling	<i>Sturnus vulgaris</i>	Winter Visitor	+	+	+	+
194	White capped bunting	<i>Emberiza stewarti</i>	Winter Visitor	-	-	-	+
195	Rock bunting	<i>Emberiz acia</i>	Winter Visitor	-	-	-	+

DISCUSSION

Larger number of bird species (n=102) were observed at the Ravi campus as that area being a close to riverine tract and also comprising of agricultural field, naturally growing flora, guava plantations, and most importantly the heavy plantation of Changa Manga Forest in the vicinity. One of the major reasons why a large number of winter visitors and fish eating birds were observed in the area was that Balloki Headworks is not far away from the sight and the fish ponds in C-Block of Ravi campus with small to large size fish makes it an attraction for piscivorous birds like the pied kingfisher and waders. The city campus being situated in the heavily

populated inner city of Lahore still hosted 53 species of birds due to enough tall and old trees that the birds utilize for breeding and roosting. Some of the major reasons observed for decreased biodiversity may include population boom and habitat fragmentation. Grey Hornbill and Alexandrine parakeets that were observed abundantly in the region two decades ago and are now a rare sighting were also observed in the Lahore campus. Black Redstarts and Purple Sunbirds were also observed in great numbers during the winter season.

Observation of less number of birds species sighted have many causes as mentioned in previous work of many authors like, Mahmood, (2000), Masood, (2004), Muzzaffar, (2000), Nazir, (2008), Saeed, (2008), Saleem,

(2008), Zulfiqar, (2008), Munir, (2010), Tanveer, (2010). Waterfowl species cannot be sighted as original wetlands habitat does not exist in the two campuses, rather few wader species were observed near fish ponds or flying around campuses territories like, Black-winged Stilt, Pied Avocet, Cattle Egret, Little Egret, Great Egret, Night Heron, Pond Heron, Pied Kingfisher, White-breasted Kingfisher, Grey Heron, common Coot (*Fulica atra*), Indian Courser, Marsh Harrier and Cinnamon Bittern. Therefore the forest birds were not sighted because of habitat fragmentation and introduction of exotic plant species in the urban areas and usually in newly build campuses in the city. Similarly diurnal and nocturnal raptors cannot find their food in altered habitats; vulture extinction is the recent phenomenon (Oak *et al.* 2004).

Urban habitat can be created into natural habitat for birds (Burgess, 2004), but the metropolitan city authorities needs to rethink and plant native trees and leaving some natural areas as natural parks in the city. Correspondingly, university management should encourage plantation in newly build areas and awareness among students and staff to protect it for to restore the natural habitat for native avian diversity.

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