

Avifaunal Diversity in Green Belts Along the Sirhind Canal and its Branches in Punjab

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Abstract

Green belt areas along the irrigation canals have been found to represent unique and distinct habitat type for canopy-philic avian species in forest deficient state of Punjab. During the study period, 51 bird species were recorded in green belts along Sidhwan canal and its irrigation branches. It was revealed that 37.25% of the bird species were those falling under scare to rare category. The conservation of canal side plantations could help in the conservation of avian biodiversity.

Key words : Avifaunal diversity, Green belts, Sirhind canal, Conservation.

Punjab is chiefly an agrarian state with more than 84% of its area under intensive agriculture as compared to nearly 5% area under forests, the latter are mostly in the form of tree strips along the highways, connecting roads, railway lines and irrigation canals (1). The population status and distribution of canopy-philic avian species is largely governed by the available forest cover (2). The present study was undertaken with the objective to enlist the avian biodiversity, its status, abundance, breeding and feeding habits found /observed in the green belts along the Sirhind canal and its branches in Punjab. It will provide basic data to develop future management strategies for bird conservation especially in canal side habitats in forest deficient state like Punjab.

Methods

Observations were made on the bird species richness found in the canal side plantations or green belts along the Sirhind canal and its branches, Sidhwan and Sudhar irrigation canals covering routes of more than 150 km. The bird notes took into account their activities like feeding, nesting, roosting, perching and the type of sub-habitat utilized e.g. thick bushes, tree canopy, canal waters, electric or telegraph wires and also the road segments running parallel to these irrigation canals. The information was gathered both by randomly walking down 1.5 km each after every 5 km covered on slow moving vehicle at the speed of 40 km per hour during the field visits carried out be-

tween the september 2001 to September 2003. Direct and indirect clues to the presence of avifauna e. g. the calls and songs of some birds species were also noted down. The correct identification, species status and feeding habits of the birds were made following Ali (3) and Nameer et al. (4).

Results and Discussion

There were 51 species of birds belonging to 25 families in 13 orders in the surveyed area. Among these, 22 belonged to the order Passeriformes, 11 to Ciconiiformes, 4 to Columbiformes, two each to Galliformes, Cuculiformes, Strigiformes and Gruiformes, and one each to Anseriformes, Piciformes, Bucerotiformes, Upupiformes, Coraciiformes and Psittaciformes. Of these, 10 (19.61%) species were common, 8 (15.6%) were scarce, 7 (13.73%) were frequent, 6 (11.76%) each were abundant and 'frequent to common', 5 (9.80%) were scarce becoming rare; 4 (7.84%) were of uncertain status; 3 (5.88%) were of common to abundant category, and 2 (3.92%) were rare. Out of the 51 species, 20 (39.20%) were omnivores, 13 (25.49%), carnivores, 11 (21.57%) insectivores, 4 (7.84%) granivores, 2 (3.92%) frugivores and 1 (1.96%) were herbivores. Further, of these 51 species, 47 were residents, 3 winter visitors and one was summer visitor. It was revealed from the present study that 37.25% of the avian species were having their abundance status ranging from the scare to rare with some having uncertain status (Table 1).

Table 1. List of birds recorded in green belts along the Sirhind canal and its branches in Punjab. For all bird species, status as given in Ali (3). A=Abundant, F=Frequent, C= Common, U= Uncertain, S= Scarce, SR = Scarce. Becoming rare. R= Rare. F-C= Frequent to common, C-A= Common to abundant. Status : R-Resident, S= Summer Visitor, W= Winter Visitor. Breeding : + = Breeds in the area. – = Does not breed in the area. Feeding habit : In =Insectivorous. Cv = Carnivorous. He = Herbivorous,Gr = Granivorous, Fr=Frugivorous, Om=Omnivorous.

Order	Families	Scientific name	English name	Abundance	Status	Breed- ing	Feeding habit
Galiformes	Phasianidae	<i>Francolinus</i>	Black Partridge	U	R	+	Om
		<i>francolinus</i>					
		<i>Francolinus</i>	Grey Partridge	U	R	+	Om
		<i>pondiceriannus</i>					
Anseriformes	Anatidae	<i>Anas</i>	Spotbill	U	R	+	He
Piciformes	Megalaimidae	<i>poecilorhyncha</i>					
		<i>Megalaima</i>	Crimson throated	R	R	+	Fr
Bucerotiformes	Bucerotidae	<i>rubricapilla</i>	Barbet				
		<i>Tockus birostris</i>	Common Grey Hornbill	SR	R	+	Om
Upupiformes	Upupidae	<i>Upupa epops</i>	Hoopoe	F		+	In
Coraciiformes	Dacelonidae	<i>Halcyon</i>	Whitebreasted Kingfisher	C	R	+	Cv
		<i>smyrnensts</i>					
Cuculiformes	Cuculidae	<i>Endynamys scolopacea</i>	Koel	S	R	+	Om
		<i>Centropus sinensis</i>	Crow Pheasant	C	R	+	Cv
Psittaciformes	Psittacidae	<i>Psittacula krameri</i>	Roseringed Parakeet	A	R	+	Fr
Strigiformes	Strigidae	<i>Bubo bubo</i>	Indian Great Honned Owl	R	r	=	Cv
		<i>Athene</i>	Spotted owlet	SR	R	+	In
Columbiformes	Columbidae	<i>Columba livia</i>	Blue Rock Pigeon	A	R	+	Gr
		<i>Streptopelia decaocto</i>	Ring Dove	A	R	+	Gr
		<i>Streptopelia tranquebaria</i>	Red Turtle Dove	F	R	+	Gr
		<i>Streptopelica chinensis</i>	Spotted Dove	F	r	+	Gr
		<i>Amaurornis phoenicurus</i>	Waterbreasted waterhen	F-C	R	+	Om
Gruiformes	Rallidae	<i>Gallinula chloropus</i>	Indian Moorhen	F-C	R	+	Om
		<i>Tringa hypoleucos</i>	Common Sandpiper	S	W	–	Cv
Ciconiiformes	Scolopacidae	<i>Himantopus himantopus</i>	Blackwinged Still	C	W	–	Cv
		<i>Burhinus oedicephalus</i>	Stone Curlew	SR	R	+	Cv
		<i>Vanellus indicus</i>	Redwattled Lapwing	A	R	+	In
	Accipitridae	<i>Milvus migrans</i>	Pariah kite	C-A	R	+	Om
		<i>Elanus caeruleus</i>	Blackwinged Kite	SR	R	+	Cv
	Podicipedidae	<i>Tachybaptus ruficollis</i>	Little Grebe	C	R	+	In
	Phalacrocoracidae	<i>Phalacrocorax niger</i>	Little Cormorant	C	R	+	Cv
	Ardeidae	<i>Egretta garzetta</i>	Little Egret	C	R	+	Cv
		<i>Bubulus ibis</i>	Cattle Egret	C-A	R	+	Cv
		<i>Ardeola grayii</i>	Pond Heron	C	R	+	Cv

Table 1. Continued.

Order	Families	Scientific name	English name	Abundance	Status	Breed- ing	Feeding habit	
Passeriformes	Lanidae	<i>Lanius schach</i>	Rufousbacked Shrike	F	R	+	Cv	
	Corvidae	<i>Coracias benghalensis</i>	Blue Jay	S	R	+	Cv	
		<i>Dendrocitta vagabunda</i>	Tree Pie	S	R	+	Om	
	Hirundinidae	<i>Corvus splendens</i>	House Crow	C-A	R	+	Om	
		<i>Hirundo concolor</i>	Dusky Crag Martin	F	R	+	In	
		<i>Hirundo rustica</i>	Common Swallow	U	W	-	In	
		<i>Hirundo smithii</i>	Wiretailed Swallow	C	S	+	In	
		<i>Hirundo fluvicola</i>	Indian Cliff Swallow	C	R	+	In	
		<i>Dicrurus adsimilis</i>	Black Drongo	F-C	R	+	Om	
		<i>Saxicola caprata</i>	Pied Bush Chat	S	R	+	In	
		Sturnidae	<i>Acridotheres tristis</i>	Indian Myna	A	R	+	Om
			<i>Acridotheres ginginianus</i>	Bank Myna	A	R	+	Om
			<i>Sturnus contra</i>	Pied Myna	F-C	R	+	Om
	Pycnonotidae	<i>Pycnonotus cafer</i>	Redvented Bulbul	F-C	R	+	Om	
	Silividae	<i>Cisticola juncidis</i>	Streaked Fantail Warbler	S	R	+	Om	
		<i>Prinia socialis</i>	Ashy Wren-Warbler	S	R	+	In	
		<i>Orthotomus sutorius</i>	Tailor Bird	SR	R	+	Om	
	Passeridae	<i>Turdoides earlei</i>	Striated Babbler	F-C	R	+	Om	
		<i>Passer domesticus</i>	House Sparrow	S	R	+	Om	
		<i>Ploceus philippinus</i>	Baya Weaver Bird	C	R	+	Om	
		<i>Ploceus benghalensis</i>	Black throated Weaver Bird	F	R	+	Om	
		<i>Ploceus manyar</i>	Streaked Weaver Bird	F	R	+	Om	

In the green belts surveyed, the hole nests of Roseringed Parakeet were found mostly on the tree species *Mangifera indica* and *Syzygium cumini*, similarly natural cavities in the *Melia azaderach* seemed to be preferred by Spotted Owlet Common Myna seemed having preference for the holes in the old *Morus alba* trees for their nesting purposes. Community nests of Weaverbirds were noticed on trees species *Acacia auriculiformis* and *Phoenix sylvestris* Roxb. growing in canal side plantations. Ring Doves

were commonly seen roosting on the tree species *Albizia lebeck*, *Dalbergia sissoo* and *Morus alba*. The colonies consisting of large agglomeration of mud nests of Indian cliff Swallows were noticed under many bridges over these canals. The maximum of 60 mud nests fused together with short tubular openings were counted under one bridge arch. Large number of threatened bird species e. g. Crimson throated Barbet, Common Grey Hornbill, Indian Great Horned Owl, Tree Pie, Black Partridge and Grey Partridge were

recorded in green belts during the said period.

Maan et al. (5) recorded 60 species of birds in canal-side plantation in Lal Suhanara National Park located in Punjab Province of Pakistan. It was further stated that the flow of irrigation canal made the habitat important for avian biodiversity because of the ecotone effect. Though there is an increased awareness to prepare checklists of birds on a wider scale, but such monitoring works are mostly confined to sanctuaries and forest ranges (6–8). The present communication is a small step in the direction of preparing bird checklists of canal side habitats in the agricultural dominated landscape of Punjab. It has been reported that because of the unchecked agricultural expansion and unsustainable forestry, one in eight of the world's birds face extinction (9).

It can be concluded that the present study the canal side plantations support and sustain large number of threatened avian species preferring different sub-habitats like tree cover, understory canopy layer, water dwellers and those confined to the neighborhood of water. So, an effective way to save these birds is to save their habitats. The bird diversity studies need to be carried out for the correct identification of the representative sites for the bird conserva-

tion programs.

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