

Avian diversity of Anchar lake, Kashmir, India

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Abstract: Present study documents avian diversity of the Anchar lake, located at a distance of 14kms north-west of Srinagar in the Indian state of Jammu and Kashmir. Sixty eight (68) bird species comprising of 21 species of resident birds, 27 summer visitors, 11 winter visitors and 9 local altitudinal migrants were recorded during two year study period from July 2013 to June 2015. Population estimation of bird species was carried out using visual census; block count and line transect method. The birds were identified following standard reference keys. The data regarding species composition, periodicity of their occurrence and relative abundance of each species is presented.

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Key words: Avian diversity, Anchar lake, altitudinal migrants, visual census

1.Introduction

The aquatic habitats of Kashmir like lakes and wetlands are important for their ecological importance as they provide habitat to aquatic flora and fauna including different bird species. They attract large congregations of migratory waterfowl like mallard, pintail, gadwall, shoveller besides, a good number of summer migrants of which Indian great reed warbler, pheasant tailed jacana, Indian whiskered tern etc. are noteworthy. The species diversity is an important component of health of any ecosystem including lakes and wetlands wherein, bird species occupy an important place serving as useful indicators for assessing ecological status of such habitats. The Anchar lake (34° 20' to 34° 36'N and 74° 82' to 74° 85'E, Figure 1) is located near Soura at a distance of 14kms north-west of Srinagar at an altitude of 1583m above sea level with an area of about 4.26 Km² and a maximum depth of 2.6 meter (Sushil *et al* 2014).

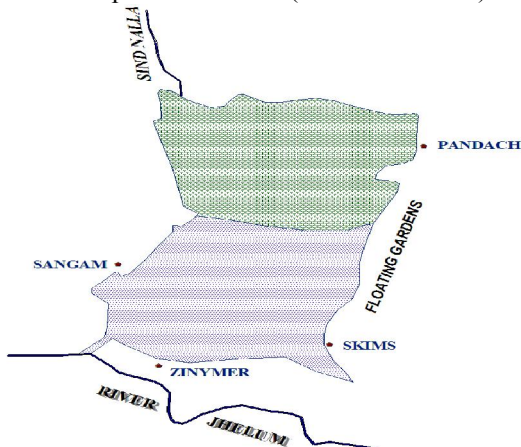


Figure 1. Map of Anchar lake Kashmir

The lake is facing a number of anthropogenic threats like waste disposal, encroachment, macrophyte harvesting, water bird poaching etc. resulting in loss of habitat as well as its biodiversity. Although a complete checklist of birds of various wetlands and lakes of Kashmir is available (Shah, 1984; Dar, 1998; Ahangar, 2008) but no work has been carried out to explore the avifauna of Anchar lake. The present work was, therefore, undertaken to explore bird species composition with relative abundance which can be used in future for evaluating the condition of this lake.

2. Methods

The lake was divided into four study sites viz., (i) peripheral wooded areas with dense growth of willow trees (ii) open water area (iii) area with submerged and floating aquatic vegetation and (iv) marshy areas with tall and dense macrophytic vegetation. All study sites were visited for bird watching once in a fortnight for a period of two years from July 2013 to June 2015. Birds were observed with naked eye and through 10 X 50 field binoculars from camouflaged study posts and identified with the help of identification keys and coloured plates of Ali (2002), Bates and Lowther (1952) and Robin *et al.* (1983). The birds have been named after Manakadan and Pittie (2001). Population estimation of bird species was carried out using, visual census, block count, line transect method (Watson, 1965; Gaston, 1975), and 4. Counting nests in colonies (Thompson and Rothery, 1991). Terms used in defining abundance of each species are those used by Bull (1964) and Mc Caskie (1970) as:

Very abundant (VA): over 1000 individuals seen per day; Abundant (A): 201-1000 individuals seen per day; Very common (VC): 51-200 individuals seen per

day; Common (C): 21-50 individuals seen per day; Fairly common (FC): 7-20 individuals seen per day; Uncommon (UC): 1-6 individuals seen per day; Rare (Re): 1-6 individuals seen per season; Very rare (R): infrequent occurrence.

3. Results and discussion

A total of 68 species of birds belonging to 13 orders and 29 families were recorded in Anchar lake (Table 1). Passerines represented by 26 species contribute about 38.23% of bird diversity. Of the total diversity 39.7% (27 species) were summer migrants (SM), followed by 30.88% (21 species) of residents (R), 16.18% (11 species) of winter migrants and 13.23% (9 species) of local altitudinal migrants (LAM). Among these some like mallard, northern pintail, teal, northern shoveller, Eurasian wigeon, gadwall, pochards, common moorhen and grebes are typical marsh dwelling species while as some terrestrial upland birds like pond heron, black-crowned night heron, grey heron, little bittern, Eurasian collared dove, rollers etc. spend a great deal of their time in the lake. A total of 300 resident and non-resident bird species have been reported from Jammu and Kashmir (Ali and Ripley 1983). More than 90 species have been recorded from wetlands of Kashmir (Holmes and Parr 1988, Ahangar, 2008).

Lesser number of species recorded during present study may be due to severe anthropogenic interference in the form of boating, macrophyte harvesting and water bird poaching in the lake as it does not come under jurisdiction of J&K Wildlife Protection Department. These activities disturb the water birds and may force them to shift to protected premises of Shallabugh wetland, which is in close proximity of Anchar Lake. Ducks and geese are forced to shift to safer habitats to avoid human interferences (Ma Zhijun *et al.* 1998, Terge and Arild 1998).

The areas with floating vegetation like *Trapa natans*, *Nymphoides sp.*, and *Potamogeton sp.* were used for nesting by the birds like little grebe, whiskered tern and pheasant-tailed jacana. The emergent macrophytic vegetation, *Phragmites communis*, *Typha angustata*, *Scirpus palustis*, *Sparganium ramosum*, *Butomus umbellatus* etc. were used for nesting by birds like mallard, little bittern, great reed-warbler, common moorhen and wagtails while as the peripheral trees served as the nesting sites for a number of upland species like herons, doves, rollers, golden oriole, rufous-backed shrike, paradise flycatcher etc. These findings are in consistency with Bates and Lowther (1952) and Ali (2002).

Table 1: List of birds recorded in Anchar lake

S. No.	Common name	Scientific name	Status*	Abundance
	Order: Podicipediformes			
	Family: Podicipedidae			
1	Little grebe	<i>Tachybaptus ruficollis</i>	R	VC
	Order: Ciconiformes			
	Family: Ardeidae			
2	Little egret	<i>Egretta garzetta</i>	R	C
3	Cattle egret	<i>Bubulcus ibis</i>	R	FC-C
4	Indian Pond heron	<i>Ardeola grayii</i>	R	C-VC
5	Black-crowned Night-Heron	<i>Nycticorax nycticorax</i>	R	C-VC
6	Grey heron	<i>Ardea cinerea</i>	R	C
7	Little bittern	<i>Ixobrychus minutes</i>	SM	C-VC
	Order: Anseriformes			
	Family: Anatidae			
8	Greylag goose	<i>Anser anser</i>	WM	FC-C
9	Mallard	<i>Anas platyrhynchos</i>	WM	VA
10	Northern Pintail	<i>Anas acuta</i>	WM	A-VA
11	Common teal	<i>Anas crecca</i>	WM	A-VA
12	Northern Shoveller	<i>Anas chlypeata</i>	WM	VA
13	Eurasian Wigeon	<i>Anas Penelope</i>	WM	A-VA
14	Gadwall	<i>Anas strepera</i>	WM	A-VA
15	Tufted Pochard	<i>Aythya fuligula</i>	WM	C-VC
16	Common pochard	<i>Aythya ferina</i>	WM	VC
17	Red-crested pochard	<i>Rhodonessa rufina</i>	WM	C-VC
	Order: Falconiformes			
	Family: Accipitridae			
18	Black kite	<i>Milvus migrans</i>	R	C-VC

S. No.	Common name	Scientific name	Status*	Abundance
	Order: Gruiformes			
	Family: Rallidae			
19	Baillon's crane	<i>Porzana pusilla</i>	SM	Re
20	Ruddy-breasted Crane	<i>Porzana fusca</i>	SM	UC-Re
21	Common moorhen	<i>Gallinula chloropus</i>	SM	VC
22	Common coot	<i>Fulica atra</i>	WM	A-VA
	Order: Charadriiformes			
	Family: Jacanidae			
23	Pheasant tailed Jacana	<i>Hydrophasianus chirurgus</i>	SM	FC-C
	Family: Scolopacidae			
24	Common snipe	<i>Gallinago gallinago</i>	R	UC-FC
25	Common sandpiper	<i>Actitis hypoleucos</i>	R	C-VC
	Family: Laridae			
26	Whiskered tern	<i>Chlidonias hybridus</i>	SM	VC-A
	Order: Columbiformes			
	Family: Columbidae			
27	Blue rock pigeon	<i>Columba livia</i>	R	C
28	Eurasian Collared-Dove	<i>Streptopelia decaocto</i>	SM	C
29	Oriental turtle-dove	<i>Streptopelia orientalis</i>	SM	C-VC
	Order: Psittaciformes			
	Family: Psittacidae			
30	Slaty-headed parakeet	<i>Psittacula himalayana himalayana</i>	SM	FC
31	Rose-ringed parakeet	<i>Psittacula krameri</i>	LAM	
	Order: Cuculiformes			
	Family: Cuculidae			
32	Common cuckoo	<i>Cuculus canorus</i>	SM	FC-C
	Order: Strigiformes			
	Family: Strigidae			
33	Barn owl	<i>Tyto alba</i>	LAM	Re
	Order: Coraciiformes			
	Family: Alcedinidae			
34	Small blue kingfisher	<i>Alcedo atthis</i>	R,	C-VC
35	White-breasted kingfisher	<i>Halcyon smyrnensis</i>	R	FC-C
36	Lesser pied kingfisher	<i>Ceryle rudis</i>	R	C
	Family: Coraciidae			
37	European Roller	<i>Coracias garrulous</i>	SM	UC-C
	Family: Upupidae			
38	Common hoopoe	<i>Upupa epops</i>	SM	FC-C
	Order: Piciformes			
	Family: Picidae			
39	Himalayan pied woodpecker	<i>Dendrocopos himalayensis</i>	LAM	, UC
40	Brown-fronted Pied Woodpecker	<i>Dendrocopos auriceps</i>	LAM	UC
41	Large Scaly-bellied Green Woodpecker	<i>Picus squamatus</i>	R	FC
42	Eurasian wryneck	<i>Jynx torquilla</i>	SM	FC
	Order: Passeriformes			
	Family: Hirundinidae			
43	Common swallow	<i>Hirundo rustica</i>	SM	VC-A
	Family: Dicruridae			
44	Ashy drongo	<i>Dicrurus leucophaeus</i>	SM	C
	Family: Oriolidae			
45	Eurasian golden oriole	<i>Oriolus oriolus</i>	SM	C
	Family: Laniidae			
46	Rufous-backed shrike	<i>Lanius schach</i>	SM	C

S. No.	Common name	Scientific name	Status*	Abundance
	Family: Sturnidae			
47	Common myna	<i>Acridotheres tristis</i>	R	C-VC
48	Common starling	<i>Sturnus vulgaris</i>	SM	C-VC
	Family: Corvidae			
49	House crow	<i>Corvus splendens</i>	R	VC-A
50	Jungle crow	<i>Corvus macrorhynchos</i>	R	FC-C
51	Eurasian jackdaw	<i>Corvus monedula</i>	R	VC-A
52	Short-billed minivet	<i>Pericrocotus brevirostris</i>	SM	UC-FC
	Family: Pycnonotidae			
53	Himalayan bulbul	<i>Pycnonotus leucogenys</i>	R	C
	Family: Muscicapidae			
54	White-capped redstart	<i>Chaimarrornis leucocephalus</i>	SM	UC
55	Tickell's thrush	<i>Turdus unicolor</i>	SM	C
56	Blue Whistling-Thrush	<i>Myiophonus caeruleus</i>	LAM	C
57	Streaked laughing thrush	<i>Garrulax lineatus</i>	LAM	C
58	Asian-paradise flycatcher	<i>Terpsiphone paradisi leucogaster</i>	SM	FC-C
59	Indian Great Reed-Warbler	<i>Acrocephalus stentoreus</i>	SM	VC
60	Spotted forktail	<i>Enicurus maculates</i>	SM	FC
61	Little forktail	<i>Enicurus scouleri</i>	LAM	Re
	Family: Troglodytidae			
62	Winter wren	<i>Troglodytes troglodytes</i>	LAM	UC
	Family: Paridae			
63	Great tit	<i>Parus major</i>	R	C
	Family: Certhidae			
64	Eurasian Tree-creeper	<i>Certhia himalayana</i>	LAM	C
	Family: Motacillidae			
65	White wagtail	<i>Motacilla alba</i>	SM	VC
66	Grey wagtail	<i>Motacilla cinerea</i>	SM	C-VC
67	Citrine wagtail	<i>Motacilla citreola</i>	SM	VC
	Family: Passerinae			
68	House sparrow	<i>Passer domesticus</i>	R	VC

Status: R=Resident; SM= Summer migrant;
WM= Winter migrant, LAM =Local altitudinal migrant



a. Indian whiskered tern



b. Graylag goose



c. King fisher



f. Common cuckoo



d. Moorhen



e. Large scaly bellied green woodpecker

Conclusion

Avifauna of Anchar lake shows a rich diversity comprising of 21 species of resident birds, 27 summer visitors, 11 winter visitors and 9 local altitudinal migrants. But in comparison to the bird diversity of protected wetlands it is far less because of high anthropogenic activities going on inside the wetland. It is suggested that the said lake be included in the list of wetlands protected under Wildlife Protection Department of Jammu and Kashmir in order to safeguard its diversity.

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