

Ecological Study of Khushalsar Lake, Kashmir: V. Avifauna

Shahzadi Wufai Naw Bahaar and G.A. Bhat

P.G. Deptt. of Environmental Science, University of Kashmir, Srinagar 190 006.

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The ecological status of the Khushalsar Lake (lat. 34° 06' N; long. 74° 47' E), Kashmir was studied by postgraduate students of Department of Environmental Science during 2003. The data on the zooplankton, nekton, Macrozoobenthos and fungal community have been reported earlier (Ali & Pandit, 2005, Shahnaz & Yousuf, 2005, Punjabi & Yousuf, 2005 and Akhtar *et al.*, this volume). In the present report, which is fifth in the series, the aquatic bird fauna associated with this hyper(eu)trophic water body is described.

Three study sites were selected in the lake on the basis of surface water characteristics (Fig 1). Site 1 was a small open water zone situated near the inlet. Site 2 marked the lake centre, while Site 3 represented the lake outlet. For the estimation of bird population, visual census method was employed. Counting was done with the help of high power field binoculars from respective vantage points. Observations were made on monthly basis. Identification was done in accordance with identification keys following Bates and Lowther (1952) and Ali (1996).

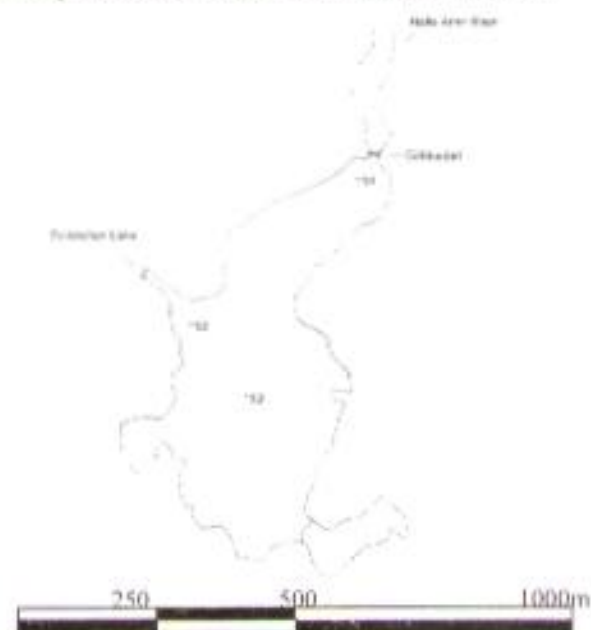


Fig. 1 Map of Khushalsar take showing study sites

A total of 18 species of birds belonging to 7 orders and 16 families were recorded out of which *Podiceps rufficollis*, *Passer domesticus*, *Columba livia*, *Acridotheres tristis*, *Milvus migrans*, *Ardea cinerea*, *Ardea grayii*, *Alcedo atthis*, *Halcyon symnensis*, *Corvus splendens*, *Nycticorax nycticorax* formed the resident avifauna. The summer migrants included *Gallinula chloropus*, *Hirundo rustica*, *Chlidonias hybrida*, *Rostratula benghalensis*, *Lanius schachs* and *Upupa epops*, while *Fulica atra* was the only winter migrant inside the lake. As is evident from the data, only 35.2% of birds belonged to the migratory community, whereas the rest (64.78%) was composed of the resident birds. The population data of the various species recorded in the lake are depicted in Table 1.

Table 1. Bird population (approximate numbers of various species) at the three study sites in Khushabar lake

S.No	Species	Common name	Site 1	Site 2	Site 3	TOTAL	
1.	<i>Gallinula chloropus</i>	Indian moorhen	250-298	86-116	29-37	365-451	
2.	<i>Passer domesticus</i>	House sparrow	185-213	47-79	23-29	255-321	
3.	<i>Corvus splendens</i>	Common crow	186-232	37-47	30-38	253-317	
4.	<i>Columba livia</i>	Pigeon	126-160	10-22	59-71	195-253	
5.	<i>Hirundo rustica</i>	Swallow	114-144	52-76	27-35	193-255	
6.	<i>Podiceps rufficollis</i>	Dabchick	99-133	50-76	05-07	154-216*	
7.	<i>Acridotheres tristis</i>	Myna	50-64	35-47	20-34	105-145	
8.	<i>Milvus migrans</i>	Kite	28-36	46-54	07-09	81-99	
9.	<i>Ardea cinerea</i>	Grey heron	6-10	0	1-01	21-35	28-46
10.	<i>Ardeola grayii</i>	Pond heron	17-25	03-05		20-30	
11.	<i>Fulica atra</i>	Coot	11-17	04-06		15-23	
12.	<i>Alcedo atthis</i>	Common blue kingfisher	10-12	04-08	01-03	15-23	
13.	<i>Chlidonias hybrida</i>	Indian whiskered tern	15-19			15-19	
14.	<i>Rostratula benghalensis</i>	Painted snipe	08-12		04-06	12-18	
15.	<i>Lanius schachs</i>	Rufous backed shrike		11-15	01-03	12-18	
16.	<i>Halcyon symnensis</i>	White breasted kingfisher	03-05	01-03	05-07	09-15	
17.	<i>Upupa epops</i>	Hoopoe		01-01	04-06	05-07	
18.	<i>Nycticorax nycticorax</i>	Night heron			03-07	03-07	
TOTAL			1108-1380	388-556	239-327	1735-2263	

Among the migratory birds, only one species (*Gallinula chloropus*) was found to use the lake as a breeding site. As per the findings of Ralton (1972), moorhen (*Gallinula chloropus*) breeds in almost all types of wetlands. Since coots and dabchicks prefer open waters (Sugden, 1979), they were mostly concentrated towards site 1 which had an open water zone. The open water area of the lake has been greatly reduced because of luxuriant growth of macrophytes. As a consequence of this only a smaller proportion (0.97%) of coots among the total bird population was sighted within the lake. Pond size has been found to be a major factor that influences the waterfowl use of any wetland (Lokemoen, 1973). Diving ducks show a strong relation with open water area (Seigfried, 1976 and Stoudt, 1982). As a consequence of much reduced open water area, use of Khushalsar as a breeding or wintering place for waterfowl is very restricted. A thick cover of emergent macrophytes along with adequate residual vegetation is necessary for successful nesting of most dabbling ducks (Fritzell, 1975). The macrophytes, especially emergents, are regularly harvested by the locals as a source of fodder, forcing most of the migratory birds not to use Khushalsar as a breeding place.

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