Current World Environment Vol. **4**(2), 375-379 (2009)

Wintering birds in and around the vicinity of Lake Mansar, district Udhampur (J&K)

DEEPTI KOTWAL*, SANJEEV KUMAR and D.N. SAHI

Department of Zoology, University of Jammu, Jammu - 180 006 (India)

(Received: June 10, 2009; Accepted: October 01, 2009)

ABSTRACT

A systematic survey of Mansar was done from 2004 – 2007 periods in order to check the status of wintering birds. The most important specialty of this area is a lake which has been given the status of wetland and is known as Lake Mansar. This lake serves as a major aquatic habitat and feeding ground for the migratory birds during the winter season. The elevation of Lake Mansar is 666 m above sea level in the Shivaliks terrain of Jammu. A total of 21 species of wintering birds were reported from the study area. These 21 species include true winter migrants as well as local migrants. Among 17 winter migrants, 8 species were found to be of waterfowls and rest 9 species includes Herons, Bittern as well as Steppe Eagle. Besides this, 4 species were observed to be residents but show local migration in the months of winter thereby increasing their number. Coots were found to be first among the winter migrants to arrive in the study area. Moreover, their number was also found to be the maximum (96).

Keywords: Migration, status, winter migrants, waterfowls and encompasses.

INTRODUCTION

India is known to be one of the 12 most important mega diversity centers of the world. India with varied habitats harbours a rich bird life. Aves constitute the most important phylum of animal kingdom. Avifauna is an important biological resource and a component of natural ecosystem. The Indian region with varied habitat harbours an incredibly rich bird life. Moreover, birds were regarded as the indicators of environment. The study of bird communities has been a major area of research in community ecology.

Migration can be defined as the seasonal movement of species from one place to another. Bird migration has been defined in a very appropriate way by Marten Duncan-"Many species in the colder regions of the world seek on the approach of winter, other lands, where more congenial conditions prevail and suitable food in sufficient quantity may be found. The return of spring, however, sees them once again on the wings, making their way back to their old breeding grounds and even, as a general rule, seeking the same nesting site. The autumn migration as a whole may be said to be a journey from the arctic and temperate zones of Northern hemisphere to countries lying to the equator in a more or less Southerly direction i.e. as forming a general southward movement. In the Northern Europe, there is a good deal of migration taking place in west to east direction."

The present study was carried out to highlight the importance of Lake Mansar which is important from habitat point of view for the aquatic migratory birds. Moreover, Lake Mansar has also given the status of Ramsar site.

A review of literature reveals that migratory ducks use non-breeding habitat for seven months

Table 1: Showing the systematic list of migratory avifauna of Mansar along with their status.

S. No.	Name of the bird species	Scientific Name	Migratory Status
	Order- Anseriformes		
	Family-Anatidae		
1.	Mallard	*Anas platyrhynchos*	Wintering
2.	Gadwall	*Anas strepera*	Wintering
3.	Shoveller	*Anas clypeata*	Wintering
4.	Common Pochard	*Aythya ferina*	Wintering
5.	Tufted Pochard	*Aythya fuligula*	Wintering
6.	Wigeon	*Anas penelope*	Wintering
7.	Pintail	*Anas acuta*	Wintering
	Order: Cicconiformes		
	Family: Anhingidae		
8.	Darter	*Anhinga rufa melanogaster*	Wintering
	Family: Ardeidae		
9.	Indian Pond Heron	*Ardeola grayii grayii*	Local migrant
10.	Grey Heron	*Ardea cinerea*	Wintering
11.	Night Heron	*Nycticorax nycticorax*	Wintering
12.	Black Bittern	*Ixobrychus flavicollis flavicollis*	Wintering
13.	Little Egret	*Egretta garzetta garzetta*	Local migrant
	Family: Accipitridae		
14.	Steppe Eagle	*Aquila nipalensis*	Wintering
	Order: Gruiformes		
	Family: Rallidae		
15.	Indian Moorhen	*Gallinula chloropus indica*	Local migrant
16.	Indian Coot	*Fulica atra*	Wintering
17.	White Breasted Waterhen	*Amaurornis phoenicurus*	Local migrant
	Family: Muscicapidae		
18.	White Capped Water Redstart	*Chaimarrornis leucocephalus*	Wintering
	Family: Motacillidae		
19.	Indian White Wagtail	*Motacilla alba dukhunensis*	Wintering
20.	Grey Wagtail	*Motacilla cinerea*	Wintering
	Family: Laniidae		
21.	Indian Grey Shrike	*Lanius excubitor lahtora*	Wintering

of a year but the importance of wintering birds has been scarcely investigated. But contrary to this abundance of work has been done on breeding biology of aquatic birds. Among these workers are Danell and Sjoberg[1] (1978), Reed et al.[2](1983), Kear[3] (1979), Giles[4] (1989) and Guzij[5] (1992). The population size, distribution and ecological parameters required for post breeding waterfowl are still not well studied; Stewart *et al.*[6] (1958) and Fredrickson & Drobney[7] (1979), As far as our knowledge about the ecology of wintering habitat of the waterbirds is concerned, it is still very little (Anderson and Batt[8] (1983).

So the aim of present work is to find out the number of migratory species in Mansar especially of the aquatic waterfowls. Besides this, the aim of this present paper is to gather sufficient information regarding the ecology of waterfowls like habitat preference, feeding and sexual dimorphism.

MATERIAL AND METHODS

Study area

The study area, village Mansar lies between 30° 45' 5" to 33° 42' 36" North latitudes and 75° 8' 32" to 73° 9' 8" East Longitutes. It is situated about 65 km North-East of Jammu city. The elevation of Lake Mansar is 666 m above sea-level in the Shivaliks terrain of Jammu. Lake Mansar is one of the oldest lakes located in Jammu Shivaliks, fringed by forests and which harbours an interesting aquatic biota. It is situated along the North - South flyway Palearctic-Oriental migratory route of Waterfowl. Lake surface area is about 0.58 Km^2 and Lake Basin area is 1.67 Km^2. The maximum depth is 38.25 m. The lake mean width is 490 m and means depth is 20.23 m. Lake Mansar is warm monomictic waterbody. The lake is a structural feature created by Mansar Fold, occurring as a tight fold. It is surrounded by number of villages and seasonal Choes and Khads.

Methodology

The study area was surveyed for recording diversity and population dynamics of wintering birds by applying Line transect method, Sale and Berkmuller[9](1988) and Point transect method, Verner[10] (1985). Census were made weekly during the study period at different hours of the day. The main transect made during the investigation was the circumference of lake. The abundance of migratory birds was recorded by observing species with the help of Binoculars (Bushnell 7 x 50 U.S.A made). Photography was done with the help of Canon T-70 camera fitted with 300mm zoom lens, digital camera and video camera in order to identify the avian species.

RESULTS AND DISCUSSION

The total number of bird species recorded was enlisted in (Table 1). Among the 21 species recorded, 8 species constitute the migratory waterfowls. These utilize the wetland either to tide over winter for a short period during their migratory spell. Coots were the first to arrive in the study area during the month of October. Mallard, Shoveller, Gadwall, Common Pochard, Coot, Pintail, Wigeon and Tufted Pochard were found to stay in the study area during winter months (October to March). An increase in the number of resident birds i.e.White Breasted Waterhen, Moorhen, Little Egret and Pond Heron was also observed showing a case of local migration. The increase in the number of these species for wintering months may be attributed to availability of space and food resources. Other migratory species includes White Wagtail, Grey Wagtail, Indian Grey Shrike, White Capped Water Redstart, Darter, Night Heron, Grey Heron, Black Bittern and Steppe Eagle. These were sited in the months of October, November, December and January.

During the migration period, waterfowls showed gregarious behaviour besides daily activities like feeding, resting, dabbling and preening. Similar findings were made by Tamisier[11] (1972). Among all these activities, the main were found to be resting as well as feeding. This observation goes well with that of Hepp[12] (1982).

A sudden decline was observed in the diversity as well as population dynamics of migratory avifauna in Mansar. During the year, 2006-2007 the decline was upto such an extent that only 2 species of migratory waterfowls i.e. Mallard and Coot used to visit Lake Mansar (Table 2). This sudden change was attributed to a number of anthropogenic activities which still prevails there. If these activities

Table 2: Showing Population Dynamics of Migratory Avifauna of Mansar during Wintering Months of Year 2004, 2005, 2006 and 2007

S. No.	Name of Bird	Oct. 2004	Nov. 2004	Dec. 2004	Jan. 2005	Feb. 2005	Mar. 2005	Oct. 2005	Nov. 2005	Dec. 2005	Jan. 2006	Feb. 2006	Mar. 2006	Oct. 2006	Nov. 2006	Dec. 2006	Jan. 2007	Feb. 2007	Mar. 2007
1.	Mallard	0	0	0	8	60	0	0	0	0	0	0	0	0	0	7	7	7	0
2.	Gadwall	0	0	0	14	18	0	0	0	0	0	0	0	0	0	0	0	0	0
3.	Shoveller	0	0	0	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0
4.	Common Pochard	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5.	Tufted Pochard	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0
6.	Wigeon	0	0	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0
7.	Pintail	0	0	0	0	47	0	0	0	0	0	0	0	0	0	0	0	0	0
8.	Darter	0	0	0	0	0	0	0	0	0	0	0	0	11	9	8	10	5	0
9.	Indian Pond Heron	2	1	0	2	0	6	0	0	0	0	0	0	11	9	15	10	9	3
10.	Grey Heron	1		0	2	0	0	0	0	0	0	0	0	1	1	1	0	0	0
11.	Night Heron	0	5	0	3	12	0	0	0	0	0	0	0	1	2	2	2	0	0
12.	Black Bittern	0	1	0	0	0	0	0	0	0	0	0	0	1	2	2	2	0	0
13.	Little Egret	23	34	45	43	48	17	32	35	39	35	32	25	30	23	22	26	29	39
14.	Steppe Eagle	0	0	0	0	22	32	0	30	33	41	52	49	0	0	35	43	52	50
15.	Indian Moorhen	17	29	0	25	39	17	0	0	0	0	0	0	8	8	7	6	7	9
16.	Indian Coot	0	50	69	72	96	9	0	0	0	0	0	0	30	33	35	40	41	45
17.	White Breasted Waterhen	4	1	0	8	9	5	9	7	8	6	11	9	8	11	16	11	11	11
20.	White Capped Water Redstart	1	1	2	1	0	0	0	0	0	0	0	1	1	1	1	2	2	3
21.	Indian White Wagtail	2	2	1	1	4	4	1	1	1	2	2	5	2	2	3	5	7	7
22.	Grey Wagtail	1	2	3	2	3	2	4	2	3	1	1	2	1	3	3	3	4	5
23.	Indian Grey Shrike	1	2	2	2	2	1	5	4	3	3	2	2	2	2	3	5	7	3

get promoted, it may be possible that in the near future no migration will take place which will change the status of the waterbirds as well as also leads to wretched condition of this attractive spot. Anthropogenic factors prevailing in Mansar includes: Removal of vegetation cover, introduction of exotic carps, diversion of water channel which effects the level of lake water, draining of lake water, conversion of paddy fields for construction purpose, washing of clothes, cattle bathing and boating. Moreover, implementation of mobile phone towers by the telecom department also serves as a criterion for the decline in the migratory rate of waterfowls as these towers alters the migratory routes.

ACKNOWLEDGEMENTS

The authors are thankful to the Department of Zoology, University of Jammu, Jammu for providing various facilities to carry out the present study.

REFERENCES

1. Danell, K. and Sjoberg, K., Habitat selection by breeding ducks in Boreal lakes in Northern Sweden. *Viltervy.* **10:** 161-190 (1978).
2. Reed, T.M., Landslow, D.R. and Symonds, F.L., The breeding waders of the Caithness flows. *Scot Birds* **12:** 180-186 (1983).
3. Kear, J., Studies on the development of young Tufted duck. *Wildfowl* **21:** 123-132(1970).
4. Giles, J., Experiments on substrate choice and feeding efficiency of downy tufted ducklings, Aythya fuligula. *Wildfowl* **40:** 74-79 (1989).
5. Gyzil, A.I., Mallard (Anas platyrhynchos) on lake Sinver (Mezhigorsky district of the Zakarpatsky region) in the Ukrainian Carpathians. *Vesto. Zool*. No.2, pp.83. (1992).
6. Stewart, R.T., Gies, A.D. and Evans, C.D., Distribution of population and hunting kill of the Canvasback, *J.Wildlif. Manage.* **22:** 333-370 (1958).
7. Friedickson, L.H. and Drobney, R.D., Habitat utilization by post-breeding waterfowl, In: Waterfowl and Wetlands. The Wildlife Soc. Madison Wis., pp.119-131 (1979).
8. Anderson, M.G. and Batt, E.D.J., Workshop on the ecology of wintering waterfowl. *Wildl. Soc. Bull.* **11:** 22-24 (1983).
9. Sale and Berkmuller. , Manual of Wildlife Techniques for India. Food and Agriculture Organization of the United Nations, Dehradun. (1998)
10. Verner, J., Assesment of counting techniques. *Current Ornithology.* **2:** 247-302 (1985).
11. Tamisier, A., Rythms nycthemereaux des sarcelles d'hiver pendant geur hiver mage on Camargue *Apavda.* **40:** 107-135 (1972).
12. Hepp, G.R., Behavioural ecology of waterfowl (Anatinae) wintering in Coastal North Carolina. *Ph.D. Thesis*, North Carolina State Univ. Releigh, N.C. (1982).