

DIVERSITY OF MIGRATORY BIRDS IN OTTU LAKE, SIRSA, HARYANA, INDIA

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ABSTRACT : The diversity of migratory birds according to their respective families was studied during January 2009 to April 2012 in Ottu Lake, which is situated (29°29'39.38" N 74°54'02.42"E) located 12 km West of Sirsa, Haryana, India. Lake provides a good wintering place for migratory birds. A total of 64 avian species belonging to 44 genera and 27 families distributed in 9 orders were recorded in the study period of three years comprising primarily of winter and summer seasons. Among the total avian fauna of 64 species 57 species were winter visitors accounting 89% while 7 species were summer visitors contributing 11%. Family Scolopacidae (Waders) dominated the migratory birds in total number of species representing 11 species (17%) followed by Family Anatidae (ducks) with 10 species (16%) and Motacillidae (wagtails) with 07 species (11%). So far as abundance status is considered 51 species were common, 11 uncommon and 2 rare. Thus considering the diversity richness of Ottu lake it is recommended to take effective measures for preserving and converting this water body into a bird sanctuary.

Key words : Migratory birds, Avian fauna, diversity, Ottu Lake, Haryana.

INTRODUCTION

Birds with their amazing ability to fly, beauty and variety have a great recreational importance on earth. Apart from this they are also well recognized as bio-indicators of healthy ecosystems. Ecological health of any area is primarily indicated by change in its bird's population. This is due to the fact that birds are usually at or near the top of water body's food chain and cannot tolerate even slight habitat disturbances. But birds do not appeal solely for their aesthetic value; they also have social and economic values. Their biological value is well known from early times as pollinators and seed dispersers besides controlling insects and rodents. Migratory birds fly to their seasonal habitats by slow dispersion in order to increase their survival. Out of more than 9000 birds of world, Indian subcontinent contain about 1300 species or over 13% of world's birds (Grimmett *et al*, 1999). Indian subcontinent has nearly 48 bird families out of the total of 75 families in the world. A total of 450 species of birds are reported to spend at least some time in Haryana due to its unique position. Migratory birds spend a part of their sojourn in Haryana, mainly from their breeding grounds in China, Tibet, Russia, Central Asia, Afghanistan and Europe for feeding and roosting. Large and small water bodies across the country provide stopover habitats to these migratory birds. Among the several water bodies in India, Ottu Lake covering an area of about 950 acres, with a depth of approximate 15 feet, situated 12 km from Sirsa, towards

its west, Haryana, India, serves an excellent habitat for migratory birds. Presence of many trees and bushes, around the lake make it a suitable habitat for attracting birds. However very few studies have been carried out to ascertain the status of migratory birds in Haryana (BirdLife International, 2001, 2004; Grimmett and Inskipp, 2003; Delhi Bird, 2004; Harvey *et al*, 2006; Naoroji, 2006; Bahuguna *et al*, 2008; Kumar and Gupta, 2009; Tak *et al*, 2010; Gupta and Kaushik, 2011; Singh and Laura, 2013; Koparde and Manchi, 2013) and that too were restricted to District Kurukshetra and Yamunanagar situated in Eastern part of Haryana. Most of the earlier studies have focused on central and East Haryana around Delhi. Therefore a study for migratory bird diversity was carried out in the western part of Haryana which has largely been ignored.

Study site

Ottu Lake is located (29°29'39.38" N 74°54'02.42"E) at a distance of about 12 km west of Sirsa, Haryana, India.

It is a perennial lake formed due to construction of weir on Ghaggar River in 1896-97. It provides water for irrigation to nearby areas and to the neighboring state, Rajasthan. The water level of lake increases in rainy season. The lake provides a natural habitat to a wide range of residents. The predominating vegetation around lake is *Eucalyptus sp*, *Acacia arabica*, *Azadirachta indica*,



Haryana, India

Ottu Lake, Sirsa

Table 1 : Family wise Species distribution of Migratory birds of Ottu Lake, Sirsa, Haryana.

S. No.	Family	Number of species	Percentage
1.	Accipitridae	2	3%
2.	Anatidae	10	16%
3.	Ardeidae	1	2%
4.	Charadriidae	1	2%
5.	Coraciidae	1	2%
6.	Cuculidae	2	3%
7.	Falconidae	2	3%
8.	Fringillidae	1	2%
9.	Hirundinidae	2	3%
10.	Glareolidae	1	2%
11.	Jacaniidae	1	2%
12.	Laniidae	1	2%
13.	Laridae	1	2%
14.	Meropidae	1	2%
15.	Motacillidae	7	11%
16.	Muscicapinae	1	2%
17.	Oriolidae	1	2%
18.	Pandionidae	1	2%
19.	Passerinae	1	2%
20.	Phoenicopteridae	1	2%
21.	Picidae	1	2%
22.	Recurvirostridae	1	2%
23.	Rostratulidae	1	2%
24.	Scolopacidae	11	17%
25.	Sturnidae	2	3%
26.	Sylviinae	3	5%
27.	Turdinae	6	9%

Zizyphus jujuba, *Ficus benghalensis*, *Ficus religiosa*, and *Dalbergia sissoo*. Aquatic plants mainly comprise of water hyacinth. The climate of Sirsa is semiarid type. There are three major seasons i.e. rainy (July–September)



recorded along with their habitat, season and time of the year and status (winter visitor, summer visitor, resident etc.)

The checklist was prepared using standard common and scientific names of the birds following Manakadan and Pittie (2001). The abundance status of the recorded migratory bird species was established on the basis of frequency of sightings as common- recorded 6–10 times out of 10 visits, uncommon- recorded 3–5 times out of 10

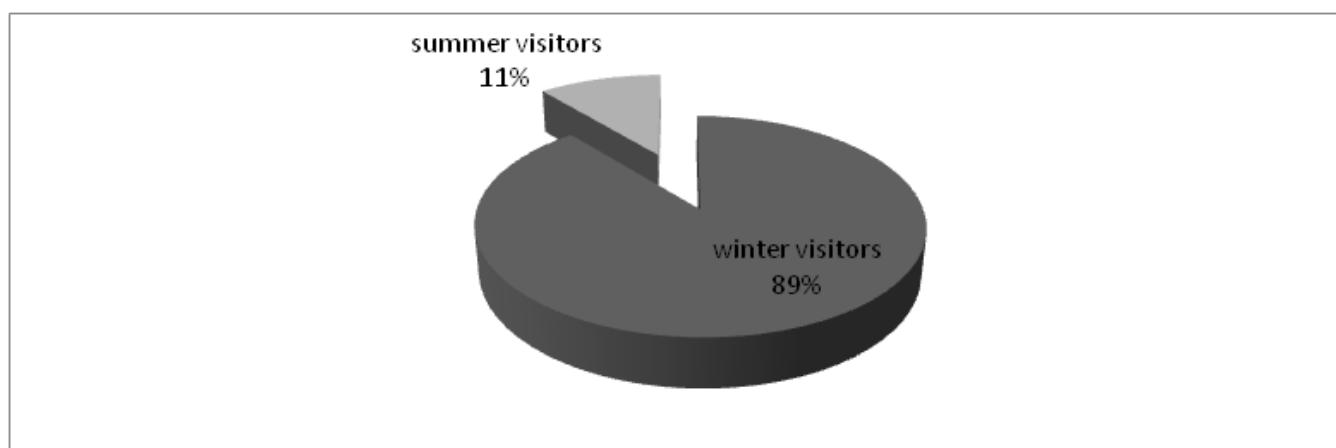


Fig. 1 : Proportion of Migratory birds represented by seasons.

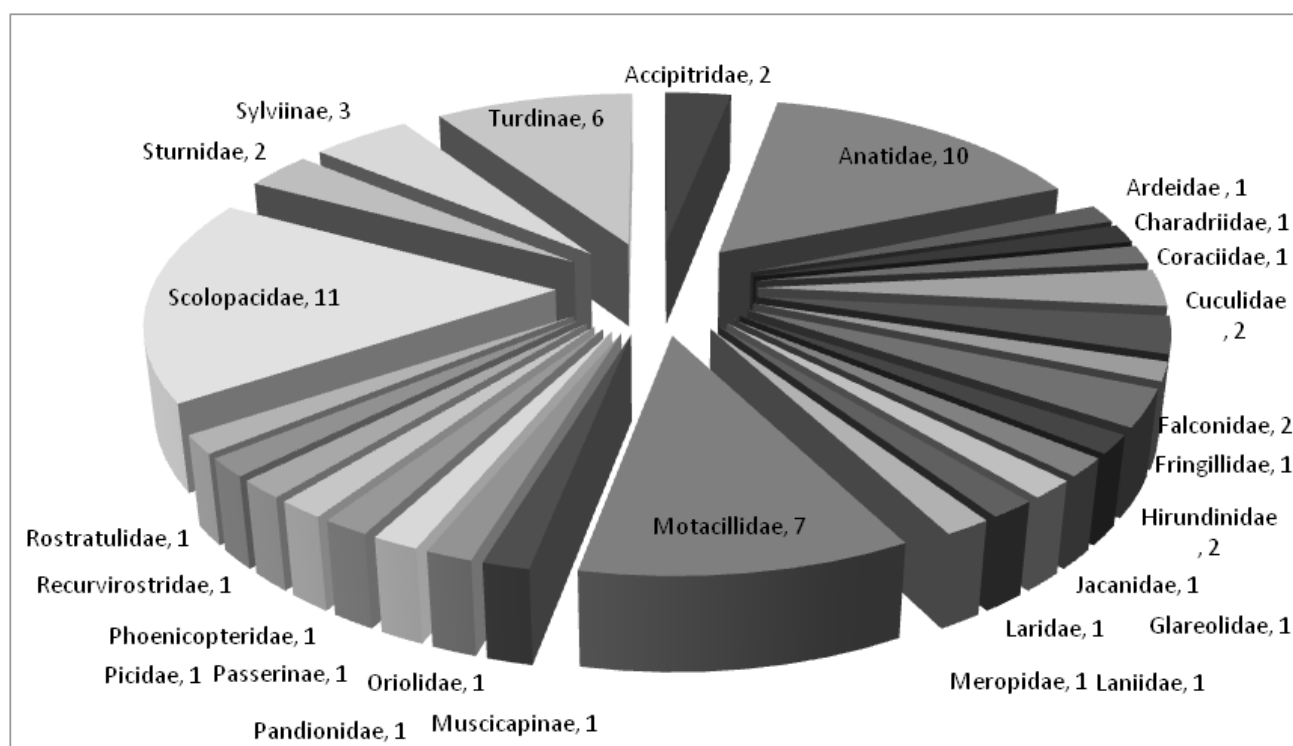


Fig. 2 : Proportion of families as represented by species richness of Migratory Birds.

visits, rare- recorded 0–2 times out of 10 visits. Data was collected by direct observation. The present paper deals only with migratory birds.

RESULTS AND DISCUSSION

A total of 64 species of migratory birds belonging to 44 genera and 27 families distributed in 9 orders (Accipitriformes, Anseriformes, Charadriiformes, Ciconiiformes, Coraciiformes, Cuculiformes, Falconiformes, Passeriformes, Piciformes) have been recorded from the study area Table 2. Earlier in Haryana Kumar and Gupta, (2009) recorded 54 species from Kurukshetra; Tak *et al* (2010) reported 31 species from Yamunanagar district and Singh and Laura (2013)

recorded 34 species from Rohtak. It was found that winter migratory birds starts coming in October and stays here till March end. Whereas summer visitors start arriving in April and stays up to October. Third Category is that of Passage migrants which after staying for few days migrates towards their destination *eg* Rosy Starlings.

The number of species wintering in this area is more than the summer migrants. Out of the total number of 64 migratory species recorded from the region 57(89%) species were winter visitors and only 07(11%) were summer visitors, Figure 1. So most of the migratory species were winter visitors except Lesser Whistling Duck, Indian plaintive cuckoo, Pied crested cuckoo, Small Pratincole,

Table 2 : Migratory birds recorded in the Ottu Lake, Sirsa, Haryana.

S. No.	Order	Family	Common Name	Scientific Name	Status
1.	Accipitriformes	Pandionidae	Osprey	<i>Pandion haliaetus</i> (Linnaeus, 1758)	WR
2.	Anseriformes	Anatidae	Bar Headed Goose	<i>Anser indicus</i> (Latham, 1790)	WC
3.			Common Pochard	<i>Aythya ferina</i> (Linnaeus, 1758)	WC
4.			Common Teal	<i>Anas crecca</i> Linnaeus, 1758	WC
5.			Gadwall	<i>Anas strepera</i> Linnaeus, 1758	WC
6.			Garganey	<i>Anas querquedula</i> Linnaeus, 1758	WC
7.			Lesser Whistling Duck	<i>Dendrocygna javanica</i> (Horsfield, 1821)	SC
8.			Mallard	<i>Anas platyrhynchos</i> Linnaeus, 1758	WC
9.			Northern Shoveller	<i>Anas clypeata</i> Linnaeus, 1758	WC
10.			Northern Pintail	<i>Anas acuta</i> Linnaeus, 1758	WC
11.			Tufted pochard	<i>Aythya fuligula</i> (Linnaeus, 1758)	WU
12.			Charadriiformes	Glareolidae	Small Pranticole
13.	Jacaniidae	Pheasant Tailed Jacana		<i>Hydrophasianus chirurgus</i> (Scopoli, 1786)	SU
14.	Laridae	Whiskered Tern		<i>Chlidonias hybridus</i> (Pallas, 1811)	WU
15.	Recurvirostridae	Pied Avocet		<i>Recurvirostra avosetta</i> Linnaeus, 1758	WC
16.	Rostratulidae	Greater Painted Snipe		<i>Rostratula benghalensis</i> (Linnaeus, 1758)	SU
17.	Scolopacidae	Common Snipe		<i>Gallinago gallinago</i> (Linnaeus, 1758)	WC
18.		Black Tailed Godwit		<i>Limosa limosa</i> (Linnaeus, 1758)	WC
19.		Common Redshank		<i>Tringa totanus</i> (Linnaeus, 1758)	WC
20.		Common Sandpiper		<i>Actitis hypoleucos</i> Linnaeus, 1758	WC
21.		Green Sandpiper		<i>Tringa ochropus</i> Linnaeus, 1758	WC
22.		Little Stint		<i>Calidris minuta</i> (Leisler, 1812)	WC
23.		Marsh Sandpiper		<i>Tringa stagnatilis</i> (Bechstein, 1803)	WC
24.		Ruff		<i>Philomachus pugnax</i> (Linnaeus, 1758)	WC
25.		Spotted Redshank		<i>Tringa erythropus</i> (Pallas, 1764)	WC
26.		Temminck's Stint		<i>Calidris temminckii</i> (Leisler, 1812)	WC
27.	Wood Sandpiper	<i>Tringa glareola</i> Linnaeus, 1758		WC	
28.	Ciconiiformes	Ardeidae		Grey Heron	<i>Ardea cinerea</i> Linnaeus, 1758
29.		Charadriidae	White Tailed Lapwing	<i>Vanellus leucurus</i> (Lichtenstein, 1823)	WC
30.		Phoenicopteridae	Greater Flamingo	<i>Phoenicopterus ruber</i> Linnaeus, 1758	WU
31.	Coraciiformes	Coraciidae	European Roller	<i>Coracias garrulus</i> Linnaeus, 1758	WC
32.		Meropidae	Small bee eater	<i>Merops orientalis</i> Latham, 1801	SC
33.	Cuculiformes	Cuculidae	Indian plaintive cuckoo	<i>Cacomantis passerinus</i> (Vahl, 1797)	SC
34.			Pied crested cuckoo	<i>Clamator jacobinus</i> (Boddaert, 1783)	SC
35.	Falconiformes	Accipitridae	Eurasian Sparrowhawk	<i>Accipiter nisus</i> (Linnaeus, 1758)	WU
36.			Eurasian Marsh Harrier	<i>Circus aeruginosus</i> (Linnaeus, 1758)	WR
37.		Falconidae	Common Kestrel	<i>Falco tinnunculus</i> Linnaeus, 1758	WC
38.			Eurasian Hobby	<i>Falco subbuteo</i> Linnaeus, 1758	WR
39.	Passeriformes	Fringillidae	Common Rosefinch	<i>Carpodacus erythrinus</i> (Pallas, 1770)	WU
40.		Hirundinidae	Common swallow	<i>Hirundo rustica</i> Linnaeus, 1758	WC
41.		Hirundinidae	Wiretailed Swallow	<i>Hirundo smithii</i> Leach, 1818	SC

Table 2 continued....

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42.		Laniidae	Rufous Tailed Shrike	<i>Lanius isabellinus</i> Hemprich & Ehrenberg, 1833	WC
43.		Motacillidae	Citrine Wagtail	<i>Motacilla citreola</i> Pallas, 1776	WC
44.		Motacillidae	Grey Wagtail	<i>Motacilla cinerea</i> Tunstall, 1771	WC
45.		Motacillidae	Oriental backed pipit	<i>Anthus hodgsoni</i> Richmond, 1907	WC
46.		Motacillidae	Tawny Pipit	<i>Anthus campestris</i> (Linnaeus, 1758)	WC
47.		Motacillidae	Eurasian tree pipit	<i>Anthus trivialis</i> (Linnaeus, 1758)	WC
48.		Motacillidae	White Wagtail	<i>Motacilla alba</i> Linnaeus, 1758	WC
49.		Motacillidae	Yellow Wagtail	<i>Motacilla flava</i> Linnaeus, 1758	WC
50.		Muscicapinae	Red Throated Flycatcher	<i>Ficedula parva</i> (Bechstein, 1792)	WU
51.		Oriolidae	Eurasian Golden Oriole	<i>Oriolus oriolus</i> (Linnaeus, 1758)	SC
52.		Passerinae	Spanish Sparrow	<i>Passer hispaniolensis</i> (Temminck, 1820)	WC
53.		Sturnidae	Common Starling	<i>Sturnus vulgaris</i> Linnaeus, 1758	WC
54.		Sturnidae	Rosy Starling	<i>Sturnus roseus</i> (Linnaeus, 1758)	PC
55.		Sylviinae	Blyth's Reed-Warbler	<i>Acrocephalus dumetorum</i> Blyth, 1849	PC
56.		Sylviinae	Common Chiffchaff	<i>Phylloscopus collybita</i> (Vieillot, 1817)	WC
57.		Sylviinae	Common lesser whitethroat	<i>Sylvia curruca</i> (Linnaeus, 1758)	WC
58.		Turdinae	Black Redstart	<i>Phoenicurus ochruros</i> (Gmelin, 1774)	WC
59.		Turdinae	Bluethroat	<i>Luscinia svecica</i> (Linnaeus, 1758)	WC
60.		Turdinae	Common Stonechat	<i>Saxicola torquata</i> (Linnaeus, 1758)	WC
61.		Turdinae	Desert Wheatear	<i>Oenanthe deserti</i> (Temminck, 1825)	WC
62.		Turdinae	Isabelline Wheatear	<i>Oenanthe isabellina</i> (Temminck, 1829)	WC
63.		Turdinae	Variable Wheatear	<i>Oenanthe picata</i> (Blyth, 1847)	WC
64.	Piciformes	Picidae	Eurasian Wryneck	<i>Jynx torquilla</i> Linnaeus, 1758	WU

W- Winter visitor, S- summer visitor, P- Passage migrant; C- Common, U- Not common, R- Rare

Pheasant Tailed Jacana, Small bee eater, Eurasian Golden Oriole, and Greater Painted Snipe which were summer visitors. Passeriformes order have maximum number of families representing 10 out of a total of 27 families. Among the family wise distribution of species as given in Table 1, the Family Scolopacidae (Waders) dominated the migratory birds in total number of species 11 followed by Family Anatidae (ducks) with 10 species and Motacillidae (wagtails) with 07 species, Figure 2. The family Turdinae represented 6 species, family Sylviinae with 3 species and Accipitridae, Cuculidae, Falconidae, Hirundinidae, Sturnidae with 2 species each. Rest 17 families were represented by single species each, Table 1. Further analysis of Table 2 on the basis of frequency of sighting revealed that 51 species were common (having 43 winter visitors, 6 summer visitors and 2 passage visitors), 11 uncommon (having eight winter visitors - Bar Headed Goose, Tufted pochard, Whiskered Tern, Greater Flamingo, Eurasian Marsh Harrier, Common Rosefinch, Red Throated Flycatcher, Eurasian Wryneck, and three summer visitors - Small Pratincole, Greater

Painted Snipe, Pheasant Tailed Jacana) and 2 rare (Osprey and Eurasian Hobby both winter visitors).

The rich avian fauna of migratory birds of the Ottu lake documented in the present study may be due to proximity of Ghaggar River, serenity, presence of diverse habitat and trees make it a suitable place for temporary halt. But deforestation, loss of stopover habitat, communication towers, unregulated use of pesticides with other anthropogenic disturbances are posing a threat to the migratory birds. So considering the richness of avian fauna of Ottu Lake it is required to keep human disturbances to be minimum and effective suitable measures should be taken to maintain species diversity and abundance. The lake management authorities should be educated to maintain natural conditions of the place along with the importance of ecological balance. A good ecological health of the lake would definitely increase the migratory bird diversity of the region. Thus the number of migratory birds visiting this lake indicates that it is a good habitat for birds and hence can be preserved as a bird sanctuary.

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