



Full Length Article

Status and Diversity of Avian fauna in the estuarine wetland area of Bhayander and Naigaon, Maharashtra, India

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ABSTRACT

This is the first report on avian diversity in the estuarine wetland area of Bhayander and Naigaon of Thane district from May 2008 to June 2009. The occurrence of birds was observed every month along the estuarine wetland area. Wetlands provide habitats for various types of avian species in different seasons. During the study period at both the Station 1 Bhayander and Station 2 Naigaon 131 avian species belonging to 45 families including resident and migratory were identified. Among them family Scolopacidae and Accipitridae were found to be dominant followed by family Ardeidae, Sylviidae, Laridae, Motacillidae and Rostratulidae. Out of 45 families observed at study area family Scolopacidae and Accipitridae includes 12 species each followed by Ardeidae and Sylviidae with 8 and 7 species respectively and family Laridae, Motacillidae and Rostratulidae with 6 species each.

Key Words: Wetland, Avian diversity, Blue Rock Pigeon, Cattle Egret, Grey Heron.

INTRODUCTION

The occurrence of a variety of organisms reflects the biological diversity of that particular expanse. Throughout the world, 9702 avian species belonging to more than 1800 genera exist (Sibley and Monroe, 1990). Of these, approximately 1300 species of birds have been reported from India (Manakadan and Pittie, 2001). One of the best known functions of wetlands is to provide a habitat for birds. Wetlands are important bird habitats and birds use them for breeding, nesting and rearing young ones. Birds also use wetlands as a source of drinking water and for breeding, resting, shelter and social interactions (Stewart, 2007).

Wetland areas possess treasures of faunal biodiversity (P. Ishwara Bhat et. al., 2009). In India, wetland areas occupy about 15.26 million hectares, which is approximately 4.6% of the geographical area of the country (SAC, 2011). The wetlands

areas are habitats for hundreds of avian species both resident and migratory. Out of 1340 bird species reported in India around 310 species of birds are dependent on these wetlands areas (M. Murugesan et. al., 2013). Wetlands in India are under tremendous pressure due to various anthropogenic activities such as reclamation, deforestation and extensive concrete construction (Kler, 2002). The birds are very sensitive to such activities and responds by changes in species composition and density. Wetland avifauna acts as indicators of wetland quality and parameters for assessing restoration success and regional biodiversity (Kumar and Gupta, 2009) (Balkhande J. V. et. al., 2013). Thus, the present study is the first attempt to compile a document of avian diversity in the estuarine wetland area of Bhayander and Naigaon.

MATERIAL AND METHODS**Study Area**

The present study was carried out at two stations Bhayander and Naigaon respectively.

Station 1: The first station at Bhayander is located 19° 19' N and 72° 51' E (Google Earth, 2008). The Bhayander is geographically surrounded by sea from the West side, by the estuary from the north side and by open and occupied land from the south and east side. The estuarine water is mainly from the buffering of Ulhas River with the Arabian sea which empties its water in the Thane creek and Vasai creek.

Station 2: The second station Naigaon is located 19° 20' N and 72° 51' E (Google Earth 2008). Naigaon is a small town in the Thane District of the Maharashtra state and situated diagonally opposite to Bhayander on the another side of the estuary. The approximate distance between Bhayander and Naigaon is about 5 Km.

Bird watching and recording has been carried out for a period of one year from May 2008 to June 2009. Observations were made with the aid of a binocular and camera with zoom lenses. Recorded birds were identified by using standard books such as Ali (1996) and Monga Sunjoy, (2003).

RESULTS AND DISCUSSION

Table 1: Status and diversity of avian fauna observed in the estuarine wetland area of Bhayander and Naigaon of Thane district.

Sr.No.	Scientific Name of the Bird	Common Name of the Bird	Seasonal Status
	Family: Corvidae		
1	<i>Corvus splendens</i>	House Crow	R
2	<i>Corvus macrorhynchos</i>	Jungle Crow	R
	Family: Dicruridae		
3	<i>Dicrurus macrocercus</i>	Black Drongo	R
	Family: Passeridae		
4	<i>Passer domesticus</i>	House Sparrow	R
5	<i>Petronia xanthocollis</i>	Yellow – Throated Sparrow	R
	Family: Scolopacidae		
6	<i>Gallinago gallinago</i>	Common Snipe	M
7	<i>Limosa limosa</i>	Black – tailed Godwit	M
8	<i>Numenius phaeopus</i>	Whimbrel	M
9	<i>Numenius arquata</i>	Eurasian Curlew	M
10	<i>Tringa erythropus</i>	Spotted Redshank	M
11	<i>Tringa stagnatilis</i>	Marsh Sandpiper	M
12	<i>Tringa nebularia</i>	Common Greenshank	M
13	<i>Tringa ochropus</i>	Green Sandpiper	M
14	<i>Tringa glareola</i>	Wood Sandpiper	M
15	<i>Calidris minuta</i>	Little Stint	M
16	<i>Calidris temminckii</i>	Temminck's Stint	M
17	<i>Philomachus pugnax</i>	Ruff	M
	Family: Columbidae		
18	<i>Columba livia</i>	Blue Rock Pigeon	R
19	<i>Streptopelia chinensis</i>	Spotted Dove	R
20	<i>Streptopelia decaocta</i>	Eurasian Collared Dove	R
	Family: Laridae		
21	<i>Larus heuglini</i>	Heuglin's Gull	M
22	<i>Larus brunnicephalus</i>	Brown – headed Gull	M
23	<i>Larus ridibundus</i>	Black – headed Gull	M

24	<i>Gelochelidon nilotica</i>	Gull – billed Tern	M
25	<i>Sterna albifrons</i>	Little Tern	M
26	<i>Chlidonias hybridus</i>	Whiskered Tern	M
	Family: Falconidae		
27	<i>Falco tinnunculus</i>	Common Kestrel	M
28	<i>Falco subbuteo</i>	Eurasian Hobby	M
29	<i>Falco juggar</i>	Laggar Falcon	M
	Family: Tytonidae		
30	<i>Tyto alba</i>	Barn Owl	R
	Family: Strigidae		
31	<i>Athene brama</i>	Spotted Owlet	R
	Family: Apodidae		
32	<i>Cypsiurus balasiensis</i>	Asian Palm – Swift	R
	Family: Alcedinidae		
33	<i>Alcedo atthis</i>	Small Blue Kingfisher	R
34	<i>Halcyon smymensis</i>	White – Breasted Kingfisher	R
	Family: Meropidae		
35	<i>Merops orientalis</i>	Small Bee - eater	R
	Family: Hirundinidae		
36	<i>Hirundo rustica</i>	Common Swallow	R
37	<i>Hirundo smithii</i>	Wire – tailed Swallow	M
	Family: Recurvirostridae		
38	<i>Himantopus himantopus</i>	Blackwinged Stilt	R
39	<i>Recurvirostra avosetta</i>	Pied Avocet	M
	Family: Motacillidae		
40	<i>Motacilla alba</i>	White Wagtail	R
41	<i>Motacilla citreola</i>	Citrine Wagtail	M
42	<i>Motacilla flava</i>	Yellow Wagtail	M
43	<i>Motacilla cinerea</i>	Grey Wagtail	M
44	<i>Motacilla maderaspatensis</i>	Large Pied Wagtail	M
45	<i>Anthus rufulus</i>	Paddyfield Pipit	R
	Family: Pycnonotidae		
46	<i>Pycnonotus jocosus</i>	Red – whiskered Bulbul	R
47	<i>Pycnonotus leucotis</i>	White – eared Bulbul	R
48	<i>Pycnonotus cafer</i>	Red – vented Bulbul	R
	Family: Estrildidae		
49	<i>Amandava amandava</i>	Red Munia	R
50	<i>Lonchura malabarica</i>	White – throated Munia	R
51	<i>Lonchura punctulata</i>	Spotted Munia	R
52	<i>Lonchura Malacca</i>	Black – headed Munia	R
	Family: Sylviidae		
53	<i>Cisticola juncidis</i>	Streaked Fantail – Warbler	R
54	<i>Prinia socialis</i>	Ashy Warbler	R
55	<i>Acrocephalus dumetorum</i>	Blyth’s Reed Warbler	M
56	<i>Acrocephalus stentoreus</i>	Indian Great Reed – Warbler	R
57	<i>Orthotomus sutorius</i>	Common Tailorbird	R
58	<i>Phylloscopus collybita</i>	Common Chiffchaff	M
59	<i>Sylvia curucca</i>	Common Lesser Whitethroat	M
	Family: Sturnidae		
60	<i>Sturnus malabaricus</i>	Grey – headed Starling	R
61	<i>Sturnus pagodarum</i>	Brahminy Starling	R

62	<i>Sturnus roseus</i>	Rosy Starling	M
63	<i>Sturnus contra</i>	Asian Pied Starling	R
64	<i>Acridotheres tristis</i>	Common Myna	R
	Family: Glareolidae		
65	<i>Glareola lacteal</i>	Small Pratincole	R
	Family: Psittacidae		
66	<i>Psittacula krameri</i>	Rose – Ringed Parakeet	R
	Family: Coraciidae		
67	<i>Coracias benghalensis</i>	Indian Roller	R
	Family: Upupidae		
68	<i>Upupa epops</i>	Common Hoopoe	R
	Family: Capitonidae		
69	<i>Megalaima haemacephala</i>	Coppersmith Barbet	R
	Family: Alaudidae		
70	<i>Alauda gulgula</i>	Eastern Skylark	R
	Family: Phalacrocoracidae		
71	<i>Phalacrocorax niger</i>	Little Cormorant	M
72	<i>Phalacrocorax carbo</i>	Large Cormorant	M
	Family: Rostratulidae		
73	<i>Rostratula benghalensis</i>	Painted Snipe	R
	Family: Charadriidae		
74	<i>Charadrius dubius</i>	Little Ringed Plover	R
75	<i>Charadrius alexandrinus</i>	Kentish Plover	R
76	<i>Charadrius mongolus</i>	Lesser Sand Plover	R
77	<i>Vanellus indicus</i>	Redwattled Lapwing	R
78	<i>Vanellus leucurus</i>	White – tailed Lapwing	M
	Family: Laniidae		
79	<i>Lanius cristatus</i>	Brown Shrike	M
80	<i>Lanius schch</i>	Rufous – backed Shrike	R
	Family: Accipitridae		
81	<i>Pernis ptilorhynchus</i>	Oriental Honey – Buzzard	M
82	<i>Elanus caeruleus</i>	Black – shouldered Kite	R
83	<i>Milvus migrans</i>	Black Kite	R
84	<i>Haliastur Indus</i>	Brahminy Kite	R
85	<i>Gyps bengalensis</i>	Indian White – backed Vulture	R
86	<i>Circus aeruginosus</i>	Western Marsh Harrier	M
87	<i>Accipiter badius</i>	Shikra	R
88	<i>Butastur teesa</i>	White – eyed Buzzard	R
89	<i>Buteo rufinus</i>	Long – legged Buzzard	M
90	<i>Aquila clanga</i>	Greater Spotted Eagle	R
91	<i>Aquila heliacal</i>	Eastern Imperial Eagle	R
92	<i>Hieraetus pennatus</i>	Booted Eagle	R
	Family: Ploceidae		
93	<i>Ploceus philippinus</i>	Baya Weaver	R
	Family: Irenidae		
94	<i>Aegithina tiphia</i>	Common Iora	R
	Family: Turdidae		
95	<i>Luscinia svecica</i>	Bluethroat	M
96	<i>Copsychus saularis</i>	Oriental Magpie - Robin	R
97	<i>Saxicoloides fulicata</i>	Indian Robin	R

98	<i>Saxicola torquata</i>	Common Stone Chat	R
99	<i>Saxicola caprata</i>	Pied Bush Chat	R
	Family: Timaliidae		
100	<i>Turdoides caudatus</i>	Common Babbler	R
101	<i>Turdoides earlei</i>	Striated Babbler	R
	Family: Nectarinidae		
102	<i>Nectarinia zeylonica</i>	Purple – rumped Sunbird	R
103	<i>Nectarinia asiatica</i>	Purple Sunbird	R
	Family: Rhipidurinae		
104	<i>Rhipidura albicollis</i>	White – throated Fantail - Flycatcher	R
	Family: Oriolidae		
105	<i>Oriolus oriolus</i>	Eurasian Golden Oriole	R
	Family: Ardeidae		
106	<i>Egretta garzetta</i>	Little Egret	R
107	<i>Egretta gularis</i>	Western Reef - Egret	R
108	<i>Ardea cinerea</i>	Grey Heron	R
109	<i>Ardea purpurea</i>	Purple Heron	R
110	<i>Bubulcus ibis</i>	Cattle Egret	R
111	<i>Ardeola grayii</i>	Indian Pond - Heron	R
112	<i>Butorides striatus</i>	Little Green Heron	R
113	<i>Nycticorax nycticora</i>	Black – crowned Night Heron	R
	Family: Ciconiidae		
114	<i>Anastomus oscitans</i>	Asian Openbill - Stork	R
	Family: Threskiornithidae		
115	<i>Plegadis falcinellus</i>	Glossy Ibis	R
116	<i>Threskiornis melanocephalus</i>	Oriental White Ibis	R
	Family: Anatidae		
117	<i>Sarkidiornis melanotos</i>	Comb Duck	R
118	<i>Anas poecilorhyncha</i>	Spotbilled Duck	R
119	<i>Anas acuta</i>	Northern Pintail	M
120	<i>Anas crecca</i>	Common Teal	M
	Family: Cuculidae		
121	<i>Clamator jacobinus</i>	Pied Crested Cuckoo	R
122	<i>Eudynamis scolopacea</i>	Asian Koel	R
123	<i>Centropus sinensis</i>	Greater Coucal	R
124	<i>Cuculus canorus</i>	Common Cuckoo	R
	Family: Rallidae		
125	<i>Gallirallus striatus</i>	Blue – breasted Rail	R
126	<i>Rallus aquaticus</i>	Water Rail	R
127	<i>Amaurornis phoenicurus</i>	White – breasted Waterhen	R
128	<i>Porzana fusca</i>	Ruddy – breasted Crake	R
129	<i>Fulica atra</i>	Common Coot	R
	Family: Pandionidae		
130	<i>Pandion haliaetus</i>	Osprey	R
	Family: Phoenicopteridae		
131	<i>Phoenicopterus roseus</i>	Greater Flamingo	M

R = Resident and M = Migratory.

The species of birds mentioned above have been observed and identified at both the stations.

Table 1 shows that 131 species of birds were encountered in the estuarine wetland area of Bhayander and Naigaon of Thane district during the study period. 68% of the species were resident while 32% were migratory. These migrants includes species such as Grater Flamingo, Northern pintail, Brown Shrike, Large Cormorant, Rosy Starling, Eurasian Hobby, Laggar Falcon, Heuglin's Gull, Eurasian Curlew, Little Stint etc. 45 families were noticed during the study period among them Scolopacidae and Accipitridae were the dominant families with 12 species each followed by family Ardeidae and Sylviidae with 8 and 7 species respectively. So also family Laridae, Motacillidae and Rostratulidae with 6 species each.

Similar kind of observations and results were made by kumar (2006) recorded Ardeidae to be the most dominant family in Bharathpuzha river basin in Kerala. Surana (2007) recorded Anatidae to be most dominant family with 12 species and Ardeidae with 9 species in Chimdi lake Nepal. Rathore and Sharma (1999) also reported Anatidae to be dominant family with 12 species in Sarsai Nawar in Uttar Pradesh.

M. Murugesan et. al. in 2013, reported 166 bird species belonging to 56 families from the wetland areas of Oussudu lake in Puducherry. While Verma Ashok et. al. in 2004 recorded about 149 species of birds belonging to 35 families from the Mahul creek of Mumbai which is near to the estuarine area of Bhayander and Naigaon. Also 44 bird species were observed by P. Ishwara Bhat et. al. in 2009 from the Anekere wetland areas of Karkala in Udupi district of Karnataka state.

Present study reveals that the avian species observed along the wetland areas of Bhayander and Naigaon are comparatively less to the avian species observed along the other wetland areas. It may be due to loss of habitat by reclamation of land for construction purposes and also due to reduction of nesting sites.

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