

Avian diversity in Mahim Bay, Mumbai

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Abstract : The Mahim bay is situated on the west coast of Mumbai extending from Bandra to Worli. This area is home to many bird species, including winter visitors and residents. The migratory birds are attracted to the Mahim bay because this area has rich benthic fauna and fish diversity, which forms the food source. The Mahim bay is considerably polluted due to anthropogenic activities like, sewage disposal especially from the Mithi River and BMC drainage outlets, recreational activities and religious rituals such as Ganesh visarjan. Therefore the present survey was conducted to prepare a checklist of the birds occurring in the Mahim bay. Present survey was conducted from June 2011 to September 2013. We observed that the seashore and near shore water is inhabited by 27 different bird species of which 11 are residents and 16 are winter visitors. Birds belonging to the following families were observed: Accipitridae, Ardeidae, Charadriidae, Falconidae, Laridae, Phalacrocoracidae and Scolopacidae. Of these, Family Scolopacidae (8 species), Laridae (7 species), and Ardeidae (7 species) were dominant. Since most sea birds feed on the rich benthic fauna and fishes, pollution may affect these food resources impacting the avian diversity in the Mahim bay.

Key words : Migratory birds, Mahim bay, Mumbai, Avian fauna

Introduction

Many bird species are known to inhabit the urban Mumbai metropolis (Monga, 2004) and its surrounding areas including Mahul (Verma et al., 2003), Uran (Pawar, 2011), Vasai (Walmiki et al., 2013), and Thane Creek (Nitsure, 2002; Quadros, 2001). However, there is lack of thorough survey on the bird diversity of western coast of Mumbai especially in the Mahim Bay. This area is home to many bird species. The large congregations of migratory and resident water birds use this area as a wintering ground. The birds are attracted to the Mahim bay because it has rich benthic fauna and fish diversity, which forms the food source. The Mahim bay is considerably polluted due to anthropogenic activities like, sewage disposal especially from the Mithi River and BMC drainage outlets, recreational activities and religious rituals such as Ganesh visarjan. Therefore the present survey was conducted to prepare a checklist of the birds occurring in the Mahim bay.

Study area

The study area, Mahim bay, is situated on the west coast of Mumbai (Lat. 19°02'01"N; Long. 72°49'36.1" E). This area receives regular release of domestic sewage along with fresh water drainage from the Mithi River. Recently the Rajiv Gandhi sea link was constructed over the Mahim bay. All these factors have put enormous pressure on the environment and ecology of the Mahim bay thereby affecting its biota.



Figure 1: Satellite photograph of Mahim Bay, Mumbai.

Materials and methods

Present survey was conducted from June 2012 to September 2013. Birds in the Mahim bay were observed every fortnightly, during the low tides and high tides period, using 8 X 42 binocular. The waders feeding in the intertidal area were observed during the low tide. The bird species were identified using standard field guides (Ali and Ripley, 1995; Grimmett et al., 1999; Ali, 2002; Pande, 2003). Care was taken to avoid disturbances to the birds during the survey visits.

Results and discussion

Birds, besides enhancing the aesthetic beauty of a place, are an important component of the ecosystem. They occupy an important position in the food chain and are therefore sensitive to the changes in the ecosystem. The migratory birds are responsible for the fluctuations in bird population and help in understanding the ecology of an area. Drastic changes in the population of the migratory birds may also result due to alteration in ecology of a stopover sites or a wintering areas. Total absence of birds from an area may indicate pollution (Borale et al., 1994).

Earlier, few authors reported a general account of shorebirds around Mumbai: Verma et al. (2003) reported 150 species in Mahul area; Pawar (2011) reported 56 species from Uran area including terrestrial birds and waders; Walmiki et al. (2013) reported 143 species from Vasai area; Nitsure (2002) and Quadros (2001) reported 53 and 55 bird species from the Thane creek, respectively.

The present study showed that the Mahim bay is inhabited by 27 different bird species belonging to families including Accipitridae, Ardeidae, Charadriidae, Falconidae, Laridae, Phalacrocoracidae and Scolopacidae (Table 1). Family Scolopacidae (8 species), Ardeidae (7 species) and

Laridae (7 species) were dominant during the study period. We observed that the shore water is inhabited by 27 different bird species of which 11 are residents and 16 are winter visitors. Winter migrants, like Whimbrel and Eurasian Curlew migrate from Europe and slender billed Seagulls come from Baluchistan (Pande et al., 2003). We observed that these winter visitor birds arrive in Mahim bay in September and depart during April to May. The initial flock of slender billed Seagulls arrived on 9th September in the year 2012 whereas in 2013 they arrived on 11th September in the Mahim bay. Although the present study was conducted for one year, from June 2012 to September 2013, we observed that the Mahim bay has a rich and varied bird life.

Conclusion

The present study revealed that Mahim Bay harbours rich bird diversity. However the anthropogenic activities like sewage disposal and religious rituals can have adverse effect on the environment of the Mahim bay. Since most sea birds feed on the rich benthic fauna and fishes, pollution may affect these food resources impacting the avian diversity in the Mahim bay. Further studies are required to thoroughly understand the avian diversity in the Mahim bay to create awareness among the general public and develop conservation strategies.

Table 1: List of birds observed in the Mahim bay, Mumbai.

Sl. No.	Common Name	Scientific Name	Family	Category	Population Status
1.	Common or Black Kite	<i>Milvus migrans</i>	Accipitridae	R	Very Common
2.	Brahminy Kite	<i>Haliastur Indus</i>		R	Occasional
3.	Grey Heron	<i>Ardea cinerea</i>	Ardeidae	R	Common
4.	Indian Pond Heron	<i>Ardeola grayii</i>		R	Occasional
5.	Western Reef Egret	<i>Egretta gularis</i>		R	Very Common
6.	Large Egret	<i>Ardea alba</i>		R	Very Common
7.	Inter-mediate Egret	<i>Egretta intermedia</i>		R	Very Common
8.	Little Egret	<i>Egretta garzetta</i>		R	Very Common
9.	Black Crowned Night Heron	<i>Nycticorax nycticora</i>		R	Common
10.	Little Ringed Plover	<i>Charadrius dubius</i>	Charadriidae	R	Common
11.	Peregrine Falcon	<i>Falco peregrinus</i>	Falconidae	WV	Occasional
12.	Slender billed Seagull	<i>Larus cachinnans</i>		WV	Very common

13.	Little Tern	<i>Sterna albifrons</i>	Laridae	WV	Occasional
14.	Whiskered Tern	<i>Chilodrias hybridus</i>		WV	Occasional
15.	Gull Billed Tern	<i>Gelocheidon nilotica</i>		WV	Occasional
16.	Caspian Tern	<i>Hydroprogne caspia</i>		WV	Occasional
17.	Black Headed Seagull	<i>Larus ridibundus</i>		WV	Common
18.	Brown Headed Seagull	<i>Larus brunnicephalus</i>		WV	Common
19.	Little Cormorant	<i>Phalacrocorax niger</i>	Phalacrocoracidae	R	Very Common
20.	Common Sandpiper	<i>Tringa hypoleucus</i>	Scolopacidae	WV	Common
21.	Common Red-shank	<i>Tringa tetanus</i>		WV	Common
22.	Common Green-Shank	<i>Tringa nebularia</i>		WV	Occasional
23.	Eurasian Curlew	<i>Numenius arquata</i>		WV	Common
24.	Whimbrel	<i>Numenius pheopus</i>		WV	Common
25.	Curlew Sandpiper	<i>Calidris testacea</i>		WV	Occasional
26.	Black-tailed Godwit	<i>Limosa limosa</i>		WV	Common
27.	Marsh Sandpiper	<i>Tringa stagnatilis</i>		WV	Occasional

Abbreviations: R- Resident, WV- Winter Visitors

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