Avian Diversity of Dongri village wetlands Bhayander west Thane

***Dr.Lalana Khot**

Department of Zoology

R.D.&S.H.National College & S.W.A.Science College , Bandra (West),Mumbai 400050.

Abstract

Birds provide many benefits to people, the amazing journey they undertake, and the way these change with the seasons, have all evoked human fascination and wonder through the ages. The knowledge about birds and their relationship with environment are substantial education resource. Destruction of water birds habitats or over exploitation of migratory bird population in one part can strongly influence number of birds elsewhere along it. Climate change acts in combination with major threats such as habitat loss and alien invasive species, making their impact worse. Wetlands are among the world's most productive ecosystem. They provide refuge as well as serve breeding and nursing grounds for many species of animals. The present study deals with the documentation of Avian diversity observed at Dongri Village, Bhayander (West) during the Monsoon and Post monsoon period of 2016-17.

The research yielded very rich diversity of birds in the Dongri village area of Bhayander wetlands.

There were total 22 Families, 32 Genus and 40 Species of birds were recorded in this region during the study period.

Key words: Climate change, Bhayander, wetlands, Avian diversity, habitat loss

Introduction

In India 1300 species of birds are recorded which form 13% of total species of birds found on earth which makes India rich in avifaunal biodiversity (Grimmettet al., 1998). In the state Maharashtra there are 568 species belonging to 272genera, under 83 families and 20 avian orders (Pandeet.et.al.2011).Birds create a major part of an ecosystem by showing their presence at various levels of food web. The spiritual value of birds in many cultural traditions is also high, for example cranes and crow pheasant, being considered sacred in many parts of country and Mandarin ducks and wild Geese, being considered as symbol of fidelity and loyalty. Avian diversity can also be studied by considering it as an indicator of an ecosystem and habitat (Morrison 1986).Like Mumbai city its suburban area is also dealing with immigration resulting in shortage of land for commercial as well as residential construction. To fulfill this need the forested area is continuously fragmented (used for construction) which affects migratory as well as resident birds. (Varkey et.al., 2015).

Wetlands are one of the most productive ecosystems and severely affected habitats. Wetland provides necessary food, water and shelter for species of many migratory birds. (Ghadigaonkar et.al., 2015).The area rich in spawning grounds, nursing grounds, migrations are to be protected and proper care should be taken (Patole 2010). Birds face enormous challenges on daily basis with respect to feeding, nursing and nesting activities. There is no doubt that ecosystem, species and genera are being lost or damaged faster than ever before. Sucha loss threatens the natural richness of our planet and future sustainability.With the present global loss of thousands of species as a result of pollution

and habitat destruction, assessment of species diversity and richness are highly needed (May, 1986). Such studies assist environmental biologist predicts where and how many species go extinct such that certain effective measure may be taken to concave them (Reise&Bartsch, 1990).

The present study deals with avian diversity and impact of anthropogenic activities on avifauna if any.

Study area

The study area Dongri village is located in Bhayander city of Thane district situated just north of Gorai Mumbai. It is just 2 km away from Bhayander creek. It is a region with varied heritage of biodiversity for observing avi-fauna of Bhayander constituting variety of species. The region is easily accessible both from Mira-road & Bhayander. There are has patches of mangrove forest, estuaries and also salt pans which are covered by shade trees. During monsoons salt pans and surrounding area blushes with greenery which makes the study area ideal habitat for avifauna both migratory and resident species.

In spite of rich bird life that it harbors, the updated information of bird life in this region remain to be documented. As with other animals birds are classified into orders, families, common name, species &scientific name. A species is a population of birds with a distinct identity which does not interbreed with other bird populations. Where there is a constant variation in a species it is called a sub-species.

Materials and Methods

Biological diversity of avi-fauna at Bhayander mangroves was studied by direct field observations for a period of monsoon period and post monsoon winter season (September 2016 to February 2017).

Observation was made along the selected paths along the wetlands near Dutta Mandir, Dongri Village Bhayander west. Fieldwork involved 2 visits per month at the give site.

Monitoring of paths was in the morning from 08.00 am to 11.00 am during post monsoon and winter season during the above period.

Equipments used during the trails were Olympus binocular, notepad and Nikon camera was used for photography. Observation of various birds was done along the selected path (Dongri village Bhayander mangrove region), were made by direct visual method. Specimens were identified with relevant literature. The ideal survey route comprised about 2 kilometers. Bird sighting was carried on every visit and noted for further analysis. Sighting commenced in the early morning hours so that they coincide with maximum bird activity and to avoid high human intervention. The average visit time was about 3 hours per visit. Seasonal changes added great difference in bird sighting

The study helps to see the effect of seasonal changes, affect plant and animal life. It is best to wear subdued colors, walk slowly and make use of cover such as bank, trees, & bushes.

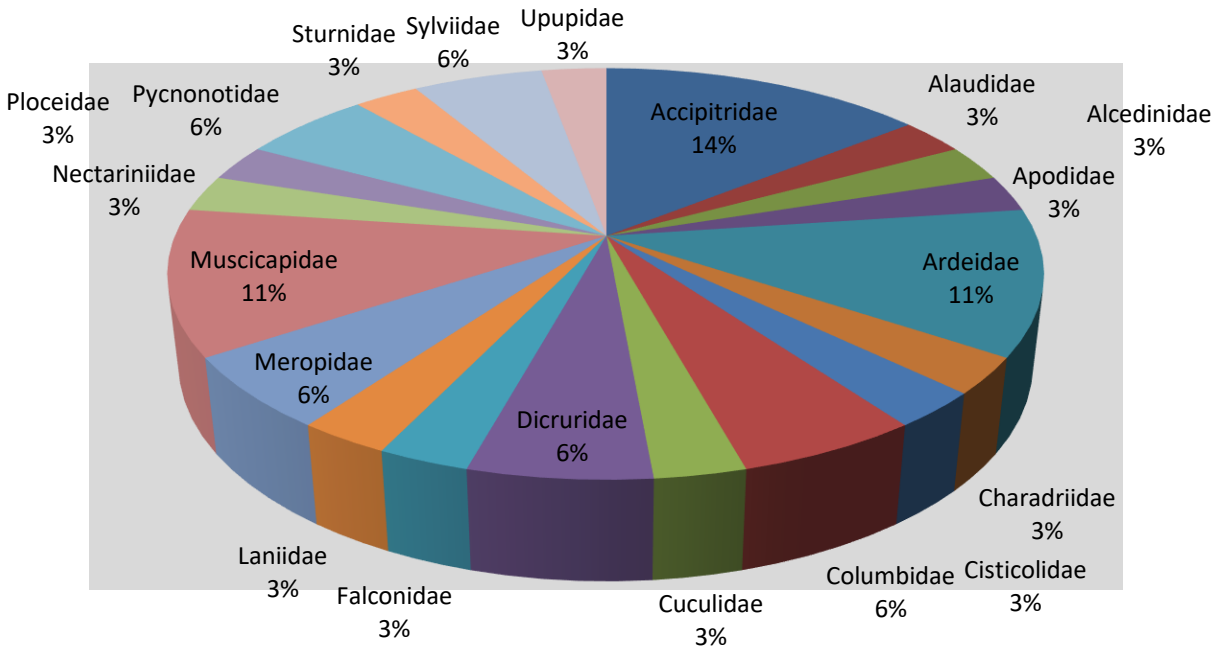


Fig.no.2 Comparison of percentage of bird species belonging to different avian family.

Fig.no.3 Percentage occurrence of avi-fauna

Account of avian diversity at Dongri Bhayander from Sep-2016 – Feb-2017

Sr. no	Family	Common name	Scientific name	Sep	Oct	Nov	Dec	Jan	Feb
1	Accipitridae	Black Kite	Milves migrans	+++	+++	+++	++	++	+++
2	Accipitridae	Black Winged Kite	Elanus axillaris	—	—	+	++	++	++
3	Accipitridae	Montagu's Harrier	Circus pygargus	+	+	—	—	—	—
4	Accipitridae	Shikra	Accipiter badius	++	++	++	++	++	++
5	Accipitridae	Hen Herrier	Circus cyaneus	—	—	+	—	—	—
6	Alaudidae	Rufous-tailed Lark	Ammomanes phoenicura	—	—	+	+	—	—
7	Alcedinidae	White-throated Kingfisher	Halcyon smyrnensis	—	—	—	+	+++	++
8	Apodidae	House Swift	Apus affinis	+++	+++	+++	+++	++	+
9	Ardeidae	Grey Heron	Ardae cinerea	—	—	+	++	—	—
10	Ardeidae	Indian Pond Heron	Ardeola grayii	+++	++	++	++	++	+
11	Ardeidae	Great Egret	Egretta alba	+++	++	++	++	++	++
12	Ardeidae	Western Reef Heron	Egretta gularis	—	—	—	—	+	—

13	Charadriidae	Little Ringed Plover	Charadrius dubius	++	+	+	+	—	—
14	Cisticolidae	Jungle Pirinia	Prinia sylvatica	++	++	++	++	+	+
15	Columbidae	Oriental Turtle Dove	Streptopelia orientalis	—	—	—	+	+	—
16	Columbidae	Red Collared Dove	Streptopelia tranquebarica	—	—	—	—	+	—
17	Cuculidae	Asian Koel	Eudynamys scolopaceus	—	—	—	+	—	—
18	Cuculidae	Crow Pheasant	Centropus sinensis	+	+	+	+	+	+
19	Dicruridae	Black Drongo	Dicrurus macrocercus	+	++	+++	+	+	+
20	Dicruridae	Ashy Drongo	Dicrurus leucophaeus	+	++	+++	+++	+++	+++
21	Falconidae	Common Kestrel	Falco tinnunculus	—	—	—	+	—	—
22	Laniidae	Brown Shrike	Lanius cristatus	—	—	++	++	++	—
23	Meropidae	Chestnut Headed Bee-eater	Merops leschenaulti	—	+	—	++	—	—
24	Meropidae	Little Green Bee-eater	Merops orientalis	++	++	++	++	++	++
25	Muscicapidae	Blue Rock Trush	Monticola solitarius	–	–	–	+	+	–
26	Muscicapidae	Common Stonechat	Saxicola torquatus	—	—	—	+	+	—
27	Muscicapidae	Indian Robin	Copsychus fulicatcus	—	—	—	+	+	—
28	Muscicapidae	Oriental Magpie-Robin	Copsychus saularis	—	—	++	++	—	+
29	Muscicapidae	Red-brested Flycatcher	Ficedula parva	—	—	+	+	—	—
30	Nectariniidae	Purple Sunbird	Cinnyris asiaticus	—	—	—	+	+	—
31	Ploceidae	Baya Weaver	Ploceus philippinus	+++	—	—	—	—	—
32	Pycnonotidae	Red-whiskered Bulbul	Pycnonotus jocosus	++	++	+++	++	++	+
33	Pycnonotidae	Red-vented Bulbul	Pycnonotus cafer	—	—	—	+	+	+
34	Sturnidae	Common Mayna	Acridotheres tristis	+++	+++	+++	+++	+++	+++

35	Sylviidae	Common Tailorbird	Orthotomus sutrorius	—	+	++	+	++	—
36	Sylviidae	Lesser Whitethroat	Sylvia curruca	—	—	—	+	++	—
37	Upupidae	Common Hoopoe	Upupa epops	—	—	—	++	++	+
38	Corvidae	Jungle crow	Corvus macrorhynchos	++	++	++	++	++	++

Density: Not seen (—), Rare (+), Common (++), Abundant (+++).

Results

Habitat loss and degradation driven by infrastructure development agriculture intensification and human disturbance are among the most frequent threads to key wetlands and sea birds population (Mali & Kawle, 2012).

As the capacity of some species to adapt to extreme changes in the environment is limited, biodiversity is likely to be affected with changes in environment, mainly the climate. Many species are no longer found throughout their formal ranges and are found in reduce numbers, e.g. Baya Weaver. They are manifested with loss of habitat or reduction in area of ecosystem.

Anthropogenic activities such as, forest fires by human activities, cutting trees, pollution caused by cement industry in study area was also observed.

According to (Rory Mccann, 2004) the major threats contributing to bird extinction are land claim-On going & recent coastal reclamation as well as constructions that formerly brought slit to sustain and replenish the intertidal habitats, are resulting in major habitat loss in many regions of our country.

Discussion:

Extinction is a natural process. More importantly, this extinction are human induced, and hence artificial. To prevent this extinction we need strong scientific data and equally strong legal, administrative and political backing up from governments and public support (Rahamani Asad, 2006). In present study some total 21 families, 30 genus and 33 species of birds were recorded at Dongri Village (Bhayander) region in the year 2016-17. Human activities like, forest fire, cutting of trees has affected the bird population and diversity in the study area. However the study area is a very small region of this village and result analysis reveals quite a good avian diversity. It may be possible that the area may be very rich in birds which are migrants and probability of not sighting are very high during the visits.

Conclusion:

Climate change acts in combination with major threats such as habitat loss and alien invasive species, making their impact worse. In addition to climate change, other factors contributing to biodiversity loss are land use changes, invasive species, overexploitation and pollution. Species that have the capability to keep up with climate shifts may survive; others that cannot respond are likely to suffer. Species with high fertility and dispersal capacities have proved to be highly adaptive to variable climatic conditions. “Survival of fittest” is the common experience in nature, a cornerstone of ecology (Prabha Ranade, 2008).

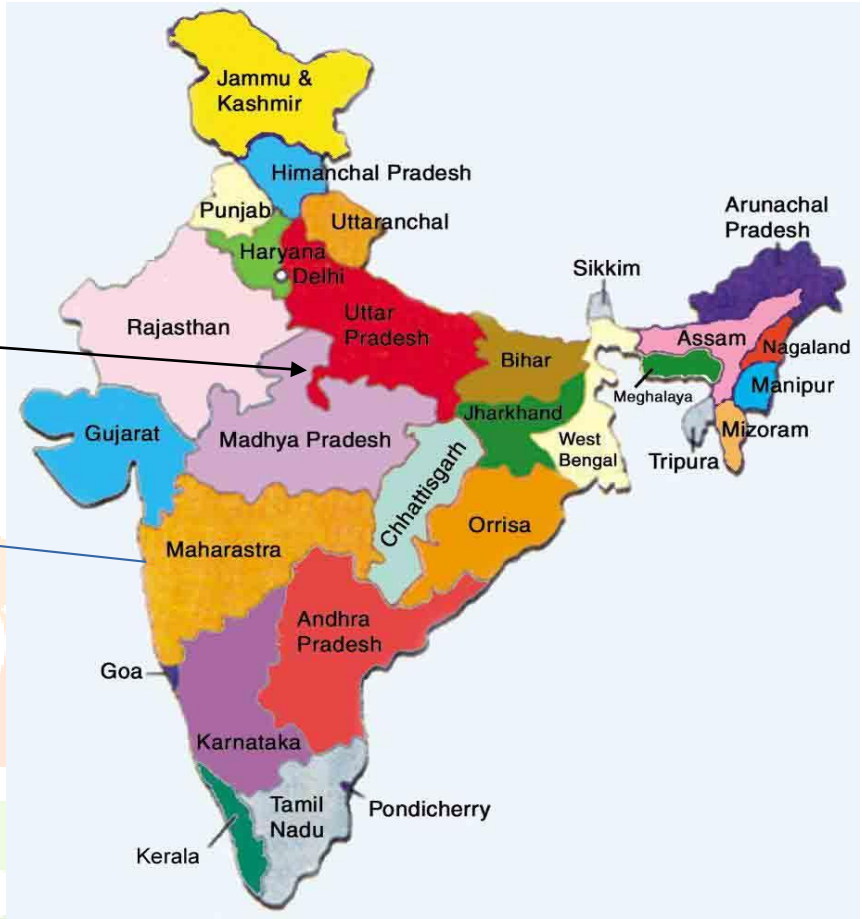
In the present study, it was observed area under study is quite rich in avian diversity. As long as there is no human intervention in form of construction with habitat loss in this wetlands it can be conserved with respect to Biodiversity.

References

- Ali.S.2002 The Book of INDIAN BIRDS
- Brooke et al. (2008) Conservaion Biology.
- Grimmett, R.,Inskipp, C. and Inskipp, T., 2007. Pocket Guide to the Birds of Indian Subcontinent. OXFORD University Press.
- Johnson Varkey, Akshay H. Pandirkar, Bruno Fernandes, Kuldeep Pathak, Prasad Khadye and Pritesh Ghadigaonkar. 2015. Threats to the Existing Diversity of Avifauna of Gogte Salt Plant , Mumbai Suburb Proc UGC National Seminar on "Wetlands-Present Status, Ecology & Conservation"
- Kathiresan, K. and Rajendran, N. 2005. Mangrove ecosystems on Indian Ocean region. Indian J. Mar. Sci.,34 (1):104-113.
- KulkarniVivek
- Mali,A.R., and Kawale,S.A., 2012 Biodiversity of Marine Shore Birds. Procd. Of Nat Sem on Biodiversity and Conservation of Coastal and Marine Ecosystems of India.2012,pp 82-85.
- **Menon N.G and Pillai C.S.G (1996):** Central Marine Fisheries Research Institute.ICAR, Tatapuram, Cochin.pg.1.
- Monga, S., 2003. Birds of Mumbai. India Book House Pvt. Ltd., 2003.
- Moorthy and Subramanian, 1999
- Pandey S Birds of Lonavala
- Patole,V. M. (2009) Biodiversity and ecology of mangroves in Mochemad Creek, Vengurla, Maharashtra. Ph. D. Thesis. University of Mumbai.
- Reise& Bartsch,1990
- Rory Mccann Bird Life International (2004) State of world's birds 2004:indicators for our changing world. Cambridge,UK.
- Terdalkar .S.S., Apte,S.A and Kulkarni, A.S.,2005.Mangrove biodiversity and economics of Ratnagari coast with special reference to Bhatyeestuary.Nat Environ Pollut Tech 4(2): 265-268.

Map


Vasai
VASAI EAST
Giriz
Navghar-Manikpur
VASAI WEST
Naigaon
NAIG
Vasai Beach
Vasai Creek
Dongri
Mira
Bhayandar
Uttan Virgin
Beach
UTTAN
CS Link Rd
BORIVALI WEST
Gorai Beach
BORIVALI
GORAI
Esselworld
Sanjay G
Nationa
New Link Rd
KANDIVA
MANORI
KANDIWALI


Jammu &
Kashmir
Himanchal Pradesh
Punjab
Uttaranchal
Haryana
Delhi
Rajasthan
Uttar
Pradesh
Bihar
Sikkim
Arunachal
Pradesh
Assam
Nagaland
Meghalaya
Manipur
Jharkhand
Mizoram
West
Bengal
Tripura
Gujarat
Madhya Pradesh
Chhattisgarh
Orrisa
Maharastra
Andhra
Pradesh
Goa
Karnataka
Tamil
Nadu
Pondicherry
Kerala