

## Studies on Avifaunal Diversity in Saltpan Area of Mitanagar, Mulund East, Mumbai Maharashtra.

\*Snehal Pawar and \*\* Mangesh Jaamble.

\*Department of Environmental Science, Ratnagiri Subcenter, Dist: Ratnagiri, Pin - 415619.

\*\* Department of Zoology, S.R.M. College, Kudal, Dist: Sindhudurg, Pin – 416520.

Author's Email: [snehalnikhilsatpute99@gmail.com](mailto:snehalnikhilsatpute99@gmail.com).

### ABSTRACT:

A Mumbai suburban area is dealing with immigration, resulting in a shortage of land for commercial as well as residential construction. To fulfil this need, the forests are continuously used for construction, which affects the migratory as well as resident birds. It should also be seen that the existing avifaunal diversity should gradually get habituated and adapted to the human vicinity. Saltpan, Mithagar area is located in Mulund East, near to the Bhandup pumping station. It is approximately 4km away from Mulund railway station and Thane Creek (Bird Watching). The study area consists of feather grass and greenery in the surroundings. There is also a dumping ground area where frequent scavengers were seen. Birds have immense ecological value as they serve as bioindicators for the quality of habitat. They are very sensitive to any slight changes occurring in the ecosystem. Various birds were seen in the study area. Especially the feeding needs of many birds were found to be in this area. The present study has been based on regular observations and identification of the species within one year, from October 2022 to December 2023. Around 61 species of birds from 24 families were recorded from the study area. They included a variety of resident birds, migratory birds, and small birds. But, due to human interference, it has an impact on avian diversity. It is a need of time to take some steps towards the care and conservation of the concerned ecosystem.

**Keywords:** Saltpan, ecosystem, avifauna

### A. INTRODUCTION:

India has a very wide range of all types of wetlands distributed along its geographical regions. Obviously, we have a very rich biodiversity of all kinds, including all taxonomic grades of plants and animals. Mumbai region also hosts a very rich coastal and freshwater biodiversity in various wetland habitats such as mangrove creeks, salt marshes and freshwater pools. All these kinds of habitats provide an immense shelter and life support to different animals right from lower invertebrates like sponges up to even human beings. Avifauna attains an utmost importance due to its wide range of species, feeding habit diversity and mainly because of their importance as ecological indicators for even minor alterations in the environment. According to Dr. Salim Ali, the Indian subcontinent bears a total of 1260 species of birds. According to very recent investigations done by Dr. Satish Pande, there are almost 1345 species of birds currently available in India. Of them, about 540 species are found in Maharashtra, and of them, nearly 350 species are observed in Western Ghats, including coastal zones. Obviously, the avifaunal species diversity itself indicates the current richness of the Maharashtra State habitats. In the case of wetlands, several workers from different parts all over India as well the globe have reported very rich species richness and species abundance in the wetlands. The dependence of birds on a wetland

is not just only for food but also it is for nesting as well as roosting behavior. Besides, birds are very choosy in terms of their habitats as well as their feeding grounds and breeding sites. The choices may differ seasonally in the case of several species. Besides, there is a seasonal chain of interactions and dependence between birds and surrounding animals as well as within the bird populations itself observed throughout the year. Every component in the chain has a significant role to play in that chain. It is also a matter of harmonious exchange and interactions with the other species in the habitat. Thus, any damage caused to any of the ecological components in the chain can lead to disturbance in the bird life and even temporary or permanent loss of the species from the habitat. Hence, studies on the avifaunal diversity of a wetland can be a good measure for evaluation of the concerned wetland in terms of its health, carrying capacity, and sustainability in terms of conservation and management. It is also a matter of fact that, presently due the population explosion and consequent problems like pollution and the need of open land, as well as the greed of mankind, has been leading to a great loss of wetlands all over the country. In the present day, the bird life is coming in a great threat due to anthropogenic activities. The major reason is threats of human interference are increasingly day to day in all types of habitats. Mumbai's suburban area is also dealing with immigration, resulting in a shortage of land for commercial as well as residential construction. To fulfil this, need the forest needs to be continuously used for construction, which affects the migratory as well as resident birds. It should also be seen that the existing avifaunal diversity should gradually get habituated and adapted to the human vicinity. That will automatically lead to the sustainable management of the other animal as well as bird diversity in the respective areas. This study was with the aim to prepare the checklist of avian diversity in and around the saltpan area of Mithagar in Mulund East, Mumbai Maharashtra.

## OBJECTIVE:

- 1] Observation on the distribution of avian diversity in the study area.
- 2] Identification of species with the help of standard proper identification keys.
- 3] To determine threats of human activities towards the alteration in the habitat structures.

## MATERIALS AND METHOD:

**A] Study area:** The area selected for the present study of the saltpan of Mithagar is near the Mulund (west) dumping ground and Bhandup pumping station. It is approximately 4km away from Mulund railway station and Thane Creek (Bird Watching). The total area of the saltpan selected for the study was about 128.49 acres area ( $19^{\circ}10'41''$  N,  $72^{\circ}.58'40''$  E). It is adjoined to the Mumbai eastern express highway (CST to Thane). Also, it connects to the busiest road, from the Mulund to Airoli. This is the route to be followed by regular transporters and public. During the rainy season, the entire area is filled with water and the surrounding area is covered with greenery, which is home for many birds. It is to be noted that during study time (morning to evening), many residents and workers from this locality are engaged in regular activities in the saltpan.

**B] Methodology:** For the purpose of the study, the selected area was visited at a regular interval of 15 days. The observations were done by using binocular Celestron 10x25 capacities during morning and evening for the period of one year from October 2021 to December 2022. Identification of the observed birds was done by using reputed identification keys available at hand (Ali Salim, 2002; Grimmet *et al.*, 2007; and Mangesh Jamble, 2010)

Photography was done by using a standard digital camera Nikon P1000 specification 3000mm zoom, 125 x zoom- NIKKOR ED glass-lens. The observation was made mainly during the early mornings and evenings. The observations done are presented in the form of a checklist at the end.

## RESULTS AND DISCUSSION:

The birds are ecologically versatile organisms. They can successfully survive in all kinds of habitats. Birds are one of the best bioindicators of the environmental quality of an ecosystem. 61 species from 24 families have been reported in the Mithagar saltpan locality of the Mulund area. The continuous study and observation have led to the recording of 24 families as check listed below table No.1. *Scolopacidae* family contributed highest percentage of bird species with 19.7% followed by family- Anatidae with 13.1%. Further, the family *Accipitridae* has 8.2%, and *Charadriidae* and *Laridae* contribute 6.6%. *Motacillidae* and *Phalacrocoracidae* with 4.9%. of bird species. *Alcedinidae*, *Cuculidae*, *Glareolidae*, *Meropidae*, and *Threskiornithidae* with 3.3% of bird species and least percentage with 1.6% was recorded for families- *Acrocephalidae*, *Alaudidae*, *Recurvirostridae*, *Ciconiidae*, *Columbidae*, *Corvidae*, *Laniidae*, *Muscicapidae*, *Pandionidae*, *Pycnonotidae*, *Rallidae* and *Sturnidae*.

Different types of species were found in the study area throughout the year depending upon the mode of occurrence- resident birds were found throughout the year. The most commonly sighted birds during study time were egrets, spotted sandpiper, marsh sandpiper, common red shank, little stint, Indian egret, glossy ibis, and black headed ibis. The appropriate climatic and habitat conditions in saltpan are very much suitable for these species. The great egret was the most commonly spotted bird. The most uncommon among them was greater flamingo, which migrates to this area for feeding and is seen from October to February. A comparative study of birds reveals that there is a similar minor but well-marked and readily recognizable difference in size, coloration and other details in those species which range over a wide area and live under natural conditions.

It was also observed that, due to human interference, there is a gradual decrease in the count of species where scavengers are seen throughout the year as there is a dumping ground. Thus, it is our duty to maintain avifaunal diversity by not disturbing the habitat of bird species.

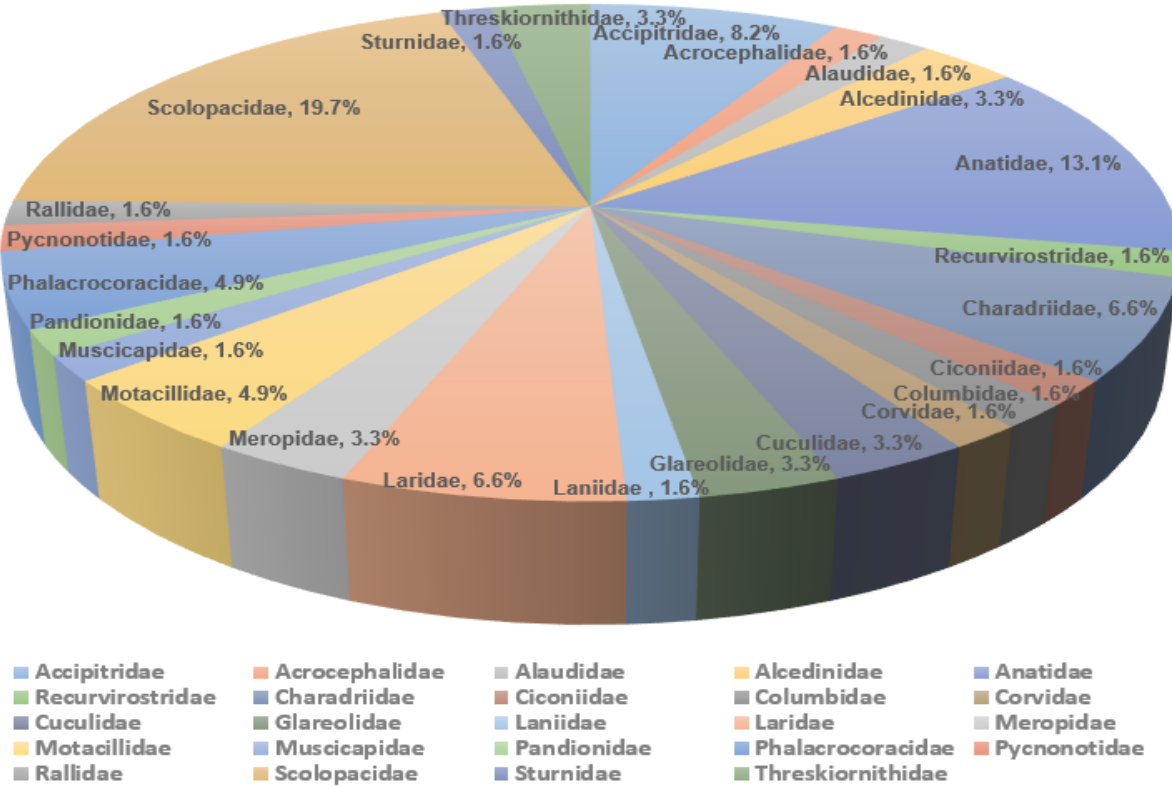
**Table:** Checklist of the Avifauna observed in and around Mithagar Salt Pan, Mulund east, Mumbai, Maharashtra.

Family	Common Name	Technical Name
<i>Accipitridae</i>	Greater Spotted Eagle	<i>Clanga clanga</i>
	Indian Spotted Eagle	<i>Clanga hastata</i>
	Brahminy kite/ Red-backed sea-eagle	<i>Haliastur indus</i>
	Eurasian Marsh	Harrier <i>Circus aeruginosus</i>
	Black Kite	<i>Milvus migrans</i>
<i>Acrocephalidae</i>	Paddyfield Warbler	<i>Acrocephalus agricola</i>
<i>Alaudidae</i>	Oriental Skylark	<i>Alauda gulgula</i>
<i>Alcedinidae</i>	Common kingfisher/ Eurasian kingfisher/ River kingfisher	<i>Alcedo atthis</i>
	White throated kingfisher/ White Breasted kingfisher	<i>Halcyon smyrnensis</i>
<i>Anatidae</i>	Green Winged Teal	<i>Anas carolinensis</i>
	Aleutian Cackling Goose	<i>Branta Hutchinsii Leucopareia</i>
	Garganey	<i>Spatula querquedula</i>

	Great Egret/ Common egret	Ardea alba
	Gray Heron	Ardea cinerea
	Intermediate Egret	Ardea intermedia
	Pond Heron	Ardeola grayii
	Little Egret	Egretta garzetta
<i>Recurvirostridae</i>	Black Winged Stilt	Himantopus himantopus
<i>Charadriidae</i>	Kentish Plover	Charadrius alexandrinus
	Little Ringed Plover	Charadrius dubius
	Common Ringed Plover	Charadrius hiaticula
	Red wattled Lapwing	Vanellus indicus
<i>Ciconiidae</i>	Painted Stork	Mycteria leucocephala
<i>Columbidae</i>	Laughing Dove	Spilopelia senegalensis
<i>Corvidae</i>	Large-billed Crow	Corvus macrorhynchos
<i>Cuculidae</i>	Gray Bellied Cuckoo	Cacomantis passerinus
	Greater coucal/ Crow pheasant	Centropus sinensis
<i>Glareolidae</i>	Small Pratincole	Glareola lactea
	Collared Pratincole	Glareola pratincola
<i>Laniidae</i>	Issabelline Shrike	Lanius isabellinus
<i>Laridae</i>	Whiskered Tern	Chlidonias hybrida
	White Winged Tern	Chlidonias leucopterus
	Gull-billed Tern	Gelochelidon nilotica
	River Tern	Sterna aurantia
<i>Meropidae</i>	Blue Cheeked Bee Eater	Merops persicus
	Blue Tailed Bee Eater	Merops philippinus
<i>Motacillidae</i>	Paddyfield Pipit	Anthus rufus
	Long Billed Pipit	Anthus similis
	Western Yellow Wagtail	Motacilla flava
<i>Muscicapidae</i>	Bluethroat	Luscinia svecica
<i>Pandionidae</i>	Osprey	Pandion haliaetus
<i>Phalacrocoracidae</i>	Pigma Cormorant	Microcarbo pygmaeus
	Indian Cormorant	Phalacrocorax fuscicollis
	Greater Flamingo	Phoenicopterus roseus
<i>Pycnonotidae</i>	Red Whiskered Bulbul	Pycnonotus jocosus
<i>Rallidae</i>	White Breasted Waterhen	Amaurornis phoenicurus
<i>Scolopacidae</i>	Common Sandpiper	Actitis hypoleucos
	Spotted Sandpiper	Actitis macularius
	Dunlin	Calidris alpina
	Little Stint	Calidris minuta
	Ruff	Calidris pugnax
	Green Sandpiper	Tringa ochropus
	Black-tailed Godwit	Limosa limosa
	Wood Sandpiper	Tringa glareola
	Common Greenshank	Tringa nebularia
	Green Sandpiper	Tringa ochropus
	Marsh Sandpiper	Tringa stagnatilis
	Common Redshank	Tringa totanus

<i>Sturnidae</i>	Common Myna	<i>Acridotheres tristis</i>
<i>Threskiornithidae</i>	Glossy Ibis	<i>Plegadis falcinellus</i>
	Black Headed Ibis	<i>Threskiornis melanocephalus</i>

**Chart:** The orderwise distribution of birds families of Mithagar Salt Pan, Mulund east, Mumbai, Maharashtra.



Photos Of Birds at Mithagar salt pan in and surrounding area.



**CONCLUSION:**

Increasing human interference is disturbing the habitat of avifauna. If avifaunal diversity saltpan is to be maintained and conserved, then conservation of their habitats as well as food needs to be seriously thought about. Environmental education of common man is also a need of time. Along with the Environmental education right from the primary level.

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