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STUDY OF AVIFAUNA OF SALT PANS OF PALGHAR TALUKA MAHARASHTRA.

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ABSTRACT

Sanjeevani Salt pan and Kharekuran Salt pan are situated at palghar taluka of Maharashtra. This area is isolated by the human population. It's a very good site for the water birds including the migratory ones. We have surveyed the avian fauna of this area for one year from December 2015 to December 2016. We recorded total 34 species of birds belonging to 9 orders and 19 families. Passeriformes and Charadiiformes are the dominating orders in our observations which constituted 37% of total birds observed in this period. It also provides reach diet to birds. Salt pans provide important roost habitat, particularly for shorter-legged birds. In this paper enumeration of avifauna is discussed.

KEYWORDS Sanjeevani and Kharekuran Salt pan, Avifauna, Ecosystem.

INTRODUCTION

Wetlands play a very important role in our life. They prevent floods by retaining excess rain water, preserving water quality, and increasing biological productivity for both aquatic life and human communities. Wetlands ecosystems are interconnected and interactive within a watershed. In India, unplanned urbanization and a growing population have taken their toll on wetland, Moosvi (2006).

Salt pans provide important roost habitat, particularly for shorter-legged birds, which are less able to utilize aquaculture ponds due to their greater depth. Moreover, three focal shorebird species foraged extensively in salt pans and semi-traditional aquaculture ponds, even when intertidal mudflats were exposed, suggesting that artificial wetlands could buffer against the impacts of degraded intertidal foraging areas for some shorebird species, Jonathan *et al* (2015).

World is covered of 70% of water, named as lakes, rivers, seas and oceans by its salinity raised in due time. Likewise in extreme condition also arise naturally or by artificially. Saltpans exhibits range of above 50 ppt salinity on such environments also occupied by most biotic organisms. Saltpans are one of the hypersaline environments which are man-made hypersaline shallow ponds shows high stress through the salinity changes. Among halophilic microbes, there is competitive, symbiotic and even associated interactions are seen in salt pans, Das and Arora (2002).

In India 1300 species of birds are recorded which form 13% of the total species of birds found on earth which makes India rich in avifaunal biodiversity, Grimmett *et al.,(* 1998*)*. In the state of Maharashtra there are 568 species belonging to 272 genera, under 83 families and 20 avian orders, Pande *et. al*. (2011). Birds create a major part of an ecosystem by showing their presence at various levels of food web. Avian diversity can also be studied by considering it as an indicator of an ecosystem and habitat, Morrison (1986). Many researchers have contributed to record avian diversity of Maharashtra state to generate a large amount of data, Bharucha and Gogate (1990); Kasambe and Wadatkar(2007); Vyawahare (2008); Mahabal and Patil (2009); Kurhade (2010) and Pawar (2011).

It is a global concern that the area of wetland is decreasing day by day. Wetlands include lakes, lagoons, rivers, coastal mudflats and solar salt works. Wetlands are the cradles where human civilizations have developed. They provide most valuable environment for biological diversity including plants, animals, birds, reptiles, fish and invertebrates.

The primary purpose of this paper is to integrate the principles of ecology with the social and environment problems of society. Society still fails to understand her true position in the planet and knowledge of ecology has not yet taken hold to produce the kind of wisdom needed for our own Survival. Therefore, there is need of hours for ecological knowledge to be greater than ever in this modern technological advance period. The present study is carried out to find out the avian diversity and to create the awareness for their conservation. Little work has been done to link our increasingly informed understanding of shorebird ecology to that of the economic decisions taken by land managers. Here, we address both ecological and economic issues affecting a key wintering site in the Palghar in order to guide policy makers who must balance biodiversity concerns with human welfare in this densely populated region.

STUDY AREA

Sanjeevani Salt pan and Kharekuran Salt pan is situated at palghar taluka of Maharashtra. This area is isolated by the human population. The topography of this area shows many small lakes and patches of forest. Sanjeevani Salt pan 19°37'24.6"N 72°44'45.0"E that is 10 km away from Palghar city near kelva village and Kharekuran Salt pan 19o.71'2776"N 72o73'63.29"E 5 km away from Palghar city.

MATERIALS AND METHODS

The entire observations were conducted by rigorous field surveys all around the salts pan in palghar. For one year, observations were recorded by using Nikon Action 10x50 binocular and relevant

photographs were taken by Canon 700 D. Birds were identified with the help of noting, standard methods given by Ali & Ripley (1969, 1995), Ali (1996) and Ali (2002).

RESULT AND DISSECTION

In the present study a total of 34 birds belong to 9 Orders and 19 families were recorded in 1 years of nature trails from Sanjeevani Salt plant and Kharekuran Salt plant (table 1). This is the first record of avian biodiversity of Saltpans in Palghar district of Maharashtra state. Saltpans exhibits qualitative variation in avifauna.Fig.1.

Table 1. Avifauna of Sanjeevani Salt plant and Kharekuran Salt plant.

ORDER: PELECANIFORMES	**Common Name**		***Scientific Name***
FAMILY: PHALACROCORACIDAE	1	Little cormorant	*Phalacrocoraxniger*
ORDER: CICONIIFORMES			
FAMILY : ARDIDAE	2	Cattle egret	*Bulbulcus ibis*
	3	Grey heron	*Ardea cinerea*
	4	Pond heron	*Ardeola grayii*
	5	Little egret	*Egretta grazetta*
	6	Median egret	*Egretta interida*
FAMILY : PHOENICOPTERIDAE	7	Greater flamingo	*Phoenicopterusruber*
ORDER : ANSERIFORMES			
FAMILY: ANATIDAE	8	Lesser whistling teal	*Dendrocyna javanica*
	9	Spot billed duck	*Anas poecilorhyncha*
ORDER: CHARADRIIFORMES			
FAMILY: RECURVIROSTRIDAE	10	Black winged stilt	*Himantopus himantopus*
FAMILY: SCOLOPACINAE	11	Common sandpiper	*Actitishy poleucos*
	12	Little stint	*Calidris minuta*
FAMILY: CHARADRIIDAE	13	Kentish plover	*Charadrius alexandrinus*
	14	Little ringed plover	*Charadrius dubius*
	15	Red-wattled Lapwing	*Vanellus indicus*
	16	Red shank	*Tringa tetanus*
	17	Barttailed gotwit	*Limosa ipponica*
	18	Ringed plover	*Charadrius hiatcula*
	19	Blacktailed gotwit	*Limosa limosa*
ORDER: COLUMBIFORMES			
FAMILY: COLUMBIDAE	20	Blue rock pigeon	*Columba livia*
ORDER: APODIFORMES			
FAMILY: APODIDAE	21	Asian palm-swift	*Cypsiurus balasiensis*
ORDER: CORACIIFORMES			
FAMILY: ALCEDINIDAE	22	White-breasted kingfisher	*Halcyon pileata*
FAMILY: MEROPIDAE	23	Small green bee-eater	*Meropsorientalis*
ORDER : PICIFORMES			
FAMILY :CAPITONIDAE	24	Coppersmith Barbet	*Megalaima haemacephala*
ORDER: PASSERIIFORMES			
FAMILY:HIRUNDINIDAE	25	Common swallow	*Hirundorustica*
FAMILY : LANIIDAE	26	Rufous-backed shrike	*Laniusschach*
FAMILY: PLOCEIDAE	27	House sparrow	*Passer domestius*
FAMILY: MOTACILLIDAE	28	Paddy field pipit	*Anthus rufulus*
FAMILY: MUSCICAPIDAE	29	Common stonechat	*Saxicolatorquata*
	30	Desert wheatear	*Oenanthe deserti*
	31	Indian robin	*Saxicoloides fulicate*
FAMILY: ALAUDIDAE	32	Black crowned Finch-lark	*Eremopterix nigriceps*
	33	Bush lark	*Mirafra assamica*
FAMILY: DICRURIDAE	34	Black drongo	*Dicrurus adsimils*

Fig. 1. Birds at salt pan and near the surrounding area.

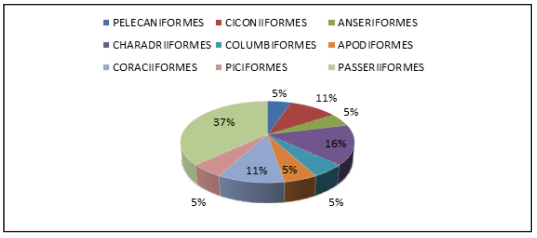

Fig. 2. The Order wise distribution of bird families of Sanjeevani Salt pan and Kharekuran Salt pan.

The order Passeriformes was found dominant having 7 families followed by orders Charadriiformes(3), Coraciformes(2), Ciconiiformes (2), Piciformes(1), Columbiformes(1), Apodiformes (1), Anseriformes (1), Pelecaniformes(1) Fig(2).

The family Charadriidae, Ardidae and Muscicapidae, were found dominant with seven, five and three species respectively indicating the wetland habitat moderately support birds life followed by Anatidae(2), Scolopacinae(2), Alaudidae (2), Phalacrocoracidae(1),

phoenicopteridae (1), Recurirostridae(1), Columdriae (1), Apodidae (1), Alcedinidae (1), Meropidae (1),Capitonidae (1), Hiruninidae (1), Lanindae (1), Ploceidae (1), Muscicapidae (1), Motacillidae (1), Dicruridae (1) .Fig.3.

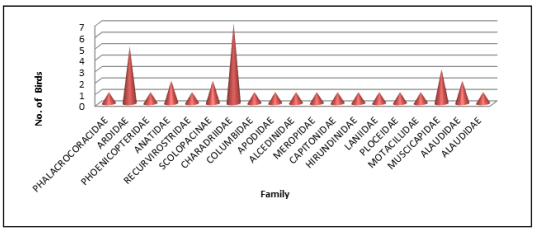

Fig. 3 The Family wise distribution of bird species of Sanjeevani Salt pan and Kharekuran Salt pan.

Order Passeriformes(10 species) and Charadriiformes(10 species) were maximum recorded and it was followed by orders Ciconiiformes (6 species), Anseriformes (1), Coraciformes(2), Pelecaniformes(1), Columbiformes(1), Apodiformes(1) and Piciformes(1), Fig(4).

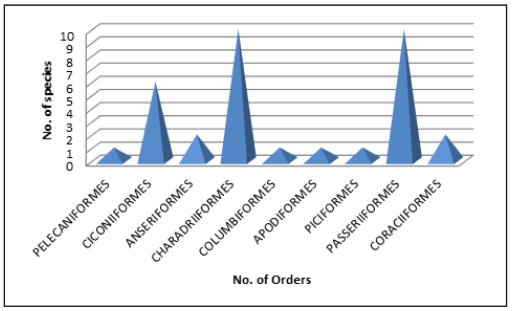

Fig.4. The Order wise distribution of bird species of Sanjeevani and Kharekuran Salt pan.

On the basis of orders Passeriiformes and Charadriiformes was maximum recorded with 10 species from both which followed by orders, Ciconiiformes (6), Coraciformes (2), Anseriformes (2), Piciformes (1), Columbiformes (1), Apodiformes (1), Pelecaniformes (1).

Similar type of study was carried out by Singh *et al*. (2016), where they observed beneficial aspect of garbage dump of Palghar in terms of avifauna and recorded 33 species of birds belonging to 21 families. Singh (2016) studied the avifauna of Waghoba forest of Palghar and recorded 77 species belonging to 31 families. Singh (2016- in press) studied the avifauna of suburb of Mumbai, Palghar and recoded 67 species belong to 33 Families. Vikas kumar (2015) recorded 99 birds' species in Vansda National Park, Gujarat. Terdalkar *et al*. (2005) listed 45 species of birds belonging to 18 families around Bhatye estuary, Ratnagiri. Prashant *et al*. (1994) in their study of coastal area of Nellore district recorded 78 species of birds. Vyawahare (1991) listed 245 bird species in Dhule district of Maharashtra. Varkey *et.al* (2015*).* Listed a avifauna of Gogte salt plant and record of 93 species from 11 orders and 36 families. Singh *et al*. (2016- in press). Listed an avifauna of vasai wetland recorded 43 species of birds belonging to 10 Orders and 27 Families. The Order Passeriformes and Ciconiiformes were found dominant having 37% and 18% families and 35% and 33% bird species respectively.

CONCLUSION

Around 34 species of birds belonging to 9 orders and 19 families were recorded in the study area which has its own importance. Monsoon triggers the availability of benthic fauna, plankton and algae attract waders and birds like flamingoes and many other aquatic birds. Salt pans provide an important resource to migratary shorebirds. Use of artificial wetlands as foraging habitat may become increasingly important with decreases in quality or extent of intertidal mudflat. If, as predicted, intertidal mudflats are lost through increased rates of erosion, whilst being squeezed between impermeable coastal developments and rising sea levels. With continuing salt pan declines, these birds will suffer disproportionately. As development pressures increase, operators may need financial incentives if salt pans are to be maintained over large areas.

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