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Intertidal Faunal Diversity of Malvan & Kondura Coast of Sindhudurg (MS), India

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Abstract: ***The distribution and diversity of intertidal marine fauna were collected from sandy and rocky habitat along the coast of Malvan and Kondura beach, Maharashtra, India from January 2021 to May 2023. A total of 37 species belonging to 26 families, 19 orders and 5 phyla were identified. All these observations were made by taking live photographs of those organisms without disturbing them. As crowding of tourists and human activities are increasing, they are badly impacting the natural habitat of the tidal organisms.***

Keywords: Intertidal, Sandy, Rocky, Sindhudurg, diversity

I. INTRODUCTION

The intertidal zone is one of the most dynamic zones because it acts as an interface between the sea and the terrestrial environment (Vaghela et. al., 2010). The intertidal zone lies in the area above the low tide water area and submerged high tide area it is also referred to as littoral zone. The activities of intertidal organisms are highly depended on the two factors- the duration of exposure to the sunlight and presence of wave action. Depending on the total average exposure of the zone, the intertidal region is divided into three zones- Low, Middle and High. The intertidal micro and macro-organisms act as bio indicators in understanding the changing aquatic conditions (Bierman et al., 2009). The macro fauna of benthic region of intertidal zone is important in characterization and functioning of the littoral and is a great indicator of heath of the ecosystem. (Johnson et. al., 2005). The abundance and variety of the intertidal fauna in Maharashtra always attracted the attention of marine researchers. Several researchers published important articles that described and identified many of the species of Maharashtra (Khade & Mane 2012; Kolhe & Mogalekar 2017; Kurhe 2014; Pati etal 2014, Lakwal 2018). This work was designed to assess the initial state of the intertidal faunal diversity. The present study will be useful for the conservation of the coastal zones of Sindhudurg district. It also emphasizes further research on the ecological and biological aspects of the intertidal biodiversity.

II. MATERIAL AND METHOD

This research was conducted by random sampling in the intertidal zone of Sindhudurg coast. The coastal area of district is dominated by sand, rock, and reef. The present study was conducted in the intertidal zone of two location i.e Malavan and Kondura beach.

A. Malavan Beach

The beach has long stretches of sandy shore and scattered rocks. The beach is located in the latitude- 16.066700° or 16°4' 0.1200'' N and longitude - 73.4666968° or 73° 28' 0.1128'' E. It is the southernmost beach of Maharashtra. It is one of the most visited tourist spots in the Sindhudurg due to its beauty.

B. Kondura Beach

The beach has scattered rocky patches and short areas of sand. The beach is located in the latitude- 15.889621° or 15° 53' 23''N and longitude- 73.59914° or 73° 35' 57'' E. It is located in south kokan coast of Maharashtra. It has an enclosed beach in creek and stream. The rocks provide the organisms with shelter and protection. The rocks are covered with dead barnacle shells.

III. RESULT AND DISCUSSION

A total of 37 species was recorded during the study (Table 1). All the species belonging to 05 phyla, 07 class, 19 orders and 26 families were recorded from two localities of Sindhudurg coast. Phylum wise analysis showed that the phylum Mollusca shows total 60 % contribution (22 species), phylum Arthropoda 16 % contribution in total fauna (06 species), and phylum Coelenterates 8%, Chordata 8% and Cnidaria 8%, (03 species each) dominated the intertidal fauna indicating a healthy environment in the region (Fig. 1).

Similar studies reported by (Lakwal et al 2018) from Ratnagiri coast. Where Mollusca was the most dominant group among total occurrence of intertidal fauna. The predominance of species suggest that the environmental components available in this intertidal zone favour the formation of microhabitats that contributes to the survival of several species of marine invertebrate such as molluscs (Qader etal 2019).

A list with authentic records reflects the true natural diversity of the intertidal fauna of any region. For taxa that are widespread or distributional records in such list form an essential part of the information that can be used to map their global distribution and seasonal movement (Adharini 2020). Intertidal zones are of utmost importance for intertidal faunal populations as these area provide better visibility for vigilance against predators and free movement for food procurement. It is the need of the hour to monitor these areas systematically in the rapidly changing environment with a focused study on the status, distribution and conservation of the intertidal fauna of the region which can achieved only through strengthening public participation species.

The observation of the present study are more or less in favour of earlier workers like Poriya and Kundu (2014) reported 82 intertidal fauna from Gujarat. Anirudha (2006) reported 56 species from Sundarban. Vinod et al (2014) total of 24 species were reported from west coast of India. Pati et al (2014) reported a total of 180 specie belongs to 113 genera, 41 families and 6 order. Kolhe and Mogalekar (2017) were recorded 24 species of decapod crustacean from Ratnagiri Maharashtra.

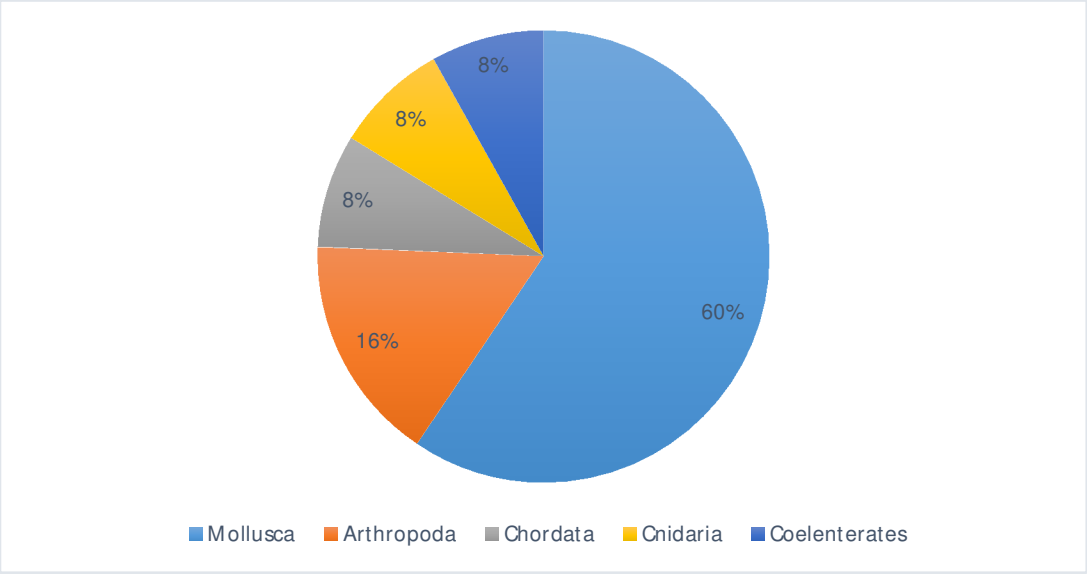

Fig. 1: Percentage wise distribution of intertidal fauna in Malvan and Kondura beach

Table 1: A systematic checklist of the intertidal species of Malvan & Kondura beach of Sindhudurg

Phylum	Class	Order	Family	Genus/Species
Arthropoda	Malacostraca	Isopoda	Cymothoidae	*Anilocra leptosome*
				Catoessa boscii
		Decapoda	Matutidae	*Matuta victor*
			Varunidae	*Metaplax longipes*
			Portunidae	*Portunus sanguinolentus*
			Leucosiidae	*Seulocia rhomboidalis*
Chordata	Actinopterygii	Pleuronectiformes	Paralichthyidae	*Pseudorhombus triocellatus*
			Soleidae	*Solea ovate*
	Reptilia	Testudina	Chelonidae	*Chelonia mydas*
Cnidaria	Hydrozoa	Leptothecata	Aequoreidae	*Aequorea forskalea*
		Anthoathecata	Porpitidae	*Porpita porpita*
				Velella velella
Mollusca	Gastropoda	Neogastropoda	Olividae	*Agaronia propatula*
			Babyloniidae	*Babylonia spirata*

			Nassariidae	*Nassarius stolatus*
		Caenogastropoda	Turritellidae	*Turritella attenuate*
				Turritella duplicate
		Littorinimorpha	Naticidae	*Tanea picta*
		Cycloneritida	Neritidae	*Nerita undata*
		Siphonariida	Siphonariidae	*Siphonaria laciniosa*
	Bivalvia	Arcida	Arcidae	*Anadara pilula*
				Anadara secticostata
			Glycymerididae	*Tucetona sibogae*
		Mytilida	Mytilidae	*Brachidontes pharaonis*
				Perna viridis
		Venerida	Veneridae	*Callista erycina*
				Dosinia exoleta
				Gafrarium pectinatum
				Marcia opima
				Paratapes textilis
				Sunetta solanderii
				Sunetta scripta
		Cardiida	Donacidae	*Donax cuneatus*
		Pectinida	Placunidae	*Placuna placenta*
Coelenterates	Anthozoa	Actiniaria	Actiniidae	*Bolocera tuediae*
		Scleractinia	Euphylliidae	*Galaxea astreata*
		Zoantharia	Sphenopidae	*Zoanthus gigantus*

IV. CONCLUSION

In conclusion the intertidal faunal list produced in this study should provide some baseline data for current and future conservation and restoration efforts such efforts are very important given the endangered status of Sindhudurg district. However special attention should be made to locate and preserve the intertidal fauna at both side.

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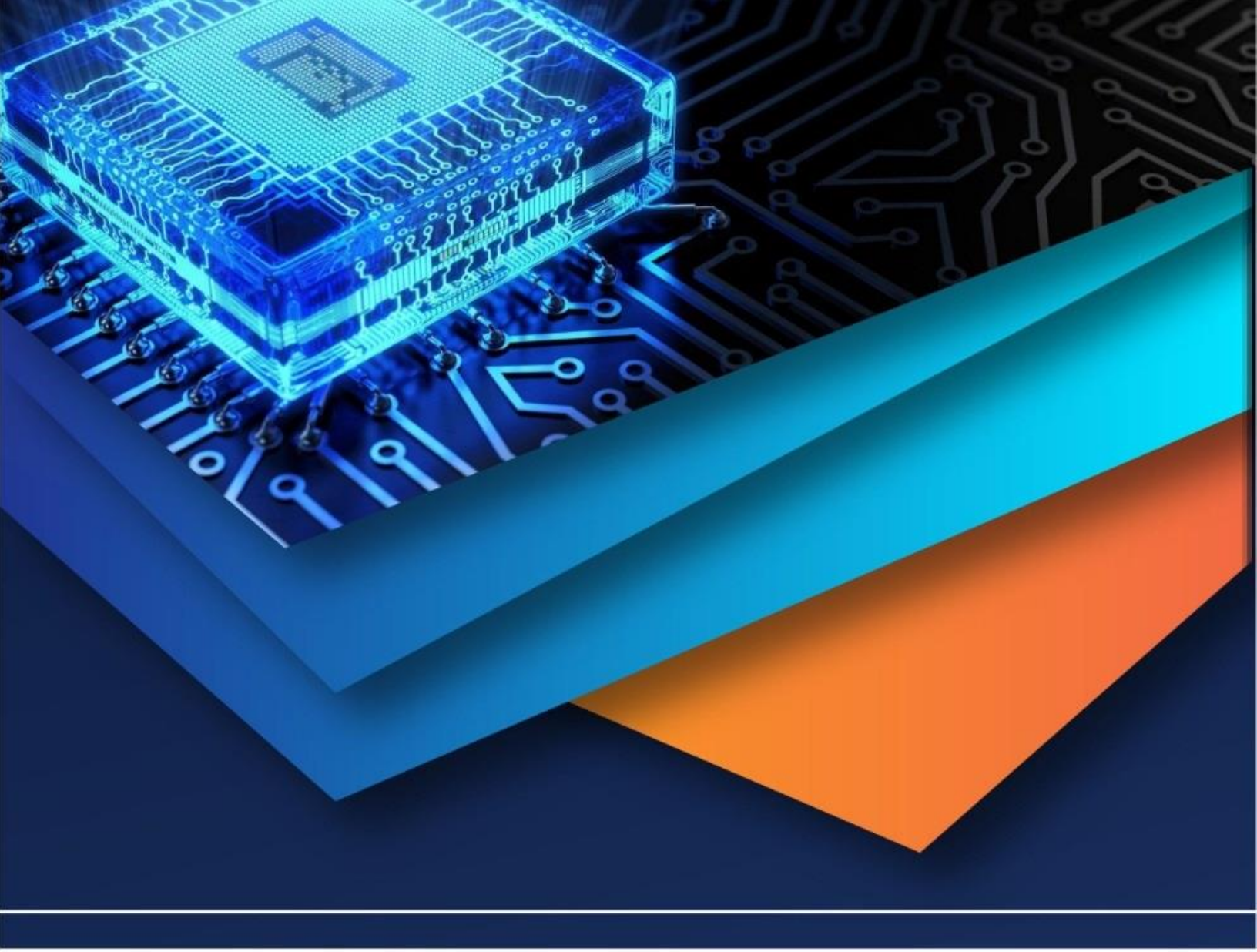

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