

Ichthyofaunal Diversity of Astaranga coast (Odisha, India)

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Abstract: Conservation and development of Ichthyofaunal diversity is much more important as it provides a major food resource to human beings. Odisha, a state of India, covers a large coastline with a huge varieties of marine fishes. Astaranga coast is having great economic value for its surrounding population. In the current study, the Ichthyofaunal diversity of Astaranga coast is observed. A total of 17 fish species were observed belonging to 16 families and 8 orders.

Keywords: Ichthyofaunal diversity, Major food resources, Astaranga, Coastline

1. Introduction

Fish are an important resource for humans worldwide especially as food. The marine fishery resource is a self-renewable one and marine fisheries in India have a potential contribution in ago economic development, employment generation, supplying of animal protein and earning foreign currency. Fisheries resource in India is one of the largest and diversified natural resource of world on the basis of fish species.

Species richness has dominated our view of global biodiversity patterns for centuries [1, 2]. Marine fish culture in coastal waters of many countries has grown dramatically in recent years, and further growth is expected in the upcoming decade [3]. A related indicator of biodiversity is habitat diversity [4]. Since different species can show preferences for different depths [5].

2. Material and Methods

2.1. Study Site

Orissa, the maritime state along the east coast of India, has a coastline of 480 km. The coastline is bestowed with six major estuaries, India's second largest mangrove forest (Bhitarkanika sanctuary), Asia's largest brackish water coastal lagoon (chilka) and extensive sandy beaches rich in heavy minerals. Astaranga the area of Project is situated in the eastern coast part of Odisha. This area is the interest area of project due to availability of a variety of edible fishes found in abundant quantity.

The area of study is Astaranga village, lies on the Bay of Bengal coast. It is a fishing village and a community development block in Puri district in the Indian state of Odisha. It is located in between coordinates 19°58'46"N 86°16'10"E, near the mouth of the rive Devi. It is about 60 km east of Puri and about 19 km from Konark. During summer the temperature is more than ° c and the minimum temperature is recorded during winter as 16° c. The average rainfall of area is about 1600-1800mm during monsoon. Astaranga is one of the four new ports being set upon the Odisha.



Figure 1



Figure 2: Map showing Astaranga coast in Odisha, state of India

Sample collection and preservation

This study was carried out from February 2017 to March 2017. Specimen were collected from beach of Astaranga by the help of local fishermen. Specified formats were used during sampling for collection of various information relating to fish catch. Regular sampling of catches from different fishing gears (gill nets, drag, boat, cast nets and 'khanda' nets traps) at the fishing ground. Measuring scale, notepad, pencil were used to measured the species and to recorded these. The collected materials were preserved 5% formalin. All identifications are done by the help of ZSI,

Gopalpur, Berhampur, Ganjam and only those species with conformed identification are listed in this paper.

3. Result and Discussion

17 species were observed in the study place. These species were most abundant and frequently found species and they belong to 16 families like Engraulidae, Pristigasteridae, Cyprinidae, Belonidae, Lutjanidae, Carangidae, Sphyraenidae, Leiognathidae, Stromateidae, Sillaginidae, Sparidae, Scombridae, Platycephalidae, Cynoglossidae, Ariidae, and Mugilidae. All these families are included in 8 orders like Clupeiformes, Cypriniformes, Beloniformes, Perciformes, Scorpaeniformes, Pleuronectiformes, Siluriformes, and Mugiliformes. Perciformes showed highest species diversity among all the orders. The species *Ilisha elongata*, and *Mugil cephalus*, have great economic value than the other species in the local area. All the species observed were belonged to a single class Actinopterygii. All the species belong to this class as they had paired fins not arranged biserially. Under class Actinopterygii 8 orders were found. There are 16 different families, out of which 8 families come under order Perciformes and 2 families come under order Clupiformes. This might be related to reproduction, feeding and migration. The lower number of

species must be due to differences in sampling gear and most importantly habitat characteristics which ultimately affect species abundance. Therefore protection of a network of habitats may be important for a species long-term viability [6].

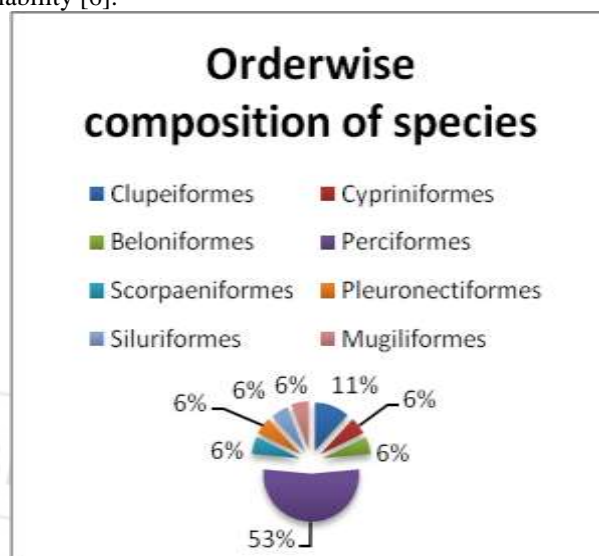


Figure: Percent composition of orders of fishes

Table: Species composition of Astaranga coast

Order	Family	Species	English name
Clupeiformes	Engraulidae	<i>Stolephorus indicus</i> (Van Hasselt, 1823)	Indian anchovy
	Pristigasteridae	<i>Ilisha elongata</i> (Bennet, 1830)	Elongate ilisha
Cypriniformes	Cyprinidae	<i>Abramis brama</i> (Linnaeus, 1758)	Freshwater bream
Beloniformes	Belonidae	<i>Xenentodon cancila</i> (Hamilton, 1822)	Freshwater garfish
Perciformes	Lutjanidae	<i>Lutjanus russellii</i> (Bleeker, 1849)	Russell's snapper
	Carangidae	<i>Megalaspis cordyla</i> (Linnaeus, 1758)	Torpedo scad
		<i>Alectis indica</i> (Rüppel, 1830)	Indian threadfish
	Sphyraenidae	<i>Sphyraena jello</i> (Cuvier, 1829)	Pickhandle barracuda
	Leiognathidae	<i>Secutor insidator</i> (Bloch, 1787)	Pugnose ponyfish
	Stromateidae	<i>Pampus argenteus</i> (Euphrasen, 1788)	Silver pomfort
	Sillaginidae	<i>Sillago sihama</i> (Forsskål, 1775)	Silver sillago
	Sparidae	<i>Rhabdosargus sarba</i> (Forsskål, 1775)	Goldlined sea bream
	Scombridae	<i>Rastrelliger kanagurta</i>	Indian mackerel
Scorpaeniformes	Platycephalidae	<i>Cociella crocodilus</i> (Cuvier, 1829)	
Pleuronectiformes	Cynoglossidae	<i>Cynoglossus cynoglossus</i> (Hamilton, 1822)	Bengal tongue sole
Siluriformes	Ariidae	<i>Arius arius</i> (Hamilton, 1822)	Threadfin sea catfish
Mugiliformes	Mugilidae	<i>Mugil cephalus</i> (Linnaeus, 1758)	Flathead grey mullet



Figure: *Stolephorus indicus*, Picture by; Osmany, H.B



Figure: *Ilisha elongata*, Picture by; Osmany, H.B.



Figure: *Abramis brama*, Picture by; Girolstein, S.



Figure: *Secutor insidator*, Picture by;Randall, J.E.



Figure: *Xenentodon cancila*, Picture by;Osmany, H.B.



Figure: *Lutjanus russellii*, Picture by; Govinda Rao Velamala, and Ramesh Babu K.



Figure: *Pampus argenteus*Picture by Osmany,H.B.



Figure: *Megalaspis cordyla*, Picture by; Kudus Kadharsa, Ponnuel Mohanchander, and Syed ajmal Khan.



Figure: *Sillago sihama*Picture by;Randall, J.E.



Figure: *Alectis indica*, Picture by; Sachinandan Dutta.



Figure: *Rhabdosargus sarba*Picture by;Randall, J.E.



Figure: *Sphyraena jello*, Picture by;Osmany, H.B.



Figure: *Rastrelliger kanagurta*Picture by; Dr. Jitendra Kumar.



Figure: *Cociella crocodilus*, Picture by; Randall, J.E.



Figure: *Cynoglossus cynoglossus* Picture by; Osmany, H.B.



Figure: *Arius arius* Picture by; Osmany, H.B.



Figure: *Mugil cephalus* Picture by; Randall, J.E.

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4. Conclusion

Level of biodiversity has grown over the research works, because of the continuous discovery of new species. If a particular species becomes dominant, it may change the composition of a population and many important and endangered species may get extinct. Marine fishes contribute a vital part as food, industrial and medicinal products raw material. Therefore continuous monitoring of the Ichthyofaunal diversity is essential.

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