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Short Communication

Diversity of Fish Fauna from Downstream Zone of River Mahisagar, Gujarat State, India

Gohil Mahendrasinh N. and Mankodi Pradeep C.
Division of Fishery and Aquatic Biology, Dept. of Zoology, Faculty of Science, The M. S. University of Baroda, Vadodara, Gujarat, INDIA

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Abstract

Documentation of biodiversity has become very important aspect of science now a day due to various environmental influences. Fish diversity of any regime has great significance in assessment of that zone reference to environment and pollution, as well as contributes to the necessary information for fisheries. Several fishes are considered bio-indicators also. River Mahisagar is one of the major perennial westward flowing rivers of Gujarat State. This river receives tremendous load of pollution in its middle and downstream zones, also highly influenced by tidal inflow from Gulf of Cambay. Here in this study an attempt was made to document fish diversity of downstream zone of this river in post monsoon season. Total 26 bony fishes from various families were recorded.

Keywords: Fish fauna, Mahisagar river

Introduction

India is one of world's richest, vast and potential Inland fishery resources, which falls in two Categories - viz. brackish water and fresh water. Fishes are very important from the biodiversity point of view and are the best bio-indicators of the ecosystem[1]. The downstream riverine zone has different salinity in different seasons as well as this zone is under the influence of varied tidal amplitude. Hence the fish fauna is not uniform and seasonal variation has been observed from this habitat[2]. Riverine fishery is one of the essential economic components of the fishery sector of any state.

Perennial rivers can support good fishery. Mahisagar is one of the important perennial rivers of central Gujarat, flowing westward to terminate in to Gulf of Cambay. This river sustains good level of fresh water as well as estuarine fishery as capture fishery and contributes to economy of Gujarat state. The fish taxonomy is one of the important parameters for assessment of fishery in a river. The present project deals with the study of downstream zone of river Mahisagar for the taxonomy of fishes.

Material and Methods

Fish were collected from downstream zone of river Mahisagar using different types of net namely gill net, cast net and also from local fish landing centres. The fishes were thoroughly washes to remove debris, blood stains etc. For documentation purpose, the photographs were taken. Fish brought to laboratory were preserved in 10% formalin. The meristic and morphometric characters were measured. The fishes were identified up to their species level[3,4].

Results and Discussion

The downstream zone of River Mahisagar was visited every month for collection of fishes. The entire zone was divided in to two distinct zone i.e. the fresh water zone and estuarine zone (tidal influenced zone). Total 26 species were reported from 03 orders and 12 families and were classified as per Day (1887) identification key (table-1). Only bony fishes were found present in our survey.

A perfect understanding of the ichthyofaunal diversity of a system is an essential prerequisite for successful implementation of fisheries development, sustainable utilization of fishery resources and for adopting suitable conservation measures. Here we have encountered only few species from marine habitat while remaining all the species are usually found from freshwater and/or estuarine zones from various rivers of India. Maximum species (08) were from family-Cyprinidae, which is a common feature for inland fish diversity[5,6]. Only one species was representing Order-Pleuronectidae i.e. Genus-*Cynoglossus*, which is commonly known as flat fish, was found from this zone. The presence of this fish is merely a chance and must have reached to this area through high tidal inflow as otherwise; this fish is bottom dwelling marine fish. The two species of family clupeidae are regularly found in various estuaries of India[7]. These fishes have different food habits like herbivorous, carnivorous and omnivorous. Few of them are also detritus consumers[8]. Industrial wastes, sewage, pollutants released in river at many places, changes the natural water quality and affects the diversity of ichthyofauna, thus there is an urgent need for proper investigation and documentation of fish diversity[9]. The large scale industrialization and the consequent effluent discharge are going to make the river almost lifeless or

dead resulting massive destruction of this riverine fauna and flora. Further, the downstream zone is under the influence of high tidal flow allowing marine species to enter in this zone regularly. The status of all the fishes found in this zone of River Mahisagar is common and abundant and do not have conservation problem, however, due to tidal influence monthly and seasonal assemblage of fish diversity changes frequently.

Conclusion

Documentation of biodiversity has become very much important aspect to understand different ecosystem and influences on them. The downstream zone of River Mahisagar was surveyed for diversity of fish fauna during post monsoon season. This zone has both fresh water and estuarine regime and hence, fishes of different ecosystems are represented in the survey. Total 26 species were reported from 03 orders and 12 families having diverse food habits and ecosystem.

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Table–1
Fish faunal diversity of downstream zone of River Mahisagar

Sr. No.	CLASS: PISCES		SUB-CLASS: TELEOSTEI
	Order	**Family**	**Genus and species**
1	Acanthoptergii	Percidae	*Ambassis ranga*
2			*Therapon jarbua*
3		Gobiidae	*Gobius giuris*
4			*Boleophthalmus glaucus*
5		Rhynchobdellidae	*Mastacembelus pancalus*
6			*Mastacembelus armatus*
7		Mugilidae	*Mugil belank*
8			*Mugil corsula*
9		Ophiocephalidae (channadae)	*Ophiocephalus marulius*
10			*Ophiocephalus punctatus*
11		Cichlidae	*Oreochromis mossambicus*
12	Ancanthini	Pleuronectidae	*Cynoglossus macrolepidotus*
13	Physostomi	Siluridae	*Macrones seenghala*
14			*Arius nenga*
15		Scombresocidae	*Belone annulata*
16		Cyprinidae	*Labeo boggut*
17			*Labeo rohita*
18			*Cirrhina reba*
19			*Cirrhina fulungee*
20			*Barbus sarana*
21			*Barbus ticto (Puntis ticto)*
22			*Rohtee cotio*
23			*Chela bacaila*
24		Notopteridae	*Notopterus kapirat*
25		Clupeidae	*Engraulis mystax*
26			*Clupea fimbriata*