

A Study on the Ichthyo-faunal Diversity of Doria Beel, Majuli, India

Gayatri Agni Borah¹, Pubali Bhuyan² and Rimen Bordoloi*³

¹ Department of Zoology, Bahana College, Bahana, Jorhat - 785 101, Assam, India

² Department of Life Sciences, Dibrugarh University, Dibrugarh - 786 004, Assam, India

³ Department of Zoology, Debraj Roy College, Golaghat - 785 621, Assam, India

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The North Eastern region of India is declared as one of the hot spots areas of freshwater fish biodiversity in the world, harbour 63% of total freshwater fishes available in the country [1]. The region is distinctive in having certain endemic genera of fishes like *Akysis*, *Badis*, *Aborichthys*, *Conta*, *Chaca*, *Erethistis*, *Erethistoides*, *Exostoma*, *Myerglanis*, *Olyra*, *Parachiloglanis*, *Pareuchiloglanis*, *Pseudecheneis* and *Pseudolaguvia* [2]. Different studies on Ichthyofaunal diversity of this region implies that fish fauna of north-east region comprises Indo-Gangetic fauna, Burmese and South China fish fauna along with several endemic fish species of Brahmaputra River [3]. Majuli is the largest inhabited river island, of Brahmaputra River, Assam, India, covers 352 km² land mass area. Previous studies reported that there are around 155 wetlands (locally called as beel) are present in Majuli district, which also has direct or indirect connection with Brahmaputra River [4]. Every year the wetland is flushed out by flood water and it has also connection with some others channel of Brahmaputra River. Therefore, there is a high probability of variation in occurrence of fishes in this wetland and considering such facts, present study focuses on the conservation status and diversity of the freshwater fish species of the Doria beel, Majuli, Assam, India.

Study area

Majuli is a river island in the Brahmaputra River, Assam, regarded as one of the richest bio-diversity areas of north east India due to its geographical and physio-graphical conditions with climatic variations. The geographical extent of the Doria beel is 26°57'30.58 N latitude and 94°10.02.36'E longitude with elevation 277 ft. It is situated about 2 km from Garmur panchayat of Majuli district. Area of the Doria beel is about 4 hectares and about 20% of the surface area is occupied by aquatic weeds.

Sampling

To study of the occurrence of fish species of the Doria beel, Majuli, samples were collected monthly basis for a period of one year (January, 2021 to December, 2022). The fish were collected by using fishing gears mainly nets, valve trap and other some local fish catching equipment with the help of local fisherman. Survey was carried on during morning time by active searching as per guidance of local fishermen and peoples, neighbouring to the study area. The fish species were identification and systematic arrangement were followed by the method described by [5-7]. Fish samples were preserved in 5% formalin for further investigation. The individual species was weighted and recorded after collection.

Present study reported a total of 50 fish species belonging to 16 families from the study area (Table 1, Fig 1), among which Cyprinidae was found as the most dominant family, represented 17 fish species (34%). Second largest family observed in the study area is Channidae with 7 fish species (14%). Other families like Bagridae, Belontiidae and Actinopterygii showed 8% occurrence with 4 fish species each and Cobitidae, Nandidae and Synbranchidae represented 4% occurrence with 2 fish species each. Remaining families showed 2% occurrence with only one fish species each. According to IUCN red list, out of 50 species collected from the selected study area, 74% species are included in least concern category, 14% species are categorized as not evaluated, 6% species are included in near threatened category and 6% species are considered as vulnerable (Fig 2).

Of the 50 species encountered, app. 40 fish species have ornamental value and most of them belong to channidae family. Species like *Clarius batrachus*, *Channa stewartii*, *Channa striatus*, *Channa gachua*, *Channa orientalis*, *Channa marulius*, *Channa punctatus*, *Anabus testudineus* and *Clarius batrachus* also has medicinal and nutritional properties for human welfare. Fishes like *Channa aurantimaculata*, *Channa stewartii* etc. are endemic species of Brahmaputra River, Assam which need serious attention for conservation reported from present study [8].

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Correspondence to: Rimen Bordoloi, Department of Zoology, Debraj Roy College, Golaghat - 785 621, Assam, India, Tel: +91 8638039538; E-mail: pubalibhuyan14feb@gmail.com

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Table 1 List of fish species along with its IUCN status, recorded in Doria beel, Majuli, Assam

Family	Common name	Scientific name	IUCN status
Anguillidae	Bami	<i>Anguilla bengalensis</i>	Near threatened
Anabantidae	Kawoi	<i>Anabas testudineus</i>	Least concern
Bagridae	Aari	<i>Aorichthys aor</i>	Not evaluated
	Laluwa singara	<i>Mystus cavasius</i>	Least concern
	Singara	<i>Mystus tengara</i>	Least concern
	Singara	<i>Mystus vittatus</i>	Least concern
Belontiidae	Vaseli	<i>Trichogaster lalius</i>	Least concern
	Vaseli	<i>Trichogaster fasciata</i>	Least concern
	Vaseli	<i>Trichogaster sota</i>	Near threatened
	Vaseli	<i>Trichogaster labiosa</i>	Near threatened
Actinopterygii	Chanda	<i>Chanda nama</i>	Least concern
	Kutchia	<i>Mastacembelus armatus</i>	Least concern
	Chanda	<i>Parambassis ranga</i>	Least concern
	Chanda	<i>Parambassis lala</i>	Near threatened
Channidae	Goroi	<i>Channa punctatus</i>	Near threatened
	Sowl	<i>Channa marulius</i>	Least concern
	Chenga	<i>Channa stewartii</i>	Least concern
	Chenga	<i>Channa striatus</i>	Least concern
	Chengeli	<i>Channa gachua</i>	Least concern
	Sowl	<i>Channa orientalis</i>	Vulnerable
	Chenga	<i>Channa aurantimaculata</i>	Least concern
	Puthi	<i>Puntius sophore</i>	Least concern
	Cyprinidae	Mirika	<i>Cirrhinus mrigala</i>
Kunhi		<i>Labeo gonius</i>	Least concern
Bata		<i>Labeo bata</i>	Least concern
Common carp		<i>Cyprinus carpio</i>	Vulnerable
Silver carp		<i>Hypophthalmichthys molitrix</i>	Near threatened
Grass Carp		<i>Ctenopharyngodon idella</i>	Near threatened
Japani puthi		<i>Puntius javanicus</i>	Least concern
Darikona		<i>Rosbora daniconius</i>	Least concern
Bahu		<i>Catla catla</i>	Least concern
Kalia jora		<i>Labeo Calbasu</i>	Least concern
Rahu		<i>Labeo Rohita</i>	Least concern
Lachun bhangun		<i>Cirrhinus reba</i>	Least concern
Dorikona		<i>Esomus danricus</i>	Least concern
Muwa		<i>Amblypharyngodon mola</i>	Least concern
Puthi		<i>Puntius chola</i>	Least concern
Sakori puthi		<i>Puntius ticto</i>	Least concern
Cobitidae		Botia	<i>Lepidocephalus guntea</i>
	Doria	<i>Botia doria</i>	Near threatened
Clariidae	Magur	<i>Clarius betrachus</i>	Least concern
Chacidae	Chital	<i>Chaca chaca</i>	Least concern
Gobiidae	Pati mutuwa	<i>Glossogobius giuris</i>	Least concern
Heteropneustidae	Singi	<i>Heteropneustes fossilis</i>	Least concern
Siluridae	Pabha	<i>Ompok pabo</i>	Near threatened
Synbranchidae	Kuchia	<i>Monopterus albus</i>	Least concern
	Kandhuli	<i>Notopterus notopterus</i>	Least concern
Nandidae	Randhani	<i>Badis badis</i>	Least concern
	Gadgadi	<i>Nandus nandus</i>	Least concern
Schilbeidae	Borali	<i>Wallago attu</i>	Vulnerable

**IUCN: International Union for Conservation of Nature and Natural Resources

SUMMARY

North-east India is A one-year survey was conducted on fish diversity of the Doria beel, Majuli, Assam, India from the year of January, 2021 to December, 2022 by using sampling method. During the study period, a total of 50 fish species belonging to 16 families were observed, among which maximum diversity is observed in the family Cyprinidae family with 17 species. In present study, it is seen that most of the fishes reported from the Doria beel, Majuli, Assam are under least concern and not evaluated category and this implies that

studies needed to a great extent to confirm the important parameters of this fishes which can also improve their conservation status.

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Conflict of interest

Authors declared no conflict of interest.

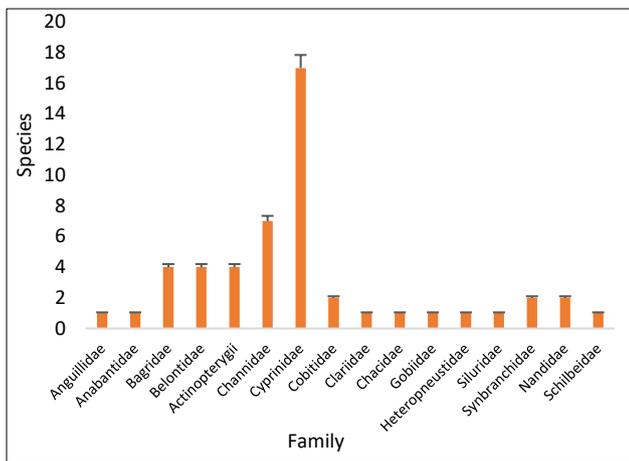


Fig 1 Family wise distribution of fishes recorded from Doria beel, Majuli, India

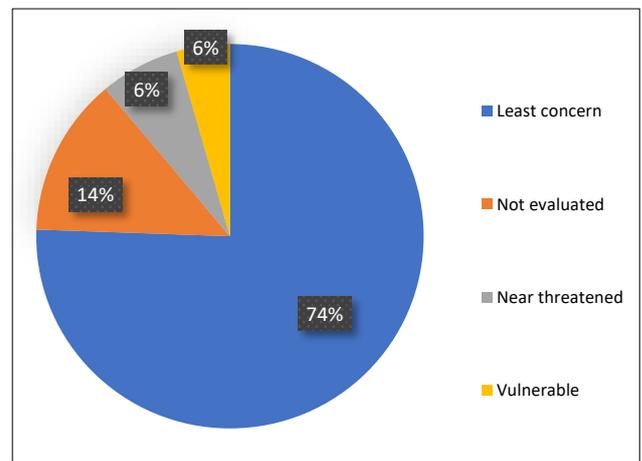


Fig 2 IUCN status of the fishes recorded from Doria beel, Majuli, India

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