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Diversity of Fishes of Mahananda River at Chapai Nawabgonj District

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Abstract: The diversity of fish fauna of the Mahananda river at Chapai Nawabganj Sadar upazilla has been studied from the period of October, 2006 to November, 2007. The aim of the study was to find out the open water fish diversity in Mohananda River of Chapai Nawabgonj. About 56 fish species were found and identified during the investigation under 9 orders, 20 families and 42 genera. Among 56 species, 20 species were found under the order Cypriniformes, 17 species were found under the order Siluriformes, 10 species were found under the order perciformes, 3 species were found under the order Clupeiformes, 2 species were found under the order Channiformes and a single species was found under the order Synbranchiformes, Tetraodontiformes, Beloniformes and Cyprinodontiformes each. During the entire period of the study, only 19 endangered fish species were found from the study point. Among exotic carps, only *Hypophthalmichthys molitrix* was found during the study period in the river Mohananda.

Key words: Fish diversity, Mohananda River, endangered fish, Chapai Nawabganj, extinct fish species, open water fish

INTRODUCTION

Bangladesh is well known as the land of rivers, where it bears a huge potential for fisheries sector. This fisheries sector has an important and potential contribution in the agro-based economic development (5-6% in GDP), poverty alleviation, employment and supplying of animal protein (63%) and earning the foreign currency (DoF, 2005). Ali (1982) informed that Bangladesh is unique in having possibly the largest inland water resources with large rivers, their tributaries, canals, streams and beels. Haque (1982) informed that the water-land ratio of this country is very high in comparison to other countries of the world. The country abounds in a large varieties of fish species that is 260 of fresh water fish species, 24 species that of prawns in Inland water bodies and 475 species of marine fish, 36 species of marine shrimps and 12 species of exotic fishes (DoF, 2005). Fisheries sector plays an important role contributing 5.71% of the total export earning, 4.92% of the national income and about 23% of total agricultural production. The people of Bangladesh are provided with 63% of total animal protein from fisheries sector (DoF, 2005).

Although, it is clear that the Inland water resources in the main source of fish production, but unfortunately the total open water production is coming in a fixed cycle with the continuous decreasing of most common fish species. Once, it was said that fish rice is the main food of Bangladeshi, but now it is a rare talk. The fact is the unconsciousness for the open water fisheries has brought the poor situation of many delicious and nutritious fish species. In this context, it is highly essential to measure the fisheries diversity of the open water.

Although, river is the prime habitat for all fresh water fishes, but in Bangladesh no notable researches have been done yet regarding fish diversity in rivers. However, in recent times, there has been growing awareness amongst the researcher in the country to study fishes. Hope, this will creates a new way towards fisheries science to protect many of the native fish species form extinction.

MATERIALS AND METHODS

The fishes were collected mainly from the fishermen on the spot and also the retail fish market of the study area. Visit to the different spot and fish market were made almost once within a 15 days. The specimens collected during the investigation were identified preliminary on the spot and help the related book (sometimes helped the fish card, which prepare before the study). Those, which appeared difficult to be identification were marked and were brought to the Department of Fisheries, University of Rajshahi. For identification of the fish sample, mainly Rahman (2005) taxonomic key was used. Some times other related book, Bhuiyan (1964), Talwar and Jhingran (1991) and Shafi and Quddus (2001) also use for more information and identification as well. The collected specimens were preserved in 5-10% formalin according to the size. Plastic jar are used to collect and preserve the

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fish. After collecting and preserving all the fishes photograph were also taken with the camera. This photograph was used to identify and analysis of them in indoor research station.

RESULTS AND DISCUSSION

A total of 56 open water fish species belonging to 42 genara, 20 families and 9 orders were identified during the study period. Out of them, 1 species was belonging to the family Synbranchidae, Tetraodontidae, Belonidae, Cyprinidontidae, Heteropneustidae, Chacidae, Notopteriodae, Gobiidae, Pristolepidae; 2 species were belonging to the family Channidae, Clupidae, Centropomidae; 3 species were belonging to the family Siluridae, Mastacembelidae, Anabantidae; 4 species were belonging to the family Schilbeidae, Bagridae, Sisoridae; 5 species were beloning to the family Cobitidae and 15 species were beloning to the family Cyprinidae. A check list of collected fish species is given:

Order-Synbranchiformes:
Family-Synbranchidae (Mud eels)
Genus-*Opisternon* McClelland
Species-*Opisternon bengalensis* McClelland

Order-Tetraodontiformes:
Family-Tetraodontidae (Puffer fishes)
Genus-*Tetraodon* Linnaeus
Species-*Tetraodon cutcutia* Hamilton

Order-Beloniformes:
Family-Belonidae (Gars)
Genus-*Xenentodon* Regan
Species-*Xenentodon cancila* (Hamilton)

Order-Cyprinodontiformes:
Family-Cyprinodontidae (Top-minnows)
Genus-*Aplocheilus* McClelland
Species-*Aplocheilus panchax* (Hamilton)

Order-Channiformes:
Family-Channidae (Snke-heads)
Genus-*Channa* Scopoli
Species-*Channa striatus* (Bloch.)
Species-*Channa punctatus* (Bloch.)

Order-Cypriniformes:
Family-Cyprinidae (Carps, Minnows, Barbs etc.)
Genus-*Salmostoma* Swainson
Species-*Salmostoma bacaila* (Hamilton)
Species-*Salmostoma phulo* (Hamilton)
Genus-*Esomus* Swainson
Species-*Esomus danricus* (Hamilton)
Genus-*Apspidoparia* Hackel
Species-*Apspidoparia jaya* (Hamilton)
Genus-*Ablypharyngodon* Bleeker
Species-*Ablypharyngodon mola* (Hamilton)
Genus-*Rohtee* Skyes
Species-*Rohtee cotio* (Hamilton)
Genus-*Labeo* Cuvier
Species-*Labeo calbasu* (Hamilton)
Species-*Labeo rohita* (Hamilton)
Species-*Labeo bata* (Hamilton)
Genus-*Cirrhinus* (Oken) Cuvier
Species-*Cirrhinus cirrhosus* (Bloch.)
Genus-*Puntius* Hamilton
Species-*Puntius sarana* (Hamilton)
Species-*Puntius ticto* (Hamilton)
Species-*Puntius sophore* (Hamilton)
Genus-*Catla* Valenciennes
Species-*Catla catla* (Hamilton)
Genus-*Hypophthalmichthys* Bleeker
Species-*Hypophthalmichthys molitrix* (Valenciennes)

Family-Cobitidae (Loaches):
Genus-*Acanthocobities* Peters
Species-*Acanthocobities botia* (Hamilton)
Genus-*Somileptes* Bleeker
Species-*Somileptes gongota* (Hamilton)
Genus-*Botia* Gray
Species-*Botia dario* (Hamilton)
Species-*Botia lohachata* (Hamilton)
Genus-*Lepidocephalus* Bleeker
Species-*Lepidocephalus guntea* (Hamilton)

Order-Siluriformes:
Family-Siluridae (Butter catfishes, Freshwater sharks)
Genus-*Wallago* Bleeker
Species-*Wallago attu* (Bloch.)
Genus-*Ompok* Lacepede
Species-*Ompok bimaculatus* (Bloch.)
Species-*Ompok pabda* (Hamilton)
Family-Heteropneustidae (Stinging cat fish)
Genus-*Heteropneustes* Muller
Species-*Heteropneustes fossilis* (Bloch.)
Family-Chacidae (Square-head catfishes)
Genus-*Chaca* Gray
Species-*Chaca chaca* (Hamilton)
Family-Schilbeidae (Schilbid catfishes)
Genus-*Silonia* Swainson
Species-*Silonia Silondia* (Hamilton)
Genus-*Pseudeutropius* Bleeker
Species-*Pseudeutropius atherinoides* (Bloch.)

Genus-*Eutropiichthys* Bleeker
Species-*Eutropiichthys vacha* (Hamilton)
Genus-*Clupisoma* Swainson
Species-*Clupisoma garua* (Hamilton)
Family-Bagridae (Bagrid catfishes)
Genus-*Rita* Bleeker
Species-*Rita rita* (Hamilton)
Genus-*Mystus* Scopoli
Species-*Mystus seenghala* (Sykes)
Species-*Mystus menoda* (Hamilton)
Species-*Mystus cavasius* (Hamilton)
Family-Sisoridae (Sisorid catfishes)
Genus-*Glyptothorax* Blyth.
Species-*Glyptothorax telchitta* (Hamilton)
Genus-*Gagata* Bleeker
Species-*Gagata cenia* (Hamilton)
Species-*Gagata yossoufi* Rahman
Genus-*Hara* Blyth
Species-*Hara hara* (Hamilton)

Order-Clupeiformes:
Family-Notopteridae (Feathe backs)
Genus-*Notopterus* Lacepede
Species-*Notopterus notopterus* (Pallas)
Family-Clupeidae (Shads, herrings etc.)
Genus-*Gudusia* Fowler
Species-*Gudusia chapra* (Hamilton)
Genus-*Corica* Hamilton
Species-*Corica soborna* (Hamilton)

Order-Perciformes:
Family-Mastacembelidae (Spiny eel)
Genus-*Macrognathus* Lacepede
Species-*Macrognathus aculetus* (Bloch.)
Genus-*Mastacembelus* (Gronovius) Scopoli
Species-*Mastacembelus armatus* (Lacepede)
Species-*Mastacembelus puncalus* (Hamilton)
Family-Anabantidae (Climbing perches, goramies)
Genus-*Colisa* Cuvier
Species-*Colisa fasciatus* (Bloch. and Schneider)
Species-*Colisa lalia* (Hamilton)
Genus-*Anabas* Cuvier and Cloquet
Species-*Anabas testudineus* (Bloch.)
Family-Gobiidae (Gobies, mud skippers)
Genus-*Glossogobius* Gill
Species-*Glossogobius giuris* (Hamilton)
Family-Centropomidae (Gint perch, glass perch)
Genus-*Chanda* Hamilton
Species-*Chanda nama* (Hamilton)
Species-*Chanda ranga* (Hamilton)
Family-Pristolepidae
Genus-Badis Bleeker
Species-*Badis badis* (Hamilton)

Recorded 56 species of fishes were under 9 orders, 19 families, 42 genera. Islam and Hossain (1983) recorded 110 species of fishes from the river Padma near Rajshahi. Mortuza (1992) recorded 126 fish and 13 species of fisheries items from the Barnai project area. Although, no previous statistical record is available for Mohandand River near Chapai Nawabganj Sadar, but obviously it seems very poor condition of riverine fisheries in comparison to those previous study of padma and other rivers of Bangladesh. The number of species recorded in the present study was far less than the species recorded by Mourtuza (1992) and Hossain (1983) probably due to the unavailability of some vulnerable and endangered species. Again this reduction of fish species was also associated with the siltation of the river, irrigation and over fishing. Mohananda is a river, which is hugely tormented by bank erosion every year with a wide range of water fluctuation every year. In rainy season floodwater increases up to 43 m and in dry season decrease up to 10-15 m. Thus, fish habitat in river also changes a lot time to time, which may also be a considerable cause to decrease of fish in this river. Besides only 19 endangered fish, species were found in Mohananda River among 54 IUCN declared list of endangered fish. Therefore, rest of the other 35 endangered species may be treated as extinct in Mohananda River. This is not good news for fish biology and open water fisheries at all. In this circumstance, it is essential to take immediate action for habitat improvement of Mohananda River to save the fish biodiversity.

CONCLUSION

At present, fish diversity of Bangladesh facing very critical stage. From 1960 till now, there are massive changes occurred as declining fish production, as well as species diversity notably in open water. Therefore, it is most urgent to take suitable step to protect fish fauna of Bangladeshi river. In the light of the present study of Mohananda River, it is time to make proper policies and take necessary step to implement so that the future generation can get the fishes lively on the earth rather than photographs in literature.

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