

Fisheries resources of the river Mahananda

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Abstract: The present study was carried out during April, 2009 to March 2010 on the Mahananda river to determine its fisheries resources. The Mahananda river is one of the major rivers of the Northern region of Bangladesh. The river originated from the Ganga river of India. It enters into the Bholahat thana of Chapai Nawabganj district and passed through different parts of this district to meet the Padma river. The fisheries resource of Nawabganj is quite good. A good amount of the fishes are supplied from the Mahananda river to Nawabganj town and its adjacent area. The highest and lowest water level of the Mahananda river were recorded as 19.50m in 1st September, 2009 and 12.32m in 18 April 2010, respectively. During the study period, a total of 111 species of fishes were recorded under 1 class, 11 order, 27 family, 49 genera. Important orders are Clupeiformes, Cypriniformes, Belontiiformes, Channiformes etc. From the study area 15 species of fisheries items were recorded under classes Crustacea, Gastropoda, Amphibia, Reptilia.

Key words: Mahananda, fish species, resources

Introduction

The curiosity in fish and fisheries has been very great from time ancient beyond the reach of memory. Bangladesh is very rich in fresh water fish production. In terms of fresh water fish production, Bangladesh ranks as the world leader accounting for a production of 4076-kg/sq. km. against 411-kg/sq. km. in China and 391-kg/sq. km. in India (World Bank, 1989). Bangladesh ranks third (After China and India) among the world largest inland fish producing countries. Fish is the most important and primary source of animal protein in human diet throughout the whole Indo-Pak-Bangladesh-Subcontinent and other southeast Asia and African countries. It is the second cheap staple food after rice. The fisheries sector accounts of 3% of GDP, 8% of gross value added of agricultural products. The fisheries sub-sector of Bangladesh is broadly divided into inland and marine fisheries. Present production of fish is 0.95 million tons (Task Force report, 2001 vol-2). Inland fisheries contribute about 73 percent and marine fisheries 27 percent of the total catch of fish in Bangladesh. The earlier records of the study of the fishes of this region are only fragmentary and devoted chiefly to the fishes of west Bengal and North Bengal. Bhuiyan (1964) recorded 71 species from fresh water areas of Dhaka district. Doha (1973) published a list of 106 species from Mymensingh and Tangail districts. Rahman (1974) listed 257 species inhabiting the fresh water areas of Bangladesh. The present work deals with the fisheries resource of the river Mahananda. The study mainly deals with a fisheries resource. The present research may be helpful to understand about the number of fish, fisheries species and fisheries items.

Materials and Methods

The data concerning the present study were collected through the survey method from fishermen and different fish traders. Interview schedules were used to collect various information regarding the name of fish, seasonal

abundance, maximum- minimum length. Systematic samples were taken during the period from April 2009 to March 2010. A total of 150 interviews were made with the fisherman, fish traders and people associated with the fishing of the river Mahananda. The fishes were also collected mainly from the fisherman on the spot and also from the retailers of the Nawabganj Bazar and Hat. The specimens thus collected during the investigation were identified primarily in the field. Those which appeared difficult to be identified were marked and were brought to the laboratory of Department of Zoology, university of Rajshahi. A total of 500 fish and fisheries specimens brought to the laboratory for taxonomic study from the survey area, which species of fishes and species of other fisheries items like, Arthropoda, Mollusca, Reptilia, were identified. The specimens collected were preserved in 5-10% Formalin according to their size. Taxonomic studies were made on the physical and anatomical features of the collected specimens.

Results and Discussion

Bangladesh is very rich in freshwater fish species. Inland water bodies contain over 260 species of fishes (Rahman, 1989). A total of 475 species of fishes are recorded from marine water (FFYP) of which 65 species are being exported commercially (Hossain, 1970). Among 56 species of palaemonid and penaeid prawns only 16 species are commercially important and found in the freshwater, estuarine and seawater of Bangladesh. More than 14 species of exotic fishes have been introduced in Bangladesh. During the study period, a total of 111 different species of fishes, 15 species of fisheries items under the classes Crustacea (Arthropoda), Gastropoda (Mollusca), Amphibia, Reptilia (Chordata), were identified (Table 1-2). In the table 1, the checklist of identified 111 fishes with local names, minimum-maximum length (cm), seasonal availability, breeding season, abundance.

Table 1. Check List of the fishes of the river Mohananda at Nawabganj area, Chapai Nawabganj

Sl. No.	Scientific name	Local name	Minimum-maximum length (cm)	Seasonal availability	Breeding seasons	Abundance
Class-Osteichthyes						
I Order-Clupeiformes						
1.	<i>Tenulosa ilisha</i>	Ilisha, Hilsa	23-30	R	Jan-March	V.R
2.	<i>Ilsha motius (Hamilton)</i>	Khorchona	-	-	-	F
3.	<i>Gadusia chapra</i>	Chaipila	4-15	A	-	V.C
4.	<i>Gadusia variegata</i>	Khari	2-7	R.A	-	C
5.	<i>Gonialosa manminna</i>	Chapila	3-11	R	April-July	C
6.	<i>Corica soborna</i>	Gura Much	2.5-5	All	Not known	C
7.	<i>Notopterus Notopterus</i>	Phali	14-30	All	May-July	V.C
8.	<i>Notoperus chitala</i>	Chital	20-50	All	April-July	
9.	<i>Setipinna phasa</i>	Phasa	10-18	R	Feb-March	V.R
10.	<i>Setipinna taty</i>	Feoah	8-15	R	-	R
II Order-Cypriniformes						
11.	<i>Chela atpar</i>	Chela	5-20	A	-	V.C
12.	<i>Chela laubuca</i>	Dankens	5-15	R.A	-	F
13.	<i>Oxygaster bacaila</i>	Katari	6-15	All	April-Aug	V.C
14.	<i>Oxygaster phulo</i>	Chellya	4-12	All	May-Oct	V.C
15.	<i>Oxygaster gora</i>	Gora-chela	5-21	R	-	R
16.	<i>Rasbora elanga</i>	Sephaila	5-10	All	Apr-July	C
17.	<i>Rasbora daniconius</i>	Daria	3-8	All	Apr-July	V.C
18.	<i>Rasbora rasbora</i>	Darkina	3-5	R	-	F
19.	<i>Danio devario</i>	Banspata	4-9	All	Apr-July	C
20.	<i>Danio shunensis</i>	Debari	4-5	R	-	R
21.	<i>Danio rerio</i>	Darika	2-3	R	-	F
22.	<i>Rohtee cotio (Hamilton)</i>	Pithali	3-5	R	Apr-July	I
23.	<i>Esomus danricus</i>	Mol	20-65	All	Aug-Oct	V.C
24.	<i>Amblypharyngodon microlepis</i>	Moa	3-8	All	Apr-Nov	V.C
25.	<i>Amblypharyngodon microlepis</i>	Kagchi	2-5	All	-	V.C
26.	<i>Puntius sarana</i>	Sar puti	8-15	R	Apr-July	R
27.	<i>Puntius chola</i>	Chola puti	4-9	All	Apr-July	V.C
28.	<i>Puntius stigma</i>	Dento-puti	5-8	All	Apr-July	V.C
29.	<i>Puntius conchoniis</i>	Moina punti	4-6	A	Apr-July	V.C
30.	<i>Puntius ticto</i>	Tit-punti	3-6	All	Apr-July	V.C
31.	<i>Punrius phutunio</i>	Phutani punti	2-3	A	Apr-July	R
32.	<i>Puntius sophore (Hamilton)</i>	Jati punti	3.5-6	All	Apr-July	C
33.	<i>Puntius gelius</i>	Khudir punti	3-4	A	-	R
34.	<i>Aspidoparia jaya</i>	Jaya	3-8.5	All	Dec-Feb	V.C
35.	<i>Aspidoparia morar</i>	Piali	-	-	-	-
36.	<i>Labeo rohita</i>	Rui	17-80	All	April-July	V.C
37.	<i>Labeo calbasu</i>	Calbaus	12-40	All	April-July	V.C
38.	<i>Labeo nandina</i>	Sada baus	11-22	R	April-July	C
39.	<i>Labeo bata</i>	Bata	9-17	A	-	R
40.	<i>Labeo pangusia</i>	Baitka	-	-	-	-
41.	<i>Catla catla</i>	Katol	14-55	All	April-July	V.C
42.	<i>Cirrhinus mrigala</i>	Mrigel	13-26	All	May-July	C
43.	<i>Cirrhinus reba</i>	Raikhor bata	5-11	All	April-July	V.C
44.	<i>Cyprinus Carpio (Lineaus)</i>	Common carp	12-30	R	-	R
45.	<i>Cyprinus Carpio</i>	Mirror carp	12-30	R	-	R
46.	<i>Hypophthalmichthys molitrix</i>	Silver carp	12-24	R	-	F
47.	<i>Ctenphayngodon idellus</i>	Grass carp	12-33	R	-	F
48.	<i>Crossocheilus latius</i>	Calabata				
49.	<i>Botia Dario</i>	Bau-mach	5-10	All	-	V.C
50.	<i>Batia dayi (Hora)</i>	Rani mach	4-9	All	-	V.C
51.	<i>Lepidocephalus guntea</i>	Gutum	4-8	All	-	V.C
52.	<i>Lepidocephalus irrorata</i>	Poi	3-7	A	-	C
53.	<i>Lepidocephalus berdmorei</i>	Pulya	3-7	A	-	V.C
54.	<i>Nemachilus botia</i>	Bati-chata	-	-	-	-
55.	<i>Wallago attu</i>	Boal	25-90	All	May-Aug	V.C
56.	<i>Ompok pabda</i>	Pabda	9-18	All	-	C
57.	<i>Ompok bimaculatus</i>	Kani-pabda	9-16	All	June-Aug	C
58.	<i>Scilonia silondia</i>	Silong dhain	10-20	A	-	V.R
59.	<i>Pangasius pangasius</i>	Pangus	18-30	R	March-July	C

Sl. No.	Scientific name	Local name	Minimum-maximum length (cm)	Seasonal availability	Breeding seasons	Abundance
60.	<i>Clupisoma garua</i>	Ghaura	8-18	All	March-July	C
61.	<i>Clupisoma murius</i>	Bacha	9-18	All	-	F
62.	<i>Clupisoma atherinoides</i>	Patasi	4-9	All	May-Aug	V.C
63.	<i>Clupisoma taakree</i>	Tin-laata fish	4-6	All	May-July	V.C
64.	<i>Eutropiichthys vacha</i>	Vacha	10-22	All	-	C
65.	<i>Ailila coila</i>	Banspata	6-14	R	-	C
66.	<i>Ailichthys punctata (Day)</i>	Sutali	6-14	All	-	C
67.	<i>Heteropneuster fossilis</i>	Jial,sing	13-26	All	-	R
68.	<i>Clarias batrachus</i>	Magur	14-30	All	May-July	R
69.	<i>Mystas aor</i>	Air	18-72	All	April-July	V.C
70.	<i>Mystus seenghala</i>	Taila air	12-36	A	April-July	V.R
71.	<i>Mystus menoda</i>	Bujri tengra	3-5	All	April-Aug	V.C
72.	<i>Mystus vittatus</i>	Batha tengra	6-10	All	April-Aug	C
73.	<i>Mystus cavasius</i>	Kabasi tengra	8-15	All	April-July	V.C
74.	<i>Mystus bleekeri</i>	Golsa tengra	6-10	W	April-July	F
75.	<i>Mystus menoda</i>	Gang- tengra	5-10	W	April-July	R
76.	<i>Leiocassis rama</i>	Gura- tengra	3-10	R	April-July	R
77.	<i>Rita rita</i>	Rita,rida	12-40	R	-	C
78.	<i>Bagarius bagarius</i>	Bagar	16-45	W	April-July	C
79.	<i>Gagata gagata</i>	Gang- tengra	-	R	-	R
80.	<i>Chaca chaca</i>	Square hade cat fish	-	-	-	-
III Order : Beloniformes						
81.	<i>Xenentodon</i>	Kakila	13-22	All	-	V.C
IV Order : Cyprinodontiformes						
82.	<i>Aplochilus panchax</i>	Charchoka	4-5.5	All	Jan-Oct	C
V: Order : Mugiliformes						
83.	<i>Rhinomugil corsula</i>	Ural	9-22	All	-	R
84.	<i>Sicamugil cascasia</i>	Kuch khalia	2.5-4	S	-	R
VI Order : Channiformes						
85.	<i>Channa punctatus</i>	Lata	8.5-22	All	April-Oct	V.C
86.	<i>Channa striatus</i>	Shol	16-40	All	April-June	C
87.	<i>Channa marulius</i>	Gajar	26-55	All	April-June	F
88.	<i>Channa gachua</i>	Chang	7-14	All	April-June	F
89.	<i>Channa barca</i>	Tila-sol	13-35	All	-	F
VII Order : Symbranchiformes						
90.	<i>Amphipnous cuchia</i>	Kuchia	13-30	R	-	V.R
VIII Order : Anguilliformes						
91.	<i>Anguilla nebulosa</i>	Bamuch	13-33	R	-	R
IX Order : Perciformes						
92.	<i>Chanda nama</i>	Chanda	2-4.5	All	March-Oct	V.C
93.	<i>Chanda ranga</i>	Lal-chanda	3-6.5	All	-	V.C
94.	<i>Chanda sp.</i>	Channa	-	-	-	-
95.	<i>Chanda baculis</i>	Phopha chanda	2-4	All	-	V.C
96.	<i>Anabas testedineus</i>	Koi	8-12	All	June-July	R
97.	<i>Colisa fasciata</i>	Colisa	3.5-8	All	June-Oct	R
98.	<i>Colisa lalius</i>	Lal colisa	3.5-4.5	All	June-Oct	R
99.	<i>Colisa chuna</i>	Chunna colisa	3.6-5	R	-	R
100.	<i>Badis badis</i>	Kala koi	-	-	June	V.R
101.	<i>Nandus nandus</i>	Veda,Royna	8.5-13.5	All	April-Aug	R
102.	<i>Glossobobius giurries</i>	Baila	9-17	All	March-Oct	V.C
103.	<i>Glossobobius padmaticus</i>	Chhoto bele	-	-	-	-
104.	<i>Pama pama</i>	Poa	9-14	All	-	R
105.	<i>Otolithes argenteus</i>	Poe	-	-	-	-
X Order : Mastacembeliformes						
106.	<i>Mastacembelus</i>	Bain	24-60	All	April-July	V.C
107.	<i>Mastacembelus pancalus</i>	Gunchi	12-18	All	April-July	V.C
108.	<i>Macrogathus</i>	Kata baim	11-20	All	-	C
XI Order : Tetradontiformes						
109.	<i>Tetraodon cutcutia</i>	Potka	3.5-5	W	-	R
110.	<i>Tetraodon potoca</i>	Boga	3-5	W	-	R
111.	<i>Chelonodon fluviatus</i>	Tapa	-	-	-	-

Seasonal availability column, S = Summer, R = Rainy, A = Autumn, W = Winter, All = All the season; Abundance column, VR = Very rare, R = Rare, F = Few, C = Common, VC = Very common

Table 2. Check list of Fisheries items in the river Mahananda at Nawabganj area

Sl. No.	Local name	English name	Scientific name	Abundance	Seasonal availability	Breeding seasons
1.	Beel chingri	Prawn	<i>Macrobra-chium dayaman</i>	Common	Whole	Dec-Feb
2.	Colda chingri	Prawn	<i>M. malcomsonii</i>	Few	Whole	Dec-Feb
3.	Gura chingri	Prawn	<i>M. lamarrei</i>	Very Common	Whole	May-June
4.	Kakra	Crab	<i>Cancer pagurus</i>	Very common	Whole	April-June
5.	Shamuk	Snail	<i>Pila globosa</i>	Very common	Whole	April-June
6.	Jhinuk	Mussel	<i>Unio sp:</i>	Very common	Whole	April-June
7.	Sona bang	Bull frog	<i>Rana hexadactyla</i>	Rare	Few	May-July
8.	Kola bang	Frog	<i>Rana tigrina</i>	Rare	Few	May-July
9.	Kachim, Dura	Tortoise	<i>Trinoyx hurum</i>	Rare	Few	April-Sep
10.	Kachim, Dura	Tortoise	<i>Trionys gangeticus (Cuvier)</i>	Rare	Rare	April-Sep
11.	Kachim, Dura	Tortoise	<i>Lissemys punctata (Bannaterree)</i>	Rare	Rare	April-Sep
12.	Kachim, Dura	Tortoise	<i>Chitra indica</i>	Rare	Rare	April-Sep
13.	Kachim, Dura	Tortoise	<i>Kachuga tectuni (Gray)</i>	Rare	Rare	April-Sep
14.	Kachim, Dura	Tortoise	<i>Herdella thurgi (Gray)</i>	Rare	Rare	April-Sep
15.	Pani shap, Dora shap	Water Snake	<i>Natrix piscator</i>	Very Common	Rare	-

The fisheries resources of Mahananda River identified in this study were not reported earlier by any researchers. However, the fisheries resources are largely influenced by aquatic vegetation. These vegetations are responsible for providing food, shelter, protection for fish and fisheries items. The fish species observed in this study varied depending on seasons. Again the indentified species were categorized based on their economic importance as “economically important”, more important, and most important.

Bangladesh is very rich in freshwater fish species. Inland water bodies contain over 260 species of fishes (Rahman, 1989). During the study period, a total of 111 different species of fishes and 15 species of fisheries items were identified and reported for the first time in Bangladesh.

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