ISSN: 2347-5129
(ICV-Poland) Impact Value: 5.62
(GIF) Impact Factor: 0.352
IJFAS 2016; 4(2): 427-732
© 2016 IJFAS
www.fisheriesjournal.com
Received: 08-02-2016
Accepted: 10-03-2016

Dulon Roy
Department of Zoology, Jagannath University, Dhaka-1100, Bangladesh.

Abdullah Al Masud
Department of Zoology, Jagannath University, Dhaka-1100, Bangladesh.

Anirban Sarkar
Department of Zoology, Jagannath University, Dhaka-1100, Bangladesh.

Gulshan Ara Latifa
Department of Zoology, University of Dhaka, Dhaka-1000, Bangladesh.

Correspondence
Dulon Roy
Department of Zoology, Jagannath University, Dhaka-1100, Bangladesh.

Diversity of Fish Fauna in Some Selected Area of a Haor System in Khaliajury Thana of Netrakona District Bangladesh

Dulon Roy, Abdullah Al Masud, Anirban Sarkar, Gulshan Ara Latifa

Abstract
The present study was conducted in some selected areas of haor for a period of 6 months from July 2014 to December 2014. The study was undertaken to evaluate the fish diversity, its status, identification, relative abundance and habitat preference. During the study period, 103 fish species with their taxonomic position were recorded under 29 families of 11 orders. Among the recorded fish species, majority of fishes (31 species) were under the family cyprinidae. The relative abundance were categorized as very common (vc), common (c), fairly common (fc), occasional (o), few (f) and rare (r). In case of habitat preferences, the fishes were classified as flood plain (fp), migratory (m) and riverine (r). The haor is an important source of fishes and provide a habitat for a large number of fresh water species of fishes. The number of species, genera and family of the fishes that recorded from different location of the haor during the study period is still rich in fresh water fish fauna.

Keywords: Diversity, Fishes, Relative Abundance, Haor, Habitat.

Introduction
Bangladesh is a densely populated country of 147 570 km2 with a population of 130 million people. It is fortunate in having an extensive water resources in the form of ponds, natural depressions (haors and heels), lakes, canals, rivers and estuaries covering an area of 4.56 million ha (DOF, 2005) [4]. The haors, baors, beels and jheels are of fluvial origin and they are commonly identified as freshwater wetlands. These freshwater wetlands occupy four landscape units - floodplains, freshwater marshes, lakes and swamp forests. Approximately there are 411 haors about an area of 8000 km^2 have dispersed in the districts of Sunamgonj, Sylhet, Moulvibazar, Hobigonj, Netrokona and Kishoreganj.
FAO (2005) [5]. Ranked Bangladesh as sixth largest aquaculture producing country with its estimated production of 856 956 tonnes in 2003. Aquaculture accounted for about 43.5 percent of the total fish production during 2003-2004, with inland open water fisheries contributed 34.8 percent (DOF, 2005) [4]. The Haor, Baors and Beels play an important role in the ecology, economy and livelihood of the country. The life and livelihood of Bangladesh is dependent on the wetlands. The vast water bodies of Haors are the source of fisheries, aquatic vegetations and other freshwater biodiversity, irrigation, navigation and flood control etc.
The first scientific account of freshwater fish fauna of Bangladesh began with the work of Hamilton (1822) [6]. Recently, Rahman (2005) [10]. Has made significant contribution on freshwater fishes and recorded 265 species of fish under 55 families from Bangladesh. A number of other workers also have described freshwater fish fauna from different parts of the country. Siddiqui *et al*. (2007) [12]. Have described 251 species of freshwater fishes under 61 families from Bangladesh. Islam *et al*. (2008) [8]. Have recorded 108 species under 29 families of 10 orders from Tanguar Haor. Chandra (2009) [3]. Has listed 139 species of fishes both exotic and indigenous origin belonging 34 families and 87 genera in some selected district in Bangladesh.

Objectives
In the present study, the fish fauna, its relative abundance and habitat preference were an attempt to make a fish faunal list of available species of Khaliajury thana, Netrakona district, Bangladesh.

Materials and Methods

The study was conducted in some selected areas of Haor during the period from July 2014 to December 2014. Sampling was done single at regular interval in each week. The fish species were sampled at random through netting in different locations.

Identification of the fish species was based on Siddiqui *et al*. (2007) [12], Shafi and Quddus (2001) [11], Rahman (2005) [10]. And IUCN Bangladesh (2000) [9]. The relative abundance of fishes have categorized based on the number of fishes recorded from seven beels. In case of relative abundances, the terms commonly used were: Very common (VC) - sighted each time during sampling, usually a number of individuals; Common (C) - sighted each time in sampling, but less in number than the very common; Fairly common (FC) - sighted in most sampling, but relatively less in number than common; Occasional (O) - occasionally seen; Few (F) - sighted in few numbers; Rare (R) - rarely sighted each time in sampling. The categorization of the threatened species of fishes was made on the guidelines provided by IUCN Bangladesh (IUCN Bangladesh 2000) [9]. In habitat preferences, the term used are: FP= Flood plain, M= Migratory, and R= River.

Fig: Study area

Results and Discussions

During the study period 103 species of fishes under 29 families of 11 orders were recorded from the some selected areas of Haor. All of them were freshwater fishes, of which 21 species were riverine, 27 migratory, 55 floodplain residents and among these three were exotic species (Table 1).

Table 1: Freshwater species of fishes with their taxonomic position recorded from some selected areas of a haor system of Khaliajury thana under Netrakona district Bangladesh Phylum- Chordata, Class- Osteichthyes

Sl. No.	Order	Family	Scientific Name With Taxonomic Position	English Name	Local Name	Relative Abundance	Habitat Preference
1.	Osteoglossiformes	Notopteridae	*Notopterus Chitala* (Hamilton, 1822)	Humped Featherback	Chital	Fc	M
2.			*Notopterus Notopterus* (Pallas, 1769)	Gray Featherback	Foli Kanla	C	Fp
3.	Clupeiformes	Clupeidae	*Corica Soborna* (Hamilton, 1822)	Ganges River-Sprat	Kachki	C	R
4.			*Gonialosa Manmina*	Ganges	Gonichapila	C	R

			(Hamilton, 1822)	River Gizzard Shad			
5.		Engraulidae	*Gudusia Chapra* (Hamilton, 1822)	Indian River Shad	Chapila	C	M
6.			*Setipinna Phasa* (Hamilton, 1822)	Hairfin Anchovy	Phasa	F	M
7.	Cypriniformes	Cyprinidae	*Amblypharyngodon Microlepis* (Bleeker, 1853)	Indian Carplet	Mola	Fc	Fp
8.			*Amblypharyngodon Mola* (Hamilton, 1822)	Mola Carplet	Mola	C	Fp
9.			*Catla Catla* (Hamilton, 1822)	Catla	Catla, Katal	C	M
10.			*Chela Cachius* (Hamilton, 1822)	Chela	Chap Chela	C	Fp
11.			*Chela Laubuca* (Hamilton, 1822)	Grass Barb	Chebli	Fc	Fp
12.			*Cirrhinus Mrigala* (Bloch, 1795)	Mrigal	Mirka,Mrigal	C	M
13.			*Cirrhinus Reba* (Hamilton, 1822)	Reba	Laacho	C	M
14.			*Ctenopharyngodon Idella* (Valenciennes, 1844)*	Grass Carp	Grass Carp	Fc	Fp
15.			*Cyprinus Carpio* (Linnaeus, 1758)*	Common Carp	Carpu	Fc	Fp
16.			*Devario Devario* (Hamilton, 1822)	Danio	Baspata/ Chap/ Chela	C	Fp
17.			*Esomus Danricus* (Hamilton, 1822)	Flying Barb	Darkina	C	Fp
18.			*Hypophthalmichthys Molitrix* (Valenciennes, 1844)*	Silver Carp	Silver Carp	Fc	Fp
19.			*Labeo Rohita* (Hamilton, 1822)	Rahu	Rui,	C	M
20.			*Labeo Angra* (Hamilton, 1822)	Angra Labeo	Angrot, Kharsa	Vf	M
21.			*Labeo Bata* (Hamilton, 1822)	Bata Labeo	Bata	Vf	M
22.			*Labeo Calbasu* (Hamilton, 1822)	Kalbasu	Kalibaus	Vc	M
23.			*Labeo Nandina* (Hamilton, 1822)	Nandi Labeo	Nandina	C	M
24.			*Labeo Gonius* (Hamilton, 1822)	Kuria Labeo	Ghanyya	Vc	M
25.			*Osteobrama Cotio* (Hamilton, 1822)	Cotio	Dhela	Fc	Fp
26.			*Puntius Chola* (Hamilton, 1822)	Chola Barb	Chalaputi	C	M
27.			*Puntius Phutunio* (Hamilton, 1822)	Dwarf Barb	Phutani Punti	F	Fp
28.			*Puntius Conchonius* (Hamilton, 1822)	Rosy Barb	Kanchan Punti	F	Fp
29.			*Puntius Gelius* (Hamilton, 1822)	Golden Barb	Gili Punti	Fc	Fp
30.			*Pontius Sarana* (Hamilton, 1822)	Olive Barb	Sar Punti	Fc	Fp
31.			*Puntius Sophore* (Hamilton, 1822)	Pool Barb	Jat Punti	Vc	Fp
32.			*Puntius Terio* (Hamilton, 1822)	One Spot Barb	Teri Punti	F	Fp
33.			*Puntius Ticto* (Hamilton, 1822)	Ticto Barb	Tit Punti	Vc	M
34.			*Rasbora Daniconius* (Hamilton, 1822)	Rasbora	Darkina	Fc	Fp

35.			*Salmostoma Bacaila* (Hamilton, 1822)	Large Razor Belly Minnow	Katari	C	Fp
36.			*Salmostoma Phulo* (Hamilton, 1822)	Finescale Minnow	Fulchela	Fc	M
37.			*Securicula Gora* (Hamilton, 1822)	Gora Chela	Gora Chela	C	M
38.		Balitoridae	*Acanthocobotis Zonalternans* (Blyth, 1860)	River Loach	Balichata	F	M
39.		Cobitidae	*Botia Dario* (Hamilton, 1822)	Queen Loach	Rani	Fc	R
40.			*Lepidocephalichthys Guntea* (Hamilton, 1822)	Guntea Loach	Gutum	C	Fp
41.			*Somileptes Gongota* (Hamilton, 1822)	Gongota Loach	Poia	F	Fp
42.	Characiformes	Characidae	*Pygocentrus Nattereri* (Kner, 1858)*	Red Piranha	Piranha	F	Fp
43.			*Piaractus Brachypomus* (Cuvier, 1818)*	Pirapitinga	Thai Rupchnda	F	Fp
44.	Siluriformes	Bagridae	*Mystus Aor* (Hamilton, 1822)	Long Whiskered Catfish	Air	C	M
45.			*Mystus Bleekeri* (Day, 1877)	Day's Mystus	Tengra	C	M
46.			*Mystus Cavassius* (Hamilton, 1822)	Gangetic Mystus	Gulsha	Fc	M
47.			*Mystus Gulio* (Hamilton, 1822)	Gulio Catfish	Nuna Tengra	F	M
48.			*Mystus Tengara* (Hamilton, 1822)	Tengara Mystus	Bajari Tengra	Vc	Fp
49.			*Mystus Vittatus* (Bloch, 1797)	Stripped Dwarf Catfish	Gulsha Tengra	Vc	Fp
50.			*Mystus Menoda* (Hamilton, 1822)	Menoda Catfish	Gang Magur	F	R
51.			*Rama Chandramara* (Hamilton, 1822)	Asian Cory	Bajaria Tengra	C	Fp
52.			*Rita Rita* (Hamilton, 1822)	Rita	Rita	Fc	R
53.		Siluridae	*Ompok Bimaculata* (Bloch, 1797)	Butter Catfish	Kani Pabda	F	Fp
54.			*Ompok Pabda* (Hamilton, 1822)	Pabda Catfish	Pabda	Fc	Fp
55.			*Ompok Pabo* (Hamilton, 1822)	Pabo Catfish	Kala Pabda	F	Fp
56.			*Wallago Attu* (Schneider, 1801)	Boal	Boal	Vc	R
57.			*Ailia Coila* (Hamilton, 1822)	Gangetic Ailia	Kajuli	F	R
58.			*Ailia Punctata* (Day, 1872)	Jamuna Aila	Kajuli/ Baspata	F	R
59.			*Clupisoma Garua* (Hamilton, 1822)	Garua Bacha	Ghaura	F	R
60.			*Clupisoma Naziri* (Mirza And Awan, 1973)	Indus Garua	Bacha	F	R
61.			*Eutropiichthys Murius* (Hamilton, 1822)	Murius Bacha	Muri Bacha	F	M
62.			*Pseudeutropius Atherinoides* (Bloch, 1794)	Indian Potasi	Batasi	Fc	M
63.			*Silonia Silondia* (Hamilton, 1922)	Silond Catfish	Shilong	F	R

64.		Pangasiidae	*Pangasius Pangasius* (Hamilton 1822)	Pangus	Pungas	F	R
65.		Sisoridae	*Bagarius Bagarius* (Hamilton, 1822)	Gangetic Goonch	Baghair	Vf	R
66.			*Gagata Cenia* (Hamilton, 1822)	Indian Gagata	Gogni	Vf	R
67.			*Gagata Gagata* (Hamilton, 1822)	Gangetic Gagata	Gang Tengra	F	R
68.			*Gogangra Viridescens* (Hamilton, 1822)	Huddah Nangra	Gang Tengra	F	R
69.			*Hara Hara* (Hamilton, 1822)	Kosi Hara	Kutakanti	F	R
70.		Clariidae	*Clarias Batrachus* (Linnaeus, 1758)	Walking Catfish	Magur	Vc	Fp
71.		Heteropneustidae	*Heteropneustes Fossilis* (Bloch, 1794)	Stinging Catfish	Shing, Jiol	Vc	Fp
72.		Chacidae	*Chaca Chaca* (Hamilton, 1822)	Squarehead Catfish	Chaka	F	Fp
73.	Beloniformes	Belonidae	*Xenentodon Cancila* (Hamilton, 1822)	Freshwater Garfish	Kakila	Vc	Fp
74.			*Hyporhamphus Limbatus* (Valenciennes, 1846)	Congaturi Halfbeak	Ek Thuita	C	Fp
75.	Cyprinidontiformes	Aplocheilidae	*Aplocheilus Panchax* (Hamilton, 1822)	Blue Panchax	Techoukka	C	R
76.	Synbranchiformes	Synbranchidae	*Monopterus Cuchia* (Hamilton, 1822)	Cuchia	Kuchia	Vf	Fp
77.			*Ophister Benglense* (Mcclelland, 1845)	Bengal Mud Eel	Kunche	F	Fp
78.	Perciformes	Ambassidae	*Chanda Nama* (Hamilton, 1822)	Glass-Perchlet	Nama Chanda	Vc	Fp
79.			*Pseudambassis Ranga* (Hamilton, 1822)	Indian Glassy Fish	Ranga Chanda	C	Fp
80.		Leiognathidae	*Leiognathus Equulus* (Forskal, 1775)	Common Pony Fish	Tak Chanda	F	Fp
81.		Sciaenidae	*Otolithoides Pama* (Hamilton,1822)	Pama	Poa	Fc	Fp
82.		Nandidae	*Nandus Nandus* (Hamilton, 1822)	Mud Perch	Bheda, Meni	Vc	Fp
83.		Pristolepidae	*Badis Badis* (Hamilton,1822)	Badis	Napte Koi	F	Fp
84.		Mugilidae	*Rhinomugil Corsula* (Hamilton, 1822)	Corsula Mullet	Khalla, Bata	F	R
85.			*Sicamugil Cascasia* (Hamilton,1822)	Yellowtail Mullet	Bata, Keski	F	R
86.		Gobidae	*Glossogobius Giuris* (Hamilton, 1822)	Tank Goby	Bailla	C	M
87.			*Brachygobius Nunus* (Hamilton, 1822)	Golden-Banded Goby	Nuna Baila	F	M
88.			*Gobiopterus Chuno* (Hamilton, 1822)	Glass Goby	Chuno Bele	Vf	M
89.		Anabantidae	*Anabas Testudineus* (Bloch, 1775)	Climbing Perch	Koi	Vc	Fp
90.		Osphronemidae	*Colisa Fasciata* (Bloch And Schneider, 1801)	Giant Gourami	Khalisha	Vc	Fp
91.			*Colisa Lalia* (Hamilton, 1822)	Dwarf Gourami	Lal Khalisha	Vc	Fp
92.			*Colisa Labiosa* (Day, 1877)	Thick Lipped Gourami	Boicha	C	Fp
93.			*Colisa Sota* (Hamilton, 1822)	Honey Gourami	Sota Khalisa	C	Fp

94.			*Ctenops Nobilis* (Mcclelland, 1845)	Indian Gourami	Neftani	Vf	R
95.		Mastacembelidae	Macrognathus Aculeatus (Bloch, 1786)	Lesser Spiny Eel	Tara Baim	Vc	Fp
96.			*Macrognathus Pancalus* (Hamilton, 1822)	Sriped Spiny Eel	Guchi Baim	Vc	Fp
97.			*Mastacembelus Armatus* (Lacepede, 1800)	Tire-Track Spiny Eel	Sal Baim	C	Fp
98.	Channiformes	Channidae	*Channa Punctatus* (Bloch, 1793)	Spotted Snakehead	Taki, Lata	Vc	Fp
99.			*Channa Striatus* (Bloch, 1793)	Stripped Snakehead	Shol	C	Fp
100.			*Channa Orientalis* (Bloch &Schneider, 1801)	Walking Snakehead	Cheng, Gachua	C	Fp
101.			*Channa Marulius* (Hamilton, 1822)	Giant Snakehead	Gajar	C	Fp
102.	Tetrodontiformes	Tetradontidae	*Tetraodon Cutcutia* (Hamilton,1822)	Common Pufferfish	Tepa, Potka	C	Fp
103.			*Chelonodon Patoca* (Hamilton,1822)	Milk Spotted Puffer	Potka	C	Fp

*Exotic species

Bhuiyan (1964) [2]. Gave an account of 71 species of freshwater fishes belonging 45 genera and 25 families which he collected from Dhaka. Haque (2004) [7]. Has described 134 species of fishes under 76 genera and 32 families from the capture fisheries of the Padma River. As mentioned earlier Rahman (2005) [10]. Has compiled a list of 265 species of freshwater fishes belonging to 154 genera and 55 families. Siddiqui *et al*. (2007) [12] have described 251 species of freshwater fishes belonging to 61 families from Bangladesh. Islam *et al*. (2008) [8]. Have recorded 108 species under 29 families of 10 orders from Tanguar Haor. Chandra (2009) [3]. Has listed 139 species of fishes both exotic and indigenous origin belonging 34 families and 87 genera in some selected district in Bangladesh. Considering the number of families, genera and species of fishes, it appears from the present investigation that the hoar is still rich in freshwater fish fauna.

Conclusions

Bangladesh haors are rich in biodiversity and have great ecological, economic and social values in ensuring livelihood security of millions of poor people particularly for fisher community in Bangladesh. Now days the haors are under threat and gradually degrading due to several anthropogenic and natural causes. The poor sanitation system around the Haor also causes the pollution of water. The application of insecticides, pesticides and huge inorganic fertilizer in the paddy fields during dry season causes the water pollution and fish disease in the Haor area.

By observing the number of species, genera and families of fishes reported herein seems that Khaliajury region so called Vati anchal is still rich in freshwater fish fauna though many indigenous species are becoming threatened day by day.

Acknowledgement

Authors are deeply thankful to the fishermen and fisher community who helps during data collection in different ways to make this research properly.

References

1. Ahmed MA, Hasan S. A Check-list of the fishes of the Karnaphuli reservoir. Bangladesh J Zoology. 1981; 9(1):37-40.
2. Bhuiyan AL. Fishes of Dacca. Asiatic Society of Pakistan, Dacca, 1964, 148.
3. Chandra KJ. Availability of fish fauna in some selected districts in Bangladesh. Bangladesh J Anim. Science 2009; 38(1, 2):151-163.
4. DOF. Fishery Statistical Yearbook of Bangladesh 2003-2004. Fisheries Resources Survey System, Department of Fisheries, Ministry of Fisheries and Livestock, Matshya Bhaban, Dhaka, 2005, 46.
5. FAO. Yearbook, Fishery and Aquaculture Statistics, Rome, 2005.
6. Hamilton F. An Account of the Fishes Found in the River Ganges and its Branches. Archibald Constable and Company, Edinburgh, 1822, 405.
7. Haque MA. Capture Fisheries of the river Padma near Rajshahi. Ph.D. Thesis, Institute of Biological Sciences, Rajshahi University, Bangladesh, 2004, 180.
8. Islam KA, Bashar MA, Ali MS. Diversity of fish fauna in Tanguar haor system. Bangladesh J Zoology 2008; 36(2):167-174.
9. IUCN Bangladesh. Red Book of Threatened Fishes of Bangladesh. IUCN-The World Conservation Union, Dhaka, Bangladesh, 2000; 12:116.
10. Rahman AKA. Freshwater Fishes of Bangladesh. Edn 2. Zoological Society of Bangladesh, Dhaka, 2005, 394.
11. Shafi M, Quddus MMA. Bangladesher Mothsho Shampad (in Bengali), Kabir Publication, Dhaka, 2001, 442.
12. Siddiqui KU, Islam MA, Kabir SMH, Ahmed ATA, Rahman AKA, Haque EU, *et al*. Encyclopedia of Flora and Fauna of Bangladesh, Freshwater Fishes, Asiatic Society of Bangladesh, Dhaka, 2007; 23:300.