



ICHTHYOFAUNAL DIVERSITY OF RIVER TORSA AND ITS TRIBUTARIES AT TERAI REGION OF WEST BENGAL, INDIA

Debashis Das

Department of Zoology, Tufanganj Mahavidyalaya, Coochbehar-736160, WB, India

ABSTRACT

A study was carried out during 2013 – 2015 to record the present ichthyofaunal diversity in river Torsa and its tributaries at Terai region of West Bengal. One hundred and five species belong to nine order and 29 families were recorded during the study. Cyprinidae representing the highest number of recorded species, followed by family Bagridae (8 in number) then family Sisoridae (7) and family Cobitidae (6). Ninety one out of hundred and five types of fishes were recorded from Cypriniformes (50 no.), from Siluriformes (25 No.) and from Perciformes (16 in number). It is observed that according to IUCN red list one Endangered, two Vulnerable and 10 Near Threatened species were recorded from river Torsa and its tributaries during the study. It is noted that 52 species were recorded as food fish, 21 species used as an ornamental fish and another 32 species have both food as well as ornamental value. According to IUCN, trend of 22 species is decreasing and our observation recorded 48 species were found under 'rare' or 'very rare' category, those needs further investigation for their conservation.

KEYWORDS: Ichthyofauna, diversity, Torsa, Terai, North Bengal.

INTRODUCTION

The Terai region of West Bengal is the sub-mountain area of the Himalaya with dense forest on the north. The area is traversed by innumerable streams most of them originating from the hills of Bhutan, Sikkim and Tibet, to the north of this area. These rivers swell up enormously in the rains and almost dried up in winter. The tectonic plate of the Brahmaputra River basin tends towards south-east. Therefore most of these rivers enter Bangladesh after crossing their courses in Terai region of West Bengal. The topography and vegetation of this region is very similar to that of North East India which is a hotspot of biodiversity. The health of populations and communities of native fish species is an indicator of the overall condition of the aquatic ecosystem. In "Ananda mangal", Rai Gunakar Bharat Chandra Rai had written about several species of fishes widely available in Bengal. Fishes are one of a major integral part of Bengalis' diet & lifestyle; it is also found a special mention in Bengali literature. Agarwal's (2006) findings suggested that more than 80% of the Bengali population were fish-eaters, and an average Bengali has consumed fish about 320 days out of the year. The decline in abundance and distribution of fishes are indicative of dying fish species. Natural factors like alteration of river flow, sedimentation and anthropogenic factors like water pollution, large scale fishing and use of non-conventional fishing gears, etc. indicates that the natural ecological functioning of the system is at risk.

Fishery research in the 18th and 19th centuries was purely restricted to systematic. A number of authors published creditable accounts of fish species available in India, the major publications being Cuvier (1817), Hamilton (1807, 1822), Cuvier and Valenciennes (1828–1849), Heckel (1838), McClelland (1839, 1842), Jerdon (1849), Bleeker (1853, 1854, 1863), Gunther (1868), Day (1865, 1873,

1889), Alcock (1898), and Blanford (1901). British surveyors Shaw and Shebbeare first tabulated the 131 fish species from North Bengal in the year 1937 (Shaw & Shebbeare, 1937). JRB Alfred, director of the Zoological Survey of India, had presented a complete list of flora and fauna including freshwater fish of the state of West Bengal. Rajguru (2003) reported the presence of Rohita, Magura, Kawai, Chenga, Chengalia, Ilish, Chital, Barali, and Tengar fish species in the riverine system. Sen (1992) recorded 172 fresh water fish species from the state of West Bengal. Mahananda, Teesta, Jaldhaka, Torsa, Kaljani, Raidak and Sankosh are the major rivers of sub-Himalayan Terai region of West Bengal. There are few researchers published their findings of the ichthyofaunal diversities of various waterbodies of North Bengal. Such as Banerjee *et al.* (2009) recorded 71 fish species from different rivers in Darjeeling district, Patra and Dutta (2010) recorded 31 species of Cypriniformes fish from River Karala and again Patra *et al.* (2011) recorded 55 species fish from the same river, Acherjee and Barat (2012) reported 65 species from Teesta river at Darjeeling district, Mondal and Bandyopadhyay (2014) recorded 78 fish species from the rivers of Duars region, Sharma and Baro (2014) reported 83 species from river Sankosh and Barat *et al.* (2015) recorded fishes from Kaljani river at Coochbehar district. But there is no recent record of ichthyofauna diversity from the river Torsa; therefore the author attempted to record the present fish faunal diversity of the Torsa river flowing through the Terai region of West Bengal. According to Wikipedia, river Torsa originated from the Chumbi Valley in Tibet, China; after crossing Bhutan it enters into India at Jaigaon, Alipurduar district of West Bengal. In Terai, West Bengal after crossing the tea gardens, Jaldapara National Park and the plains of Coochbehar district it enters into Bangladesh at

Balabhut region which is the junction point of West Bengal, Assam and Bangladesh. As the river crosses various types of topographical regions, it is very important to record its fish faunal health at the point of knowledge of biodiversity.

MATERIALS & METHODS

Study was conducted at 10 different spots on river Torsa starting at Jaigaon (26°44'32"N and 89°19'27"E) where the river enters into India upto its merger with Kaljani river at Mohona (26°16'52"N and 89°34'57"E) during the period from 2013 to 2015.

PLATE I: Map location of the Survey Spots on River Torsa and its tributaries flowing through North Bengal, India.

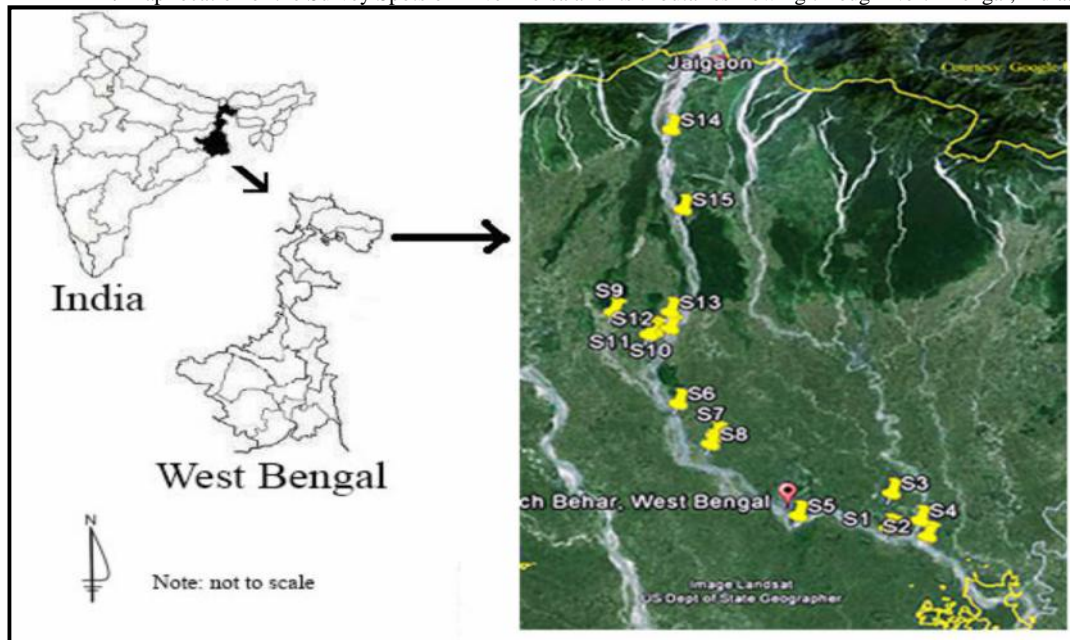


TABLE I: Detail location of the Survey Spots on River Torsa and its tributaries flowing through North Bengal, India.

Sl.	Name of the spot	GPS Reading	Location of Survey spots	
			Area / Mouza / GP	Sub-division / district
Spot-1	Arapur (Torsa-3)	26°16'18"N 89°32'60"E	Arapur, Balarampur-I	Tufanganj-I, Coochbehar
Spot-2	Sarearpar (Torsa-4)	26°15'46"N 89°35'23"E	Sarearpar, Balarampur-I	Tufanganj-I, Coochbehar
Spot-3	Ghargharia	26°18'46"N 89°33'11"E	Daskhin Maradanga, Maruganj	Tufanganj-I, Coochbehar
Spot-4	Kaljani	26°16'52"N 89°34'57"E	Bhairabertari (near mohona), Deocharai more	Tufanganj-I, Coochbehar
Spot-5	Ghugumari (Torsa-2)	26°17'13"N 89°27'24"E	Harinchara, Guriahati-II	Coochbehar-I, Coochbehar
Spot-6	Bansdaha (Torsa-1)	26°25'03"N 89°19'58"E	Nathibari, Pundibari	Coochbehar-II, Coochbehar
Spot-7	Khutamara nadi	26°22'47"N 89°22'15"E	Petbhata chandrachura, Madhupur	Coochbehar- II, Coochbehar
Spot-8	Haripur (Torsa-5)	26°22'12"N 89°21'59"E	Haripur, Madhupur	Coochbehar- II, Coochbehar
Spot-9	Char Torsa	26°30'69"N 89°15'53"E	Raichenga, Falakata	Falakata, Jalpaiguri
Spot-10	Sanjai (Torsa-6)	26°30'06"N 89°18'28"E	Palasbari, Silbari	Falakata, Jalpaiguri
Spot-11	Palasbari (Torsa-7)	26°30'06"N 89°18'28"E	Palasbari, Silbari	Falakata, Jalpaiguri
Spot-12	Siltorsa	26°30'20"N 89°19'26"E	Patlakhowa, Kathalbari	Sonapur, Alipurduar
Spot-13	Hansimara (Torsa-8)	26°43'74"N 89°19'27"E	Hansimara	Madarihut, Alipurduar
Spot-14	Jaigaon (Torsa-9)	26°44'32"N 89°19'27"E	Jaigaon	Alipurduar
Spot-15	Jaldapara (Torsa-10)	26°38'48"N 89°20'13"E	Jaldapara	Alipurduar

The major tributaries of Torsa river those were considered for survey are the Ghargharia, Kaljani, Khutamara, Char Torsa and Siltorsa. Details of the survey spots with GPS readings are presented in Table 1 and Google map locations are given in Plate 1. Stress was given to the interview of the local knowledgeable fisherman about the selection of the spots. Conventional different types of fishing gears were used and expert fishermen were engaged to capture the fishes from various spots. After capturing routine photography and proper preservation (Bagra and Das, 2010) were done as per conventional method. Identification was done by consulting literature like Talwar and Jhingran (1991), Jayaram (1999) and Viswanath (2000). For valid scientific name FishBase website was consulted and to evaluate conservation status and trends IUCN websites were surfed.

RESULTS & DISCUSSION

A total of 105 fish species belong to 9 orders and 29 families were recorded during the course of the study. A

checklist of all recorded species along with their common / local name, abundance status, IUCN conservation status and trends were presented in Table III. Family Cyprinidae representing the highest number (41) of recorded species, followed by family Bagridae (8) then family Sisoridae (7) and family Cobitidae (6). The major number (91 out of 105 types) of fishes were found from Cypriniformes (50 No.), Siluriformes (25 No.) and from Perciformes (16 in number). Summary of these findings is presented in Table II. This observation corroborated with the findings of Banerjee *et al.* (2009), Patra *et al.* (2011), Acherjee and Barat (2012) and Sharma and Baro (2014). Regarding trend of the population, IUCN noted that only seven species from the list are stable, population of 22 species is decreasing, but about other 76 species there is no data in the website of IUCN. A sector diagram showing the percentage of conservation status of fishes of river Torsa at India is presented in Fig. I.

FIGURE I: Sector diagram showing the percentage of conservation status of fishes recorded from the river Torsa, India.

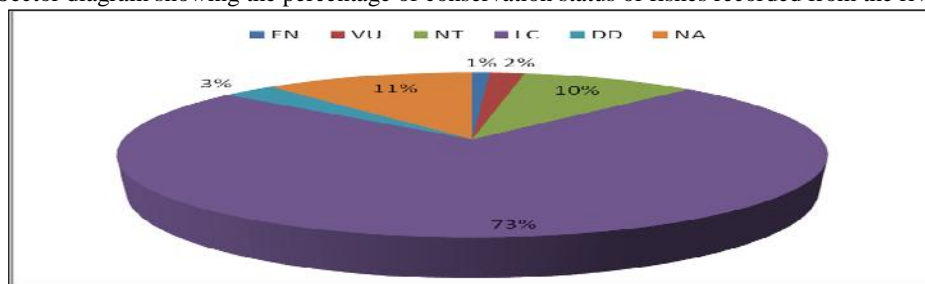


TABLE II: Summary of the survey of fishes from river Torsa and its tributaries, North Bengal, India.

Order	Family	Species Recorded	Total
CLUPEIFORMES	CLUPEIDAE	2	2
	NOTOPTERIDAE	2	
OSTEOGLOSSIFORMES	ANGUILLIDAE	1	4
	OPHICHTHIDAE	1	
	CYPRINIDAE	41	
CYPRINIFORMES	PSILORHYNCHIDAE	2	50
	BALITIRIDAE	1	
	COBITIDAE	6	
	BAGRIDAE	8	
	SILURIDAE	3	
SILURIFORMES	SCHILBEIDAE	3	
	AMBLYCIPITIDAE	1	25
	SISORIDAE	7	
	CLARIIDAE	1	
	HETEROPNEUSTIDAE	1	
CYPRINODONTIFORMES	CHACIDAI	1	
	APLOCHEILIDAE	1	1
BELONIFORMES	BELONIDAE	1	2
	SYNGNATHIDAE	1	
SYNBRANCHIFORMES	SYNBRANCHIDAE	1	4
	MASTACEMBELIDAE	3	
	CHANNIDAE	4	
	AMBASSIDAE	3	
PERCIFORMES	NANDIDAE	2	
	MUGILIDAE	2	16
	OSPHRONEMIDAE	1	
	ANABANTIDAE	1	
	OSPHRONEMIDAE	3	
TETRAODONTIFORMES	TETRAODONTIDAE	1	1

Phototaxis response of some zooplankton

After analyzing the data of Table III, it is observed that one Endangered, two Vulnerable and 10 Near Threatened species were recorded from river Torsa and its tributaries. Surprisingly IUCN not assayed 12 species from this list and data is deficient regarding three species and researchers are 'List Concern' on about 77 species of fishes from the list (Table III), out of which many are most important for their food value and other for their ornamental value. *Tor putitora* is recorded under 'endangered (A 4acde)', *Cyprinion semiplotum* is 'vulnerable (A 2acde+3cde)' and *Cirrhinus cirrhosus* is also recorded as 'vulnerable (D2)' category. Out of these three the first one was recorded as 'very rare' in Torsa, second one was found to be 'rare' category and the third

one recorded as 'common' in Torsa river. In our observation it is noted that 52 species are captured as food fish, 21 species are used as an ornamental fish and another 32 species have both food as well as ornamental value, all these data are presented in Table III. It is also recorded that 16 species are 'very common' in Torsa river, 41 species are fall in the category of 'common', 34 'rare' and 14 species are found 'very rare'. IUCN data showed that the trend of 22 species is decreasing and our observation recorded 48 species are found under 'rare' or 'very rare' category, which needs further investigation. Among these 48 species some are having very good food value or ornamental value and they required proper conservation measures.

TABLE III: Check list of Ichthyofauna recorded from river Torsa and its tributaries at North Bengal

Scientific name	Common / Local name	Abundance recoded	Economic importance	IUCN Status (ver 3.1, 2015)	IUCN Trend
<i>CLASS: PISCES</i>					
<i>ORDER: CLUPEIFORMES</i>					
<i>FAMILY: CLUPEIDAE</i>					
<i>Gudusia chapra</i> (Hamilton, 1822)	Chapila / Korti / Khoira	III	Fd	LC	D
<i>Tenualosa ilisha</i> (Hamilton, 1822)	Ilish	IV	Fd	LC	D
<i>ORDER: OSTEOGLOSSIFORMES</i>					
<i>FAMILY: NOTOPTERIDAE</i>					
<i>Notopterus notopterus</i> (Pallas, 1769)	Fali / Folui	III	Fd	LC	UK
<i>Chitala chitala</i> (Hamilton, 1822)	Chital	IV	Fd	NT	D
<i>FAMILY: ANGUILLIDAE</i>					
<i>Anguilla bengalensis</i> (Gray, 1831)	Bamos	III	Fd	NT	UK
<i>FAMILY: OPHICHTHIDAE</i>					
<i>Pisodonophis boro</i> (Hamilton, 1822)	Chei balu	III	Or	LC	UK
<i>ORDER: CYPRINIFORMES</i>					
<i>FAMILY: CYPRINIDAE</i>					
<i>SUB FAMILY: Cyprininae</i>					
<i>Tor tor</i> (Hamilton, 1822)	Putitor / Mahseer	IV	Fd	NT	D
<i>Tor putitora</i> (Hamilton, 1822)	Putitor	IV	Fd	EN A4acde	D
<i>Neolissochilus hexagonolepis</i> (McClelland, 1839)	Katli	III	Fd	NT	D
<i>Catla catla</i> (Hamilton, 1822)	Katla / Katal	III	Fd	NA	UK
<i>Osteobrama cotio cotio</i> (Hamilton, 1822)	Mowa / Mourla / Chanda	IV	Fd	LC	UK
<i>Chagunius chagunio</i> (Hamilton, 1822)	Pithkanta	I	Fd	LC	UK
<i>Cyprinion semiplotum</i> (McClelland, 1839)	Chepti	III	Fd	VU A2acde+3cde	D
<i>SUB FAMILY: Cultrinae</i>					
<i>Securicula gora</i> (Hamilton, 1822)	Chela / Ghora Chela	II	Fd	LC	UK
<i>SUB FAMILY: Rasborinae</i>					
<i>Aspidoparia jaya</i> (Hamilton, 1822)	Boroli / Bairali	IV	Fd	LC	D
<i>Cabdio morar</i> (Hamilton, 1822)	Boroli / Bairali	III	Fd	LC	UK
<i>Barilius tileo</i> (Hamilton, 1822)	Bolla	II	Fd	LC	UK
<i>Raiamas bola</i> (Hamilton, 1822)	Ghol / Sikari / Bola / Alan / Boroli	II	Fd	LC	UK
<i>Barilius barila</i> (Hamilton, 1822)	Boroli / Bairali	I	Fd	LC	UK
<i>Barilius barna</i> (Hamilton, 1822)	Dagi Ghakshi / Chipra / Boroli / Pithalu	I	Fd	LC	ST
<i>Barilius bendelisis</i> (Hamilton, 1807)	Kaksa / Darangi Ghakshi / Boroli / Kelu	I	Fd	LC	ST
<i>Barilius shacra</i> (Hamilton, 1822)	Ghakshi / Boroli	I	Fd	LC	UK
<i>SUB FAMILY: Danioninae</i>					
<i>Amblypharyngodon microlepis</i> (Bleeker, 1853)	Mourla	II	Fd/Or	LC	UK
<i>Rasbora daniconius</i> (Hamilton, 1822)	Darkina / Dankani / Dadhika	I	Fd/Or	LC	UK
<i>Esomus danricus</i> (Hamilton, 1822)	Darika	II	Fd/Or	LC	ST
<i>Devario devario</i> (Hamilton, 1822)	Chapling / Debra / Chebli / Chapchata	II	Fd/Or	LC	UK

<i>Brachydanio rerio</i> (Hamilton, 1822)	Anju / Zebra fish	II	Or	NA	UK
<i>Bengala elanga</i> (Hamilton, 1822)	Darkina / Elanga	II	Or	NA	UK
SUB FAMILY: Labeoninae					
<i>Cirrhinus cirrhosus</i> (Bloch, 1795)	Mrigal	II	Fd	VU D2	D
<i>Labeo rohita</i> (Hamilton, 1822)	Ruhi / Rui/ Rohu	II	Fd	LC	UK
<i>Labeo gonius</i> (Hamilton, 1822)	Gharea / Kurchi / Goni	III	Fd	LC	UK
<i>Labeo bata</i> (Hamilton, 1822)	Bata	I	Fd	LC	UK
<i>Labeo calbasu</i> (Hamilton, 1822)	Kalbaus	II	Fd	LC	UK
<i>Bangana dero</i> (Hamilton, 1822)	Kursha (Kalabans)	III	Fd	LC	UK
<i>Labeo dyocheilus</i> (McClelland 1839)	Langsha / Ghor Rui	II	Fd	LC	UK
<i>Bangana ariza</i> (Hamilton, 1807)	Bhagna Bata	II	Fd	LC	UK
SUB FAMILY: Barbinae					
<i>Puntius sophore</i> (Hamilton, 1822)	Deshi Puthi / Jat Puthi	II	Fd/Or	LC	UK
<i>Puntius conchonius</i> (Hamilton, 1822)	Kanchan Puthi	II	Fd/Or	LC	UK
<i>Puntius gelius</i> (Hamilton, 1822)	Golden barb / Teli Moa / Tepi Mola	III	Or	LC	UK
<i>Puntius terio</i> (Hamilton, 1822)	Teri-puthi	I	Fd/Or	LC	UK
<i>Puntius ticto</i> (Hamilton, 1822)	Tita-puthi / Tit-puthi	II	Fd/Or	LC	UK
<i>Puntius phutunio</i> (Hamilton, 1822)	Spottedsail barb / Phutuni Puti	III	Or	LC	UK
<i>Systemus sarana</i> (Hamilton, 1822)	Sar-puthi / Saral-puthi	II	Fd	LC	UK
<i>Oreochthys crenuchooides</i> (Schäfer, 2009)	Pakhna Puti	IV	Or	DD	UK
<i>Oreochthys cosuatis</i> (Hamilton, 1822)	Bhuti Puti	IV	Or	LC	UK
SUB FAMILY: Garrinae					
<i>Crossocheilus latius latius</i> (Hamilton, 1822)	Kalagachi	II	Fd	LC	UK
<i>Garra mcClellandi</i> (Jerdon, 1849)	Kusma	II	Fd	LC	UK
FAMILY: PSILORHYNCHIDAE					
<i>Psilorhynchus sucatio</i> (Hamilton, 1822)	Baluchata / Nou-chata / Balitita / Kakshi	I	Fd/Or	LC	ST
<i>Psilorhynchus balitora</i> (Hamilton, 1822)	Baluchata / Titari	I	Fd/Or	LC	UK
FAMILY: BALITIRIDAE					
SUB FAMILY: Nemacheilinae					
<i>Acanthocobitis botia</i> (Hamilton, 1822)	Ghar-poia / Khorkey	I	Fd/Or	LC	D
FAMILY: COBITIDAE					
SUB FAMILY: Cobitinae					
<i>Lepidocephalichthys guntea</i> (Hamilton, 1822)	Poia / Poa	I	Fd/Or	LC	UK
<i>Somileptes gongota</i> (Hamilton, 1822)	Guttum /Gongota Loach	II	Fd/Or	NA	UK
<i>Acanthocobitis botia</i> (Hamilton, 1822)	Poia	II	Fd/Or	LC	D
<i>Schistura beavani</i> ((Günther, 1868)	Poia	II	Fd/Or	LC	UK
SUB FAMILY: Botiinae					
<i>Botia dario</i> (Hamilton, 1822)	Botya / Bou Mach / Betrangi	III	Fd/Or	LC	UK
<i>Botia lohachata</i> (Chaudhuri, 1912)	Ghutor Poa / Baghlata	III	Fd/Or	NA	UK
ORDER: SILURIFORMES					
FAMILY: BAGRIDAE					
<i>Batasio tengana</i> (Hamilton, 1822)	Bhutani Tengra	III	Fd/Or	LC	UK
<i>Mystus vittatus</i> (Bloch, 1794)	Tengra	II	Fd/Or	LC	D
<i>Mystus tengra</i> (Hamilton, 1822)	Godhuli Tengra	II	Fd/Or	LC	UK
<i>Mystus bleekeri</i> (Day, 1877)	Golsa Tengra	III	Fd	LC	UK
<i>Mystus menoda</i> (Hamilton, 1822)	Ghora Kanta	III	Fd/Or	NA	UK
<i>Rita rita</i> (Hamilton, 1822)	Rita	III	Fd/Or	LC	D
<i>Sperata seenghala</i> (Sykes, 1839)	Aar	II	Fd	LC	UK
<i>Sperata aor</i> (Hamilton, 1822)	Guchi Aar	II	Fd	LC	ST
FAMILY: SILURIDAE					
<i>Ompok pabo</i> (Hamilton, 1822)	Pabda	III	Fd	NT	D
<i>Ompok pabda</i> (Hamilton, 1822)	Pabda	III	Fd	NT	D
<i>Wallago attu</i> (Bloch & Schneider, 1801)	Boal	III	Fd	NT	D
FAMILY: SCHILBEIDAE					
SUB FAMILY: Ailiinae					
<i>Ailia coila</i> (Hamilton, 1822)	Kajuli / Banspati	III	Fd	NT	D
SUB FAMILY: Schilbeinae					
<i>Clupisoma garua</i> (Hamilton, 1822)	Khaura / Gharua	II	Fd	LC	D
<i>Eutropiichthys vacha</i> (Hamilton, 1822)	Bacha	II	Fd	LC	D
FAMILY: AMBLYCIPITIDAE					
<i>Amblyceps mangois</i> (Hamilton, 1822)	Jal-Singi	IV	Or	LC	UK
FAMILY: SISORIDAE					
<i>Glyptothorax telchitta</i> (Hamilton, 1822)	Telchitta	IV	Or	LC	UK

Phototaxis response of some zooplankton

<i>Glyptothorax horai</i> (Fowler, 1934)	Ailsa / Kala kabri	III	Fd/Or	LC	UK
<i>Laguvia shawi</i> (Hora, 1921)	Khat Khuta Tengra	III	Or	NA	UK
<i>Gogangra viridescens</i> (Hamilton, 1822)	Kea-Kanta (Kaoua Tengra)	I	Fd/Or	LC	UK
<i>Bagarius bagarius</i> (Hamilton, 1822)	Bagha Aar	IV	Fd	NT	D
<i>Erethistes pusillus</i> (Müller & Troschel, 1849)	Tarkanta / konakanta	III	Or	LC	UK
<i>Conta conta</i> (Hamilton, 1822)	Tiktiki Mach	IV	Or	DD	UK
FAMILY: CLARIIDAE					
<i>Clarias batrachus</i> (Linnaeus, 1758)	Magur	III	Fd	LC	UK
FAMILY: HETEROPNEUSTIDAE					
<i>Heteropneustes fossilis</i> (Bloch, 1794)	Singi / Sing	III	Fd	LC	ST
FAMILY: CHACIDAE					
<i>Chaca chaca</i> (Hamilton, 1822)	Chega	III	Or	NA	UK
ORDER: CYPRINODONTIFORMES					
FAMILY: APLOCHEILIDAE					
<i>Aplocheilus panchax</i> (Hamilton, 1822)	Te-chokha	II	Or	LC	UK
ORDER: BELONIFORMES					
FAMILY: BELONIDAE					
<i>Xenentodon cancila</i> (Hamilton, 1822)	Kankley / Kakley / Khata	II	Fd/Or	LC	UK
FAMILY: SYNGNATHIDAE					
<i>Microphis deocata</i> (Hamilton, 1822)	Nol mach / Gharial mach	IV	Or	NT	UK
ORDER: SYNBRANCHIFORMES					
FAMILY: SYNBRANCHIDAE					
<i>Monopterusuchia</i> (Hamilton, 1822)	Kuchia	III	Fd	LC	UK
FAMILY: MASTACEMBELIDAE					
<i>Mastacembelus armatus</i> (Lacepede, 1800)	Bam /Bain	II	Fd/Or	LC	UK
<i>Macrogathus aculeatus</i> (Bloch, 1786)	Guchi / Gota	II	Fd/Or	NA	UK
<i>Macrogathus pancalus</i> (Hamilton, 1822)	Pankal / Pakal / Gota	II	Fd/Or	LC	UK
ORDER: PERCIFORMES					
FAMILY: CHANNIDAE					
<i>Channa marulius</i> (Hamilton, 1822)	Shal	III	Fd	LC	UK
<i>Channa striata</i> (Bloch, 1793)	Shol	III	Fd	LC	UK
<i>Channa orientalis</i> (Bloch & Schneider, 1801)	Chang	II	Fd/Or	NA	UK
<i>Channa punctata</i> (Bloch, 1793)	Sati / Taki (Lata)	I	Fd	LC	UK
FAMILY: AMBASSIDAE					
<i>Chanda nama</i> (Hamilton, 1822)	Nama Chanda	II	Or	LC	D
<i>Parambassis ranga</i> (Hamilton, 1822)	Ranga Chanda / Lal-chanda	II	Or	LC	ST
<i>Pseudambassis baculis</i> (Hamilton, 1822)	Chanda	II	Or	LC	D
FAMILY: NANDIDAE					
SUB FAMILY: Nandinae					
<i>Nandus nandus</i> (Hamilton, 1822)	Bheda / Meni	II	Fd	LC	UK
SUB FAMILY: Badinae					
<i>Badis badis</i> (Hamilton, 1822)	Napit Mach / Bot Koi	III	Or	LC	UK
FAMILY: MUGILIDAE					
<i>Rhinomugil corsula</i> (Hamilton, 1822)	Fasalla / Kharsula	III	Fd	LC	UK
<i>Sicamugil cascasia</i> (Hamilton, 1822)	Khaskhasia / Parse	IV	Fd	LC	UK
FAMILY: GOBIIDAE					
SUB FAMILY: Gobiinae					
<i>Glossogobius giuris</i> (Hamilton, 1822)	Balia / Beley	II	Fd/Or	LC	UK
FAMILY: ANABANTIDAE					
<i>Anabas testudineus</i> (Bloch, 1792)	Koi	II	Fd	DD	UK
FAMILY: OSPHRONEMIDAE					
SUB FAMILY: Luciocephalinae					
<i>Trichogaster fasciatus</i> (Bloch & Schneider, 1801)	Khalisha / Kholsha	I	Fd/Or	NA	UK
<i>Trichogaster labiosa</i> (Day, 1877)	Ranga-kholisha / Kholsha	I	Or	NA	UK
<i>Trichogaster chuna</i> (Hamilton, 1822)	Chuna kholisha (Dhutra)	III	Or	LC	UK
ORDER: TETRAODONTIFORMES					
FAMILY: TETRAODONTIDAE					
<i>Tetraodon cutcutia</i> (Hamilton, 1822)	Tepa / Tayapa	II	Fd/Or	LC	UK

Note: Abundance category: I= Very common; II= Common; III= Rare; IV= Very rare
Economic importance: Fd=Food fish; Or=Ornamental fish.

Status & Trend: LC=Least Concern; NT= Near Threatened; EN=Endangered; NA= Not assessed; VU=Vulnerable; DD= Data Deficient; D=Decreasing; UK=Unknown; ST=Stable

ACKNOWLEDGEMENT

The author is grateful to the UGC for financial assistance, to the authorities of WBBB, for motivation and to colleagues Dr. A. Patra, Dr. M. L. Acherjee and Dr. P. Jha for their valuable suggestions.

REFERENCES

Acherjee, M. L., Barat, S. (2012) Ichthyofaunal diversity of Teesta river in Darjeeling Himalaya of West Bengal, India. *Asian J. Exp. Biol. Sci.* 4(1): 112-122.

Agarwal, S. C. (2006) *History of Indian Fishery*. Daya Publishing House, Delhi, India.

Alcock, A.W. (1898) A systematic account on the zoological collection made on the road to the Pamirs. In: *Report on the Natural History Results of the Pamir Boundary Commission*. Superintendent of Government Printing Press, Calcutta, India.

Bagra, V. and Das, D. N. (2010) Fish diversity of river Siyom of Arunachal Pradesh, India: A Case Study. *Our Nature*. 8: 164-169.

Banerjee, S., Paul, M., Gupta, S. (2009) Fish fauna of major rivers of Darjeeling district, with special reference to their conservation status. *Rec. Zool. Surv. India*. 109(P-4): 15-23.

Barat, S., Dey, A., Nur, R., Sarkar, D. (2015) Ichthyofauna diversity of river Kaljani in Cooch Behar district of West Bengal, India. *Int. J. Pure App. Biosci.* 3(1): 247-256.

Blanford, W. T. (1901) Distribution of vertebrate animals in India, Ceylon and Burma. *Phil. Trans. Roy. Soc. London*, 194: 335–436.

Bleeker, P. (1853) Bijdrage tot de kennis der Muraenoiden en Symbranchoiden van den Indischen Archipel. *Verh. Batav. Gen.*, 25: 1–76.

Bleeker, P. (1854) Nalezingen op de ichthyologische fauna van Bengalen en Hindostan. *Verh. Batav. Gen.*, 26: 1–166.

Bleeker, P. (1863) Systema cyprinoideorum revisum. *Ned. Tijdschr. Dierk.*, 1: 187–218.

Cuvier, G. L. C. F. D. (1817) *Le Regne Animal distribue d' apres son organisation*. Chez Deterville, Paris, France.

Cuvier, G. L. C. F. D., Valenciennes, A. (1828– 1849) *Histoire Naturelle des Poisons*, 22 volumes. Paris–Strasbourg, France: Levrault..

Day, F. (1865) *The Fishes of Malabar*. Quaritch, London, UK.

Day, F. (1873) *Report on the Fresh-water Fish and Fisheries of India and Burma*. Office of the Superintendent, Government Printing Press, Calcutta, India.

Day, F. (1889) *The Fauna of British India, Including Ceylon and Burma*. Taylor and Francis, London, UK.

Gunther, A. (1868) *Catalogue of the Fishes in the British Museum*, Vol. 5. British Museum, London, UK.

Hamilton, F. (1807) *A Journey From Madras Through the Countries of Mysore, Canara and Malabar*, (3 volumes). East India Company, London, UK.

Hamilton, F. (1822) *An Account of the Fishes Found in the River Ganges and Its Branches*. Archibald Constable and Co., Edinburgh and London, UK.

Heckel, J.J. (1838) *Fische aus Caschmir Gesammelt und Herausgegeben von Carl Freiherrn V. Hugel, Beschrieben von Joh. Jacob Heckel*. Wein.

Jayaram, K.C. (1999) *The Freshwater Fishes of Indian Region*. Narendra Pub. House. New Delhi.

Jerdon, T. C. (1849) On the freshwater fishes of southern India. *Madras J. Lit. Sci.*, 15: 302–346.

McClelland, J. (1839) Indian cyprinidae. *Trans. Asiat. Soc. Bengal (Asiatic Res.)*, 19: 217–471.

McClelland, J. (1842) On the freshwater fishes collected by William Griffith during his travels from 1835 to 1842. *Calcutta J. Nat. Hist.*, 2: 560–589.

Mondal, K. and Bandyopadhyay, N. (2014) Present status of Ichthyofaunal diversity of different rivers of Duars of North Bengal, India. *J.T.B.S.R.R.* 3(1): 1-8).

Mukherjee, M., S. Sarkar, A. Sarkar. (2005) *Endangered Fishes of West Bengal with Special Reference to North Bengal—A Documentation on Research Restoration and Future Plan of Action*. Department of Fishery, Aquaculture, Aquatic Resources and Fishing Harbours, Government of West Bengal, Kolkata, India.

Patra, A.K., Datta, T. (2010) Diversity of Cypriniformes Fish Fauna in Karala River, A Tributary of Teesta River at Jalpaiguri District of West Bengal, India. *Research Journal of Biological Sciences*. 5(1): 106-110.

Patra, A. K., Sengupta, S., Dutta, T. (2011) Physico-chemical properties and ichthyofauna diversity in Karala river, a tributary of Teesta river at Jalpaiguri district of West Bengal, India. *Int. J. Applied Biol. Pharmaceutical Technol.* 2(3): 47-58.

Rajguru, S. (2003) *Asamia Prabhad* [Assamese Aphorisms] (in Assamese). Nagaon, India: Balagopal Prakashan.

Sen, T. K. (1992) Fresh water fish. In State Fauna Series 3. Pub. Zoological Survey of India. Kolkata. West Bengal.

Shaw, G. E., Shebbeare, E. O. (1937) The fishes of Northern Bengal. *J. Royal Asiat. Soc. Bengal (Science)*, 3(1): 1-137.

Phototaxis response of some zooplankton

Sharma, S., Baro, D. Ch. (2014) Ichthyofaunal diversity from Sonkosh river, Assam, India. *The Clarion*. 3(1): 18-24.

Talwar, P. K., A. G. Jhingran. (1991) *Inland Fishes of India and Adjacent Countries*, Vols. 1 and 2. New Delhi, India: Oxford and I.B.H. Publishing Company Ltd.

Tilak, R. (1975) On additions to the fish fauna of North Bengal. *Cheetal. J. Wld. Lif. Pre. Soc. India*. 15(4): 34-40.

Tilak, R. (1987) The Fauna of India and the adjacent countries: Pisces (Teleostomi). Zoological Survey of India. Calcutta.

www.fishbase.org
www.iucn.org
www.wikipedia.org