

Ichthyofauna Diversity of River Kaljani in Cooch Behar District of West Bengal, India

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ABSTRACT

The present study was conducted to generate a primary database on ichthyofauna diversity of river Kaljani flowing through Cooch Behar district of West Bengal, India. 138 indigenous fish species belonging to 31 families were identified. The family Cyprinidae represented the largest diversity accommodating 20 genera and 50 species. Amongst all the fishes 58 species have ornamental value and 55 species the food value. Ornamental fishes are dominant over the food fishes and carnivorous fishes are dominant over the omnivorous and herbivorous fishes. According to IUCN (International Union for Conservation of Nature) and CAMP (Conservation Assessment and Management Plan) the conservation status of the fishes are listed as, 1(0.72%) species as Critically Endangered, 13(9.42%) species as Endangered, 41(29.71%) species as Vulnerable, 35 (25.36%) species as at Lower Risk Near Threatened, 41(29.71%) species as Lower Risk Least Concerned, 4 (2.89%) species as Data Deficient and 3(2.17%) species as Not Evaluated. It is concluded, that anthropogenic pressure arising out of agriculture run offs, indiscriminatory use of fishing with new fishing technologies and widespread habitation of people have contributed to the vulnerability of the fish diversity.

Keywords: Ichthyofauna diversity, Kaljani river, Cooch Behar, Ornamental fish, Conservation status.

INTRODUCTION

Cooch Behar district being situated near the state of Assam, and lying between 25° 57'47" to 26° 36'2" North latitude and between 89° 54'35" to 88°47'44" East longitude, is unique in its topography and climatic characteristics. It has a total water stretch of approximately 6121 ha including hill stream rivers, beels and others aquaculture resources and fishes are invariable living components of these water bodies. These organisms are important food resources and good indicators of the ecological health of the waters they inhabit. The diversity within the fresh water ecosystem has a great importance in terms of the livelihood and the economic importance of the people living around it. Accordingly the relation between the biodiversity and human well-being is inter-related and is being promoted increasingly through the concept of ecosystem services provided by the species. Biodiversity is essential for stabilization of ecosystem, protection of overall environmental quality for understanding intrinsic worth of all species on the Earth¹. The Cooch Behar district shows close similarities with the North Eastern States of India, particularly Assam, in terms of its richness and magnificent biodiversity. The North Eastern region of India is considered to be one of the major hotspots of freshwater fish biodiversity in the world². Earlier studies report 230 fish species from the North Eastern India by Sinha³ and 422 species reported from North East India by Goswami *et al.*,⁴ Kar *et al.*,⁵ also reported 69 species from North Eastern India.

A great number of species have been reported from most of the North Eastern states but in Cooch Behar district no such report on fish biodiversity has been reported. Among all the rivers flowing through the district of Cooch Behar, Kaljani is the richest in fresh water fish biodiversity. This river which is about 96 Km long originates from Gabaur Bachhra forest, lying in the borders of Bhutan and West Bengal, and outfalls into Shiltorsa in Cooch Behar. Few workers have studied on fish diversity of Northern region of West Bengal^{6,7,8,9,10,11}. The existing literatures do not give specific distribution of fish fauna in different water bodies of the Cooch Behar district. The present study, therefore, is aimed at to update the ichthyofaunal diversity in the river Kaljani and to get a database on the distribution of fish species in the Cooch Behar district.

MATERIALS AND METHODS

The study was conducted in river Kaljani in Coochbehar district covering an area of about 9 Km in the lower reaches of the river, that is, from Amlaguri to Chhat Bhelakopa. The work was surveyed over a period of two years (August 2012 to August 2014). The sampling areas were divided into 4 sites namely, Amlaguri (26°34' N latitude and 89°58' E longitude), Chhatoa (26°32' N latitude and 89°58' E longitude), Jaigir Chilakhana (26°31' N latitude and 89°58' E longitude), and Chhat Bhelakopa (26°29' N latitude and 89°58' E longitude). Distance among the sample sites was 3 Km. Fishes were collected from different sites with the help of fishermen using different types of nets namely, gill nets, cast nets, dip nets, drag nets and other locally designed fishing gears like *Katal* fishing gear. In *Katal* fishing technique, some area of the river is temporarily fenced off by bamboo and *Eichhornia* or *Pistia* sp. After a few days, these areas are covered by nets and the fishes are caught by cast net. This method is applied throughout the year except monsoon. The harvested fishes are then preserved in 10 % formaldehyde solution¹². Fish photographs were taken from fresh samples by camera (Nikon, Coolpix L24) and were identified following their general body form, morphometric and meristic characteristics according to Talwar and Jhingran¹³, Jayaram¹², and Vishwanath *et al.*¹⁴ Conservation status of fish is given as per Conservation Assessment and Management Plan¹⁵ (CAMP) and International Union for Conservation of Nature¹⁶ (IUCN).

RESULTS AND DISCUSSION

About 138 fish species were recorded in the present study which belonged to 31 families (Table-1). As seen from Fig.2, the most dominant fish families contributing to the study was Cyprinidae: 50 species and Sisoridae: 14 species. The less dominant family than Cyprinidae was Bagridae contributing 11 species and Cobitidae: 8 species. The families Belontiidae, Channidae, and Schilbeidae contributed to 6 species. Mastacembelidae represented 4 species and Balitoridae, Badidae and Siluridae represented 3 species. Ambassidae, Amblycipitidae, Clupeidae and Notopteridae contributed 2 species. Other families Anabantidae, Anguillidae, Aplocheilidae, Belonidae, Chacidae, Clariidae, Engraulididae, Gobiidae, Heteropneustidae, Mugilidae, Nandidae, Ophichthidae, Pangasiidae, Synbranchidae, Syngnathidae and Tetradontidae all contributed 1 species each. Among the 138 species, 55 species had food value, 58 species ornamental value and 25 species both ornamental and food value (Table-1). Bhattacharya *et al.*¹⁷ reported 52 indigenous ornamental fish species occurring in the North East. Mahapatra *et al.*²⁴ reported 190 fish species from West Bengal. Ponniah¹⁸ reported that fish species of North East India showed 250 potential ornamental fish species. In case of West Bengal, the survey and enlistment of indigenous ornamental fishes is fragmentary represented by a few works^{19, 20, 21, 22}. Therefore, in the present study an attempt has been made to explore the available indigenous ornamental fish fauna of West Bengal. Ornamental fishes were dominant over the food fishes. All the three types of feeding habit of fishes like carnivorous, omnivorous and herbivorous were available in this region. About 97 species of fishes are carnivorous, 28 species are omnivorous and 13 species are herbivorous fish (Table-1). Similar findings were reported from tropical rivers of India^{22,8}. The evaluation of conservation status of the fishes and the results of the present study revealed that 25.36% of the fishes belonged to lower risk near threatened (LRnt), 29.71% vulnerable (VU), 29.71% lower risk least concern (LRlc) 2.17% not evaluated (NE),

9.42% endangered (EN), 0.72% critically endangered (CEN) and 2.89% data deficient (DD) category) in Fig-1. Month wise availability of fish species were high in the months of November (2012) to April (2013) and September (2013). Chhat Bhelakopa (Site -4) had the richest diversity than the other sites. *Pangasius pangasius* is a critically endangered species, found in this region. *Hilsa toli* was also found at Chhat Bhelakopa (Site-4) only during monsoon.

Fig. 1: Sector diagram showing the percentage of conservation status of fishes in river Kaljani recorded during the period 2012-14

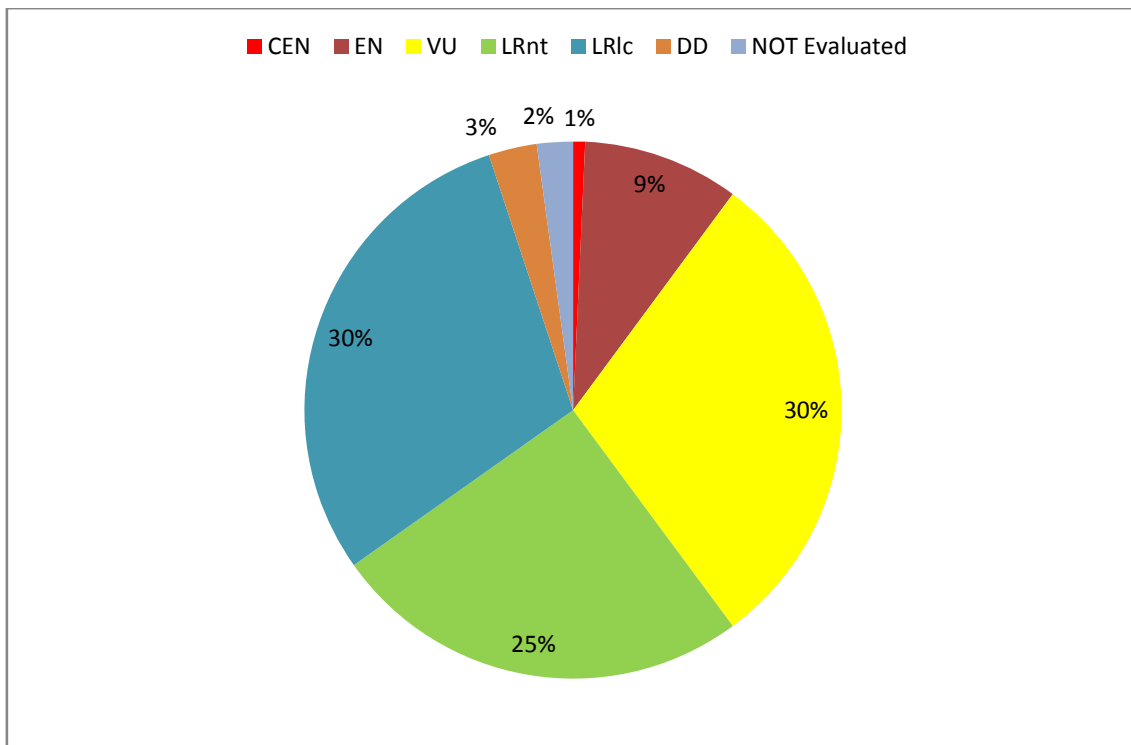


Fig. 2: Bar diagram showing the family wise distribution of fishes in the river Kaljani

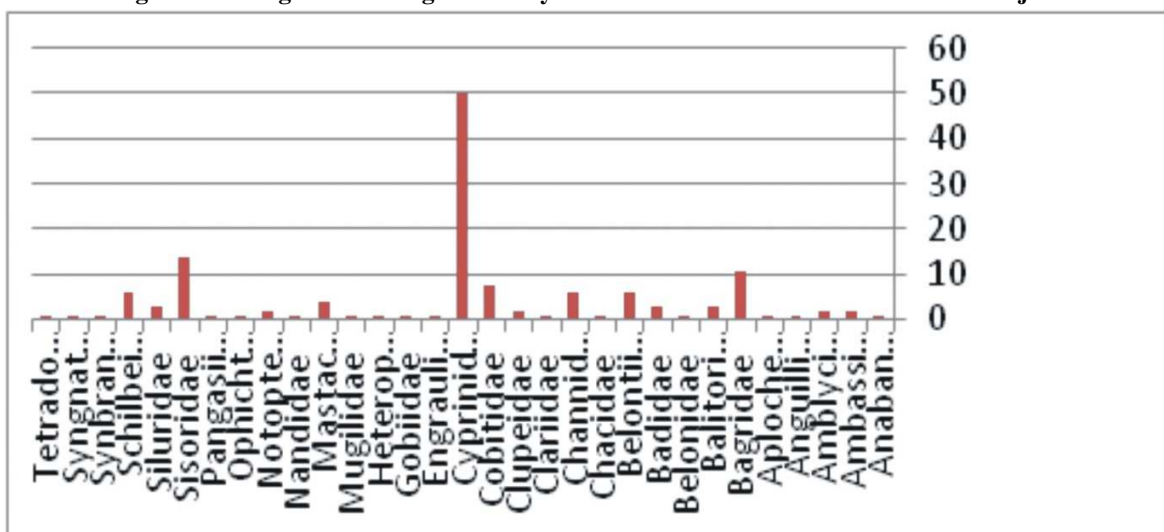


Table 1: Ichthyofauna Diversity of River Kaljani in Cooch Behar District of West Bengal

S No.	Scientific name of fishes	Family	Conservation Status	Kaljani				Economic importance	Food habit
				Site- 1	Site-2	Site-3	Site-4		
1	<i>Anabas testudineus</i> (Bloch)	Anabantidae	VU	✓	✓	✓	✓	Fd	C
2	<i>Pseudambassis ranga</i> (Hamilton-Buchanan)	Ambassidae	LRnt	✓	✓	✓	✓	Or	C
3	<i>Chanda nama</i> (Hamilton-Buchanan)	Ambassidae	LRnt	✓	✓	✓	✓	Or	C
4	<i>Amblyceps mangois</i> (Hamilton-Buchanan)	Amblycipitidae	EN	✓	-	-	-	Or	C
5	<i>Amblyceps tuberculatum</i> (Linthoingambi and Vishwanath)	Amblycipitidae	LRlc	✓	✓	✓	✓	Or	C
6	<i>Anguilla bengalensis</i> (Gray)	Anguillidae	EN	✓	✓	✓	✓	Fd	O
7	<i>Aplocheilus panchax</i> (Hamilton)	Aplocheilidae	LRlc	✓	✓	-	✓	Or	O
8	<i>Mystus bleekeri</i> (Day)	Bagridae	VU	✓	✓	✓	✓	Fd/Or	C
9	<i>Mystus carcio</i> (Hamilton)	Bagridae	LRlc	✓	✓	✓	✓	Fd/Or	C
10	<i>Mystus cavasius</i> (Hamilton)	Bagridae	LRnt	✓	✓	✓	✓	Fd/Or	O
11	<i>Mystus tengara</i> (Hamilton)	Bagridae	LRlc	✓	✓	✓	✓	Fd/Or	C
12	<i>Mystus gulio</i> (Hamilton)	Bagridae	LRlc	✓	✓	✓	✓	Fd/Or	C
13	<i>Mystus vittatus</i> (Bloch)	Bagridae	VU	✓	✓	✓	✓	Fd/Or	C
14	<i>Sperata aor</i> (Hamilton)	Bagridae	VU	✓	✓	✓	✓	Fd	C
15	<i>Sperata seenghala</i> (Sykes)	Bagridae	VU	✓	✓	✓	✓	Fd	C
16	<i>Batasio affinis</i> (Blyth)	Bagridae	LRnt	✓	✓	✓	✓	Fd/Or	C
17	<i>Rita rita</i> (Hamilton -Buchanan)	Bagridae	VU	✓	✓	✓	✓	Fd/Or	C
18	<i>Balitora brucei</i> (Gray)	Balitoridae	VU	✓	✓	✓	✓	Or	O
19	<i>Schistura fasciata</i> (Lokeshwar and Vishwanath)	Balitoridae	NE	✓	✓	✓	✓	Or	C
20	<i>Schistura tirapensis</i> (Kottelat)	Balitoridae	LRlc	✓	✓	✓	✓	Or	C
21	<i>Xenentodon cancila</i> (Hamilton)	Belonidae	LRlc	✓	✓	✓	✓	Or	C
22	<i>Badis assamensis</i> (Ahl)	Badidae	DD	✓	✓	-	✓	Or	C
23	<i>Badis badis</i> (Hamilton)	Badidae	LRlc	✓	✓	✓	✓	Or	C
24	<i>Badis bengalensis</i> (Hamilton)	Badidae	LRlc	✓	✓	✓	✓	Or	C

25	<i>Ctenops nobilis</i> (McClelland)	Belontiidae	LRnt	✓	✓	✓	✓	Or	O
26	<i>Colisa fasciatus</i> (Schneider)	Belontiidae	LRnt	✓	✓	✓	✓	Or	C
27	<i>Colisa labiosus</i> (Day)	Belontiidae	LRlc	✓	✓	✓	✓	Or	C
28	<i>Colisa lalia</i> (Hamilton -Buchanan)	Belontiidae	LRlc	✓	-	✓	✓	Or	C
29	<i>Colisa sota</i> (Hamilton-Buchanan)	Belontiidae	LRlc	✓	✓	✓	✓	Or	C
30	<i>Colisa chuna</i> (Hamilton)	Belontiidae	LRnt	✓	✓	✓	✓	Or	C
31	<i>Chaca chaca</i> (Hamilton-Buchanan)	Chacidae	EN	✓	✓	✓	✓	Or	C
32	<i>Channa striata</i> (Bloch)	Channidae	LRlc	✓	✓	✓	✓	Fd	C
33	<i>Channa bleheri</i> (Vierke)	Channidae	LRnt	✓	✓	✓	✓	Fd/Or	C
34	<i>Channa gachua</i> (Hamilton)	Channidae	LRlc	✓	✓	✓	✓	Fd/Or	C
35	<i>Channa marulius</i> (Hamilton)	Channidae	LRnt	✓	✓	✓	✓	Fd	C
36	<i>Channa punctatus</i> (Bloach)	Channidae	LRlc	✓	✓	✓	✓	Fd	C
37	<i>Channa barca</i> (Hamilton)	Channidae	DD	✓	✓	✓	✓	Fd/Or	C
38	<i>Clarius batrachus</i> (Linnaeus)	Clariidae	VU	✓	✓	✓	✓	Fd	C
39	<i>Gudusia chapra</i> (Hamilton-Buchanan)	Clupeidae	EN	✓	✓	✓	✓	Fd	O
40	<i>Tenualosa toli</i> (Valenciennes)	Clupeidae	VU	-	-	-	✓	Fd	C
41	<i>Botia Dario</i> (Hamilton)	Cobitidae	VU	✓	✓	✓	✓	Fd/Or	C
42	<i>Botia rostrata</i> (Gunther)	Cobitidae	VU	✓	✓	-	✓	Or	C
43	<i>Botia lohachata</i> (Chaudhuri)	Cobitidae	EN	✓	-	✓	✓	Or	C
44	<i>Pangio pangio</i> (Hamilton)	Cobitidae	VU	✓	✓	✓	✓	Fd	C
45	<i>Cantophrys gongota</i> (Hamilton)	Cobitidae	VU	✓	✓	✓	✓	Or	C
46	<i>Lepidocephalichthys arunachalensis</i> (Datta and Barman)	Cobitidae	EN	✓	✓	✓	✓	Or	C
47	<i>Lepidocephalichthys berdmorei</i> (Blyth)	Cobitidae	LRlc	✓	✓	✓	✓	Or	C
48	<i>Lepidocephalichthys manipurensis</i> (Arunkumar)	Cobitidae	LRlc	✓	✓	✓	✓	Or	C
49	<i>Oreochthys casuatis</i> (Hamilton-Buchanan)	Cyprinidae	LRlc	✓	✓	✓	✓	Or	C
50	<i>Oreochthys crenuoides</i> (Schäfer)	Cyprinidae	DD	✓	✓	✓	✓	Or	C
51	<i>Chagunius chagunius</i> (Hamilton)	Cyprinidae	EN	✓	✓	✓	✓	Fd/Or	O
52	<i>Osteobrama belangeri</i> (Valenciennes)	Cyprinidae	LRnt	✓	✓	✓	✓	Fd	C
53	<i>Osteobrama cotio</i> (Hamilton)	Cyprinidae	LRnt	✓	✓	✓	✓	Fd	C
54	<i>Tor putitora</i> (Hamilton)	Cyprinidae	EN	✓	✓	✓	✓	Fd	O

55	<i>Tor tor</i> (Hamilton)	Cyprinidae	EN	✓	✓	✓	✓	Fd	O
56	<i>Amblypharyngodon mola</i> (Hamilton-Buchanan)	Cyprinidae	LRlc	✓	✓	✓	✓	Fd/Or	H
57	<i>Cirrhinus reba</i> (Hamilton)	Cyprinidae	VU	✓	✓	✓	✓	Fd	O
58	<i>Crossocheilus burmanicus</i> (Hora)	Cyprinidae	VU	✓	✓	✓	✓	Fd	O
59	<i>Garra kempfi</i> (Hora)	Cyprinidae	LRlc	✓	✓	✓	✓	Fd	H
60	<i>Garra gotyla</i> (Gray)	Cyprinidae	VU	✓	✓	✓	✓	Fd	H
61	<i>Garra lamta</i> (Hamilton)	Cyprinidae	LRlc	✓	✓	✓	✓	Fd	H
62	<i>Barilius barila</i> (Hamilton)	Cyprinidae	VU	✓	✓	✓	✓	Fd	O
63	<i>Barilius tileo</i> (Hamilton)	Cyprinidae	VU	✓	✓	✓	✓	Fd	O
64	<i>Barilius vagra</i> (Hamilton)	Cyprinidae	VU	✓	✓	✓	✓	Fd	O
65	<i>Barilius dogarsinghi</i> (Hora)	Cyprinidae	EN	✓	✓	✓	✓	Fd	O
66	<i>Barilius ngawa</i> (Vishwanath and Manojkumar)	Cyprinidae	LRlc	✓	✓	✓	✓	Fd	O
67	<i>Barilius bendelisis</i> (Hamilton)	Cyprinidae	VU	✓	✓	✓	✓	Fd	O
68	<i>Barilius barna</i> (Hamilton)	Cyprinidae	VU	✓	✓	✓	✓	Fd	O
69	<i>Aspidopario morar</i> (Hamilton)	Cyprinidae	VU	✓	✓	✓	✓	Fd/Or	C
70	<i>Devario devario</i> (Hamilton)	Cyprinidae	LRnt	✓	✓	✓	✓	Or	C
71	<i>Devario assamensis</i> (Barman)	Cyprinidae	VU	✓	✓	✓	✓	Or	C
72	<i>Rasbora daniconius</i> (Hamilton)	Cyprinidae	LRlc	✓	✓	✓	✓	Or	C
73	<i>Rasbora rasbora</i> (Hamilton)	Cyprinidae	LRlc	✓	✓	✓	✓	Or	C
74	<i>Raiamas bola</i> (Hamilton)	Cyprinidae	VU	✓	✓	✓	✓	Fd/Or	C
75	<i>Salmophasia bacaila</i> (Hamilton)	Cyprinidae	LRnt	✓	✓	✓	✓	Fd/Or	C
76	<i>Psilorhynchus sucatio</i> (Hamilton)	Cyprinidae	LRlc	✓	✓	✓	✓	Or	O
77	<i>Psilorhynchus balitora</i> (Hamilton)	Cyprinidae	VU	✓	✓	✓	✓	Or	O
78	<i>Psilorhynchus homaloptera</i> (Hora and Mukherji)	Cyprinidae	VU	✓	✓	✓	✓	Fd	O
79	<i>Psilorhynchus brucei</i> (Gray)	Cyprinidae	LRnt	✓	✓	✓	✓	Or	O
80	<i>Schizothorax labialus</i> (McClelland and Griffith)	Cyprinidae	LRnt	✓	✓	✓	✓	Fd/Or	C
81	<i>Labeo rohita</i> (Hamilton -Buchanan)	Cyprinidae	LRnt	✓	✓	✓	✓	Fd	H
82	<i>Labeo calbasu</i> (Hamilton)	Cyprinidae	LRlc	✓	✓	✓	✓	Fd	H
83	<i>Labeo gonius</i> (Hamilton)	Cyprinidae	VU	✓	✓	✓	✓	Fd	H
84	<i>Labeo dyocheilus</i> (McClelland)	Cyprinidae	VU	✓	✓	✓	✓	Fd	H
85	<i>Labeo bata</i> (Hamilton)	Cyprinidae	LRnt	✓	✓	✓	✓	Fd	H

86	<i>Labeo boga</i> (Hamilton)	Cyprinidae	LRnt	✓	✓	✓	✓	Fd	H
87	<i>Labeo pangusia</i> (Hamilton)	Cyprinidae	LRnt	✓	✓	✓	✓	Fd	H
88	<i>Catla catla</i> (Hamilton-Buchanan)	Cyprinidae	VU	✓	✓	✓	✓	Fd	H
89	<i>Cirrhinus mrigala</i> (Hamilton-Buchanan)	Cyprinidae	LRnt	✓	✓	✓	✓	Fd	O
90	<i>Puntius chola</i> (Hamilton-Buchanan)	Cyprinidae	LRlc	✓	✓	✓	✓	Or	C
91	<i>Puntius conchoniis</i> (Hamilton)	Cyprinidae	LRlc	✓	✓	✓	✓	Or	C
92	<i>Puntius phutunio</i> (Hamilton)	Cyprinidae	LRlc	✓	✓	✓	✓	Or	C
93	<i>Puntius sarana</i> (Hamilton)	Cyprinidae	VU	✓	✓	✓	✓	Fd	C
94	<i>Puntius sophore</i> (Hamilton)	Cyprinidae	LRnt	✓	✓	✓	✓	Or	C
95	<i>Puntius stolickanus</i> (Day)	Cyprinidae	LRlc	✓	✓	✓	✓	Or	C
96	<i>Puntius terio</i> (Hamilton)	Cyprinidae	LRnt	✓	✓	✓	✓	Or	C
97	<i>Puntius ticto</i> (Hamilton)	Cyprinidae	LRnt	✓	✓	✓	✓	Or	C
98	<i>Esomus danricus</i> (Hamilton-Buchanan)	Cyprinidae	LRlc	✓	✓	✓	✓	Or	O
99	<i>Setipinna phasa</i> (Hamilton- Buchanan)	Engraulidae	LRnt	✓	✓	✓	✓	Fd	C
100	<i>Glossogobius giuris</i> (Hamilton-Buchanan)	Gobiidae	LRnt	✓	✓	✓	✓	Fd	C
101	<i>Heteropneustes fossilis</i> (Bloch)	Heteropneustidae	VU	✓	✓	✓	✓	Fd	O
102	<i>Rhinomugil corsula</i> (Hamilton)	Mugilidae	VU	✓	✓	✓	✓	Fd/Or	H
103	<i>Macragnathus aral</i> (Bloch and Schneider)	Mastacembelidae	LRnt	✓	✓	✓	✓	Fd/Or	C
104	<i>Macragnathus morehensis</i> (Arunkumar and Tombi)	Mastacembelidae	LRlc	✓	✓	✓	✓	Fd/Or	C
105	<i>Macragnathus pancalus</i> (Hamilton)	Mastacembelidae	LRnt	✓	✓	✓	✓	Fd/Or	C
106	<i>Mastacembelus armatus</i> (Lacepede)	Mastacembelidae	LRlc	✓	✓	✓	✓	Fd/Or	C
107	<i>Nandus nandus</i> (Hamilton-Buchanan)	Nandidae	LRnt	✓	✓	✓	✓	Or	C
108	<i>Notopterus notopterus</i> (Pallas)	Notopteridae	EN	✓	✓	✓	✓	Fd	O
109	<i>Notopterus chitala</i> (Hamilton- Buchanan)	Notopteridae	EN	✓	✓	✓	✓	Fd	C
110	<i>Olyra longicaudata</i> (McClelland)	Bargridae	LRnt	✓	✓	✓	✓	Or	C
111	<i>Pisodonophis chilkensis</i> (Chaudhuri)	Ophichthidae	LRnt	✓	✓	✓	✓	Or	C
112	<i>Pangasius pangasius</i> (Hamilton-Buchanan)	Pangasiidae	CNE	✓	✓	✓	✓	Fd	C
113	<i>Bagarius bagarius</i> (Hamilton)	Sisoridae	VU	✓	✓	✓	✓	Fd	C
114	<i>Gagata cenia</i> (Hamilton)	Sisoridae	LRnt	✓	✓	✓	✓	Fd/Or	C
115	<i>Gagata dolichonema</i> (He)	Sisoridae	LRlc	✓	✓	✓	✓	Fd/Or	C
116	<i>Hara hara</i> (Hamilton)	Sisoridae	LRlc	✓	✓	✓	✓	Or	C
117	<i>Hara Jerdoni</i> (Day)	Sisoridae	LRlc	✓	✓	✓	✓	Or	C

118	<i>Hara horai</i> (Misra)	Sisoridae	NE	✓	✓	✓	✓	Or	C
119	<i>Conta conta</i> (Hamilton-Buchanan)	Sisoridae	NE	✓	✓	✓	✓	Or	C
120	<i>Conta pectinata</i> (Ng)	Sisoridae	LRlc	✓	✓	✓	✓	Or	C
121	<i>Sisor barakensis</i> (Vishwanath and Darshan)	Sisoridae	VU	✓	✓	✓	✓	Or	C
122	<i>Sisor rhabdophorus</i> (Hamilton)	Sisoridae	LRlc	✓	✓	✓	✓	Or	C
123	<i>Sisor chennuah</i> (Ng and Lahkar)	Sisoridae	DD	✓	✓	✓	✓	Or	C
124	<i>Glyptothorax indicus</i> (Talwar)	Sisoridae	LRlc	✓	✓	✓	✓	Or	C
125	<i>Glyptothorax cavia</i> (Hamilton)	Sisoridae	LRlc	✓	✓	✓	✓	Or	C
126	<i>Glyptothorax telchitta</i> (Hamilton)	Sisoridae	LRlc	✓	✓	✓	✓	Or	C
127	<i>Ompok pabda</i> (Hamilton)	Siluridae	VU	✓	✓	✓	✓	Fd	C
128	<i>Ompok pabo</i> (Hamilton)	Siluridae	EN	✓	✓	✓	✓	Fd	C
129	<i>Wallago attu</i> (Schneider)	Siluridae	VU	✓	✓	✓	✓	Fd	C
130	<i>Neotropius atherinoides</i> (Bloach)	Schilbeidae	LRlc	✓	✓	✓	✓	Fd	C
131	<i>Ailia coila</i> (Hamilton)	Schilbeidae	VU	✓	✓	✓	✓	Fd	C
132	<i>Clupisoma garua</i> (Hamilton)	Schilbeidae	VU	✓	✓	✓	✓	Fd	C
133	<i>Clupisoma Montana</i> (Hora)	Schilbeidae	VU	✓	✓	✓	✓	Fd	C
134	<i>Eutropiichthys murius</i> (Hamilton)	Schilbeidae	LRnt	✓	✓	✓	✓	Fd	C
135	<i>Eutropiichthys vacha</i> (Hamilton)	Schilbeidae	VU	✓	✓	✓	✓	Fd	C
136	<i>Amphipnous cuchia</i> (Hamilton-Buchanan)	Synbranchidae	VU	✓	✓	✓	✓	Fd	C
137	<i>Microphis deocata</i> (Hamilton-Buchanan)	Syngnathidae	LRnt	✓	✓	✓	-	Or	O
138	<i>Tetradon cutcutia</i> (Hamilton-Buchanan)	Tetradontidae	LRnt	✓	✓	✓	✓	Or	O

O= Omnivorous, C= Carnivorous, H=Herbivorous, Fd=Food fish, Or= Ornamental fish.

According to IUCN¹⁶ and CAMP¹⁵ DD= Data deficient, NE= Not evaluated, VU= Vulnerable, EN= Endangered, CNE= Critically endangered, LRnt=Lower risk near threatened, LRlc=lower risk least concern.

CONCLUSION

The present investigation thus helps to understand the ichthyofauna diversity in different reaches of river Kaljani. The highest demandable ornamental species like *Pseudambassis ranga*, *Chanda nama*, *Ctenops nobilis*, *Colisa lalia*, *Badis badis*, *Botia dario*, *Botia rostrata*, *Botia lohachata*, *Oreochthys casuatis*, *Oreochthys crenuchoides*, *Osteobrama cotio*, *Danio devario*, *Hara hara* and *Microphis deocata* are present. The area is very rich in ornamental fish than food fish. Swain²³ reported that about almost 85 % of the exportable ornamental fish are contributed by the North Eastern states. About 55.07 % population of fish species are threatened in the river Kaljani. In addition, introduction of exotic fishes, as a part of aquaculture for commercial gains, has also resulted in loss of indigenous ichthyofaunal diversity⁵. The fishing activities were intensified with the introduction of modern fishing gears and techniques which declined the fish population. Fish sanctuary needs to be established to preserve fish stocks and indigenous brood fishes. Thus, awareness programmes amongst the fishers, strict ban on illegal monsoon fishing and usage of proper mesh size nets should be involved. Besides, the protection of breeding grounds from agricultural run-offs and indiscriminate fishing of commercially important fish species should be established which would ultimately protect and conserve the precious fish species diversity of the river Kaljani.

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