



## Status of fish and fisheries in the river Pagla, Chapai Nawabganj, Bangladesh

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### Abstract

The present study was carried out at Chapai Nawabganj district under Rajshahi division, the north-western part of Bangladesh from January 2020 to December 2020 to observe the status of fish and fisheries in the Pagla River. A total number of 69 fish species of 37 genera under 19 families and 7 orders were identified. Among the identified 69 fish species, 12% were very rare and 23% were rare. Besides these, 11 species of fisheries items were also identified.

**Keywords:** fisheries species, the river Pagla

### Introduction

Bangladesh is considered one of the most appropriate zones for fisheries in the world, with the world's largest flooded wetland and the third largest aquatic biodiversity in Asia after China and India (Shamsuzzaman *et al.*, 2017) [13]. About 700 rivers present in Bangladesh and each river has its own biological, hydrological, sedimentary and geographical features (Alam *et al.*, 2013). Fishes are the most diverse and most abundant vertebrate in the world (Ghorbani *et al.*, 2013) [4]. Fish is one of the main sources of food and provides about 60% of the animal protein for the people of Bangladesh (DoF, 2019) [3].

Studies on the diversity of freshwater fish fauna of Bangladesh with reference are insufficient and scrappy. Some notable researchers on freshwater fish diversity of Bangladesh are Rahman (1989) [11], who included 206 species of freshwater bony fish of Bangladesh. Hossain *et al.* (2012) [7] studied on Fish diversity in Meghna river estuary and their habitat relationship with environment and reported 53 species. Joadder *et al.* (2015) [8] worked on Fishes of Padma River and their conservation status and reported 71 species. Pramanik *et al.* (2016) worked on Fish diversity and their conservation status in the river Meghna and total 107 species were recorded. Habib *et al.* (2016) studied on a Checklist of fish and fisheries in the river Padma, Rajshahi and reported 82 species. Khanom *et al.* (2018) [5] worked on Abundance and present status of fish biodiversity in Shiba River, Rajshahi and reported 30 species. Hasan *et al.* (2018) [6] worked on Fish biodiversity and their conservation of the river Dakatia, Bangladesh and reported 72 species. The present work represents the status of fish and fisheries in the river Pagla, Chapai Nawabganj. Pagla River is selected for the study area. It has been selected to know the status of fish and fisheries in the Pagla River. The Pagla River is situated in the north-western part of Bangladesh (Chapai Nawabganj district under Rajshahi division). The river lies between Bangladesh-India border line. The length of the river is 43 km. The river originated from Padma River in the part of West Bengal, India and attached to the estuary of Mahananda River at Fatapura of Sundarpur union in the district of Chapai Nawabganj.

### Materials and Methods

Data were collected in respect of weather condition, fishing activities and cause of depletion of fisheries mainly by interview method and survey method. The data regarding the present study were collected from the selected spot directly and personally from the fishermen and different fish traders like retailers, aratdar and beparies through the survey method, who have involved with the fishing and marketing of fish and fisheries items of Pagla River. Relatively different deep areas of Pagla River were selected for the investigation.

### Results and Discussion

A total number of 69 fish species of 37 genera under 19 families and 7 orders were identified (Table-1). According to order, among the identified 69 fish species, the most prevalent order was Cypriniformes comprising 23 numbers of species and the least prevalent order was Tetradontiformes comprising only one species. Other prevalent order were Siluriformes, Perciformes and Clupeiformes respectively. According to family, among the identified 69 fish species, the highest number of species were identified in Cyprinidae family comprising 23 species under 7 genera and the lowest (1) number of species were identified in some families such as Gobiidae, Nandidae, Pangasiidae, Sisoridae, Heteropneutidae, Tetradontidae, Anabantidae and Osphronemidae. According to local status, among the identified 69 fish species, 12% were very rare and 23%

were rare adequate height. Based on the morphometric characteristics, fish and fisheries items were identified initially on the spot. But, those species were troublesome to identify initially on the spot, were noted and carried to the laboratory. With the help of various related books such as Freshwater Fishes of Bangladesh (Rahman, 1989 and 2005) <sup>[11, 12]</sup>, Fishes of Uttarpradesh (Shrivastova, 1959) <sup>[14]</sup>, Inland Fishes Vol-1 and Vol-2 (Talwar and Jhingram, 1991) <sup>[15]</sup> and The Fishes of Dacca (Bhuiyan, 1964) <sup>[2]</sup> etc., the specimens were identified and classified systematically. Besides these, 11 species of fisheries items were also identified under the classes Crustacea, Gastropoda, Pelecypoda, Amphibia and Reptilia (Table-2).

Some common aquatic vegetation was seen in the study area which have endless value such as food, shelter etc. In the investigation, 6 types of crafts, one type of raft, 6 types of nets, 8 types of traps and different types of hooks and spears have been found in the study area. Fishes are caught by using traditional fishing methods. Some other types of fishing (Hand fishing, Cloth fishing, Bait fishing and De-watering fishing) were also seen. The overall condition of the river found as moderate. It may be concluded that, proper management strategy should be established to conserve fish and fisheries items and the environment of the river.

**Table 1:** Checklist of fishes found in the river Pagla during the study period

Systematic Account	English Name	Bangla Name	Local Status	Breeding Season
Order-1. Cypriniformes Family-1. Cyprinidae				
1. <i>Labeo rohita</i>	Anglo labeo, Rohu	Rui	Very common	April to July
2. <i>Labeo calbasu</i>	Orange fin labeo, Black rohu	Kalibaus	Common	April to July
3. <i>Labeo bata</i>	Bata labeo	Bata	Very common	June to Sept.
4. <i>Labeo nandina</i>	Nandi labeo	Nandina	Very rare	May to July
5. <i>Labeo boga</i>	Violet gilled shark	Bhangan	Very rare	May to July
6. <i>Catla catla</i>	Catla	Katla	Very common	April to July
7. <i>Cirrhinus mrigala</i>	Mrigal	Mrigal	Very common	May to July
8. <i>Cirrhinus cirrhosus</i>	Mrigal carp	Mrigal	Less common	May to July
9. <i>Cirrhinus reba</i>	Reba	Tatkini, Raikhor	Very common	April to July
10. <i>Puntius sarana</i>	Olive barb	Sar punti	Less common	April to July
11. <i>Puntius chola</i>	Swamp barb	Chala punti	Less common	April to Aug.
12. <i>Puntius conchonius</i>	Rosy barb	Kanchan punti	Less common	April to July
13. <i>Puntius ticto</i>	Ticto barb	Tit punti	Common	April to July
14. <i>Puntius sophore</i>	Pool barb	Jat punti	Common	April to July
15. <i>Puntius phuntui</i>	Spotted barb	Phutani punti	Rare	April to July
16. <i>Puntius gelius</i>	Golden barb	Gili punti	Less common	Monsoon
17. <i>Puntius derio</i>	Onespot barb	Teri punti	Less common	Not Known
18. <i>Puntius stigma</i>	-	Dento punti	Common	April to Aug.
19. <i>Cyprinus carpio</i>	Common carp, European carp	Mirror carp	Rare	Jan. to March, July to Aug.
20. <i>Hypophthalmichthys molitrix</i>	Silver carp	Silver carp	Common	May to June
21. <i>Ctenopharyngodon idella</i>	Grass carp	Grass carp	Common	April to June
22. <i>Aspidoparia jaya</i>	Jaya	Piyali	Very common	Winter & Monsoon
23. <i>Aspidoparia morar</i>	Aspidoparia	Morar	Less common	Winter & Monsoon
Order-2. Clupeiformes Family-2. Clupeidae				
24. <i>Tenualosa ilisha</i>	Hilsha shad	Ilish	Less common	Jan. to Mar., July to Nov.
25. <i>Gudusia chapra</i>	Indian river shad	Chapila, Khoira	Common	April to July
26. <i>Gudusia soborna</i>	Ganges river spral	Kanchki,	Common	Monsoon
27. <i>Gudusia variegata</i>	Burmese river shad	Chota khari	Common	Monsoon
28. <i>Gonialosa manmina</i>	Ganges river gizzard shad	Khori	Common	April to July
Family-3. Notopteridae				
29. <i>Notopterus Notopterus</i>	Bronge feather work	Foli	Common	May to July
30. <i>Notopterus chitala</i>	Clown knife fish	Chital	Common	May to July
Family-4. Engraulidae				
31. <i>Setipinna phasa</i>	Gangetic hairfin	Phasa	Rare	Feb. to March

	anchovy			
32. <i>Setipinna taty</i>	Scaly hairfin anchovy	Teli phasa	Rare	Feb. to June
Order-3. Perciformes Family-5. Gobiidae				
33. <i>Glossobius giurus</i>	Tank goby	Bele	Common	March to Oct.
Family-6. Cichlidae				
34. <i>Oreochromis Mossambicus</i>	Mozambique tilapia	Tilapia	Less common	March to Oct.
35. <i>Oreochromis niloticus</i>	Nile tilapia	Nilotica	Rare	Jan. to March, July to Sep.
Family-7. Anabantidae				
36. <i>Anabus testudineus</i>	Climbing perch	Koi	Less common	June to July
Family-8. Osphronemidae				
37. <i>Colisa fasciatus</i>	Banded gourami	Kholisa	Common	June to Oct.
Family-9. Ambassidae				
38. <i>Chanda nama</i>	Elongated glass perchlet	Nama chanda, Chanda	Very common	March to Oct.
39. <i>Pseudambassis lala</i>	High fin glass perchlet	Lal chanda	Less common	Monsoon
40. <i>Pseudambassis Ranga</i>	Indian glassy fish	Ranga chanda	Less common	Monsoon
41. <i>Pseudambassis beculis</i>	Himalayan glass perchlet	Kata chanda	Common	Monsoon
Family-10. Nandidae				
42. <i>Nandus nandus</i>	Mottled nandus	Bheda	Rare	Monsoon
Order-4. Mastacembeliformes Family-11. Mastacembelidae				
43. <i>Mastacembelus armatus</i>	Zig-zag eel	Sal baim	Very rare	April to July
44. <i>Macrognathus aculeatus</i>	Lesser spiny eel	Tara baim	Rare	Monsoon
45. <i>Macrognathus pancalus</i>	Barred spiny eel	Guchi baim	Less common	April to July
Order-5. Siluriformes Family-12. Siluridae				
46. <i>Wallago attu</i>	Freshwater shark	Boal	Very common	May to Aug.
47. <i>Ompok Pabda</i>	Pabda catfish	Pabda	Very rare	Monsoon
48. <i>Ompok bimaculatus</i>	Butter catfish	Kani pabda	Rare	June to Aug.
Family-13. Schilbeidae				
49. <i>Neotropius atherinoides</i>	Indian batasi	Batasi	Rare	May to Aug.
50. <i>Clupisoma garua</i>	Garua bachcha	Ghaura, Garua	Less common	March to July
51. <i>Clupisoma murius</i>	Murius vacha	Bacha	Very rare	Monsoon
52. <i>Eutropiichthys vacha</i>	Batchwa vacha	Bacha	Rare	Monsoon
53. <i>Ailia coila</i>	Gangetic ailia	Baspata	Rare	Monsoon
Family-14. Pangasiidae				
54. <i>Pangasius pangasius</i>	Yellow tail catfish	Pangas	Rare	March to July
Family-15. Sisoridae				
55. <i>Bagrius bagrius</i>	Devil catfish	Baghair	Rare	April to July
Family-16. Bagridae				
56. <i>Mystus bleekeri</i>	Days mystus	Gulsa tengra	Very rare	April to Aug.
57. <i>Mystus cavasius</i>	Gangetic mystus	Kabashi tengra	Common	April to July
58. <i>Mystus tengara</i>	Stripped dwarf catfish	Bajari tengra	Common	April to Aug.
59. <i>Mystus vittatus</i>	Asian stripped catfish	Tengra	Common	April to Aug.
60. <i>Sperata aor</i>	Long whiskered catfish	Ayre	Common	April to July
61. <i>Sperata seenghala</i>	Giant river catfish	Guijja, Ayre	Very rare	April to July
62. <i>Rita rita</i>	Rita	Rita, Rida	Less common	Monsoon
Family-17. Heteropneutidae				
63. <i>Heteropneustes fossilis</i>	Stinging catfish	Shing	Rare	Monsoon
Order-6. Channiformes Family-18. Channidae				

64. <i>Channa striatus</i>	Snakehead murrel	Shol	Common	April to June
65. <i>Channa marulis</i>	Great snakehead	Gajar	Very rare	April to June
66. <i>Channa punctatus</i>	Spotted snakehead	Taki, Lata	Common	Winter (May-August)
67. <i>Channa orientalis</i>	Walking snakehead	Cheng	Less common	Not Known
68. <i>Channa barca</i>	Barca snakehead	Tila shol	Rare	Monsoon
Order-7. Tetradontiformes Family-19. Tetradontidae				
69. <i>Tetraodon cutcutia</i>	Ocellated puffer fish	Potka, Tapa	Rare	Monsoon

**Table 2:** Checklist of fisheries items found during the study period

Systematic Account	English Name	Bangla Name	Local Status
Phylum-1. Arthropoda Class-1. Crustacea Order-1. Decapoda Family-1. Palaemonidae			
1. <i>Macrobrachium rosenbergii</i>	Giant river prawn	Golda chingri	Common
2. <i>Macrobrachium malcolmsonii</i>	Monsoon river prawn	Chotka icha, Thangua icha	Less common
3. <i>Macrobrachium lamarrei</i>	Kuncho river prawn	Gura icha, Kuncho chingri	Very common
4. <i>Macrobrachium dayanum</i>	Kaira river prawn	Beel chingri, Kaira icha	Common
Family-2. Cancridae			
5. <i>Cancer pagurus</i>	Rock crab, True crab	Kakra	Very common
Phylum-2. Mollusca Class-2. Gastropoda Order-2. Mesogastropoda Family-3. Pilidae			
6. <i>Pila globosa</i>	Apple snail	Shamuk	Very common
Class-3. Pelecypoda Order-3. Eulamellibranchiata Family-4. Unionidae			
7. <i>Unio sp.</i>	Freshwater mussel	Jhinuk	Very common
Phylum-3. Chordata Class-4. Amphibia Order-4. Anura Family-5. Ranidae			
8. <i>Rana hexadactyla</i>	Bull frog	Kola bang	Common
9. <i>Rana tigrina</i>	Indian bull frog	Sona bang	Common
Family-6. Bufonidae			
10. <i>Bufo melanostictus</i>	Asian common toad, True toad	Kuno bang	Common
Class-5. Reptilia Order-5. Squamata Family-7. Colubridae			
11. <i>Natrix piscator</i>	Water snake	Pani shap	Common

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