

Checklist of Fish Fauna of Four Rice Fields (Beel) in Pirojpur District, Bangladesh

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Abstract: The study was conducted to determine the fish species found in four beels in Pirojpur District, Bangladesh. Samples were collected with the help of local fishermen by using cast net, gill net, push net and traps. During this study period, a total number of 30 fish species were found which belong to 6 orders, 15 families and 21 genera. Order Perciformes was most dominant with 15 species followed by order Cypriniformes with eight species, the order Siluriformes with four species.

Keywords: Beel, Pirojpur, Rice field, Species composition

1. Introduction

According to Rahman (2005) there are 265 fresh water species of fresh water fishes in Bangladesh, belonging to 154 genera and 55 families. Moreover, there are 63 species of prawn and shrimps, 25 edible tortoises and turtle & 17 species of crabs (Shafi & Quddus 1982). According to Siddiqui *et al.* (2007), 29 genera with 62 local species are found in the freshwater of Bangladesh.

In the rainy season about one third of the country inundated (Khan *et al.* 1994). Rice fields become suitable ground for indigenous fish. The objective of this research is to make a check-list of available fish fauna of four rice fields (beel) of Pirojpur district of southern Bangladesh. It help to understand the present status of fish diversity and their composition which would facilitate further studies on this fauna by interested researchers.

2. Material and Methods

2.1 Site selection

The present study was conducted in four rice fields namely Nangguli, Biraljury in Kawkhali Upazila and Dhuliary-Kodomtola, Nayonkhar Kola in Pirojpur Sadar Upazila, Pirojpur district, Barisal division, Bangladesh. Nangguli rice field is located within the latitudes of 22°36'55.55" to 22°37'16.20" North and the longitudes of 90°05'22.50" to 90°05'46.77" East. Biraljury rice field is situated within the latitudes of 22°35'27.15" to 22°35'54.23" North and the longitudes of 90°05'07.11" to 90°05'30.34" East. Dhuliary-Kodomtola rice field is situated within the latitudes of 22°36'39.54" to 22°37'03.48" North and the longitudes of 89°57'52.02" to 89°58'07.90" East and the last one Nayonkhar Kola rice field is situated within the latitudes of 22°37'49.29" to 22°38'20.28" North and the longitudes of 89°56'48.33" to 89°57'12.85" East. Nangguli and Biraljury rice fields get water from Shandhya River while Dhuliary-Kodomtola, Nayonkhar Kola rice fields get from Baleshwar River through canal system. Map shows the geographical locations of four rice fields in Figure 1.

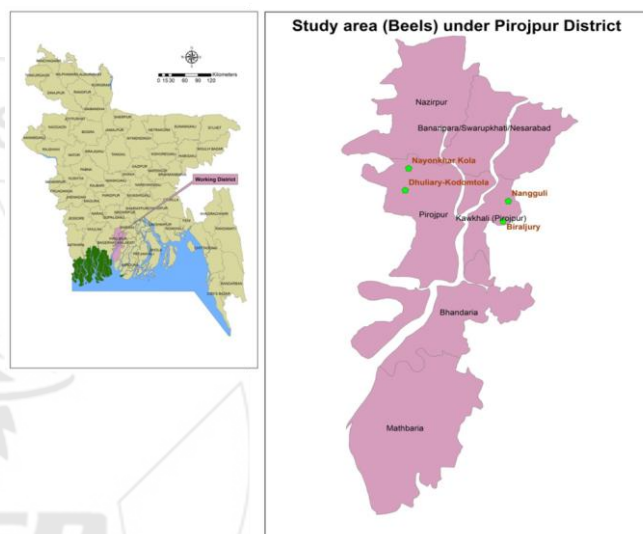


Figure 1: Map of Pirojpur district showing four rice fields (beel)

2.2 Sample collection and identification

The samples were captured from May to August 2016 from different parts of the respective beels. The samples were collected by five fishermen in every rice fields by using cast net (1 inch mesh), gill net (0.5-1 inch mesh), push net (0.5-1.0 inch mesh) and different types of fishing traps locally called Khuson, Chai. Different methods of fishing including night fishing were applied to ensure maximum harvesting of various species. Fishes were collected three times in a month. A total of 22631 fish specimens were collected from four beels. Familiar species were identified on the spots and unidentified species were preserved in formalin solution for further identification and taxonomy. Formalin solution was prepared by diluting one part of concentrated formalin or commercial formaldehyde with nine parts of water i.e., 10 % formalin (Hamilton-Buchanan 1822). The specimens were identified and classified by the help of Fresh water fishes of Bangladesh (Rahman, 2005), Encyclopedia of Flora and fauna of Bangladesh (Rahman et al. 2009), the standard keys of Qureshi & Qureshi (1983), the system mentioned by Nelson (2006), Talwar and Jhingran (1991), Shafi and Quddus (2001) and Bhuiyan (1964).

3. Results and Discussion

A total of 30 fish species belonging to 6 orders, 15 families and 21 genera were recorded during the research period. The details are given below (classified after Nelson, 2006)-

Order: Cypriniformes

Family: Cyprinidae

Genus: *Puntius*

1. *Puntius ticto* (Hamilton, 1822); Ticto barb
2. *Puntius sophore* (Hamilton, 1822); Pool barb
3. *Puntius sarana* (Hamilton, 1822); Olive barb
Genus: *Osteobrama*
4. *Osteobrama cotio cotio* (Hamilton, 1822); Cotio
Genus: *Rasbora*
5. *Rasbora rasbora* (Hamilton, 1822); Rasbora
Genus: *Amblypharyngodon*
6. *Amblypharyngodon mola* (Hamilton); Mola carplet
Family: Botiidae
Genus: *Botia*
7. *Botia Dario* (Hamilton, 1822); Bengal loach
8. *Botia dayi* (Hora, 1932); Loaches
Order: Siluriformes
Family: Bagridae
Genus: *Mystus*
9. *Mystus vittatus* (Bloch, 1794); Stripped dwarf catfish
10. *Mystus tengara* (Hamilton, 1822); Tenggara catfish
Family: Clariidae
Genus: *Clarias*
11. *Clarias batrachus* (Linnaeus, 1758); Walking catfish
Family: Heteropneustidae
Genus: *Heteropneustes*
12. *Heteropneustes fossilis* (Bloch, 1794); Stinging catfish
Order: Perciformes
Family: Mastacembelidae
Genus: *Mastacembelus*
13. *Mastacembelus armatus* (Lacepède, 1800); Zig-zag eel
Genus: *Macrognathus*
14. *Macrognathus pancalus* (Hamilton, 1822); Barred spiny eel
15. *Macrognathus aral* (Bloch & Schneider, 1801); Spiny eel
Family: Osphronemidae
Genus: *Colisa*
16. *Colisa fasciata* (Bloch & Schneider, 1801); Banded gourami
17. *Colisa lalia* (Hamilton, 1822); Dwarf gourami
Family: Channidae
Genus: *Channa*
18. *Channa punctata* (Bloch, 1793); Spotted snakehead
19. *Channa striata* (Bloch, 1793); Snakehead murrel
20. *Channa orientalis* (Bloch & Schneider, 1801); Walking snakehead
Family: Anabantidae
Genus: *Anabas*
21. *Anabas testudineus* (Bloch, 1792); Climbing perch
Family: Gobiidae
Genus: *Glossogobius*
22. *Glossogobius giuris* (Hamilton, 1822); Tank goby
Family: Ambassidae
Genus: *Parambassis*

23. *Parambassis lala* (Hamilton, 1822); Highfin glassy perchlet
24. *Parambassis ranga* (Hamilton, 1822); Indian glassy fish
Genus: *Chanda*
25. *Chanda nama* (Hamilton, 1822); Elongate glass perchlet
Family: Nandidae
Genus: *Nandus*
26. *Nandus nandus* (Hamilton, 1822); Mud perch
Genus: *Badis*
27. *Badis badis* (Hamilton, 1822); Dwarf chameleon fish
Order: Synbranchiformes
Family: Synbranchidae
Genus: *Monopterus*
28. *Monopterus cuchia* (Hamilton, 1822); Mud eel
Order: Tetraodontiformes
Family: Tetraodontidae
Genus: *Tetraodon*
29. *Tetraodon cutcutia* Hamilton, 1822; Ocellated pufferfish
Order: Cyprinodontiformes
Family: Aplocheilidae
Genus: *Aplocheilus*
30. *Aplocheilus panchax* (Hamilton, 1822); Blue panchax, Whitespot

Order Perciformes represented the highest species composition (50%) followed by Cypriniformes (26.66%), Siluriformes (13.33%). Other orders such as Synbranchiformes, Tetraodontiformes, Cyprinodontiformes were 3.33% each (Figure 2). Analyzing the catch composition of individual fish species it was revealed that *Puntius ticto*, *Puntius sophore*, *Puntius sarana*, *Rasbora rasbora* and *Macrognathus pancalus* were the most abundant species (Table 1).

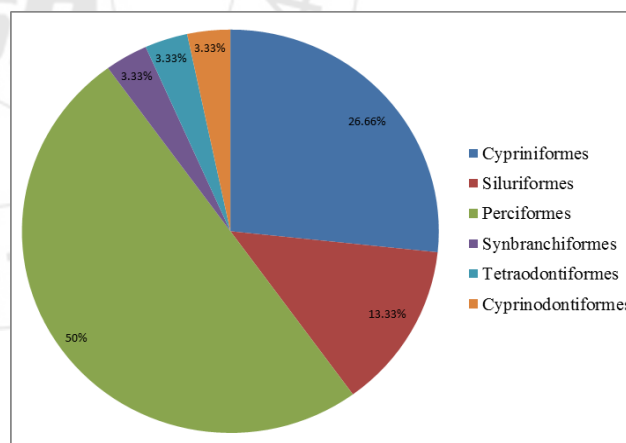


Figure 2: Percentage distribution of fish orders in four beels.

Table 1: Catch composition of fish species

Name of species	Total catch (No.)	Catch composition (%)
<i>Puntius ticto</i>	1644	7.264371879
<i>Puntius sophore</i>	2040	9.014184084
<i>Puntius sarana</i>	1785	7.887411073
<i>Osteobrama cotio cotio</i>	615	2.717511378
<i>Rasbora rasbora</i>	1461	6.455746542
<i>Amblypharyngo don mola</i>	1050	4.639653573
<i>Botia Dario</i>	315	1.391896072
<i>Botia dayi</i>	285	1.259334541
<i>Mystus vittatus</i>	675	2.982634439
<i>Mystus tengara</i>	630	2.783792144
<i>Clarias batrachus</i>	210	0.927930715
<i>Heteropneustes fossilis</i>	624	2.757279837
<i>Mastacembelus armatus</i>	915	4.043126685
<i>Macrognathus pancalus</i>	1275	5.633865052
<i>Macrognathus arai</i>	900	3.976845919
<i>Colisa fasciata</i>	905	3.998939508
<i>Colisa lalia</i>	750	3.314038266
<i>Channa punctata</i>	915	4.043126685
<i>Channa striata</i>	306	1.352127613
<i>Channa orientalis</i>	885	3.910565154
<i>Anabas testudineus</i>	312	1.378639919
<i>Glossogobius giuris</i>	225	0.99421148
<i>Par ambassis lala</i>	708	3.128452123
<i>Par ambassis ranga</i>	654	2.889841368
<i>Chanda nama</i>	828	3.658698246
<i>Nandus nandus</i>	234	1.033979939
<i>Badis badis</i>	345	1.524457602
<i>Monopterus albus</i>	45	0.198842296
<i>Tetraodon lineatus</i>	105	0.463965357
<i>Aploccheilus parichthys</i>	990	4.374530511
Total	22631	

4. Conclusion

Bangladesh has vast freshwater fish resources. Due to different natural calamities as well as anthropogenic activities the freshwater fish resources are declined day by day. Most of the indigenous fishes migrate to rice field (Beel) mainly for breeding. There are no enough conservation initiatives both from government and private sectors to protect beel fisheries. This study will help to know the present situation of the fisheries resources of the respective areas. It will also help to conduct further in-depth study on biodiversity, production and conservation of the fisheries resources.

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