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Fresh water record on fish fauna of River Barandu District Buner Khyber Pakhtunkhwa, Pakistan

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Abstract

Buner is a district of Malakand division. It lies between 34-09 and 34-43° N latitude and 72-10 and 72-47° E longitude. River Barandu is the largest river of the district. It flow in tehsil Daggar and then enters to tehsil Gagra. River Barandu is the most important water line as it connects with all major villages eventually falling into the river Indus at Kala Dhaka. In current study a total of 10 species were collected belonging to 3 orders and 4 families. These Species were *Barilius pakistanicus*, *Triplophysa naziri*, *Tor putitora*, *Crossocheilus latius*, *Schizothorax plagiotomus*, *Channa gachua*, *Gara gotyla*, *Matacembelus armatus*, *Puntius sophore* and *Schistura punjabensis*. The specie *Glyptothorax punjabensis* was not collected in current study which might be the result of increase anthropogenic activities in River Barandu. Protectiver measurements are required to save the fish fauna of River Barandu.

Keywords: Fish fauna, Buner, River Barandu

1. Introduction

Fish exhibit the greatest biodiversity of the vertebrates (animals with backbones) with over 22,000 species. Of these, about 58 percent are marine, 41 percent are freshwater species, and 1 percent move back and forth between salt and freshwater. As expected, marine fishes are the most diverse because saltwater covers 70 percent of the earth. Only 1 percent of the earth is covered by freshwater. This small area is home to 8,000 species of freshwater fishes^[1]. There are more than 186 freshwater fish species described from freshwater bodies of Pakistan. Substantial quantities of commercially important fish are caught from rivers annually.

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The inland commercially significant native fish fauna comprises about 30 species of which the economically important species are: *Labeo rohita*, *Gibelion catla*, *Cirrhinus mrigala*, *Cirrhinus reba*, *Channa straita*, *Channa marulius*, *Sperata sarwari*, *Wallago attu*, *Rita rita*, *Bagarius bagarius*, *Tenualosa ilisha*, *Notopterus notopterus*, *Nemacheilus* spp., *Tor macrolepis*, *Schizothorax* spp and *Clupisoma naziri* ^[2].

Many researchers had valuable contribution to the fish fauna of the Khyber Pakhtunkhwa. Butt JA ^[3] reported 94 species of fishes from the whole province of Khyber Pakhtunkhwa.

Mirza and his co-workers reported 13 species of fishes from river Kurram. The contribution of Hussain KA, and Shah SZA ^[4] lead to the exploration of fishes of the river swat, they reported 6 species from river Swat. Work of Nisar M ^[5] on the fish fauna of Tanda Dam Kohat explores the fish fauna by reporting 23 species. Shahjehan IA and Khan H ^[6] reported 26 fishes belonging to 8 families from Baran Dam, Bannu.

The first contribution to explore the fish fauna of river swat was done by Ahmad ND, and Mirza MR ^[7] who record 8 species of fish from Swat, including two new loches. Two new species of fishes were added in a study by Ahmad N ^[8].

In a study by akhtar and colleagues at Manglawar Valley of river Swat, total number of 18 fishes belonging to 3 orders and 3 families were recorded. These species were *Barilius pakistanicus*, *Barilius vagra*, *Cirrhinus mrigala*, *Crossocheilus diplocheilus*, *Cyprinus carpio*, *Garra gotyla*, *Glyptothorax cavia*, *Glyptothorax punjabensis*, *Glyptothorax sufii*, *Labeo rohita*, *Mastacembelus armatus*, *Puntius sophore*, *Rasbora daniconius*, *Salmophasia bacaila*, *Salmophasia punjabensis*, *Schizothorax plagiostomus*, *Tor macrolepis* and *Tor putitora* ^[9].

In district Buner study on fish fauna was carried out in 2013 on river Barandu district Buner by Saeed and his worker, who reported total 11 species belonging to 3 order and 4 families. These Species were *Barilius pakistanicus*, *Triplophysa naziri*, *Tor putitora*,

Crossocheilus latius, *Schizothorax plagiostomus*, *Channa gachua*, *Gara gotyla*, *Glyptothorax punjabensis*, *Matacembelus armatus*, *Puntius sophore* and *Schistura punjabensis* ^[10].

The current study was conducted to know the current status of fish fauna of River Barandu district Buner.

2. Materials and Methods

2.1 Fish Sampling

The collection of fishes from different points was done with the help of different nets of different sizes, hooks, cast nets, automatic rod, gill nets, dragon nets, hook net, hand nets, pH meter (HANNA HI 8314, Membrane pH meter), thermometer, measuring tape and digital camera (Canon PowerShot A3300 IS, 16 mega pixels). The collected fishes were kept in the dilute formalin solution (10%) in order to keep the fish in original form. The fishes were injected with diluted formalin solution (5%). The fishes appearing same were stored in a same glass jar. The fishes were preserved and then brought to the museum of Abdul Wali Khan University (Buner Campus) and attached a label to each jar indicating the name of locality, date and time of collection. Various morphometric measurements of fish were made by ruler and vernier caliper. Other instruments used for laboratory work are Petri dishes, surgical gloves, forceps, and tissue papers, counting needles and magnifying glass.

2.2 Identification

Taxonomic identification and classification was done on the basis of morphometric characteristics up to the species level through different taxonomic keys.

3. Results

During the study a total of 10 species were collected belonging to 3 orders and 4 families. These Species were *Barilius pakistanicus*, *Triplophysa naziri*, *Tor putitora*, *Crossocheilus latius*, *Schizothorax plagiostomus*, *Channa gachua*, *Gara gotyla*, *Matacembelus armatus*, *Puntius sophore* and *Schistura punjabensis*. The detail of each species is given in table 1.

Table 1: Table showing the fishes collected during study

Order	Family	Species
Cypriniformes	Cyprinidae	<i>Barilius pakistanicus</i>
Cypriniformes	Cyprinidae	<i>Puntius sophore</i>
Cypriniformes	Cyprinidae	<i>Tor putitora</i>
Cypriniformes	Cyprinidae	<i>Crossocheilus latius</i>
Cypriniformes	Cyprinidae	<i>Schizothorax plagiotomus</i>
Cypriniformes	Cyprinidae	<i>Gara gotyla</i>
Channiformes	Channidae	<i>Channa gachua</i>
Cypriniformes	Nemacheilidae	<i>Triplophysa naziri</i>
Cypriniformes	Nemacheilidae	<i>Schistura punjabensis</i>
Mastacembeliformes	Mastacembelida	<i>Matacembelus armatus</i>

During the current study each type of small as well as large species were collected. Among the small species the *Pantius sophore* was small having total length of 7.8 cm while among the large species was

Matacembelus armatus having length of 29 cm. the detail of each species is given in table 2.

Table 2: Morphometric measurements of species collected during study

Species	Total length	Standard length	Head length	Eye length
<i>Pantius spohore</i>	7.8 cm	6.9 cm	1.5 cm	3 mm
<i>Tor putitora</i>	22 cm	17.5 cm	5 cm	8 mm
<i>Crossocheilus latius</i>	13 cm	9.6 cm	2.3 cm	5 mm
<i>Barilius pakistanicus</i>	8.2 cm	6.8 cm	1.6 cm	4 mm
<i>Schizothorax plagiostomus</i>	18.6 cm	15 cm	3.4 cm	6 mm
<i>Matacembelus armatus</i>	27 cm	25.9 cm	4.2 cm	3 mm
<i>Channa gachua</i>	13.4 cm	11.1 cm	3.5 cm	4 mm
<i>Gara gotyla</i>	12 cm	10.5 cm	02 cm	4 mm
<i>Triplophysa naziri</i>	09 cm	08 cm	1.4 cm	2 mm
<i>Schistura punjabensis</i>	9 cm	08 cm	1.4 cm	2 mm

4. Discussion

During the study a total of 10 species were collected belonging to 3 orders and 4 families. These Species were *Barilius pakistanicus*, *Triplophysa naziri*, *Tor putitora*, *Crossocheilus latius*, *Schizothorax plagiotomus*, *Channa gachua*, *Gara gotyla*, *Matacembelus armatus*, *Puntius sophore* and *Schistura punjabensis*.

During a study on River Barandu District Buner by Saeed and co-workers in 2013 ^[10] total 11 species which belongs to 3 order and 4 families were recorded from the River Barandu. These Species were *Barilius pakistanicus*, *Triplophysa naziri*, *Tor putitora*, *Crossocheilus latius*, *Schizothorax plagiotomus*, *Channa gachua*, *Gara gotyla*, *Glyptothorax punjabensis*, *Matacembelus armatus*, *Puntius sophore* and *Schistura punjabensis*.

This result is in favor of our current result but the one specie *Glyptothorax punjabensis* is missing and was not collected in our study which might be the result of

increase in the anthropogenic activities in River barandu.

Fish diversity is more apparent than in their morphology. Fishes range in size from the very small to the very large, adult gobies may be just 8 mm, whereas the whale shark, *Rhincodon typus*, may reach 12 m. Some species lack eyes, scales or fins whereas others are heavily armoured or have adaptations for producing sound, venom, electricity or light ^[11]. Studies of spatial and temporal patterns of diversity, distribution and species composition of freshwater fishes are useful to examine factors influencing the structure of the fish community ^[12]. Fishes constitute economically vary important group of animals. The nutritional and medicinal value of fishes has already been recognized ^[13-15].

In our study it was found that in River Barandu fishes of every size are present. In current study the smallest fish collected was *Pantius spohore* having total length

of 7.8 cm, while among the large species collected was *Matacembelus armatus* having total length of 27 cm.

5. Conclusion

It was concluded from the current study that increase in the anthropogenic activities in River Barandu is threatening the fish fauna. If the protective measurements are not taken to save the fish fauna, it will result in the endangering of fish fauna in River Barandu.

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