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Muhammad Zaryab
Department of Zoology,
Govt Post Graduate College,
Karak, Khyber Pakhtunkhwa,
Pakistan

Muhammad Amjad Yousaf
Department of Zoology,
Govt Post Graduate College,
Karak, Khyber Pakhtunkhwa,
Pakistan

Shafiullah Gul
Department of Zoology,
Govt Post Graduate College,
Karak, Khyber Pakhtunkhwa,
Pakistan

Hameed Ur Rehman
Department of Chemistry, Kohat
University of Science and
Technology, KPK, Pakistan

Haleema Sadia
Center for Applied Molecular
Biology, 87-West Canal Bank
Road Thokar Niaz Baig,
University of the Punjab,
Lahore, Pakistan

Correspondence
Hameed Ur Rehman
Department of Chemistry, Kohat
University of Science and
Technology, KPK, Pakistan

Dandi Idhar Khel Lake fish fauna of district Karak, Khyber Pakhtunkhwa province of Pakistan

Muhammad Zaryab, Muhammad Amjad Yousaf, Shafiullah Gul, Hameed Ur Rehman and Haleema Sadia

Abstract

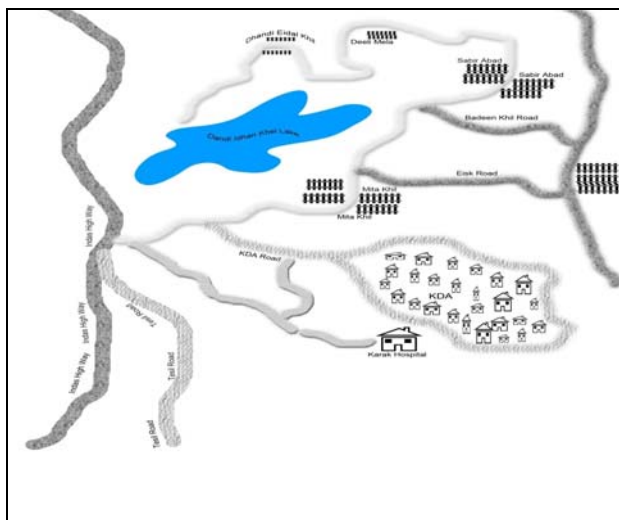
The present study was conducted to observe the fish biodiversity in Dandi Idhar Khel Lake of district Karak, Khyber Pakhtunkhwa province of Pakistan. The collection was made from August 2016 to September 2016. A total of seven fish species were collected, which belongs to three orders, three families and seven genera. Among seven fish species, five species belongs to family Cyprinidae, while the remaining two species belongs to families Anguillidae and Siluridae. Therefore, from the results of our recent study, it has been concluded that the Dandi Idhar Khel Lake of district Karak contains a suitable condition to support more diversity of the fish fauna. Hence, our present study will provide a lot of information about the diversity of fish fauna of Dandi Idhar Khel Lake that could be later valuable in systematic, fisheries management and conservation.

Keywords: Dandi Idhar Khel Lake, Biodiversity, cyprinidae

1. Introduction

Dandi Idhar Khel Lake is situated about 14km away from Sabirabad which is located in district Karak. It is on the eastern side of Sabirabad. This lake is surrounded from all sides by green and high mountains. It is a very old lake which has a catchment area of about 150 canals. The water and soil of this lake are suitable for fish survival [1]. Study of the biodiversity of a particular area is very important because it provides a wide range of information and making innovative ideas about a whole ecosystem. In the aquatic mode of life, study of fish diversity is very important to get an insight of the basic health and development of that specified ecosystem. Therefore, most other organisms just like insects and crustaceans are also considered as life indicator, but the *homosepions* are more related because they use fish as a source of food or direct use of energy and it also increase their economic level because of the high market demand and their aesthetic values. Another major importance of studying fish diversity is that, it can produce ideas to recognize new productive species for their aesthetic values and human usage. Therefore, many managers of fish diversity in different regions of the world are actively busy in describing the fish diversity of different countries [2]. Fishes also play an important role in the maintenance of health as it flesh contain a lot of proteins and useful minerals such as iodine, phosphorus and potassium, etc. The classification and composition of fishes in every aquatic ecosystem is closely related to many factors such as, the presence of food, breeding areas, water current, the geography of their living places and both the physical and chemical properties of water in where they live [3]. Many researchers conducted research on fish biodiversity in Pakistan. Abdul Haseeb *et al* in 2015, conducted study an investigation on the freshwater fish fauna of Tanda Dam in Kohat district, Khyber Pakhtunkhwa province of Pakistan and reported 11 species [4]. Asim *et al* in 2016, conducted Ichthyofaunal diversity on Muzaffargarh and Taunsa Punjab (TP) link canals, Punjab, Pakistan and reported 7 species [5]. Asmat *et al* in 2014, studied the diversity of fish fauna in the Baran dam of district Bannu, Khyber Pakhtunkhwa province (KPK), and reported 15 species [6]. Hameed *et al* in 2016, examine the Ichthyofauna of dandy dam North Waziristan agency of FATA, KPK, Pakistan and documented 5 species [7]. Hameed *et al* 2016, conducted studies on Dargai dam and reported 5 species [8]. Hameed *et al* 2016 study the current status of fish diversity of Barganat dam and documented 10 species [9]. Hameed *et al* 2015, conducted survey on the biodiversity of Ghandiali dam fishes and reported 6 species [10].

Hameed *et al* in 2015 reported 7 species from Darwazai dam as well as reported 13 species from Gomal zam dam, 7 species reported from Talai dam 7 and 5 from Darmalak dam and Shnebaye stream respectively [10-15]. Haseeb *et al* reported 13 species from Tanda dam with new recorded and Zubia *et al* documented 5 species from Damai stream [16-17]. The present study was conducted to determine the current status of freshwater fish biodiversity of Dandi Idhar Khel Lake of district Karak.



Map; showing Dandi Idhar Khel lake.

2. Materials and Methods

2.1 Fish sampling

Fish samples were taken from different regions of the Dandi Idhar Khel lake with the help of local fisherman using different types of nets such as hand nets, cast nets and hooks during the period from August 2016 to September 2016. Photographs were also taken prior to preservation with 5% formalin, since formalin decolorizes the fish color on long preservation.

2.2 Identification and preservation of fish

After collection these samples were preserved and after preservation samples were taken to the laboratory for proper identification. Fishes were recognized in the Laboratory by using keys of fish identification [4-11]. All the fish samples were preserved for the long time preservation separate plastic jar by taking 5% of formalin solution.

3. Results

In these seven species shown in Table 1 were *Aspidopariamarar*, *Cirrhinusmrigala*, *Ctenopharyngodonidella*, *Labeorohita*, and *Catla catla* belongs to class *Actinopterygii*, Order *Cypriniformes*, Family *Cyprinidae*, Genus *Aspidoparia*, *Cirrhinus*, *Ctenopharyngodon*, *Labeo* and *Catla* and species *Aspidoparia morar*, *Cirrhinus mrigala*, *Ctenopharyngodon idella*, *Labeorohita* and *Catla catla*. The other two species that are *Anguilla anguilla* and *Ompok pabda* both have different taxonomy. The specie *Anguilla anguilla* belongs to order *Anguilliformes*, family *Anguillidae* and genus *Anguilla*. The other specie *Ompok pabda* belongs to order *Siluriformes*, family *Siluridae* and genus *Ompok*.

Table 1: Taxonomic representation of Dandi Idhar Khel lake fishes.

S. No	Local name	Class	Order	Family	Genus	Species
1.	Chilwa	<i>Actinopterygii</i>	<i>Cypriniformes</i>	<i>Cyprinidae</i>	<i>Aspidoparia</i>	<i>Aspidoparia morar</i>
2.	Mori	<i>Actinopterygii</i>	<i>Cypriniformes</i>	<i>Cyprinidae</i>	<i>Cirrhinus</i>	<i>Cirrhinus mrigala</i>
3.	Grass carp	<i>Actinopterygii</i>	<i>Cypriniformes</i>	<i>Cyprinidae</i>	<i>Ctenopharyngodon</i>	<i>Ctenopharyngodon</i>
4.	Rahu	<i>Actinopterygii</i>	<i>Cypriniformes</i>	<i>Cyprinidae</i>	<i>Labeo</i>	<i>Labeorohita</i>
5.	Baam	<i>Actinopterygii</i>	<i>Anguilliformes</i>	<i>Anguillidae</i>	<i>Anguilla</i>	<i>Anguilla anguilla</i>
6.	Papta	<i>Actinopterygii</i>	<i>Siluriformes</i>	<i>Siluridae</i>	<i>Ompok</i>	<i>Ompok pabda</i>
7.	Theila	<i>Actinopterygii</i>	<i>Cypriniformes</i>	<i>Cyprinidae</i>	<i>Catla</i>	<i>Catla catla</i>



Fig: an overview of Dandi Idhar Khel district Karak

4. Discussion

During the present study in Dandi Idhar Khel Lake tehsil and district Karak 7 different fish species were found up to the species level. These seven species were identified and their systematic representation was given in table 1. In these seven species *Aspidoparia morar*, *Cirrhinus mrigala*, *Ctenopharyngodon idella*, *Labeorohita*, and *Catla catla*

belongs to class *Actinopterygii*, Order *Cypriniformes*, Family *Cyprinidae*, Genus *Aspidoparia*, *Cirrhinus*, *Ctenopharyngodon*, *Labeo* and *Catla* and species *Aspidoparia morar*, *Cirrhinus mrigala*, *Ctenopharyngodon idella*, *Labeorohita* and *Catla catla*. The other two species that are *Anguilla anguilla* and *Ompok pabda* both have different taxonomy. Another attempt was done by Tahir *et al* in 2016, conducting a survey of Ghol dam where they found 6 species, 5 species were belonging to the same family *Cyprinidae* and also same Order *Cypriniformes*. The names of these species were *Labeorohita*, *Hypophthalmichthys molitrix*, *Catla catla*, *Cirrhinus mrigala*, *Tor tor* and their Genus were *Labeo*, *Hypophthalmichthys*, *Catla*, *Cirrhinus* and *Tor* respectively. Only a single specie *Oreochromis niloticus* which have Genus *Oreochromis* family *Cirrhilidae* and order *Perciformes* was not from family *Cyprinidae* [18]. These species were also previously studied by Hameed *et al* who conducted a survey in 2015 at Sarki Dam and they found four species i.e 1. Specie *Labeorohita Hypophthalmichthys molitrix*, *Cirrhinus mrigala* Family *Cyprinidae*. [19]. Some species were also studied by Zubia *et al* in 2015 conducted study at Zebi dam. During their survey they found a total of six species, All of the six species

found in Zebi dam were belonging from a same family Cyprinidae, Same order Cypriniformes and that of Same class Actinopterygii and the names of the species were *Cirrhinus mrigala*, *Hypophthalmichthys molitrix*, *Labeorohita*, *Carassius auratus*, *Catla catla*, *Ctenopharyngodon idella* and their Genus were *Cirrhinus*, *Hypophthalmichthys*, *Labeo*, *Carassius*, *Catla*, *Ctenopharyngodon* respectively^[20].

5. Conclusion

From the present study, it may be concluded that Dandi Idhar Khel Lake has huge fauna of Cyprinidae family and the environmental conditions of Dandi Idhar Khel Lake may be more favorable for Cyprinidae family. It also supports the species of other families such as Anguilliformes and Siluriformes.

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