



E-ISSN: 2320-7078  
P-ISSN: 2349-6800  
JEZS 2016; 4(5): 94-96  
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Received: 14-07-2016

Accepted: 15-08-2016

#### Abdul Haseeb

Department of Zoology, Kohat  
University of Science and  
Technology-26000, KPK,  
Pakistan.

#### Hameed Ur Rehman

Department of Chemistry, Kohat  
University of Science and  
Technology-26000, KPK,  
Pakistan

#### Yaseen

Department of Zoology, GPGC  
Dargai Malakand

#### Qadeem Khan

Department of Zoology, GPGC  
Dargai Malakand

#### Gul Reem Mufti

Department of Animal Sciences  
Quaid-e- Azam University  
Islamabad

#### Kausar Saeed

Department of Zoology, Abdul  
Wali Khan University Mardan  
Buner Campus

#### Sumbal Haleem

Department of Zoology, Kohat  
University of Science and  
Technology-26000, KPK,  
Pakistan

#### Asma Tajdar

Department of Zoology, Kohat  
University of Science and  
Technology-26000, KPK,  
Pakistan

#### Correspondence

#### Hameed Ur Rehman

Department of Chemistry, Kohat  
University of Science and  
Technology-26000, KPK,  
Pakistan

## Diversity of Kandar dam fishes district Kohat, Khyber Pakhtunkhwa Pakistan

**Abdul Haseeb, Hameed Ur Rehman, Yaseen, Qadeem Khan, Gul Reem Mufti, Kausar Saeed, Sumbal Haleem and Asma Tajdar**

#### Abstract

The objective of the research work was to find out the diversity of fish fauna of Kandar dam located in district Kohat K.P.K, Pakistan. In the present study five species were identified *Cyprinus carpio*, *Cirrhinus mrigala*, *Ctenopharyngodon idella*, *Labeo rohita*, *Hypophthalmichthys molitrix*, *Catla catla*. So from the present study it may be concluded that Kandar dam is favorable for fish survival and hatchery. Hence, our study will provide useful information about the diversity of fish fauna of Kandar dam that could be later valuable in systematics, fisheries management and conservation.

**Keywords:** Kandar dam, fishes

#### 1. Introduction

Ichthyodiversity refers to the variety of fish species; depending on background and scale, it could refer to alleles or genotypes within fish population to species of life forms within a fish society and to species or life forms across aqua regimes [1]. Fish biodiversity play a key role in the aquatic system status and composition. It provides momentum for sustainable management of any aquatic systems [2]. Fish are cold blooded aquatic vertebrates typically with backbone, gills and fins and are primarily dependent on water is a medium in which they live. Fishes are one of the most important groups of vertebrates, which benefit human being in various ways. It also serves as an important source of human diet because it is a rich source of proteins, vitamin A, D and fats [3]. The importance of ichthy diversity is that; it gives dynamic information about the whole or fishes that are found in the water bodies. Studying fishes of an area is the first effort to understand the aquatic ecosystem of that area. Another importance of studying the fish diversity is that, it can make ideas to identify new fruitful species for culture practices and their use in human consumption [4]. Throughout the world, freshwater life is extremely more at risk, compared with land based or terrestrial life, and this can be generally endorsed to the degradation and destruction of habitat [5]. Global estimates suggest that 75 to 95 percent of riverine habitats are degraded [6].

In Pakistan different studies were carried out to know about the fish biodiversity in different areas [7]. These studies describe different species distribution pattern and provide reference line information about endangered species. But the drawback of these studies is that no one studies comprehensively, which can describe importance of species and conservation methods of endangered fish species [8, 9]. The aim of the research work was to find out the diversity study of fishes of kandar dam district kohat Khyber pakhtunkhwa Pakistan.



**Fig 1:** An overview of Kandar Dam District Kohat KPK Pakistan

## 2. Materials and Methods

### 2.1 Study Area

Kohat valley is bounded on the north by Peshawar and Nowshera districts, on the east by Attock, on the south by Mianwali of the Punjab province and Karak district and on the west by Hangu district and Orakzai agency, respectively. The total area of the Kohat district is about 2545 km<sup>2</sup>. Kandar Dam is an earth filled small dam in Kohat KPK, Pakistan. The dam has a height of 89 feet, with actual storage capacity of water 2650 acre feet <sup>[9]</sup>. This dam is most often use for irrigation as well as fisheries purpose, constructed by KPK Government in 1970 on Dargai Algada <sup>[10]</sup>.

Fish Sampling: Fish samples were collected randomly from the different regions of Kandar dam with the help of local fisherman using different types of nets namely hand nets, cast nets and hooks during the period from January 2016 to May 2016. Immediately photographs were taken prior to preservation with 10% formalin, since formalin decolorizes the fish color on long preservation.

### 2.2 Fish Preservation and Identification

After collection and photography, all samples were preserved and transferred into the laboratory of Chemistry department,

Kohat University of Science and Technology (KUST), district Kohat. In the laboratory, each fish sample was identified up to species level and identification of the species was done mainly on the basis of the color pattern, specific spots or marks on the surface of the body, shape of the body, structure of various fins etc. by using different systemic and identification keys <sup>[7-9]</sup>.

### 3. Result and Discussion

A Survey was conducted on Kandar dam from January 2016 to May 2016 situated in Kohat, KPK, and Pakistan. During the survey 5 species were identified through different identification keys. In the identified species all were belong from single order Cypriniformes and family Cyprinidae which may be shown in table 1. Hence, the members of the family Cyprinidae were found to be highly abundant in Kandar dam of district kohat. Such wide distribution might be related to substrate of the dam that could provide suitable environment for nest building and breeding. For the first time a fish diversity survey was conducted on Kandar dam. The current study shows that Kandar dam is favorable for Cyprinidae species.

**Table 1:** Fish species found in Kandar dam along with their local and scientific names.

S/No	Order	Family	Genus	Species	Common Name (English)
1	Cypriniformes	Cyprinidae	<i>Ctenopharyngodon</i>	<i>Ctenopharyngodon idella</i>	Grass carp
2	Cypriniformes	Cyprinidae	<i>Labeo</i>	<i>Labeo rohita</i>	Rohu
3	Cypriniformes	Cyprinidae	<i>Hypophthalmichthys</i>	<i>Hypophthalmichthys molitrix</i>	Silver carp
4	Cypriniformes	Cyprinidae	<i>Cirrhinus</i>	<i>Cirrhinus mrigala</i>	Mrigal carp
5	Cypriniformes	Cyprinidae	<i>Catla</i>	<i>Catla catla</i>	Catla

According to Abdul Haseeb *et al.* <sup>[12]</sup> eleven fish species were identified, from Tanda dam, district Kohat, Khyber Pakhtunkhwa in 2015, which were belonging to four orders, five families and eleven genera. Among them, seven species were belonging to family Cyprinidae, while the remaining four species were belonging to families Anguillidae, Belonidae, Cobitidae and Siluridae, respectively. Hameed *et al.* <sup>[13]</sup> recorded six species from Ghandiali Dam, District Kohat in 2015, which were belonging to two orders, two families, five genus and six species. Among them five species were belonging to family Cyprinidae and single specie belong from Hypophthalmidae. A descriptive study was taken by Hameed *et al.* <sup>[14]</sup> on Darwazai Dam Tehsil Lachi District Kohat, in which they reported seven species, in these seven species five were belonging with family Cyprinidae, order Cypriniformes while single specie belong from order Anguilliformes family Anguillidae and one specie belong with order Siluriformes and family Siluridae. For the first time a study was conducted on Ghurzandi Dam Tehsil Lachi District Kohat, by Hameed *et al.* <sup>[16]</sup> during the study about five species were identified, 3 were belonging from Cyprinidae family order Cypriniformes, and single species from order Anguilliformes family Anguillidae and one belong with order Siluriformes and family Siluridae. Hameed *et al.* <sup>[20]</sup> recorded seven species from Darmalak Dam, District Kohat in 2015, which were belonging to three orders, four families and seven genera. Among them, four species were belonging to family Cyprinidae, while the remaining three species were belonging to families Anguillidae, Cobitidae and Siluridae.

For the second time a study was conducted on Tanda Dam District Kohat, in 2016 with new records by Abdul Haseeb *et al.* <sup>[21]</sup> during the study thirteen species were identified,

which belonging to 4 orders and 5 families. The richest family was family Cyprinidae in which 9 species were recorded and the rest of four species belonging to the families Cobitidae, Anguillidae, Siluridae, and Belonidae respectively.

### 4. Conclusion

From the obtain result it may be concluded that Kandar dam is rich for Cyprinidae species. Thus we conclude that the environmental conditions were favorable for Cyprinidae species in all dams of Kohat District.

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