

## An Investigation on Freshwater Fish Fauna of Tanda Dam in Kohat District, Khyber Pakhtunkhwa Province of Pakistan

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**Abstract:** The present investigation was carried out to observe the biodiversity of fish fauna in Tanda dam of Kohat district, Khyber Pakhtunkhwa province of Pakistan. The collection was done from September 2014 to April 2015. A total of eleven species were identified, 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. Therefore, from the results of our present study, it had been concluded that the Tanda Lake of Kohat district contain favorable condition to more support the diverse of fish fauna. Hence, our study will provide useful information about the diversity of fish fauna of Tanda dam that could be later valuable insystematics, fisheries management and conservation.

**Key words:** Tanda Dam • Kohat District • Biodiversity of Freshwater Fish Fauna

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### INTRODUCTION

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> [1]. Tanda dam is a small dam located in Kohat district of Khyber Pakhtunkhwa (KPK) province of Pakistan. This dam is most often use for irrigation and fisheries purpose. Tanda fish hatchery had been made near Tanda dam for hatching the various cyprinid species during their breeding season. As many fish species are found in Tanda Lake, hence, it is a good fishing spot for hunting supporters in Asia pacific region [2].

Fish exhibit the greatest biodiversity of the vertebrates, as it can live in almost every type of aquatic environment, ranging from glacial water to the hot springs and can also tolerate a wide range of salinity as well.

About more than 25,000 species of fishes yet had been identified throughout the world. Of these, about 58 percent are marine and brackish water species, while 41 percent are freshwater species and 1 percent are migratory that move back and forth between salt and freshwater. There are more than 186 freshwater fish species had been reported from freshwater bodies of Pakistan [3]. Fish exhibit enormous diversity in their morphology, in the habitats they occupy and in their biology. Unlike the other commonly recognized vertebrates, fish are a heterogeneous group [4].

Study of aquatic biodiversity is a very important phenomenon; because it gives vital information regarding about the whole living beings 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 generate ideas to identify new productive species for culture practices and their use in human consumption [5].



Fig. 1: Map shows Tanda dam location in Kohat District [http:// wikimapia.org/#lang=ur&lat=33.573724&lon=71.379547&z=13&m=b](http://wikimapia.org/#lang=ur&lat=33.573724&lon=71.379547&z=13&m=b).

In Pakistan, earliest work on the fish fauna was done by Ahmad [6] in which fish fauna of the West Pakistan was described. Many researchers had important contributions to the fish fauna of the Khyber Pakhtunkhwa. Butt [7] reported 94 species of fishes from the whole province of Khyber Pakhtunkhwa. Hussain and Shah [8] identified 6 species from river Swat; Nisar [9] explored 23 species of fish fauna of Tanda Dam Kohat; Shahjehan and Khan [10] 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 and Mirza [11] were the first who identified 8 species of fish from Swat, including two new loaches; Naveed *et al.* [12] recorded fish fauna of River Barandu of District Buner; Asmat *et al.* [13] studied the diversity of fish fauna in Baran dam of district Bannu. Lately, Khattak *et al.* [14] identified 24 species of fishes in River Kabul at Nowshera district and Hasan *et al.* [15] reported 10 fish species from the Sharki Dam of District Karak.

## MATERIALS AND METHODS

**Fish Sampling:** Fish samples were collected randomly from the different regions of Tanda dam with the help of local fisherman using different types of nets namely hand nets, cast nets and hooks during the period from

September 2014 to April 2015. Immediately photographs were taken prior to preservation with 10% formalin, since formalin decolorizes the fish color on long preservation.

**Fish Preservation and Identification:** After collection and photography, all samples were preserved and transferred into the laboratory of department of Zoology of 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.

## RESULTS AND DISCUSSION

A study was taken to investigate the diversity of fresh water fish fauna found in the Tanda dam of Kohat district. Fishes were collected from September 2014 to April 2015. In the present study, about eleven species were identified and their detail systematic representation was recorded in the Table 1, respectively. These eleven species were belonging to four order, five family and eleven genera, as shown in Table 1 and Figures 1a-1k, respectively.

Table 1: Systematic representation of fishes found in Tanda Dam of Kohat district.

S.No.	Order	Family	Genus	Species	Common name (English)	Local name
1	Cypriniformes	Cobitidae	Lepidocephalus	<i>Lepidocephalus guntea</i>	Peppered Loach, Guntea Loach, Scavenger Loach	Gaduwa or cutter
2	Anguilliformes	Anguillidae	Anguilla	<i>Anguilla anguilla</i>	Eel fish	Baam
3	Cypriniformes	Cyprinidae	Aspidoparia	<i>Aspidoparia morar</i>	Aspidoparia	Chilwa
4	Cypriniformes	Cyprinidae	Pethia	<i>Pethia conchonius</i>	Rosy barb	Darra
5	Cypriniformes	Cyprinidae	Catla	<i>Catla catla</i>	Catla	Theila
6	Cypriniformes	Cyprinidae	Salmophasia	<i>Salmophasia bacaila</i>	Large razorbelly minnow	Qundar
7	Cypriniformes	Cyprinidae	Cirrhinus	<i>Cirrhinus mrigala</i>	Mrigal carp	Mori
8	Cypriniformes	Cyprinidae	Ctenopharyngodon	<i>Ctenopharyngodon idella</i>	Grass car	Grass carp
9	Cypriniformes	Cyprinidae	Labeo	<i>Labeo rohita</i>	Rohu	Rahu
10	Siluriformes	Siluridae	Ompok	<i>Ompok pabda</i>	Pabdah catfish	Papta
11	Beloniformes	Belontiidae	Xenentodon	<i>Xenentodon cancila</i>	Needlefish	King Machli or Tota Machli



Fig. 1a: *Lepidocephalus guntea*



Fig. 1b: *Anguilla anguilla*



Fig. 1c: *Aspidoparia morar*



Fig. 1d: *Pethia conchonius*



Fig. 1e: *Catla catla*



Fig. 1f: *Salmophasia bacaila*



Fig. 1g: *Cirrhinus mrigala*



Fig. 1h: *Ctenopharyngodon idella*



Fig. 1i: *Labeo rohita*



Fig. 1j: *Ompok pabda*



Fig. 1k: *Xenentodon cancila*



Among them, seven species were belonging to family Cyprinidae and four species to the families Anguillidae, Belonidae, Cobitidae, Siluridae, respectively. Seven species of the family Cyprinidae includes *Aspidoparia morar*, *Pethia conchoniis*, *Catla catla*, *Salmophasia bacaila*, *Cirrhinus mrigala*, *Ctenopharyngodon idella* and *Labeo rohita*, respectively. The remaining four species i.e. *Lepidocephalus guntea* was belong to the family Cobitidae, *Anguilla anguillato* the family Anguillidae, *Ompok pabda* to the family Siluridae and *Xenentodon cancila* to the family Belonidae. Thus, the result of present study revealed that large number of fish species in the Tanda dam were belong to a single family Cyprinidae, while the species belong to other families i.e. Cobitidae, Anguillidae, Siluridae and Belonidae were found to be least. Hence, the members of the family Cyprinidae were found to be highly abundant in Tanda dam of Kohat district. Such wide distribution might be related to substrate of the dam that could provide suitable environment for nest building or environmental and glacial history of study area. In list displayed by IUCN, *Cyprinus carpio* was considered as vulnerable species [16]. Climatic factor such as droughts could also effect on the distribution of cyprinid fishes as described by Lachner and Jenkins [17]. Thus, the abundance cyprinid species throughout the study period was indicating that the habitats and environmental conditions of Tanda Dam of Kohat district was more suitable for the growth and reproductive success of these cyprinid species that might be because like many other fishes, cyprinid fishes have more ability to adapt themselves according to the changing in the environmental conditions in which they lived. According to the Sarkar *et al.* [18], a major decline in distribution of some fish species might be as result of pollution, habitat loss, changes in environmental conditions, illegal fishing and overharvesting as food fish, ornamental trade and as sport also. As a result, the distributional ranges of some species have shrunk tremendously over the last decades and restricted only to localized areas.

### CONCLUSION

From the results of the present study, it had been concluded that Tanda dam of Kohat is a source of data for fish diversity, but little work has been done on this site. Therefore, it is also necessary to

develop more attractiveness in fisheries professionals to culture more fish species in this dam, so as to produce more diverse groups of fishes, increase food resources and income of local peoples who resides in Kohat district.

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