

## Biodiversity of Fish Fauna of Darmalak Dam, Tehsil Lachi, District Kohat, KPK Pakistan

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**Abstract:** The present was focused on the biodiversity of fish fauna in Darmalak dam of Kohat district, Khyber Pakhtunkhwa province of Pakistan. The collection was done from August 2014 to April 2015. A total of seven species were identified, 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. From the obtained results of the present study, it could be concluded that the Darmalak dam 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 Darmalak dam that could be later valuable in systematic, fisheries management and conservation.

**Key words:** Biodiversity • Darmalak Dam • Tehsil Lachi • Kohat District • Freshwater Fish

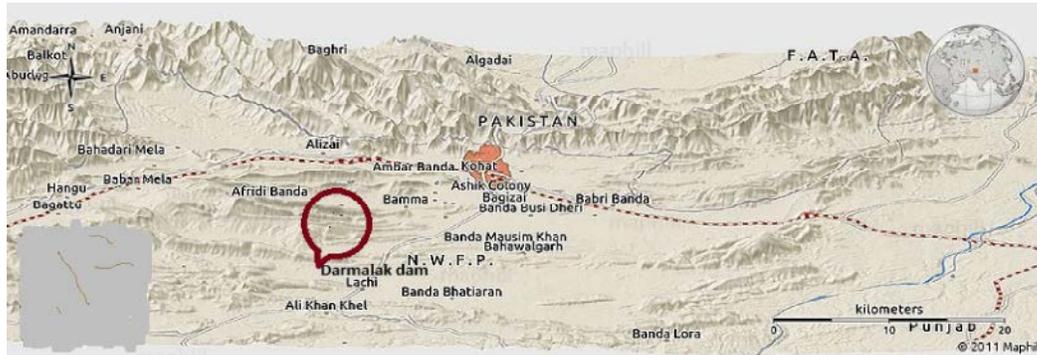
### INTRODUCTION

Biodiversity is an important field of science, it highlight the significance, abundance and important role of living things in the ecosystem. Biodiversity is a vast field regarding the natural abundance of living entities in water having a great deal with human beings such as fishes etc. Biodiversity of fish fauna is the relative abundance of fishes in the targeted area. Among vertebrates fishes has great biodiversity exhibiting variability in habitat, size, structure and niche. Fishes has variable mode of living because fishes can live in every aquatic environment. These organisms can tolerate salty environment because of excellent water regulatory system. Fishes are poikilothermic although fishes can live in every water body but their breeding season is in specific aquatic system. Fishes serve as an important source of human diet because it is a rich source of proteins, vitamin A, D and fats [1]. Biodiversity study of fish generally termed as Ichthyodiversity. All over the world 21, 723 live fish species are on record among which 8, 411 are fresh water fishes while 11, 650 are marine species [2]. In Pakistan different studies were carried out

to know about the fish biodiversity in different areas [3]. These studies describe different species distribution pattern and provide baseline information about endangered species. But the drawback of these studies is that no one study comprehensively can describe importance of species and conservation methods of endangered fish species [4]. In Pakistan fresh water fish fauna has a minimum number of 193 fish species, belonging to class Actinopterygii, sub-class Teleostei, 3 cohorts, 6 superorders, 13 orders, 30 families and 86 genera are reported by Rafique and Khan and Mirza *et al.* [4, 5].

In recent past different researchers work on specie level and identified a lot of species from different localities such as 13 species of fish were reported from Kurrum River by Mirza *et al.* [6]. Nisar [7] research on tanda dam, Kohat fish fauna by reporting 23 species. Shahjehan and Khan [8] made their contribution in fisheries line by working on family level, reporting 26 species belonging to 8 families in Barran Dam, Bannu.

Kohat is arid region of KPK having different districts on their poles, on north Peshawar and Nowshera district are located while on east attock, on west Hangu and



Map showing Darmalak dam tehsil Lachi, Kohat.

Orakzai agency and on South is Karak and Mianwali district of Punjab province. The total area of the Kohat district is about 2545 km<sup>2</sup> [9]. Lachi is one of two Tehsil in the Kohat District of Khyber Pakhtunkhwa province in Pakistan, located south of the district capital Kohat. Total area is 1,161 square kilometers (448 sq mi). The Tehsil is subdivided in 9 union councils. Darmalak dam is located in Darmalak, which is a populated place located in Tehsil Lachi, Kohat KPK, Pakistan (Fig. 1). The estimated elevation above sea level is 531 meters having Latitude: 33°24'52.6" and Longitude: 71°15'14.97" [10]. As regarding to the previous knowledge of fish fauna recorded from the different research articles conducted in different areas of KPK province of Pakistan. We conducted research based study on fish fauna of Darmalak dam Tehsil Lachi Kohat district in order to improve the existing knowledge of fish fauna and create comprehensive study on fish biodiversity of Darmalak dam.

## MATERIALS AND METHODS

**Fish Sampling:** Random fish sampling was done from different regions of the Darmalak dam Tehsil Kohat district (Fig. 1), by the help of local fisherman using different types of nets such as hand nets, cast nets and hooks. Sampling was done in August 2014 to April 2015

having fish breeding season. All the collected fishes were identified through identification keys before preservation in 10% formalin because formalin decolorizes the fish color upon long preservation.

**Fish Preservation and Identification:** After preservation all the fish samples were transferred to laboratory of department of Zoology of Kohat University of Science and Technology (KUST) and each fish is identified by using different standard identification keys and systems. According to these keys and systems each fish is identified on the basis of size, shape of the body, color pattern, fin structure and different marks and spots on the surface of the body.

## RESULTS AND DISCUSSION

The study was focused on the fish fauna of darmalak dam Tehsil Lachi, district Kohat, KPK, Pakistan. Fishes were collected from August 2014 to April 2015. In Darmalak Dam about seven species were identified belonging from three different orders. All these seven were classified systematically up to species level. In these seven species 5 were belong from cypriniformes, 1 siluriformes and 1 anguilliformes respectively (Table 1).

Table 1: Systematic representation of fishes found in Darmalak Dam Tehsil Lachi of Kohat district

SNO	Order	Family	Genus	Species	Common name (English)	Local name
1.	Cypriniformes	Cobitidae	Lepidocephalus	<i>Lepidocephalus guntea</i>	Peppered Loach,	Gaduwa or cutter
2.	Cypriniformes	Cyprinidae	Labeo	<i>Labeo rohita</i>	Rohu	Rahu
3.	Cypriniformes	Cyprinidae	Ctenopharyngodon	<i>Ctenopharyngodon idella</i>	Grass car	Grass carp
4.	Cypriniformes	Cyprinidae	Cirrhinus	<i>Cirrhinus mrigala</i>	Mrigal carp	Mori
5.	Siluriformes	Siluridae	Ompok	<i>Ompok pabda</i>	Pabdah catfish	Papta
6.	Cypriniformes	Cyprinidae	Catla	<i>Catla catla</i>	Catla	Theila
7.	Anguilliformes	Anguillidae	Anguilla	<i>Anguilla anguilla</i>	Eel fish	Baam

The study of darmalak dam fish fauna shows the abundance of cyprinidae family. In list displayed by IUCN, *Cyprinus carpio* was considered as vulnerable species [11]. Climatic factor such as droughts could also effect on the distribution of cyprinid fishes as described by Lachner and Jenkins [12]. Thus, the abundance cyprinid species throughout the study period was indicating that the habitats and environmental conditions of Darmalak Dam district Kohat was more suitable for the growth and reproductive success of these cyprinid species they might be because like many other fishes, cyprinid fishes have more ability to adapt themselves according to Haseeb *et al.* [13]. According to the Sarkar *et al.* [14], major environmental conditions, illegal fishing and Pakistan. Overharvesting as food fish, ornamental trade and as, decades and restricted only to localized areas.

### CONCLUSION

From the above study it may be concluded that Darmalak Dam have rich fish fauna especially cyprinidae species.

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