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Fish Fauna of Muhabbt Khel Dam (Lake Kana) district Karak Khyber Pakhtunkhwa, Pakistan

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Abstract

The present study was conducted on Muhabbatkhel dam (Lake Kana) located at district Karak Khyber Pakhtunkhwa, Pakistan. During our survey 04 different species were identified naming *Labeo rohita*, *Hypophthalmichthys molitrix*, *Ciprinus carpio*, *Cirrhinus cirrhosus* belonging to order Cypriniformes and species Cyprinidae. So from the present study it is concluded that Muhabbatkhel dam is favorable for Cyprinidae family of fishes. Hence, the present study will provide useful basic information about the diversity of fish fauna of Muhabbat khel dam that could be later valuable in systematic, fisheries management and conservation.

Keywords: Fishes, Muhabbt Khel Dam (Lake Kana), district Karak

1. Introduction

Study of biodiversity of an area is very important as it gives information and creating innovative ideas about the entire ecosystem. Fishes are the most diverse group of vertebrates and have occupied almost every niche of the hydrosphere. Of the approximately 40,000 species of vertebrates, a total of 21,723 species belongs to super class Pisces [1]. Fish constitutes more than a half number of all other vertebrates in the world. Fishes are the aquatic poikilothermic vertebrates (chordate) with appendages in the form of fins which arises from the skin. Their body surface is covered with scales of different types [2]. Fish display the greatest biodiversity of the vertebrates (animals with backbones) with over 22,000 species [3]. 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 [4]. In Pakistan, there are about 193 species of fresh water fishes which belongs to 13 orders, 30 families and 86 genera [4]. The study of ichthyofauna is very important because it provides a new ways for discoveries hence a lot of scientists and researcher all over the world actively search for the ichthyo diversity of different countries and part of the world. Economically important fish species are *Labeo rohita*, *Hypophthalmichthys molitrix*, *Catla Catla*, *Cirrhinus mrigala*, *Cirrhinus reba*, *Ctenopharyngodon idella*, *Channastraita*, *Channa marulius*, *Sperata sarwari*, *Wallago attu*, *Bagarius bagarius*, *Tenualosa ilisha* [5]. The aim of the research work was to conducted a fish diversity survey on Muhabbt Khel Dam (Lake Kana) District Karak K.P.K, Pakistan.

1.1 Study area

Karak a scarce drinking water are located in the Northern districts of Kyber Pakhtunkhwa (Pakistan) located some 150 km from Peshawar on Indus highway (from Karachi to Peshawar). It is found to be located at 33°7'12 North latitude 71°5'41 East latitude. Topographically Karak consists of broken hills and some 600–1400 meter above the sea level. This dam is located near the series of Karat hills just adjacent to the wildlife sanctuary/cage and located some 08–10km from Khaisari dam. It covers about 100–110 acres and having the wide range water storage capacity. The water sources of this dam are of the little springs and plentiful rain.

2. Materials and Methods

2.1 Fish sampling

Fishes were caught for collection from different sites of the Muhabbt Khel dam of Tehsil and District Karak at various times of the study period with the facilitation of local

fisherman. The Ichthyofauna were collected from different sites of individual dam (start, mid and from end) to avoid the species missing. The fishes were caught with hooks, container and different kind of nets.



Fig 1: Presents overview of Muhabbt khel dam (Lake Kana)

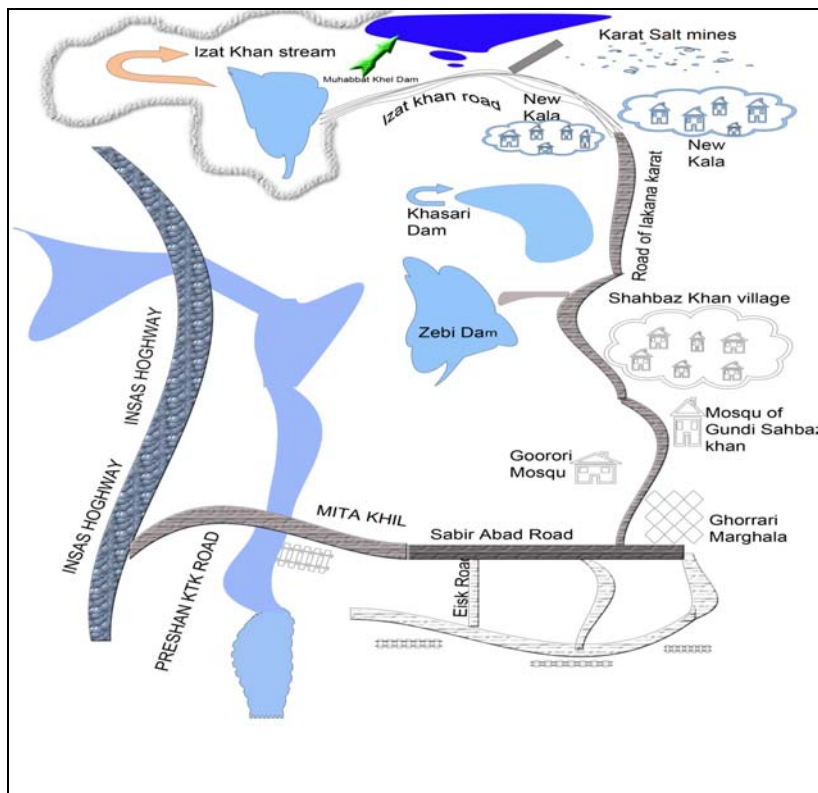


Fig 2: Map of Muhabbt Khel dam.

2.2 Fish Preservation and Identification

The Specimen was preserved in 70% Alcohol and some in 10% Formalin solution in plastic bottles with respect to their size while the large sized fishes were injected with formalin in their abdomen to avoid the Bacterial infection

(contamination) and placed in the lab for further study and identification. The shape/size wise characters were studied by using various books hints and fish/standard keys fishes presented by were identified up to the species level [1, 6, 7].

3. Results and Discussion

The survey was achieved to find out the ichthyofauna of Muhabbatkhel dam (Lake Kana). Uptill now no such work was carried on the fishes of this region and this was the 1st efforts to find and identified ichthyofauna of this dam. This survey duration was from April 2016 to September (2016).

S. No	Class	Order	Family	Genus	Species	No of catch
1	Actinopterygii	Cypriniformes	Cyprinidae	Labeo	<i>L. rohita</i>	183
2	Actinopterygii	Cypriniformes	Cyprinidae	Cirrhinus	<i>C. cirrhosus</i>	142
3	Actinopterygii	Cypriniformes	Cyprinidae	Hypophthalmichthys	<i>H. molitrix</i>	105
4	Actinopterygii	Cypriniformes	Cyprinidae	<i>Cyprinus</i>	<i>C. carpio</i>	304

Among these 04 species *C. carpio* was the most abundant and enrich one found in the study area. The Muhabbat Khel dam having (50 to 55%) more ichthyofauna than other local dams/water bodies so these fishes provide a great food stuff and influence for human life in various manners. Absence of river in District Karak stresses the ichthyofauna to live in rain filled dams and water bodies, yet no detailed study of fresh water fishes is done, but some researchers take their contribution as well. Hameed *et al* in 2015^[8] have conducted research work on biodiversity of fish fauna of the Sarki Lawaghar dam, Takhte-Nasrati district, Karak Kpk, Pakistan. During the study about four species *Labeo rohita*, *Hypophthalmichthys molitrix*, *Cirrhinus mrigala*, *Tor khudree* class Actinopterygii, order Cypriniformes and Cyprinidae species were identified. From the obtained results it may be concluded that Sarki Lawaghar dam have rich fauna of Cyprinidae species. Some of these species were also studied by Hameed *et al*, in 2015^[9]. at Zebi dam during their survey they found total of six species, and all of the six species which were found in the Zebi dam were belonging to the same family Cyprinidae, Same order Cypriniformes and that of Same class Actinopterygii and these species were *Cirrhinus mrigala*, *Hypophthalmichthys molitrix*, *Labeo rohita*, *Carassius auratus*, *Catla catla*, *Ctenopharyngodon idella* and their Genus are *Cirrhinus*, *Hypophthalmichthys*, *Labeo*, *carassius*, *Catla*, *Ctenopharyngodon* respectively. Another study was conducted by Tahir *et al*, in 2016^[10]. They conducted a survey of Ghol dam and they found 6 species there, 5 of these 6 species belonging to family Cyprinidae and order Cypriniformes. And these species were *Labeo rohita*, *Hypophthalmichthys molitrix*, *Catla catla*, *Cirrhinus mrigala*, *Tor tor* and their Genus were *Labeo*, *Hypophthalmichthys*, *Catla*, *Cirrhinus* and *Tor* respectively. And only a single specie *Oreochromis niloticus* Genus *Oreochromis* family Cirhlidae and order Perciformes do not belong to the family Cyprinidae. The dominant Species in all result of our survey is family Cyprinidae having order Cyprinoformes. Saqib *et al*, in 2016^[11] conducted study on diversity of ichthyo fauna of Khuram dam located in district Karak Khyber pakhtunkhwa, Pakistan. In the present study six species were identified, the five species belongs to single family Cyprinidae i.e. *Cyprinus Carpio*, *Crossocheilus diplochilus*, *Ctenopharyngodon idella*, *Salmophasia bacaila*, *Aspidoparia morar* and one species belong to family Siluridae i.e. *Ompok Pabda*. So from the present study, it may be concluded that Khuram dam is favorable for fish survival and hatchery. From previous study *Labeo rohita*, *Hypophthalmichthys molitrix* and *Cyprinus carpio* are likely to be the dominant species and are abundantly found in province as compared to the other species. The most dominant species was *Cyprinus carpio* which was found to present during study period clearly shows that the ichthyofauna can tolerate a wide range of temperature (as low and high both) while the unavailability, may cause

During the survey a total of 04 species was identified up to the species level. Cyprinid fishes where the major fauna influences the human life in various ways and comprises about 90% of the total fishes. The four (04) identified species and their taxonomic position are;

due to some environmental condition/factor and may any one afford such trouble to cultivate/introduce the fingerling of other species in water bodies or dams.

4. Conclusion

From the current study It can be concluded that Muhabbatkhel dam (Lake Kana) located at district Karak K.P Pakistan were suitable for the survival of Cyprinidae species. We are trying to explore the reasons in the upcoming physiochemical study of soil and water.

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