

## Freshwater Fish Fauna Damai Stream Tehsil Domel Bannu District, Khyber Pakhtunkhwa Province of Pakistan

<sup>1</sup>Zubia Masood, <sup>2</sup>Hameed-Ur-Rehman, Fariha Mengal<sup>3</sup>, <sup>2</sup>Farhan,  
<sup>4</sup>Muhammad Ilyas, <sup>3</sup>Nosheen Rafique, <sup>3</sup>Wajeeha Razzaq, <sup>3</sup>Farhat Iqbal,  
<sup>3</sup>Nighat Din, <sup>3</sup>Masooma Khawar, <sup>3</sup>Nagina Bano and <sup>3</sup>Nima Nazeer

<sup>1</sup>Department of Zoology, University of Karachi-75270, Karachi, Pakistan

<sup>2</sup>Department of Chemistry, Kohat University of Science and Technology,  
Kohat District, KPK Province, Pakistan

<sup>3</sup>Department of Zoology, Sardar Bahadur Khan Women University, Quetta, Pakistan

<sup>4</sup>Assistant director Fisheries, Torghar District, KPK, Pakistan

**Abstract:** The current study was conducted to know the status of fish fauna of Damai Stream of Tehsil Domel in Bannu District of Khyber Pakhtunkhwa province of Pakistan from the period extends from November 2014 to April 2015. In the present study, about five fish species were collected and identified from the Damai Stream, which were belonging to the two orders, two families and four genera, respectively. Among them, three species *i.e.*, *Barilius vagra*, *Labeo rohita* and *Puntius sarana* were belonging to the family Cyprinidae, while the remaining two species *i.e.*, *Oreochromis aureus* and *Oreochromis niloticus* were placed in the family Cichlidae. Thus, the results of our present study revealed that the majority of fish fauna found in the Damai Stream was belonging to the two families *i.e.*, Cyprinidae and Cichlidae, respectively. Hence, present study will provide useful information's that later could be valuable in the systematics, fisheries management and conservation.

**Key words:** Bannu district • Tehsil Domel • Damai Stream • Freshwater Fish Fauna • Diversity

### INTRODUCTION

Bannu is a district of Khyber Pakhtunkhwa province of Pakistan. Bannu District is situated in the heart of the southern region bordering the districts of Karak in East-North and Lakki Marwat in East-South and the North and South Waziristan agencies. Domel is a FATA town and Tehsil of Bannu district where Damai stream flow throughout the year [1].

Fish can be defined as diverse groups of Vertebrata that possess gills and lives in all types of aquatic habitat [2]. Among aquatic fauna, fishes are one of the most important fundamentals and play a key role in the wealth of many nations as they have been a found as a constant item in the diet of many nations [3]. The greatest biodiversity of the vertebrates is exhibited by fishes with over 25,000 species. Of these, 41 percent are freshwater species, 58 % are marine and brackish water species and only one percent that move back and forth between salt and

freshwater habitats. In Pakistan, more than 186 freshwater fish species have been described [4]. Fish are diverse not only in their external morphology but also in the habitats they occupy, as they can be found in ponds, streams, desert springs, oceans, cold mountain streams [5, 6]. As vast research work has been done on the diversity of fish fauna of Khyber Pakhtunkhwa province, Pakistan by several workers including Hussain and Shah [7], Ahmad and Mirza [8] and Ahmed [9] were the first who identified some new loaches and trout species from Swat River. Butt [10] observed ninety four species of fishes from the whole province of Khyber Pakhtunkhwa. Shahjehan and Khan [11] reported 17 species of River Kurram at Bannu district. Shahjehan and Khan [12] reported twenty six fish species from Baran Dam of district Bannu. More recently, Saeed *et al.* [13], Ishaq *et al.* [14], Akhtar *et al.* [15, 16] and Haseeb *et al.* [17] had been studied the diversity of fish fauna from the various regions of Khyber Pakhtunkhwa province of Pakistan.

As regarding to the previous published literature, though vast studies have been conducted on the diversity of fresh water fish fauna found in the various regions of Khyber-Pakhtunkhwa province to improve fisheries, but still no detailed work is available regarding to the diversity of freshwater fish fauna of Damai Stream of Tehsil Domel of Bannu district. Thence, present research work was conducted to know the current status of fish fauna of Damai Stream of Tehsil Domel of Bannu District.

## MATERIALS AND METHODS

**Study Area:** A total of 50 Fish samples were collected randomly from different regions of Damai Stream of Tehsil Domel of Bannu district by using different types of nets namely hand nets, small mashed cast nets and hooks during the period of November 2014 to April 2015.

**Fish Sampling Identification:** All samples were immediately transferred into the laboratory. In the laboratory, photographs of fish were taken prior to preservation with 10% formalin, since formalin decolorizes the fish color on long preservation. Than 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 by using different systematic and identification keys [18, 19].

## RESULTS AND DISSCUSSION

In the present study, five species were collected and identified from the Damai Stream of Tehsil Domel of Bannu District and. These five species were belonging to two orders, two families and four genera and their detail systematic representation was recorded in the Table 1 and Figures 1-5, respectively.

Among them, three species *i.e.*, *Barilius vagra*, *Labeo rohita* and *Puntius sarana* were belonging to family Cyprinidae, while the remaining two species including *Oreochromis aureus* and *Oreochromis niloticus* were belonging to family Cichlidae, respectively.



Fig. 1: *Barilius vagra*



Fig. 2: *Labeo rohita*



Fig. 3: *Puntius sarana*



Fig. 4: *Oreochromis aureus*



Fig. 5: *Oreochromis niloticus*

Thus, the result of present study revealed that majority of fish species in the Damai Stream of Tehsil Domel were belonging to the two families *i.e.*, Cyprinidae and

Table 1: Systematic representation of Diversity of Damai Stream of Tehsil Domel of Bannu District

S.No.	Order	Family	Genus	Specie	Common name(English)	Local name
1	Cypriniformes	Cyprinidae	Barilius	Barilius vagra	Vagrabaril	Lohari or chal
2	Cypriniformes	Cyprinidae	Labeo	Labeorohita	Rohu	Rahu
3	Cypriniformes	Cyprinidae	Puntius	Puntius sarana	Olive barb	kharni, jundoor
4	Perciformes	Cichlidae	Oreochromis	Oreochromis aureus	Blue tilapia	Tilapir
5	Perciformes	Cichlidae	Oreochromis	Oreochromis niloticus	Nile tilapia	Tilapir

Cichlidae, which revealed that the environmental conditions Damai Stream are suitable for their survival, which was in accordance with Haseeb *et al.* [17] worked on fish fauna of Tanda dam of Kohat district. The existence of these species throughout the study period might be related to their tolerance of wide range of water temperature or substrate of the dam that could provide suitable environment for nest building or environmental and glacial history of study area or some other climatic factor such as, droughts could also have great impact on the distribution of these fishes as previously observed by several workers [17, 18, 20]. In addition, like many other fishes, cyprinid fishes have more ability to adapt themselves according to the changing in the environmental conditions in which they lived. Thus, in the present study, the abundance of cyprinid and cichlid species was indicating that the habitat and environmental conditions of Damai Stream of Tehsil Domel of Bannu district were more suitable for the growth of these cyprinid and cichlid species. Hence, this stream has great potential to support even greater number of warm water fishes through better management practices and could contribute to food security, trade and occupation for the people of the local area in the future.

## CONCLUSION

From the obtained results of the present study, it was concluded that the great diversity of fish fauna was found in the Damai Stream of Tehsil Domel of Bannu district, which illustrates the suitability of the water for fish survival. Therefore, fish culture could easily be managed and transported in this destitute area for enhancing trade and industry which may in turn improve the earnings and life quality of the people of this area.

## REFERENCES

1. Http.wikipedia.Bannu District.
2. Ali, S.S., 1999. Fishery and fresh water Biology. 2<sup>nd</sup> Edition, Nasim Publisher; Urdu Bazar Karachi, Pakistan.
3. Essetchi, P.K., G.T. Guy, N.D. Valentin, G.B.I. Gouli and K. Tidiani, 2003. Fish diversity and its relationships with environmental variables in a West African basin. *Hydrology*, 505: 139-146.
4. Helfrich, L.A. and R.J. Neves, 2009. Sustaining America's Aquatic Biodiversity Freshwater Fish Biodiversity and Conservation. Virginia cooperative extension, publication. pp: 420-525.
5. Forese, R. and D. Pauly, 1998. Fish Base 98: Concepts, Design and Data sources, Manila: ICLARM, pp: 66-94.
6. Moyle, P.B. and J.J. Cech, Jr., 1996. Fishes. An introduction to ichthyology. 3<sup>rd</sup> ed. Prentice Hall, Upper Saddle River, New Jersey, pp: 590.
7. Hussain, K.A. and S.Z.A. Shah, 1960. Survey report of River Swat, Swat state with special reference totrot culture. *Agriculture Pakistan*, 11: 301-310.
8. Ahmad, N.D. and M.R. Mirza, 1963. Loaches of genus *Nemacheilus* Hasselt from swat state. *West Pakistan J. Sci.*, 15: 75-81.
9. Ahmad, N., 1969. Trout in swat. Government printing, West Pakistan Lahore, pp: 1-5.
10. Butt, J.A., 1986. Fish and Fisheries of KPK Pakistan. *Biologia (Pak) special supplement*, pp: 21-34.
11. Shahjehan, I.A. and N.W.D. Khan, 1997. Fish fauna of River Kurram at Bannu and Toi stream Kohat, N.W.F.P., Pakistan. *Journal of Science and Technology*, University of Peshawar, 23: 71-72.
12. Shahjehan, I.A. and H. Khan, 2000. Ichthyofauna of Baran dam, Bannu, Kpk Pakistan. *Journal of Science and Technology*, University of Peshawar, 22: 39-43.
13. Saeed K., K. Khan and F. Haq, 2013. Diversity and population status of fish fauna of river Barandu district Buner Khyber Pakhtunkhwa Province Pakistan. *Journal of biodiversity and environmental sciences*. 3(4): 83-88.
14. Ishaq, M., S. Khan, J. Khan, N. Akhtar and K. Saeed, 2014. Study on Ichthyofaunal Biodiversity of River Swat. *World Journal of Fish and Marine Sciences*, 6(4): 313-318.
15. Akhtar N., S. Khan and K. Saeed, 2014. Exploring the Fish Fauna of River Swat, Khyber Pakhtunkhwa, Pakistan. *World Journal of Fish and Marine Sciences*, 6(2): 190-194.
16. Akhtar, N., K. Saeed and S. Khan, 2014. Fresh water record on fish fauna of River Barandu District Buner Khyber Pakhtunkhwa, Pakistan. *The Journal of Zoological Studies*, 1(6): 23-26.
17. Haseeb, A., T. Azeem, Z. Masood, F. Mengal, Hameed-Ur-Rehman, A. Fayyaz and Zia-ud-Din, 2015. An Investigation on Freshwater Fish Fauna of Tanda Dam in Kohat District, Khyber Pakhtunkhwa Province of Pakistan, *Global Veterinaria*, 14(4): 576-581.
18. Hasan, Z., M.A. Khan, Z. Ali, Q. Zia, M. Zubia and W. Khan, 2015. Fish Diversity of Sharki Dam, District Karak, Khyber Pakhtunkhwa, Pakistan. *Sindh University Research Journal (Science Series)*, 47(1): 167-170.

19. Rafique, M. and N.U.H. Khan, 2012. Distribution and status of significant freshwater fishes of Pakistan. Record Zoological Survey of Pakistan, 21: 90-95.
20. Lachner, E.A. and R.E. Jenkins, 1971. Systematic, distribution and Evolution of the *Nocomis biguttatus* species group (family Cyprinidae: Pisces) with a Description of a new species from the Ozark Upland. Smithsonian Contribution to Zoology, 91: 1-27.