

Fish Diversity Along the Fresh Water Rapti River Basin of Makawanpur, Central Nepal

Debendra Prasad Dhakal¹ | Raj Kumar Gautam² | Bishwas Upreti³

¹Lecturer of Zoology
Makawanpur Multiple Campus, Hetauda, Nepal

²Lecturer of Botany
Makawanpur Multiple Campus, Hetauda, Nepal
Email: rajgautam.htd@gmail.com

³Student of B.Sc.
Makawanpur Multiple Campus, Hetauda, Nepal

Corresponding Author

Debendra Prasad Dhakal

Email: debdhakal@gmail.com

To Cite this article: Dhakal, D. P., Gautam, R. K., & Upreti, B. (2025). Fish diversity along the fresh water Rapti river basin of Makawanpur, Central Nepal. *International Research Journal of MMC*, 6(4), 99–112. <https://doi.org/10.3126/irjmmc.v6i4.85287>

Submitted: 15 August 2025

Accepted: 29 August 2025

Published: 30 September 2025

Abstract

This study was conducted in Rapti River in Makawanpur located between latitudes 27° 21' 23" N to 27° 47' 00" N and longitudes 84° 08' 43" E to 85° 11' 57" E. It was carried out throughout Bhainse to Lothar, border of Makawanpur and Chitwan with a range of about 40 km. The objective of this study was to discover the fish diversity in Rapti River, Makawanpur and to determine the Shannon-Weiner's and Margalef's richness diversity indices. A total of 4 stations were set on the basis of human settlement along Bhainse, Hetauda, Manahari and Lothar. The field work was conducted from January 2025 to August 2025 to cover winter and summer seasons. The fishes were collected by employing local fisherman by using locally prepared fishing gears. A total of 40 fish species were collected belonging to 7 orders, 10 families and 25 genera. The order Cypriniformes was the most dominant, comprising 30 species and accounting for 75% of the total collection. It was followed by Siluriformes with 4 species (10%), Anabantiformes with 3 species (7.5%) and Clupeiformes, Synbranchiiformes and Belontiiformes, each represented by 1 species (2.5%). The *Barilius bendilisis* comprises the highest frequency of 20.14% of total catch followed by *Garra gotyla* 8.14%, *Puntius ticto* 8% and *Schistura beazvani* 7.71%. The highest Shannon-Weiner's index was recorded at Manahari (2.47) and lowest at Bhainse (1.97). The high Margalef's species richness was recorded at Lothar (4.21) and low at Bhainse (1.85). Manahari has the highest diversity and Lothar has the highest richness. This indicate that Lothar has many species but their distribution is slightly less even than in Manahari where the species richness is high. The present study benefit researchers and locals for the conservation of valuable aquatic fish fauna enhancing biodiversity richness.

Keywords: fish diversity, fish conservation, fresh water, Makawanpur, Rapti

1. Introduction

Fishes, under the phylum Chordata, falls under the sub phylum Vertebrata, division Gnathostomata lies on the superclass Pisces are the most fascinating aquatic fauna. Super class Pisces are further classified into class chondrichthyes and osteichthyes. Of these two class Osteichthyes are found both on marine and fresh water whereas chondrichthyes are only reported from marine water. Fishes are one of the most important and diverse aquatic fauna with an estimated 34,300 species (Froese & Pauly, 2020). These diverse groups of aquatic fauna directly support the socioeconomic condition of the people residing near the water resource areas. (Leveque et al., 2008). In Asia, a total of about 3000 species have been recorded (Lundberg et al., 2000). The major freshwater fish taxa from South Asia have been recorded with Carps (Cypriniformes) and Catfishes (Siluriformes) (Berra, 2007; Nelson et al. 2016). The understanding of fish species diversity in tropical Asia, including Nepal, remains quite scarce. Surveys regarding the fresh water River have been incomplete and scattered, leaving many species still undiscovered or undescribed (Leveque et al., 2008).

Makawanpur District, situated in Bagmati Province, is centrally located in Nepal and shares borders with Chitwan, Parsa, Bara, Sindhuli, Dhading, Kathmandu and Lalitpur districts. The district is renowned for its rich biodiversity, agricultural activities, industrial presence and River system. Makawanpur district holds large Rapti River and other small Rivers like Karra River, Samari River, Kukhreni River, Manahari River and Lothar River. These small Rivers ultimately meet and mix up with Rapti River. About 56% of the River covers the Chitwan district and about 44% of Makawanpur district is occupied by this River system with an area of about 3,200 square kilometers. The upstream elevation ranges from 2,584 m asl and finally meets at the downstream region of 124 m asl. This River experiences approximately 150 mm of rainfall during the pre-monsoon period, 2,000 mm during the monsoon season, 80 mm in the post-monsoon period, and 20 mm in the winter season. The Rapti River current has created a variety of landforms creating cobbly, sandy and loamy soil types in the region, including steep slopes and alluvial plains in the hilly landform making the area rich in biodiversity (Bruns et al., 2002). The flow of this River changes with the seasons, becoming stronger during the monsoon months due to heavy rainfall, which often causes flooding in the adjoining region. In the dry season, the River's current decreases significantly and sometime the River level is affected by the Kulekhani hydropower dam during the operational time.

This River is crucial for the local communities, providing water for irrigation, fishing, and other daily activities. Its banks are composed of a mix of cobbles, gravels, pebbles, sand, and mud, creating a dynamic and fertile environment for agriculture. This study aims to explore the fish diversity of Rapti River. Fresh Water River flowing from the hill to flat Terai region of Nepal, like Rapti River in Makawanpur district contribute in maintaining fish diversity. This diversity can be quantified through local data and thus highlighting the role of such rivers in supporting and maintaining aquatic faunal diversity.

This study was limited only on the small section and specific sites of the Rapti River due to short time period and technical difficulties like fishing equipment. This study suggests further study of physiochemical parameters and seasonal variation which is an important aspect for the study of fish diversity.

1.1 Justification

The fresh water River of Nepal plays an important role in maintaining the fish diversity and therefore conserving aquatic faunal diversity. Moreover, these River mainly flowing from the hilly region to flat Terai are rarely explored due to the lack of sufficient data and their

analysis. The Rapti River in Makawanpur district is a good example of fresh water flowing River and provides opportunity to study the fish diversity representing fresh water.

1.2 Research Objectives

The main objective of this study is to discover the fish diversity in Rapti River, Makawanpur.

The specific objective of this study is to determine the Shannon-Weiner's and Margalef's richness diversity indices.

1.3 Literature Review

Fresh Water rivers of Nepal support diverse fish fauna that uplift local ecology and livelihoods. The Rapti River basin of Makawanpur is an important fresh water system, yet its fish diversity remains poorly documented. So, accessing its ichthyofaunal composition is crucial for conservation and sustainable management. Across Nepal, several studies have documented fresh water diversity.

The study done by Shrestha (2019) shows a total of 252 freshwater fishes which belong to 15 orders, 40 families and 120 genera. Out of 252 species, 2 species are Endangered, 9 vulnerable species, 23 rare and threatened species, 32 data deficient rare ornamental species, 27 conservation dependent and rare species, 53 uncommon or least concern species, 71 common species and 15 exotic species.

Similar study done by Shrestha (2008) reported a total of 232 freshwater fishes which belong to 11 orders, 37 families and 114 genera. Nepal's freshwater systems are rich in fish diversity, with over 220 fish species reported and the family Cyprinidae is found to be the most common. These fishes are threatened by damming and pollution so more intense studies should be done for the conservation (Khatri et al., 2020).

Shrestha, (1981) published her first work titled "Fishes of Nepal" in 1981, documenting 120 species of freshwater fish classified into 10 orders, 26 families and 63 genera. Sharma (2008) reported 200 fish species belonging to 11 Orders, 36 Families and 114 Genera. Similarly, Rajbanshi (2012) reported 230 fish species belonging to 11 Orders, 32 Families and 99 Genera.

A total of 232 species of fishes have been reported in Nepal. Among them 14 endemic species are found (Shrestha, 2008). According to Rajbansi (2005), there are 187 fish species, but still more fishes can be expected to be added being virginity of most of the remote water bodies. These fishes are found in various water bodies of altitude ranging from 70 m above the sea level to the 4000 m height (Edds, 1986). Edds (1986) studied the fishes of Chitwan national park reporting 107 fish species.

Various environmental factors like deforestation, silt deposition, soil erosion and pollution have affected the natural aquatic environment, posing a significant threat to fish diversity in Nepal (Chitrakar et al., 2024). Other causes are over fishing, electro-fishing, poisoning and developmental works such as dam, bridge, irrigation etc. In particular the River basin in Nepal has undergone extensive change thus created adverse effects to aquatic biodiversity specially the native fish fauna (Swar & Shrestha, 1997; Swar, 2002).

2. Materials and Methods

2.1 Study Area

Figure 1: Map of the Study Area and Stations

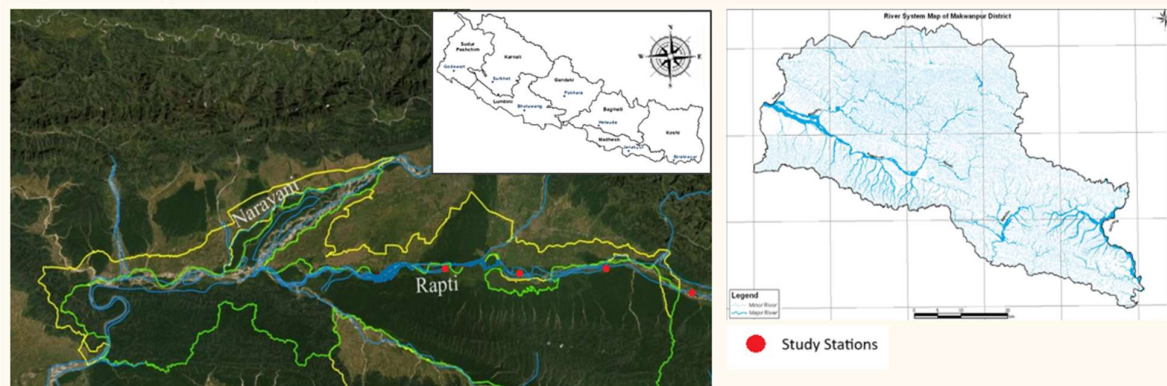


Figure 1. Map of the study area and stations

2.2 Location

The Rapti River lies in Makawanpur and Chitwan districts of Bagmati province and is a sub-basin of Narayani River system. The River extends from latitude 27° 21' 23" N to 27° 47' 00" N and longitude 84° 08' 43" E to 85° 11' 57" E. The study was done throughout Bhainse to Lothar, border of Makawanpur and Chitwan with a range of about 40 km. A total of 4 stations were set on the basis of human settlement along Bhainse, Hetauda, Manahari and Lothar. The field work was conducted from January 2025 to August 2025.

2.3 Data collection and analysis

Data were gathered through field visits and direct observation. For this study, a 100 meter stretch of River was sampled at each site, covering various habitats such as pools, run and depth. Fish sampling was conducted twice daily once in the morning (7AM to 10 AM) and again in the evening (3PM to 6 PM) at each station. The collected fish specimen was photographed on-site using a digital camera. Direct observation was carried out at 4 different stations. Identification of the fish species was done by using the keys Talwar and Jhingram (1991), Jayaram (1999), Shrestha (2008) and Shrestha (2019) in field as far possible. Data obtained from the study at the study site were analyzed and arranged in different forms such as table, charts etc. by using EXCEL for systematic and scientific analysis. The diversity of fish was analyzed using diversity indices like Shannon- Weiner's index and Species richness index.

3. Result

3.1 Distribution and Frequency

The Rapti River serves as a suitable habitat for a wide variety of fish species. A total of 40 species of fishes were collected belonging to 7 orders, 10 families and 25 genera at different station of Rapti River. These fish species were not uniformly distributed across all stations of Rapti River. Maximum number of fish species were recorded from Lothar station and minimum from Bhainse station. The most common species distributed in Rapti River was *Barilius bendelisis*. *Barilius bendelisis* comprises the highest frequency of 20.14% of total catch followed by *Garra gotyla* (8.14%), *Puntius ticto* (8%) and *Schistura beavani* (7.71%). *Schistura beavani* were only found in Bhainse station. The order Cypriniformes was the most dominant, comprising 30 species and accounting for 75% of the total collection. It was followed by Siluriformes with 4 species (10%), Anabantiformes with 3 species (7.5%) and

Clupeiformes, Synbranchiformes and Beloniformes, each represented by 1 species (2.5%). The family Cyprinidae was most prevalent, comprising 50% of the total recorded species. Family Belonidae, Mastacembalidae, Chirocentridae and Cobitidae represents by single species. Four family Danionidae, Cyprinidae, Nemacheilidae and Cobitidae of order Cypriniformes were recorded. *Schistura beavani* were only found in Bhainse station. Four species *Chirocentrus dorab*, *Naziritor chelynoidea*, *Schizothorax richardsonii* and *Tariqilabeo latius* were recorded only in Triveni station. Three species *Barilius barila*, *Opsarius tileo* and *Sperata seenghala* were only found in Manahari station. Order Synbranchiformes represents only one family Mastacembalidae, order Clupeiformes also represents only one Chirocentridae and Order Beloniformes also represents single family Belonidae. The highest Shannon-Weiner's index was recorded at Manahari (2.47) and lowest at Bhainse (1.97). The high Margalef's species richness was recorded at Lothar (4.21) and low at Bhainse (1.85).

Figure 2: Number of Individuals of Each Species Collected From the Rapti River

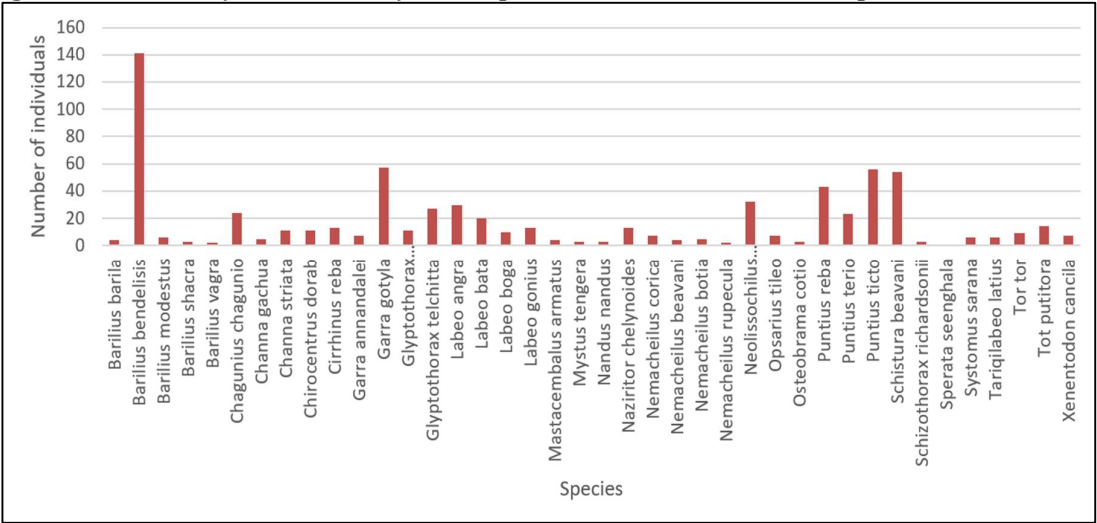
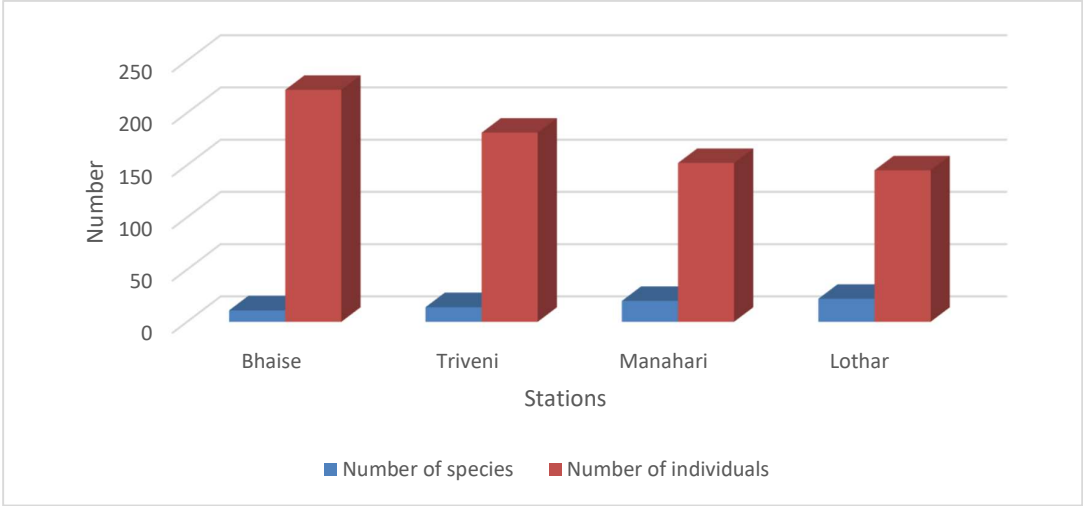


Figure 3: Station wise diversity of fishes in Rapti River

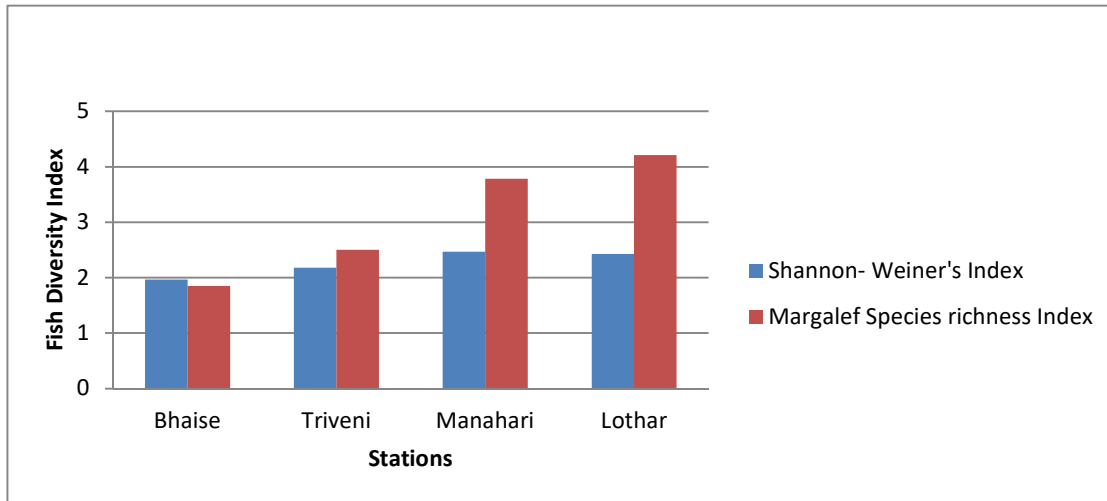


3.2 Species Diversity

The Shannon-Wiener diversity index (H) and Margalef richness index (d) were calculated based on different sampling stations. The highest Shannon-Weiner's index was

recorded at Manahari (2.47) and lowest at Bhainse (1.97). The high Margalef's species richness was recorded at Lothar (4.21) and low at Bhainse (1.85).

Figure 4: Shannon-Weiner's and Margalef Species richness Index



4. Discussion

The fish species found in Nepal have a wide range of distribution. Two hundred and thirty-two fish species belonging to 114 genera, 37 families and 11 orders are distributed in different water bodies of Nepal (Shrestha, 2008). A total of 6 orders, 12 families, 18 genera and 25 species with dominance of order Cypriniformes (52%) are distributed in Rapti River (Sah, 2025). In this study, a total of 40 fish species were documented representing 7 orders, 10 families and 25 genera (Table 2). The order Cypriniformes was the most dominant, comprising 30 species and accounting for 75% of the total collection. It was followed by Siluriformes with 4 species (10%), Anabantiformes with 3 species (7.5%) and Clupeiformes, Synbranchiformes and Beloniformes, each represented by 1 species (2.5%). Cypriniformes is the largest order of fresh water fishes, which includes 2,422 species (Nelson, 1984). Kaligandaki (Narayani) River supports the order Cypriniformes as most common order according to Edds (1986) as Rapti River is also one of the tributaries of Narayani River system. So, family Cyprinidae is also the most commonly recorded family in this River. *Barilius bendelisis*, *Garra gotyla*, *Glyptothorax telchitta*, *Schistura beavani*, *Puntius reba*, *Puntius ticto* were the most common species found in Rapti River. *Garra gotyla* is the single species present in all four stations. The Cyprinidae family was the most prevalent, comprising 50% of the total recorded species. The Siluriformes order ranked as the second most common group of fish observed in the Rapti River. Family Belonidae, Mastacembalidae, Chirocentridae and Cobitidae are represented by single species. Four family Danionidae, Cyprinidae, Nemacheilidae and Cobitidae of order Cypriniformes were recorded. *Barilius bendelisis* comprises the highest frequency of 20.14% of total catch followed by *Garra gotyla* 8.14%, *Puntius ticto* 8% and *Schistura beavani* 7.71%. *Schistura beavani* were only found in Bhainse station.

The Shannon-Wiener diversity index (H) and Margalef Richness Index (d) values were calculated for each station. The Shannon-Weiner diversity index increases from Bhainse (1.97) to Manahari (2.47) indicates increasing diversity. Manahari has the highest species diversity and Lothar (2.43) has slightly less diversity than Manahari but more diverse than Bhainse. Bhainse has the lowest diversity. The Margalef's species richness index shows a steady increase from Bhainse (1.85) to Lothar (4.21). A biodiversity index characterizes the diversity of sample or community by a single number (Magurran, 1988). The distribution of individuals

among species and the richness of species together define species diversity. However, the understanding and measurement of species diversity is complex and cannot be dealt simply (Williamson, 1973). Shannon-Wiener diversity index considers the richness and proportion of each species while richness index represents the number of individuals in the sample. The biodiversity index values showed that there were slight differences between the stations. This might be due to use of different fishing gear and might have high selectivity effect (Keskin & U"nsal, 1998). The main causes of the differences occurring in the biodiversity indices are due to atmospheric air currents and environmental conditions (Keskin & U"nsal, 1998), and seasonal fish migrations (Ryer & Orth, 1987). Lothar has the highest species richness, suggesting it has most species relative to sample size. And Bhainse has the lowest species richness. Manahari has the highest diversity and Lothar has the highest richness. This indicates that Lothar has many species but their distribution is slightly less even than in Manahari.

5. Conclusion and Recommendation

The present study was conducted since January 2025 to August 2025 covering four winter and summer season. The present work included diversity of fishes of Rapti River. With the assistance of local fisherman, a total of 40 species were collected from various stations along the Rapti River representing 7 orders, 10 families and 25 genera. These fish species were not uniformly distributed across all stations of Rapti River. Among 40 species, endangered species *Tor tor* were found in the Rapti River.

Local communities and fisherman need to recognize the importance of Riverine fisheries. To ensure the effective management and conservation of existing fish species, following recommendations are advised:

- Local people knowledge and participation should be incorporated in the development process so that they are aware of the importance of fisheries.
- To ensure the sustainable use of available resources, technical, financial, and other support services should be provided to local fisherman.
- Harmful fishing methods, such as use of fine meshed net, gill net and mosquito net capture both targeted and non-targeted juvenile fish. Therefore, these destructive tools should be prohibited to protect fish diversity.
- The amount of water flow is irregular due to Kulekhani hydropower. Therefore, authorities should offer appropriate facilities to ensure compensation flow of water to support fishes.

6. Acknowledgements

We are grateful to Dr. Yam Bahadur Silwal, Campus Chief, Makawanpur Multiple Campus, Hetauda for granting necessary administrative support, Mr. Devraj Gautam for his tireless support during the field study, and Ms. Rejina Rai for her tireless effort during field visit.

7. Declaring

Funding

This research was funded by the Makawanpur Multiple Campus, Research Management Cell under faculty enhancement program.

Author Contribution

D. P. Dhakal: Research design, data collection, data analysis and finalize manuscript.

R.K. Gautam: Research design, data collection, data analysis and revised manuscript.

B. Uprety: Data collection and data analysis.

Conflict of Interest

The authors state no conflict of interest.

References

1. Berra, T. (2007). Freshwater fish distribution. Academic press.
2. Bhandari, D., Uprety, M., Ghimire, G., Kumal, B., Pokharel, L., & Khadka, P. (2018). Nepal flood 2017: Wake up call for effective preparedness and response, Rugby, U.K.: Practical Action.
3. Bruns, B. R., Bandaragoda, D. J., & Samad, M. (2002). Integrated water-resources management in a river-basin context: institutional strategies for improving the productivity of agricultural water management. IWMI.
4. Chitrakar, P., Khalid, M. A., & Labh, S. N. (2024). Spatiotemporal variability in water quality, ichthyofaunal diversity, and its conservation in the rivers of Nepal: A mini review. *Iranian Journal of Fisheries Sciences*, 23(4), 633-648. <https://doi.org/10.22092/ijfs.2024.131390>
5. Edds, D.R. (1986): Fishes of Kali Gandaki\ Narayani River, *Journal of Natural History Museum*, 10(1-4):13-22.
6. Froese, R., & Pauly, D. (2020). Fish base. World Wide Web electronic publication. Retrieved October 12, 2020 from www.fishbase.se
7. Jayaram, K.C. (1999): The fresh water Fisheries of Indian region. (2nd ed.) Narendra publishing House, Delhi.
8. Jha, D.K. (2018). Species diversity, distribution and status of fishes in Chitwan District and adjacent areas, Nepal. *Journal of Natural History Museum*, 30, 85-101. <https://doi.org/10.3126/jnhm.v30i0.27539>
9. Jha, D.K., Shrestha, M.K., & Rai, S.C. (1989). Fish fauna of Narayani and Rapti systems in Chitwan, Nepal. *Journal of Institute of Agriculture & Animal Science*, 10, 97-107.
10. KE skin, Ç., & Ünsal, N. (1998). The fishfauna of Gökçeada Island, NE Aegean Sea, Tlirkey. *Italian Journal of Zoology*, 65(sup1), 299–302. <https://doi.org/10.1080/11250009809386836>
11. Khanal, N. (2021). A geomorphic approach for identifying flash flood potential areas in the East Rapti River Basin of Nepal. <https://doi.org/10.3390/IJGI10040247>
12. Khatri, K., Jha, B. R., Gurung, S., & Khadka, U. R. (2020). Freshwater fish diversity and its conservation status in different water bodies of Nepal. *Nepal Journal of Environmental Science*, 8, 39-52. <https://doi.org/10.3126/njes.v8i1.34442>
13. Lévêque, C., Oberdorff, T., Paugy, D. et al. Global diversity of fish (Pisces) in freshwater. *Hydrobiologia* **595**, 545–567 (2008). <https://doi.org/10.1007/s10750-007-9034-0>
14. Lundberg, J. G., Kottelat, M., Smith, G. R., Melanie L. J. Stiassny, & Gill, A. C. (2000). So many fishes, so little time: An overview of recent ichthyological discovery in continental waters. *Annals of the Missouri Botanical Garden*, 87(1), 26–62. <https://doi.org/10.2307/2666207>
15. Magurran, A.E. (1988). Ecological diversity and its measurement. Princeton University Press, Princeton.
16. Margalef, R. 1968. Perspective in Ecological Theory. Chicago: University of Chicago press.
17. Parker, T.J. & W.A. Haswell (1990): A text book of zoology. (7thed. Vol.2), Low price publication, Delhi.

18. Paudel, S. (2006). Study on the fish and fishery resources of the Rapti River. (Unpublished master thesis), Central Department of Zoology, Tribhuvan University, Nepal.
19. Rajbanshi, K.G. (2012). Biodiversity and distribution of fresh water fishes of central Nepal Himalayan region. Kathmandu: Nepal Fisheries Society, pp. 136.
20. Rajbanshi, K.G. (2005): Review on current taxonomic status and diversity of fishes in Nepal. Royal Nepal Academy of Science and Technology, Kathmandu, pp.41.
21. Karki, R., Hasson, S. U., Schickhoff, U., Scholten, T., & Böhner, J. (2017). Rising precipitation extremes across Nepal. *Climate*, 5(1), 4. <https://doi.org/10.3390/cli5010004>
22. Ryer, C.H. & Orth, R.J. (1987). Feeding ecology of the Northern pipefish, *Syngnathus fuscus*, in a seagrass community of the lower Chesapeake Bay. *Estuaries*, 10 (4), 330–336.
23. Sah S.P. (2025). Fish diversity in relation to habitat of Rapti river, Chitwan. *International Journal of Biological Innovations*. 7(1): 66-73. <https://doi.org/10.46505/IJBI.2025.7108>
24. Shannon, C.E., & Weaver, W. (1949). The mathematical theory of communication. Urbana, University of Illinois Press, 177 pp.
25. Sharma, C.M. (2008). Freshwater fishes, fisheries, and habitat prospects of Nepal. *Aquatic Ecosystem Health & Management*, 11(3), 289-297.
26. Shrestha, J. (1981). Fishes of Nepal. C.D.C. Tribhuvan University, Kathmandu, Nepal.
27. Shrestha, T. K. (2008). Ichthyology of Nepal: a study of fishes of the Himalayan waters. (1st ed.), Kathmandu, Nepal
28. Shrestha, T.K. (1996): Ecology and Management of Mahseer: A Study of Ranching Mahseer in the Himalayan River of Nepal. R.K. Printer Teku, Kathmandu, Nepal.
29. Shrestha, T.K. (2019). Ichthyology of Nepal: A study of fishes of the Himalayan waters. (2nd ed.), Kathmandu, Nepal.
30. Swar, D.B., & J. Shrestha (1997): Human impact on aquatic ecosystems and native fishes of Nepal.
31. Swar, D. B. (2002). The status of coldwater fish and fisheries in Nepal and prospects of their utilisation for poverty reduction. *FAO Fisheries Technical Paper*, 79–96.
32. Talwar, P.K., & Jhingran, A.G. (1991) *Inland Fishes of India and adjacent countries*. Oxford-IBH Publishing Co. Pvt. Ltd.

Appendix

Table 1

Shannon-Weiner's and Margalef Species Richness Index

S.N	Sampling Station	Shannon-Weiner's Index	Margalef Species Richness Index
1.	Bhainse	1.97	1.85
2.	Triveni	2.18	2.50
3.	Manahari	2.47	3.78
4.	Lothar	2.43	4.21

Table 2

Species of fishes collected from all stations and their family and order

S.N.	Species	Order	Family	Local name
1.	<i>Barilius barila</i>	Cypriniformes	Danionidae	Faketa chahale
2.	<i>Barilius bendelisis</i>	Cypriniformes	Cyprinidae	Fageta
3.	<i>Barilius modestus</i>	Cypriniformes	Danionidae	Chiple faketa
4.	<i>Barilius shacra</i>	Cypriniformes	Danionidae	Faketa
5.	<i>Barilius vagra</i>	Cypriniformes	Danionidae	Lam faketa
6.	<i>Chagunius chagunio</i>	Cypriniformes	Cyprinidae	Patharchatti
7.	<i>Channa gachua</i>	Anabantiformes	Channidae	Bhoti
8.	<i>Channa striata</i>	Anabantiformes	Channidae	Hile
9.	<i>Chirocentrus dorab</i>	Clupeiformes	Chirocentridae	Karle
10.	<i>Cirrhinus reba</i>	Cypriniformes	Cyprinidae	Mrigal
11.	<i>Garra annandalei</i>	Cypriniformes	Cyprinidae	Lohari
12.	<i>Garra gotyla</i>	Cypriniformes	Cyprinidae	Budhuna
13.	<i>Glyptothorax pectinopterus</i>	Siluriformes	Sisoridae	Capre
14.	<i>Glyptothorax telchitta</i>	Siluriformes	Sisoridae	Telcapre
15.	<i>Labeo angra</i>	Cypriniformes	Cyprinidae	Thed
16.	<i>Labeo bata</i>	Cypriniformes	Cyprinidae	Bhangan
17.	<i>Labeo boga</i>	Cypriniformes	Cyprinidae	Boga
18.	<i>Labeo gonius</i>	Cypriniformes	Cyprinidae	Gurdi
19.	<i>Mastacembalus armatus</i>	Synbranchiformes	Mastacembalidae	Baam
20.	<i>Mystus tengera</i>	Siluriformes	Sisoridae	Tengra
21.	<i>Nandus nandus</i>	Anabantiformes	Nandidae	Dalahai
22.	<i>Naziritor chelynoides</i>	Cypriniformes	Cyprinidae	Karange
23.	<i>Nemacheilus corica</i>	Cypriniformes	Nemacheilidae	Rai gadero
24.	<i>Nemacheilus beavani</i>	Cypriniformes	Nemacheilidae	Dharke Gadero
25.	<i>Nemacheilus botia</i>	Cypriniformes	Nemacheilidae	Gadela, goira
26.	<i>Nemacheilus rupecula</i>	Cypriniformes	Nemacheilidae	Gadero
27.	<i>Neolissochilus hexagonolepis</i>	Cypriniformes	Cyprinidae	Katle
28.	<i>Opsarius tileo</i>	Cypriniformes	Danionidae	Faketa
29.	<i>Osteobrama cotio</i>	Cypriniformes	Cyprinidae	Gurda
30.	<i>Puntius reba</i>	Cypriniformes	Cyprinidae	Mrigal
31.	<i>Puntius terio</i>	Cypriniformes	Cyprinidae	Sidhra/dhyatre
32.	<i>Puntius ticto</i>	Cypriniformes	Cyprinidae	Sidra
33.	<i>Schistura beavani</i>	Cypriniformes	Cobitidae	Gadela

34. <i>Schizothorax richardsonii</i>	Cypriniformes	Cyprinidae	Asala
35. <i>Sperata seenghala</i>	Siluriformes	Bagridae	Tengra
36. <i>Systemus sarana</i>	Cypriniformes	Cyprinidae	Kade
37. <i>Tariqilabeo latius</i>	Cypriniformes	Cyprinidae	Lohari
38. <i>Tor tor</i>	Cypriniformes	Cyprinidae	Falame Sahar
39. <i>Tot putitora</i>	Cypriniformes	Cyprinidae	lodar/mahaseer
40. <i>Xenentodon cancila</i>	Beloniformes	Belonidae	Chuche bam, Kauwa

PHOTO PLATES
Photo plate 1



Neolissochilus hexagonolepis



Barilius bendelisis



Labeo bata



Schistura beavani



Garra gotyla



Channa striata

Photo plate 2



Schizothorax richardsonii



Barilius barila



Botia almorhae



Nemacheilus rupecula



Raniceps raninus



Nemacheilus botia

Photo plate 3

