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Fish diversity of Narmada River at Chandan Ghat in Dindori District (M.P.)

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Abstract
The present study deals Fish diversity of Narmada River at Chandan Ghat in Dindori District (M.P.) during period June 2019 to May 2020 to census and commercially important fishes in the Narmada River. Narmada River is the largest Westward flowing river of India. It is also referred as the life line of Madhya Pradesh. Present study was aimed to generate information on the fishes of Chandan Ghat of river Narmada. The present study has been conducted to assess the fish biodiversity in a stretch of Narmada River in Madhya Pradesh. The results of present investigation reveal the occurrence of 42 fish species belonging to 6 orders, 15 families and 24 genera. Among the collected species, order Cypriniformes was most dominant constituting 47.62% followed by order Siluriformes constituting 11.90% order Perciformes constituting 21.43% orders Osteoglossiformes 4.76% and Synbranchiformes constituting 9.52% and orders Beloniformes constituting 4.76% of the total fish species.

Keywords: Fish diversity, Economic value, Nutritive Value, Narmada River

Introductions
The Narmada River is the fifth largest river of India. It is commonly known as the life line Madhya Pradesh and largest west flowing river of the country which originates from an elevation of 1015 m. in Maikal highland near Amarkantak under Anuppur district (M.P.) of 22°40'N Latitude and 81°45'E longitude. The river Narmada is an inter-state river flowing through Madhya Pradesh, Chhatishgarh, Maharashtra and Gujrat. The total length of the river is 1312 Km. with flow area of Narmada River is approximately 36000 square miles. Narmada River merges to the Gulf of Khambhat in Bharuch. The river is flows 1312 Km. in district of Madhya Pradesh and runs along the common border of Madhya Pradesh and a length of 1077 km. Study of biodiversity of fish fauna and their identification is one of the interesting field of biological research, which gives us an idea about the morphological variations and population diversity of fauna in polluted and non-polluted site of any particular habitat (Napit, 2013) [1]. Rich biodiversity of any ecosystem is absolutely essential in order to maintain their stability for proper function of their food chains (Siddiqui, *et al.* 2014) [2]. Fishes are the important element in the economy of many nations as they have been a stable in the diet of many people (Shukla, *et al.* 2013) [3]. Ichthyofaunal documentation is important to analyze status of fish species and also helps us for future planning to improve and conserve the biodiversity (Bose, *et al.* 2013) [4]. In India potential of fish culture is yet to be fully exploited. Fishes being rich source of proteins and have high nutritive value. Extensive development of aquaculture needs to be given priority after green revolution to feed ever growing population. Success of fish culture depends apart from other factors, on selection of suitable species. Secondly the country is rich in diversity of such important group of animals. Further, there is a need of a survey of diversity of fishes in different types of habitats of river all over the country.

Present investigation was undertaken to study the fish diversity of Narmada River at Chandan Ghat in Dindori Distt. (M.P.) India. The objective of study was to give recent data regarding fish diversity of this river, aiming to contribute a better knowledge of the fish diversity and a tool for conservation planning of aquatic environments in this region. It is the first effort made in this direction, various indigenous, commercially important and economically valuable fishes were found in the Chandan Ghat.

Material and methods
Fishes were collected from Narmada River at Chandan Ghat Distt. Dindori (M.P.) India with the help of local fishermen using different type of nets namely gill nets, cast nets, dragnets

and Bhor Jal. Immediately photographs were taken with help of digital camera.

Fishes were brought to laboratory and preserved in 10% formalin solution in separate specimen jars according to the size of species. Small fishes were directly placed in the 10% formalin solution. While large fishes were given an incision in their abdomen and preserved.

The sampling was carried out seasonally covering pre-monsoon, monsoon, post-monsoon and winter season. Smaller fishes were directly placed in the formalin solution, while larger fishes were given an incision on the abdomen before they were fixed. Plastic jar were used for the collection and preservation. Fishes were labeled based on the serial number, common name, scientific name, locality and date of collection. Fishes were identified with the help of taxonomic key, Days (1994) [5] and Talwar and Jhingran (1991) [6]. Fish Base website was also referred for various aspects of fish fauna (www.fishbase.org) [7]. Specific identifying characters on the body was observed and noted.

Results and discussion

All animals depend on each other in order to maintain the metabolic process. They need energy for growth and respiration.

During the study period different fish varieties have been observed in the Narmada River at Chandan Ghat in Dindori District. The results showed that the area was rich in fish diversity. Fishes belonging to 6 orders and 15 families were collected during course of the study period. Many collected fishes having economic importance sold after collection in the local fish market. In the present fish diversity study 42 species of 24 different genera 15 families and 6 orders were recorded from the Narmada River at Chandan Ghat number of catches carried out during June 2019 to May 2020. The members of Order Cypriniformes were dominated by 20 species followed by Siluriformes 5 species, Perciformes 9 species, Synbranchiformes 4 species and Osteoglossiformes and Beloniformes 2 species each.

15 fish families represented by 42 fish species, Family Cyprinidae was dominant group with 13 species in the assemblage composition in which *Garra Lamta, Rasbora daniconius* and *Puntius ticto* were found most abundant. *Catla-caltla, Puntius punctius, Puntius sarana, Puntius sophore, Lebeo rohita, Cyprinus carpio, Hypothalmichthys molitrix, Chela bacaila, Cirrhinus mrigala* found abundant. *Cirrhinus Reba, Labeo calbasu* and *Gambusia affinis* were found less abundant. Followed by Family Bagridae in which *Mystus cavasius* was found abundant. *Mystus Aor* (*Aorichthys*), and *Mystus Seenghala* were found less abundant.

Among Family Channidae *Channa striatus* was found less abundant while *Channa punctatus* and *Channa gaucha* were found abundant. Followed by Family Notopteridae in which *Notopterus Notopterus* was found abundant. *Notopterus Chitala* was found rare. Family Siluridae in which *Wallago Attu* was found abundant. Family *Ompok bimaculatus* was found rare. Family Mastacembelidae in which *Mastacembelus armatus* and *Mastacembelus pancalus* were found less abundant. Followed by family Nandidae in which *Nandus* where found less abundant. Family Ambassidae in which *Chanda Nama* and *Chanda ra$nga* are found less abundant. Family Claridae in which *Claris batrachus* found abundant.

Family Mugilidae in which *Mugil cephalus* was found rare. Family Belonidae in which *Xenentodon cancila* was found rare. Family Cichlidae in which *Oreochromis mossambica* were found abundant. Family Anabantidae in which *Anabas testudineus* were found abundant. Family Gobiidae in which *Glassogobius giuris* were found rare.

Table 1: The fish diversity and Economic value of Chandan Ghat, Narmada river (June 2019 to May 2020)

S. No.	Order	Family	Scientific name	Common name	Status
1.	Osteoglossiformes	Notopteridae	*Notopterus notopterus*	Feather back	+
			Notopterus chitala	Moy	-
2.	Cypriniformes	Cyprinidae	*Catla catla*	Catla	++
			Garra lamta	Garra	+++
			Rasbora daniconius	Black line Rasbora	+++
			Rasbora rasbora	-	++
			Cyprinus carpio	Common carp	++
			Puntius ticto	Ticto	+++
			Puntius amphibious	Khavli	++
			Puntius sarana sarana	Khavli	++
			Puntius sophore	Sophore	++
			Cirrhinus mrigala	Mrigala	++
			Cirrhinus reba	Reba	+
			Labeo rohita	Rohu	++
			Labeo calbasu	*Calbasu*	+
			Labeo bata	-	+
			Oxygaster bacaila	Indian glass barb	+
		Bagridae	*Mystus aor (Aorichthys)*	Aor	+
			Mystus cavasius	-	+
			Mystus seenghala	Seenghala	+
3.	Siluriformes	Siluridae	*Ompok bimaculatus*	Buter cat fish	-
			Wallago attu	Fresh water shark	+
		Claridae	*Claris batrachus*	Mangur	++
		Sisiridae	*Glyptothorax spp.*	-	-
		Heteropneustidae	*Heteropneustus fossillis*	Singhur	-
4.	Beloniformes	Belonidae	*Xenentodon cancila*	Kowa	
			Gadusia chapta	-	+

5.	Synbranchiformes	Mastacembelidae	*Mastacembelus armatus*	Baam	+
			Mastacembelus pancalus	Malga	+
			Mastacembelus aculeatus	-	+
		Cichlidae	*Tilapia mossambica*	Telapi	+
6.	Perciformes	Anabantidae	*Anabas testudineus*	Koi	+
		Gobiidae	*Glassogobius giuri*	Goby	-
		Nandidae	*Nandus nandus*	-	-
		Ambassidae	*Chanda ranga*	Glossyfish	++
			Chanda nama	-	-
		Channidae	*Channa striatus*	Banded snake head	+
			Channa punctatus	Spotted snake head	++
			Channa gaucha	Dhok	-
			Channa marulius	Maral	+

*Most abundant; +++, Abundant; ++, Less abundant; +, Rare; -

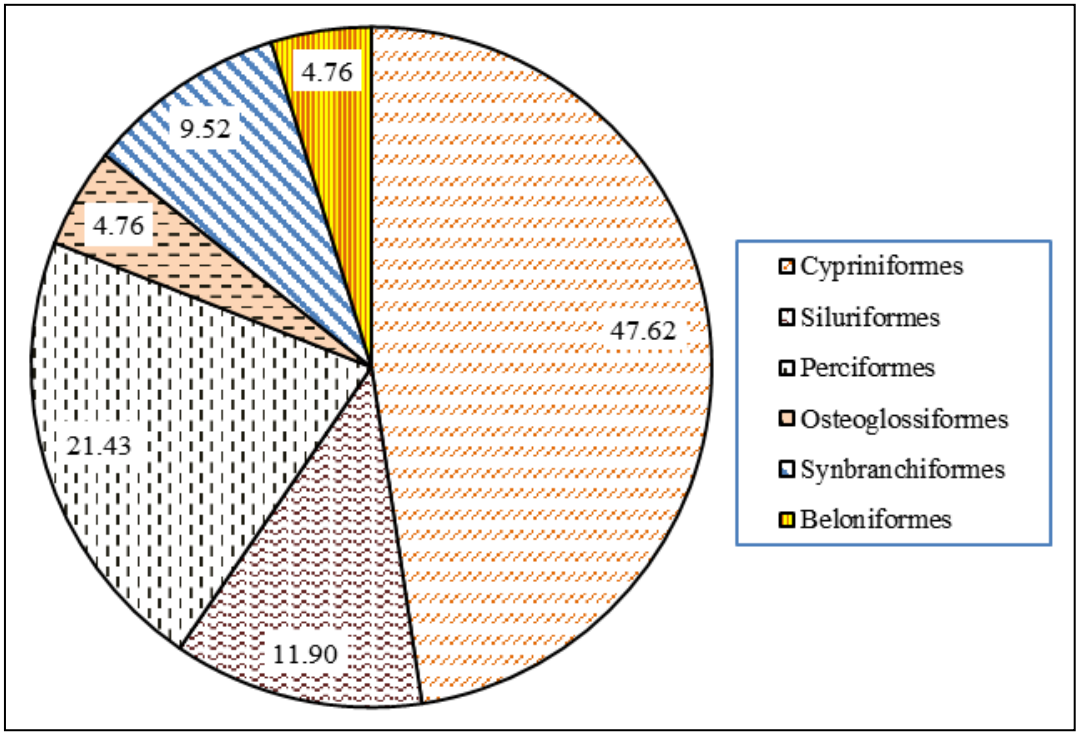

Fig 1: Order wise % analysis of fish diversity at Chandan Ghat, Narmada River.

Various workers have done work on Narmada River. Vishwakarma et al. (2014) [8], recorded 33 fish species belonging to 5 orders, 9 families and 21 genera. Patel, *et al.* (2015)[9] work done Biomass assessment and production of fish species of the Bichhiya river Rewa (M.P.) study were measured 51 fish species. Dominance species of fishes were *Labeo calbasu, Labeo rohita, Mystus seenghala, Catla catla, Cirrihinus mrigala, Tor tor*. The total density of Dominance fish species 53.06%. The total fish production were 1'04331 kg in the period of one year.

Pathak *et al.* (2014) [10] recorded 58 species of fish from western region of Narmada river at Jabalpur. Siddiqui et al. (2014)[2] work done on Biodiversity of Ichthyofauna of Narmada river of Mandleshwar region, Madhya Pradesh, India and recorded 48 species of fish belonging to 7 orders and 17 families. Bose *at al.* (2013) [4] recorded 57 species, belonging to 35 genera, 13 families, and 6 orders from middle stretch of river Tawa. Bakawale *et al.* (2013) [11] worked on the fish Species diversity of the River Narmada in western zone, and recorded total 51 species of fish belonging to 7 orders and 15 families.

In the present study 42 fish species, belonging to 6 orders and 15 families were recorded. Present investigation revealed that, Narmada River is a healthy water body providing a habitat for freshwater fishes of diverse type. However, there is constant threat to fish population due to eutrophication and illegal fishing activities. The illegal fishing activities should be banned to prevent depletion of fresh water fish resources and further studies should be conducted to generate more details regarding seasonal production and ecology of fishes. In situ conservation is one of the several prominent and suggestive measures for the conservation of fish biodiversity.

Conclusion

The work has been concluded with future strategies for development of fish diversity of Narmada River at Chandan Ghat, Dist. Dindori (M.P.) India. Recent data regarding Fish diversity of the Chandan Ghat, aiming to contribute a better knowledge of the fish diversity planning of aquatic environments in this region. To maintain fish biodiversity has an immense importance as it is not always possible to

identify individual species critically to sustain aquatic ecosystem.

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References

1. Napit Mukesh Kumar. Study of fish fauna of Bundelkhand region with special reference to Damoh district, *International Journal of advance research*. 2013;1(4):24-30.
2. Siddiqui, Anis, Chouhan, Meenakshi and Sharma. Shailendra. Biodiversity of Ichthyofauna of Narmada River of Mandleshwar Region, Madhya Pradesh, India, *Science Secure Journal of Environmental Biology*. 2014;1(1):21-25.
3. Shukla, Pallavi and Singh, Ajay. Distribution and Diversity of Freshwater Fishes in Aami River, Gorakhpur, India, *Advances in Biological Research*, 2013;7(2):26-31.
4. Bose AK, Jha BC, Suresh VR, Das AK, Parashar A and Ridhi. Fishes of the middle stretch of river Tawa, Madhya Pradesh, India, *Journal of Chemical, Biological and Physical sciences*. 2013;3(1):706-716.
5. Day Francis FLS and FZS. The fishes of India, Jagmander book agency, New Delhi, 1994, 1 & 2.
6. Talwar PK and Jhingran AG. Inland fishes of India and adjacent countries. Oxford and IBH publishing co. Pvt. Ltd. New Delhi India. 1991;1:2.
7. www.fishbase.org.
8. Vishwakarma, Kripal Singh, Altaf Ali Mir, Abhilasha Bhawsar and Vipin Vyas. Assessment of Fish assemblage and distribution in Barna Stream Network in Narmada basin (Central India), International Journal of Advanced Research, 2014;2(1):888-897.
9. Patel, Jitendra Kumar, Tiwari AK and Tiwari, Ankita. Biomass assessment and production of fish species of the Bichhiya River Rewa (M.P.), *International Journal of Applied and Universal Research*. 2017;IV(VI):11-13.
10. Pathak, Triguna, Borana K and Zafar, T. Ichthyofauna of western region of Narmada River, Madhya Pradesh. *International Journal of Research in Applied, Natural and Social Sciences*, 2014;2(4):25-28.
11. Bakawale, Sunita and Kanhere RR. Study on the Fish Species Diversity of the River Narmada in Western Zone, Research Journal of Animal, *Veterinary and Fishery Sciences*. 2013;1(6):18-20.