

Ichthyofaunal diversity of wan river, tributary of Tapi River

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Abstract

The present study was conducted for the ichthyofaunal diversity of Wan River. Wan river is one of the major tributaries of Purna River which ultimately meets to Tapi River. The study was conducted during January 2013 to December 2014. 21 species of freshwater fishes and 22 taxa was identified during this study. The Ichthyofaunal diversity spans through 8 families and 5 orders. This type of studies should be carried out frequently to get dynamics of freshwater ecosystem. Changes in ichthyofaunal diversity can be used to know the changes in freshwater ecosystem as ichthyofaunal diversity is largely dependent on available food sources and predators present in given ecosystem.

Key Words: Ichthyofauna, Wan River, Diversity, Dynamics, Freshwater ecosystem

1. Introduction

India is one of the mega biodiversity countries in the world and occupies ninth position in terms of freshwater mega biodiversity country. Freshwater biodiversity contains almost all conceivable aquatic habitats with 21,723 living species of fish have been recorded out of 39,900 species of vertebrates.

^[1] Fish is one of the major groups of vertebrates. It influences human life in a number of ways. It is a rich source of food and fish plays a predominant role in overcoming the nutritional deficiencies of Proteins, fat and vitamins. It also provides several by-products like fish meal, fish glue and fish oil etc. Fish not only provide food but boost up the economy of many countries of the world as well ^[2]. Fishes are very important from the biodiversity point of view and are the best bio-indicators of the given ecosystem ^[3].

Over the last century, riverine ecosystems have suffered most due to intense human intervention resulting in habitat loss and degradation. As a consequence, many species of fishes have become highly endangered, particularly in rivers where heavy burden is placed on freshwater resources. Traditionally rivers have been used for anthropogenic activities which causes eutrophication. The main causes of depletion fresh water diversity are habitat destruction and defragmentation ^[4], water abstraction, industrial pollution and private use ^[4-7] exotic species introduction, pollution ^[8] and global climate change impacts ^[9,10]. Freshwater fish are one of the most threatened

taxonomic groups ^[11] because of their high sensitivity to the quantitative and qualitative alteration of aquatic habits. ^[12, 13, 14]

Pawara *et al.* ^[15], reviewed fresh water fish diversity of Maharashtra (India) and reported that 165 species belonging to 9 orders, 26 families and 82 genera. Balkhande and Kulkarni ^[16] found 18 fish species belonging to 5 orders, 8 families and 14 genera in Godavari River at Dhangar Takli of Parbhani district in Maharashtra. Borana and Zafar ^[17] studied Ichthyofauna of western region of Narmada River, Madhya Pradesh and recorded that fifty-eight fish species belonging to thirty-eight genera, sixteen families and six orders.

2. Material and Methods

Study area

The Wan River is a river of central India. It is tributary of Purna River, which is major tributary of Tapi River. It rises in the Gawilgarh hills of eastern Satpura Range in Amravati District of Maharashtra state, India. Wan river flows southward, draining Amravati, Akola and Buldhana region before emptying into the Purna River in Buldhana District of Maharashtra. The watershed lies mostly in these three districts of Maharashtra state. Number of streams and nalas originating from these three districts contribute to form watershed areas that discharge their runoff to Wan River in rainy season.

It originates from 6 km away from the holy place Dhargarh which is located at the base of Chikhaldara in Satpura ranges in Amravati District of Maharashtra and flows through Akola and Buldhana districts and meets to River Purna in South at Wangeshwar. Six rivulets from right and 7 from left bank meet the river.

Sampling Period

Fishes were collected from water bodies of different localities of the study area for two consecutive years i.e. from January-2013 to December-2014 with the help of local fishermen and brought to the laboratory.

Sites of Sampling

Eleven sampling sites established at the villages situated on the bank of the river Wan are depicted in Table 1.

Table I: Detail location of the Survey Spots on River Wan and its tributaries

Site	Name of the site	GPS Reading	District
Site-1	Wari	N: 21.17172. E: 76.77401.	Akola.
Site -2	Warkhed	N: 21.12738. E: 76.78689.	Akola.
Site -3	Danapur	N: 21.09271. E: 76.78517.	Akola.

Site -4	Wadgaon	N: 21.06740. E: 76.76852.	Buldhana.
Site -5	Kolad	N: 21.05611. E: 76.75478.	Buldhana.
Site -6	KakanwadaKh.	N: 21.03296. E: 76.74654.	Buldhana.
Site -7	Kakanwada Bu.	N: 21.03056. E: 76.74993.	Buldhana.
Site -8	Wankhed	N: 20.99122. E: 76.73144.	Buldhana.
Site -9	PaturdaKh.	N: 20.94858. E: 76.72564.	Buldhana.
Site-10	Paturda Bu.	N: 20.94369. E: 76.72886.	Buldhana.
Site-11	Takali	N: 20.92986. E: 76.76092.	Buldhana.

Collection of Sample

Fishes were collected from water bodies of different localities of the study area for two consecutive years i.e. from January-2013 to December-2014 with the help of local fishermen and brought to the laboratory. Collected fishes were labeled; preserved and identified by using Day ^[18] for any further confirmation Zoological Survey of India, Regional Office, Pune was concerned.

3. Result and Discussion

As an outcome of the present Ichthyofaunal study, in all 21 fresh water fish species and 22 taxa were identified from Wan River and its tributaries (M.S.) which belongs to 8 families and 5 orders. The family Cyprinidae was dominant with 12 fish species (55%) followed by Siluridae 02 (9%), Channidae 02 (9%), Mastacembelidae 02 (9%), Notopteridae 01 (5%), Clariidae 01 (5%), Gobiidae 01 (4%), Bagridae 01 (4%) (Figure 1).

Table 1: The Ichthyofauna of Wan River and its tributaries is listed below.

Order	Family	Species	Local name
Osteoglossiformes	Notopteridae	<i>Notopterus notopterus</i>	Patola
Cypriniformes	Cyprinidae	<i>Catla catla</i>	Catla
		<i>Labeo rohita</i>	Rohu
		<i>Cirrhinus mrigala</i>	Mrigala
		<i>Cyprinus corpio var. nudus</i>	Common carp
		<i>Cyprinus corpio var. communis</i>	Common carp
		<i>Puntius sophore</i> (Hamilton)	Palushi
		<i>Puntius sarana</i> (Hamilton)	
		<i>Cirrhinus reba</i> (Hamilton)	
		<i>Gonoproktopterus kolus</i> (Sykes)	Batter
		<i>Crossocheilus latius</i> (Hamilton)	Sandkoal
		<i>Garra mullya</i> (Sykes)	Maya
		<i>Labeo sp.</i>	
Perciformes	Channidae	<i>Channa punctata</i> (Bloch).	Dhadkya
		<i>Channa marulius</i> (Hamilton)	Marai
	Gobiidae	<i>Glossogobiusgiuris</i> (Hamilton)	Dhisala
Siluriformes		<i>Wallago attu.</i>	
	Siluridae	<i>Ompokbimaculatus</i> (Bloch)	Patava
	Bagridae	<i>Mystus bleekeri</i> (Day)	Katarna
	Clariidae	<i>Heteropneustes fossilis</i> (Bloch)	Shikker
Synbranchiformes	Mastacembelidae	<i>Mastacembelus armatus</i> (Lacepede)	Bam
		<i>Macrognathus pancalus</i> (Hamilton)	Bam

Table 2: Family Wise Percent Composition of Fish.

S. No.	Family	No. of Fish Species	Species Composition In (%)
1	Notopteridae	1	5
2	Cyprinidae	12	55
3	Channidae	2	9
4	Gobiidae	1	4
5	Siluridae	2	9
6	Bagridae	1	4
7	Clariidae	1	5
8	Mastacembelidae	2	9

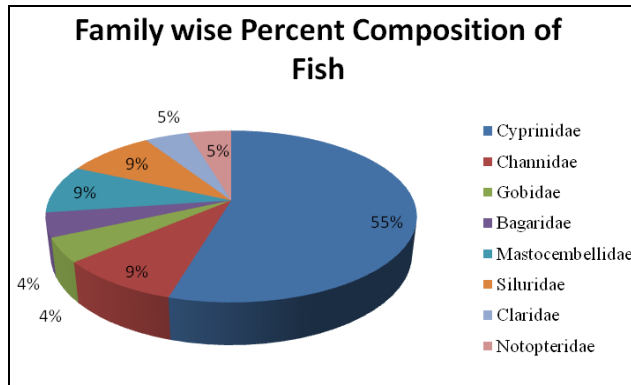


Fig 1: Diagrammatic representations of the % number contribution of each Order.

4. Conclusion

Documentation of biodiversity is very much important aspect to understand different ecosystems and their interactions. One should know what really exist and then planning for conservation can be made. These types of studies for understanding Ichthyofauna are very important in order to conserve fresh water bodies. These water bodies are life lines for the peoples who live nearby them. Due the anthropogenic activities fish diversity of these fragile smaller-ecosystems are at huge loss. Long term management plan is required to conserve this inherent treasure. This type of study is very much important in designing conservation management plans. Strict management measures with large scale public awareness are essential components of conservation management plans for fish fauna of these fresh water bodies.

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