"Ichthyofaunal Diversity and Distribution of Freshwater Fishes in Chankapur Dam, Kalwan, Maharashtra, India"

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Abstract:

The Chankapur Dam, established in 1911 on the Girna River, serves as a vital freshwater ecosystem in the Nashik district of Maharashtra. A systematic study was undertaken to document the current status of its fish fauna between January and March 2024. Taxonomic identification revealed a total of 14 species belonging to 7 families. The family-wise distribution showed high prevalence of **Cyprinids** (6 species), reflecting their strong adaptive capabilities in this habitat. Other families recorded include **Channidae**, **Bagridae**, **Siluridae**, **Clariidae**, **Nemacheilidae**, and **Cichlidae**. While the dam currently supports a blooming fishery, the observed species decline compared to past records highlights the growing impact of anthropogenic activities on regional aquatic diversity.

Keywords: Freshwater Fishes, Chankapur Dam, Girna River, Cyprinids, Kalwan.

Introduction:

Fish are very diverse animals and can be categorised in many Ways Although mast fish have probably been discovered and described about 250 new ones are still discovered every year According to fish bare about 34,800 species of fish had been described as of January 2024.

Fish species divesiry is roughly divided equally between marine (oceanic) and fresh water ecosystem. Coral reefs in the Indo-pacific constitutes the centre of diversity for marine fishes whereas continental freshwater fishes are most diverse in large. River basins of tropical rainforest, especially the Amazon congo & Mekong basins. More than 5.600 species inhibit Neoropical Fishes represent about 10% of all vertebrate species on the earth more freshwater fish species than occur in all of Europe.

Currently there are about 18.000 species of fish found in fresh water and each year, hundreds of new species are discovered. There have been 290 species of freshwater fish Studied from the western ghats, which are divided into 4 orders, 33 families and 106 genera.

Chankapur Dam is an earthfill dam on the Girna River near Abhona in kalwan tehsil of Nashik district in the state of Maharastra in india. The dam was built in 19th century by british. chankapur is one of the biggest dam of Maharastra in India. chankapur dam opened in 1911. The height of the dam above

lowest foundation 41 m (135 ft) while. The length is 3,705 m (12,156ft) . the Volume content is 2,123 km³ (509 cu mi) and gross storage capacity is 79,690.00 km³ (19,118.65 cu mi).

The aquatic ecosystem is important and it has large economic importance. Fresh water ecosystem support large number of plants &animals. In maharastra state Nashik district is also rich in Freshwater reserviors. Fishery is exconomically important Sector Freshwater ecosystem support large number of plant (phytoplankton) & animals space (zooplankton) . The fresh water reserviors are use in multiple purposes like Agricultural, Household, Fisheries & Industrialization etc. In India various workers have studied diversity and distrubution of fresh water Fishes from different parts of country.viz, A. D. Shelke recorded 05 orders 11 families 18 genus and 24 species in Girna Dam was built on Girna river in 1969 which is located near the Nandgaon in the Nashik , Maharashtra.

A.N shendge recorded 24 species & order (cypriniformes, Siluriformes, perciformes, osteoglossiforms, synbranchiforme clypeiformes, Mugilliformes and Aulopiformes) The Fishes recorded were found to be widely distributed and were present in good number in river. capital kumbar et.al. recorded Families and 13 species of catfish belongs to 5 families 10 genera was recorded in the Krishna river at sangali District [ms]. Fish diversity in Nira river in pune district has been studied. The study river in realvealed the presence of 24 species of to fish belonging to 8 orders (cypriniformes, siluriformes, perciformes.. osteoglossiformes, synbrachiformes, clupeiformes, Mugiliformes and Aulopiformes). The Predominant order of fishes in this area (Sangavi) are cypriniformes, siluriformes and perciformes. The highest number of 10 species was recorded in the order cypriniformes. A study of fish diversity in Bhandara District (Ms) india all are 38 species are reported area which all are collected and reported in terms of low, moderate and optimum distribution according to availability.

Most of studies in Maharastra is focused on large rivers and also showed westerned Ghat's of Maharastra as rich Freshwater Fish fauna. Dipak v muley et. al. studied of endemic and threatened fish species diversity and its assemblage structure from Northern western Ghats Maharastra (India) and recorded 23 Species belong 7 families and 19 genera. S.S. Patole 32 Species 6 order reported 11 Families and 24 genera at Nandurbar district (NorthWest khandesh region) of Maharastra. 26 species recorded by Jawale. C.A. and et. al. in osmanabad district Dr. Sachin N. Tayade reported 30 species belongs to lo different families and 5 orders. The main objective of this study is to study diversity, distribution richness of fish diversity from chankapur Dam was buit on Girna river in (Maharastra) Nashik District.

Materials and Methods:

2.1 Study Site

Chankapur Dam is located on the Girna River near Kanashi village, Kalwan Tehsil, Nashik. Geographically, it lies between latitudes 20.498° N and longitudes 73.883° E. The reservoir has a surface area of 10,320 km² and supports a local fishery that offers opportunities for increasing regional production.

2.2 Sampling and Identification

Specimens were collected between January 2024 and March 2024 with the help of local fishermen using gill nets, cast nets, and traps. Fishes were identified morphologically using standard taxonomic keys, including *The Fishes of India: A Handbook* by K.C. Jayaram.

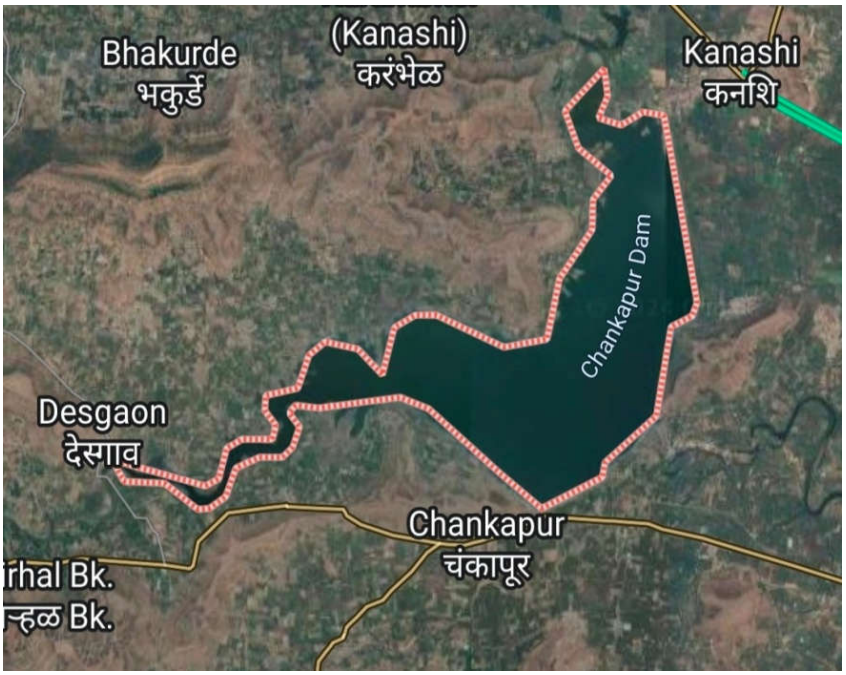


Image :- study area of chankapur dam


GPS Map Camera
Nashik, Maharashtra, India


Nashik, Maharashtra, India
Lat 20.494594°
Long 73.890937°
21/01/24 12:48 PM GMT +05:30


GPS Map Camera
चंकापुर, महाराष्ट्र, भारत
FVQJ+HGR, चंकापुर, महाराष्ट्र 423502, भारत
Lat 20.490759°
Long 73.881784°
Google

Result and Discussion:

During the study, 14 fish species representing 12 genera and 7 families were identified (Table 1). The family **Cyprinidae** was dominant with 6 species, followed by **Channidae** with 3 species. The families **Clariidae**, **Bagridae**, **Siluridae**, **Nemacheilidae**, and **Cichlidae** were represented by one species each. The dominance of Cyprinids in Chankapur Dam aligns with findings by Shelke (2016) in the Girna River. This dominance is likely due to their high adaptive capacity to varying environmental conditions.

Nashik also reported by A.D. Shelke (2016). S. S. Patole studied fish diversity in Nandurbar District and reported 83 specimens they belong to 6 orders, 11 families, 24 genus and 32 species, were Cypriniformes order is dominant with 19 (59.40%) species followed by Perciformes and Siluriformes with 05 (15.60%) species, Beloniformes, Clupeiformes and Osteoglossiformes contribute 01 (3.10%) species each (2014). Fresh water fishes provide food and a livelihood for millions of the world's poorest people, and also contribute to the overall economic wellbeing by means of export commodity trade. The Fish diversity is dependson biotic and abiotic factors. Fish communities are also work excellent as biological indicator. The fish Fauna is an important. Aspect of fishery aspect of fishery potential of a water body. It was observed that distribution of fish species is quite variable because of geographical and geological conditions D.S.Kumbhar and et. al. (2018).

Table 1:- Fish fauna of Chankapur Dam, Nashik District (Maharashtra) India.

Sr.No.	Local name	Common Name	Family	Scientific Name
1	Rav	Rohu	Cyprinidae	*Labeo rohita*
2	Kanashi	Calbasu	Cyprinidae	*Labeo calbasu*
3	Catla	Catla	Cyprinidae	*Labeo catla*
4	Combda	Common carp	Cyprinidae	*cyprinus carpio*
5	Mahya	Sucker fish	Cyprinidae	*Garra mullya*
6	Chepti	Catla	Cyprinidae	*Catla catla*
7	Dokrya	Dwarf murrel	Channidae	*channa orientalis*
8	Kala masa	Spotted snakehead	Channidae	*Channa punctata*
9	Maral	Bullseye snakehead	Channidae	*Channa marulius*
10	Shingtya	Catfish	Bagridae	*Mystus seenghala*
11	Wanz	Catfish	Siluridae	*ompok bimaculatus*
12	Mangur	Walking fish	Claridae	*clarius batrachus*
13	Mooree	Mooreh	Nemacheilidae	*Acanthocobitis mooreh*
14	Mrigal	Mozambique Tilapia	Cichlidae	*Oreochromis mossambicus*

Table 2:- Family Wise Fish fauna of Chankapur Dam

Sr.No.	Family	Scientific Name
1	Cyprinidae	*Labeo rohita*
	Cyprinidae	*Labeo calbasu*
	Cyprinidae	*Labeo catla*
	Cyprinidae	*cyprinus carpio*
	Cyprinidae	*Garra mullya*
	Cyprinidae	*Catla catla*
2	Channidae	*channa orientalis*
	Channidae	*Channa punctata*
	Channidae	*Channa marulius*
3	Bagridae	*Mystus seenghala*
4	Siluridae	*ompok bimaculatus*
5	Claridae	*clarius batrachus*
6	Nemacheilidae	*Acanthocobitis mooreh*
7	Cichlidae	*Oreochromis mossambicus*

Figure 1: Family wise Percentage Compsition of Freshwater fishes

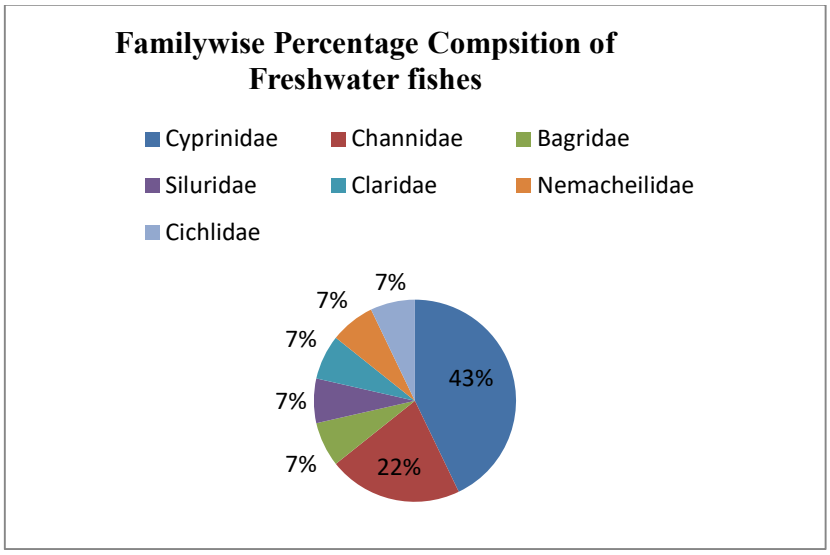
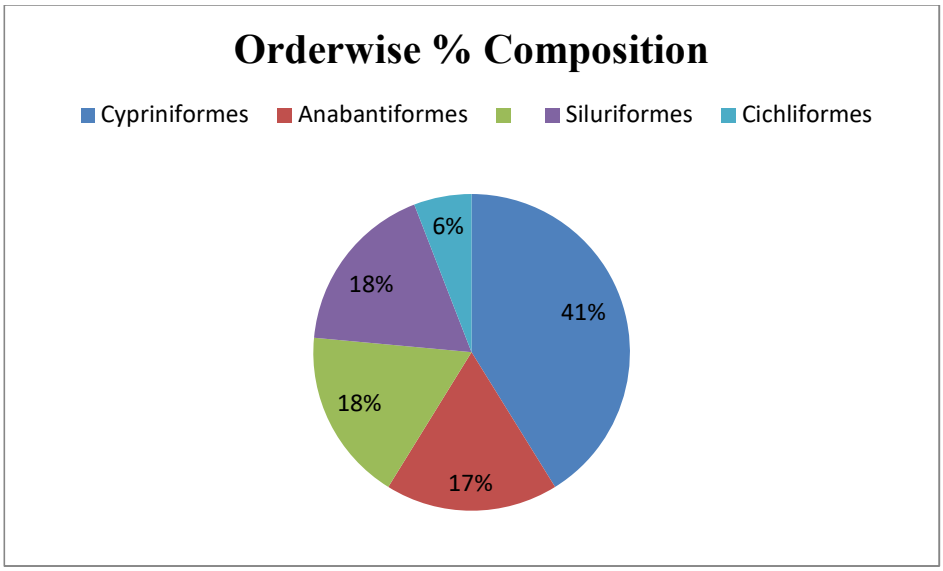


Table 3:- Orderwise Fish fauna of Chankapur Dam

Sr.No.	Order	Family	Scientific Name
1	**Cypriniformes**	Cyprinidae	*Labeo rohita*
		Cyprinidae	*Labeo calbasu*
		Cyprinidae	*Labeo catla*
		Cyprinidae	*cyprinus carpio*
		Cyprinidae	*Garra mullya*
		Cyprinidae	*Catla catla*
		Nemacheilidae	*Acanthocobitis mooreh*
2	**Anabantiformes**	Channidae	*channa orientalis*
		Channidae	*Channa punctata*
		Channidae	*Channa marulius*
3	**Siluriformes**	Bagridae	*Mystus seenghala*
		Siluridae	*ompok bimaculatus*
		Claridae	*clarius batrachus*
4	**Cichliformes**	Cichlidae	*Oreochromis mossambicus*

Figure 2: Orderwise % Composition of Freshwater Fishes



Photoplate I

Labeo rohita

Labeo calbasu

Labeo catla

Mystus seenghala

Ompok bimaculatus

Cyprinus carpio

Clarius batrachus

Photoplate II

Channa orientalis

Channa punctata

Catla catla

Channa marulius

Acanthocobitis mooreh

Garra mullya

Oreochromis mossambicus

Conclusion:

The study indicates a healthy availability of fish species in Chankapur Dam, likely due to favorable ecological and water parameters. However, comparison with previous literature suggests a decline in the total number of species. Human activities continue to threaten this diversity, making monitoring essential for future biodiversity and the well-being of local society.

Acknowledgement

The authors are greatly thankful to Principal, Dr.V.J. Medhane KAANMS Arts, Commerce and Science College, Satana, for providing all necessary research laboratory facilities during the tenure research work and I also thankful to my Research Guide Prof. Dr.J.D. Vasait, Head, Department of Zoology, Arts, Commerce and Science College, Surgana for their continuous constructing suggestions, motivation in and off the field and all sorts of help during this Research work.

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