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FISH DIVERSITY OF BHEEMGARH DAM, CHHAPARA, SEONI (M.P.)



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ABSTRACT

The Fish diversity is a good indicator of health of aquatic ecosystem. A good piscine diversity represents the balanced ecosystem. Taking this into consideration the fish diversity of Bheemgarh dam Chhapara Seoni is studied during present investigation. The present study observed that 35 fish species belonging to 24 genera, 15 families and 5 orders so far been identified (Table 1). Order wise distribution shows Cypriniformes represents 07 families 17 genera and 25 species out of them family Cyprinidae represent 8 genera and 13 species, family Bagridae represents 2 genus and 5 species, family Cobitidae and siluridae represents 2 genera and 2 species each while family Schilbeidae, Heteropneustidae and Claridae represents 1 genus and 1 species. Order Perciformes represents 4 families, 4 genera and 5 species. Out of them family Centropomidae represents 1 genera and 2 species family Nandidae, Cichlidae and Gobiidae represent 1 genus and 1 species each. The results were discussed with recent literature. The fish species were also divided into different groups like major carps, catfishes, eels, feather back etc. Rapid deforestation, sewage discharge, mining activities, thermal activities, anthropogenic activities and irrational fishing practices over the year, this aquatic diversity is on the way of decline. It is necessary to protect biodiversity in their natural habitat.

KEYWORDS :Fish Diversity, Conservation Status, Species, Bheemgarh Dam.

INTRODUCTION

Bheemgarh dam also known as Sanjay Sarovar Bandh is built Across the Wainganga river in

Chhapara tehsil of Seoni district of Indian state of Madhya Pradesh. The Bhimgarh Sanjay Sarovar Dam is located 43 km away from the Seoni. It is known as the biggest Mud / Earthen dam of Asia. It is situated 22°20'41"N 79°36'16"E. It has an average elevation of 611 metres (2004 feet). The city is 2,043 ft. above sea-level, half-way between Nagpur and Jabalpur. It is bordered by Jabalpur, Narsinghpur and Mandla districts to the north, Balaghat to the east and Chhindwara to the west and the shares its southern boundary with Nagpur (Maharashtra). National Highway No. 7 connects the Kanyakumari-Banaras passes through the district from north to south. Fair weather roads connect the major towns in the district. The narrow-gauge Chhindwara- Nainpur Central Railway passes through Seoni connecting Jabalpur, Nagpur, Chhindwara, Balaghat, Katangi, Keolari and Nainpur. Prateet. Dalsagar Lake is polluted near many anthropogenic activity on its bank. The problems of pollution at many other place, is due to sewage inflow, animal carcasses, plastic bags etc. Lake has always been the most important fresh water resources along the banks of which our ancient civilizations have flourished and most developmental activities are still dependent upon them. Lake water has multiple uses in every field of development like agriculture, aquaculture etc.

Freshwater ecosystem and their resources are an important part of human life and activity, and health of those freshwater ecosystems is visible in the wellbeing of the fish assemblage the support. Minns (1989) reported that in lotic environment, the diversity, community structure and species assemblages are influenced by various biotic and abiotic variables. In present times, biological diversity has assumed great significance, especially after the earth summit. The ichthyofaunal diversity refers to variety of fish species. Besides this, fisheries are emerging as an important economic activity globally. Fisheries play an important role in the socio-economic development of the country, as it is a valuable source of livelihood for a huge section of economically backward population. The study and conservation of ichthyofaunal diversity is not merely a topic of scientific quest as it has great economic and moral significance thereby having relevance on the survival of humanity on this earth.

Fishes are aquatic creatures, perfectly adapted for life in water. Freshwater bodies comprise variety of fishes. Fishes alone contribute about 2,546 species and the fishes of inland water bodies of Indian subcontinent have been subject of study since last century (Kalbande et al., 2008). Human beings from time immemorial use fishes for various purposes. Millions of human are suffering from hunger and malnutrition while fishes form rich source of food and provide a meal to tide over a nutritional difficulties of man. Fishes have formed an important item of human diet from time immemorial and are primarily caught for this purpose (Sarwade and Khillare, 2010). In order to maintain sustainable development and stability of ecosystem, surveillance of fish faunal diversity of water bodies is needed. The workers like Kamble and Reddi (2012), Kharat et al. (2012), Galib et al. (2013), Nagabhushana and Hosetti (2013), Chandrashekhar (2014), Biswas and Panigrahi (2014) have contributed in the field of study of fish faunal diversity.

The present study, conducted in Bheem Garh Dam in Chhapara Seoni (M.P.). It is constricted on river Wainganga of Chhapara Seoni district. The fish diversity is facing serious threats as reported by many workers. Some disturbing trends are already discernible in fish diversity and fisheries of Bheemgarh Dam. As a results, a number of fish species either have become extinct or have reached at the of extinction.

MATERIALS AND METHODS

The present investigation on fish diversity is carried out on the Bheemgarh Dam Seoni from May 2014 to April 2015. The precipitation occurs in the months of, August, and September. The Bheemgarh dam is very big water dam. The fishes from the dam were collected with the help of local fishermen. The

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collected fishes were brought to laboratory, fixed in 5% formalin, cleaned with rectified spirit and preserved in 10 % formalin. The fishes were identified by standard keys of Day (1878), Jayram (1981), Talwar and Jhingaran (1991) and Jhingaran (2005).



Fig. 1. A View of Bheemgarh Dam

Table:-1 Fish species their feeding guild and conservation status of Bheemgarh Dam in Chhapara of Seoni District (M.P)

Order	Family	Genera	Feeding guild	IUCN cons. status
Cypriniformes	Cyprinidae	<i>Catla catla (Ham)</i>	H	LC
		<i>Cirrhinus mrigala(Ham)</i>	O	LC
		<i>Cirrhinus carpio (Linnaeus)</i>	H	VU
		<i>Cetnopharyngodon idella</i>	H	NE
		<i>Hypophthalmichthys molitrix</i>	H	NT
		<i>Lebeo calbause (Ham)</i>	O	LC
		<i>Labeo dero (Ham)</i>	H	LC
		<i>Labeo gonius (Ham)</i>	H	LC
		<i>Labeo rohita (Ham)</i>	H	LC
		<i>Oxygaster bacaila (Ham)</i>	O	LC
		<i>Puntius ticto (Ham)</i>	H	LC
		<i>Puntius sarana (Ham)</i>	H	LC
		<i>Tor tor (Ham)</i>	H	NT
			Cobitidae	<i>Lepidocephalichthys guntea (Ham)</i>
<i>Nemacheilus denisunii(Day)</i>	H			LC
	Siluridae	<i>Ompok bimaaculatus (Bloch)</i>	C	NT
		<i>Wallago attu (Bl. & Schn.)</i>	C	NT
	Bagridae	<i>Mystus(m) bleekeri (Day)</i>	C	LC
		<i>Mystus(m) cacasius (Ham)</i>	C	LC
		<i>Mystus aor (Ham)</i>	C	LC
		<i>Mystus(O) seenghala (sykes)</i>	C	LC
		<i>Rita rita(Ham.)</i>	C	NE
	Schilbeidae	<i>Clupisoma garua (Ham)</i>	C	LC
	Heteropneustidae	<i>Heteropneusts fossils (Bloch)</i>	C	LC
	Clariidae	<i>Clarias batrachus (Linn)</i>	C	LC
Ophiocephaliformes	Ophiocephalidae	<i>Channa marulius (Ham)</i>	C	LC
Clupeiformes	Clupeidae	<i>Channa punctatus (Bl)</i>	C	LC
	Notopteridae	<i>Notopterus notopterus (pallas)</i>	O	LC
Perciformes	Centropomidae	<i>Chanda nama (Ham)</i>	O	LC
		<i>Chanda ranga (Ham)</i>	O	LC
	Nandidae	<i>Badis badis (Ham)</i>	O	LC
	Cichlidae	<i>Tilapia mossabica (Peters)</i>	H	LC
	Gobiidae	<i>Glossogobius giuris (Ham)</i>	O	NE
Mastacembeleformes	Mastacembelida	<i>Mastacembelus armatus (Lacepede)</i>	C	LC

Feeding guilded (H-Herbivore, O-Omnivore and C-Carnivore) Odyuo and Nagesh 2011.

IUCN conservation categories (LC-Least Concern, VU-Vulnerable, NE-Not evaluated and NT-Near Threatened)

RESULTS AND DISCUSSION

The present study observed that 35 fish species belonging to 24 genera, 15 families and 5 orders so far been identified (Table 1). Order wise distribution shows Cypriniformes represents 07 families 17 genera and 25 species out of them family Cyprinidae represent 8 genera and 13 species, family Bagridae represents 2 genus and 5 species, family Cobitidae and siluridae represents 2 genera and 2 species each while family Schilbeidae, Heteropneustidae and Claridae represents 1 genus and 1 species. Order Perciformes represents 4 families, 4 genera and 5 species. Out of them family Centropomidae represents 1 genera and 2 species family Nandidae, Cichlidae and Gobiidae represent 1 genus and 1 species each. Order Ophiocephaliformes represents only one family Ophiocephalidae with 1 genus and 3 species. Order Clupeiformes represents two family Clupeidae and Notopteridae both represent one genus and one species Order Mastacembeleformes represent one family Mastacembelidae respectively with one genus and one species. Trophic structure indicated dominance of herbivore with 16 fish species followed by carnivore 15 species and omnivore with 7 species while one species was not evaluated.. As per (IUCN 2010) red data book out of 39 species 4 belonging to near threatened (NT) category, 31 belonging to least concern (LC), 1 belonging to vulnerable (VU) and 3 species was not evaluated.

Choudhary (1977) observed 39 species of Gandhi Sagar reservoir. Singh (1993) observed 84 species from Sardar sarovar dam of Narmada River. Saxena (1997) reported 42 species from upstream region and 35 species from downstream region in river satluj. Solanki et.al, (2010) reported 29 species from Tapti river of Betul. district Rapid deforestation, sewage discharge, mining activities, thermal Activities, anthropogenic activities and irrational fishing practices over the year, this aquatic diversity is on the way of decline.

Kharat et al. (2012) had recorded 51 species of fishes belonging to the 14 families and 35 genera during their study on Krishna River at Wai (M.S.). Jayabhaye and Lahane (2013) observed the 21 species of fishes belonging to 6 families and 13 genera during their study period on Pimpaldari tank, Dist. Hingoli (M.S.). Our findings are corroborating with observations of Sakhare (2001), Sarwade and Khillare (2010), Kharat et al. (2012) and Jayabhaye and Lahane (2013).

CONCLUSION

It is conclude that the Bheemgarh dam have high fish diversity with good economic potential. To conserve and maintain the fish diversity, further need to assess water quality, and anthropogenic activities to this dam should be controlled. To maintain the richness of aquatic ecosystem continuous monitoring of dam is needed.

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