

STATUS OF CAPTURE AND CULTURE FISHERY FROM THE COMMERCIAL CATCHES OF FRESH WATER HABITAT BHEEMGARH DAM IN SEONI (M.P.).

Dr. Sandeep Kumar Shukla
Department of Zoology

P.M. College of Excellence Govt. P.G. College Seoni (M.P.)

ABSTRACT :- Fisheries and Aquaculture have been considered as an important means of poverty elevation and food security besides promoting health and well-being. Fish continue to be one of the most traded food commodities worldwide. It contributes to around 17% of the global population's animal protein intake. Fish is often referred to as "Rich Food for Poor People" as it provides essential nourishment with both macronutrients and micronutrients. Present study fish culture in Bheemgarh dam. Bheemgarh dam also known as Sanjay Sarovar Bandh is constructed Across the Wainganga River in Chhapara tehsil of Seoni district of Madhya Pradesh. The Bheemgarh dam is situated 43 km away from the Seoni. It is known as the biggest mud dam of Asia. It is situated 22°20'41"N 79°36'16"E. The River Weinganga has been under constant threat of pollution by sewage and industrial wastes, disposal of dead bodies, deforestation, excessive use of fertilizers and pesticides, bathing and water development programmes. The dam has a catchment area is 2007.75 Sq. Km. Present study 22 species of fishes found belonging to 16 genera, 9 families and 5 orders were identified from Bheemgarh dam. It is of great Importance for the region because its water is used for human and cattle consumption, power generation, fish production and irrigation.

KEYWORDS:- Bheemgarh Dam, Commercial Fishes Fresh water habitat.

INTRODUCTION:-

India has a large network of river, canals, lakes and ponds, which contribute more than 30% of the total fish production. Fish form one of the most important group of animals for man and have received his attention from ancient time. Majority of our people suffer from hunger and malnutrition. Fish is an excellent food for man and provides protein, fat and vitamin A and D, which are essential for the health of man. Fish is also provide

source of vitamin B, it food rich in protein is specially preferred for containing essentially amino acid such as Lysine and methionine abundantly required for formation of phosphocithine in gray matter of the brain unsaturated fat in fish also reduce the risk of formation of high blood cholesterol. Phosphorus and several minerals are also present in it. They have good test and easily digestible. Besides being a rich source of food, fishery provides job opportunities also. By product of fishes i.e. fish manure, isinglass and several other production of commerce.

Considerable studies on fish diversity from different fresh water bodies of India have been carried out during the last few decades Hamilton Buchanan (1822), Day(1878), Mishra (1962), Jayram (1981) Thomus et.al. (1989), Talwar & Jhingrah (1991), Menon (1992), Rao et.al (1999). Sarkar and Banergee (2000), Mishra et.al.(2003). There are over 19000 reservoirs in India. Covering 3, 15,366 ha. And many more are under construction. (Suguman 2000) Reservoir Fishery in India is also important from social economic point of view as it has the potential of providing employment to about 2 million people (Khan Et.al.1999). According to sreenivasan (1993) the Maharashtra is endowed with an area of 1,79,430 ha. Under reservoir and the state produces 516 tons of fish of these area the state fisheries corporation was operating in 6,272 ha. Of reservoir and marketing the catches.

The present investigation was under taken to study the aquatic vertebrate animals with reference to fishes from Bheemgarh dam water. Bheemgarh dam also known as Sanjay Sarovar Bandh is constructed Across the Wainganga River in Chhapara tehsil of Seoni district of Madhya Pradesh. The Bheemgarh dam is situated 43 km away from the Seoni. It is known as the biggest mud

dam of Asia. It is situated 22°20'41"N 79°36'16"E. It is multipurpose type like irrigation and power production and also fishing purposes (Table No. 1).

MATERIAL AND METHOD:-

Bheemgarh dam also known as Sanjay Sarovar Bandh is constructed across the Wainganga River in Chhapara tehsil of Seoni district of Madhya Pradesh. The present study, which is under taken, is willing to observe the limnology and pisciculture of the dam. The salient features of dam is as following-

1) Catchments area	-	2007.75 Sq. Km.
2) Submerged area	-	105253 Hect.
3) Total Length	-	3870.06 M.
4) Top width of bundh	-	330.25 mt.

(Data is collect from irrigation Dept. of Seoni M.P. state).

The fishes were collected from the Bheemgarh dam with the help of fisherman during the year June 2023 – May 2024. The specimen were preserved in 10% formalin and subsequently identified following work of Lagler (1956) Menon and Talwar (1972), Day (1878), Datta Munshi & Srivastav (1968), Jayram (1981) and Talwar & Jhingran (1991).

RESULT AND DISCUSSION:-

Fish as constitute economically a very important group of animals. A large number of dams and reservoir has been constructing during the recent year to provide water for irrigation and power production. These bodies of water offer immense scope for fish culture for successful fish farming in dam and reservoir. Bheemgarh dam reservoir is very productive more work has been carried out of fish fauna. The distribution of fish species is quite variable because of geographical and geological condition.

In all 22 species of fishes belonging to 16 genera, 9 families and 5 orders were identified from Bheemgarh dam. They are *Notopterus notopterus* under Osteoglossiformes, *Catla catla*, *Cirrhinus mrigala*, *C. reba*, *Cyprinus carpio*, *Labeo bata*, *L. calbasu*, *L. rohita*, *Puntius amphibious*, *P. ticto*, and *Nemacheilus botia* under Cypriniformes, *Mystus cavasius*, *M. seenghala*, *Ompok bimaculatus*, *Wallago attu*, *Clarias batrachus*,

and *Heteropneustes fossilis* under Siluriformes, *Mastacembelus armatus* under Synbranchiformes, *Nandus nandus*, and *Channa marulius*, *C. punctatus* and *Anabas testudineus* under Perciformes. A systematic list of fishes observed from the dam has been tabulated in given in the table No. 1. & 2.

As far as the genera and families to different orders are concerned, order Cypriniformes consists of 6 genera (37.50%) under one families (10%), Siluriformes of 6 genera (26.09%) under 4 families (40%), Perciformes of 3 genera (18.75%) under 3 families (30%), Osteoglossiformes, Synbranchiformes and Synbranchiformes of single genus (6.25%) under single family each (10%) (Table 2 and Graph 1). Order Cypriniformes has been found to be a major order with 10 species and percent contribution of 45.45%. Siluriformes comes next with 6 species and percent contribution of 27.27%, Perciformes with 4 species and percent contribution of 18.18%, Synbranchiformes with 2 species and per-cent contribution of 5.0%, Osteoglossiformes and Synbranchiformes with 1 species each and percent contribution of 4.55% follow the order (Table 2 and Fig. 1).

Valsangkar (1993) recorded 17 indigenous and 5 introduced fish species from Shivaji Sagar reservoir. Sakhare (2001) recorded 23 fish species belonging to 7 orders in Jawalgaon reservoir in Solapur district. Pawar and Madlapure (2002) recorded 11 fish species belonging to 5order in sivur dam. Ingole (2005) recorded 22 fish species occurrence in the during research work at Bheemgarh dam. According to Pir et al. (2019), freshwater fish, which make up about 25% of all vertebrates, are an important component of the world's biodiversity. Only 6 of the 515 taxonomic families, or 30% of the total, contain 7,956 fish species. One of the key challenges to permitting sustainable use of natural resources is its conservation. (Preena PG et al., 2020; Shao F, Han M, Peng Z, 2019). The huge fecundity and tolerance to changes in the physical and biological properties of water body may be the reasons why the cypenidae family has the most species diversity. (Shi Z et al., 2020) According to (Sharma, et al., 2008), the substantially larger population density of Cypriniformes is due to the greater fertility of big carps and favorable environmental conditions. (Manel S et al., 2020).

Table No. 1. Fish Diversity of Bheemgarh Dam Chhapara Seoni (M.P.)

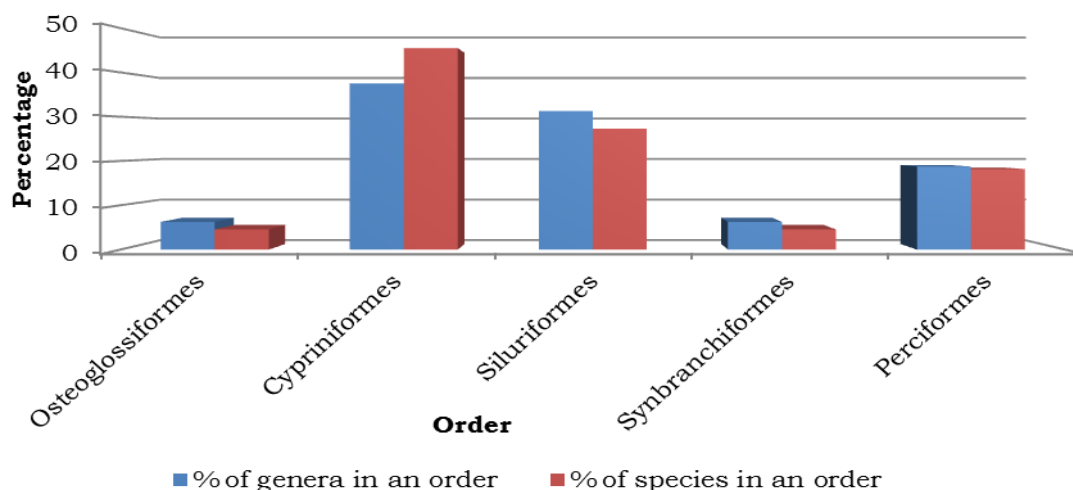
Class/Sub-class/ Order/Division/ Family/Sub-family	Taxonomic Name	Local name	IUCN Category	
			CAMP (1998)	CAFF (2006)
Class Actinopterygii Subclass Neopterygii Division Teleostei Order Osteoglossiformes Suborder Notopteroidei Family Notopteridae	1. <i>Notopterus notopterus</i>	Patola	LR-nt	EN
Subdivision Euteleostei Superorder Ostariophysii Order Cypriniformes Family Cyprinidae Sub-family Cyprininae	2. <i>Catla catla</i> 3. <i>Cirrhinus mrigala</i> 4. <i>C. reba</i> 5. <i>Cyprinus carpio</i> 6. <i>Labeo. rohita</i> 7. <i>L. calbasu</i> 8. <i>L. bata</i> 9. <i>Puntius ticto</i> 10. <i>Puntius amphibious</i> 11. <i>Oxygaster bacaila</i>	Catla Mrigal Naren Common carp Rohu Kriya Bata Khadia Khadia	VU LR-nt VU LR-nt LR-nt LR-nt LR-nt NE	LR-nt LR-nt VU LR-lc LR-nt LR-nt LR-nt DD
Order Siluriformes Family Bagridae	12. <i>Mystus seenghala</i> 13. <i>Mystus. Vitatus</i>	Tengara Katuwa	NE VU	LR-nt VU
Family Siluridae	14. <i>Ompok bimaculatus</i> 15. <i>Wallago attu</i>	Pauda Padin or Lonch	EN LR-nt	EN LR-nt
Family Clariidae	16. <i>Clarias batrachus</i>	Mangur	VU	VU
Family Heteropneustidae	17. <i>Heteropneustes fossilis</i>	Singhi	VU	VU
Order Synbranchiformes Sub-order Mastacembeloidei Family Mastacembelidae Sub-family Mastacembelinae	18. <i>Mastacembelus armatus</i>	Baam	NE	VU
Order Perciformes Sub-order Percoidei Family Nandidae Sub-family Nandinae	19. <i>Nandus nandus</i>	Dhebari	LR-nt	LR-nt
Family Anabantidae	20. <i>Anabas testudineus</i>	Kabai	LR-nt	LR-nt
Sub-order Chanoidei Family Channidae	21. <i>Channa marulius</i> 22. <i>Channa punctatus</i>	Padam Sauri Sauri	LR-nt LR-nt	VU LR-nt

EN=Endangered, Vu (Vulnerable), LR-nt= Lower risk near threatened, LR-lc (Lower risk least concern), NE (Not evaluate), DD (Data deficient), *Exotic fish.

Table no. 2. Number and percent composition of families, genera and species under various orders

S. No.	Order	Families	Genera	Species	% of families in an order	% of genera in an order	% of species in an order
1.	Osteoglossiformes	1	1	1	10	6.25	4.55
2.	Cypriniformes	1	6	10	10	37.50	45.45
3.	Siluriformes	4	5	6	40	31.25	27.27
4.	Synbranchiformes	1	1	1	10	6.25	4.55
5.	Perciformes	3	3	4	30	18.75	18.18

Graph No. :1 Number and percent composition of families, genera and species under various orders



CONCLUSION :-

Fisheries have ample scope of development to strengthen the national economy. To realize the potential, there is a need to adjust the existing laws and legislation of the country for integrated resource management and for conservation of the fisheries resources. Seoni fishers, fish farmers, traders, processors, and general people as a whole need to understand these issues, to be involved in the formulation of management plans, and to benefit from the whole process. The management measures should include regulating fishing intensity at a sustainable level, control gear selectivity, gear type and size of fish, implementation of closed season, prohibition of destructive fishing, closed fish sanctuary, and

allocation of resources (finance, manpower) for fisheries. Concerned government departments, development partners, researchers and non-government organizations can play important role in the wide-ranging advancement of the fisheries sector.

REFERENCES :-

1. B.N. Yadav (1993) Fish and Fisheries Daya publishing House, New Delhi; 155.
2. Datta Munshi and Srivastava M.P. (1968)-Natural history of fishes and systematic of fresh water fishes of India.Narendra Publication House Delhi.
3. Day F. (1944) - The fishes of India being a natural history of the Burma and Cylon. Fourth Indian

- Reprint vol.I & II Jagminder Book Agency, New Delhi.
4. Hamilton B.F. (1822) - An account of fishes found in the river Ganga and its branches Edinburgh and London VIII + 400 p.p. plate 39.
 5. Ingole S.B. (2005) - Some aspects of Hydro biological studies of Majalgaon dam Dist. Beed (M.S.) Ph.D. Thesis, S.R.T.M.U. Nanded (M.S.)
 6. Jayaram K.C. (1981) -The freshwater fishes of India Pakistan, Burma and Shrilanka, Hand Book Zoological Survey of India No. 2, XII + 475 pp.
 7. Khan A.A., Kartha K. N., Percy Dawson and George (1991) - Fish harvesting system in Indian reservoir proc.Of Nat. workshop on 1000 energy fishing 8-9 August 1991.
 8. Lagler K.F. (1956) -Freshwater fishery biology W.M. C. Brown and Co Iowa.
 9. Lauria V, Das I, Hazra S, Cazarro I, Arto I, Kay S, Ofori-Danson P, Ahmed M, Hossain MAR, Barange M, Fernandes JA(2018). Importance of fisheries for food security across three climate change vulnerable deltas. *Sci Total Environ.* 2018 Nov 1;640-641:1566-1577.
 10. Misra K.S. (1962) - An aid to the Identification of the common commercial fishes of India and Pakistan. *Rec. Indian Mus.* 57 (1-4) 1-320.
 11. Mohanty BP, Mahanty A, Ganguly S, Mitra T, Karunakaran D, Anandan R.(2019)- Nutritional composition of food fishes and their importance in providing food and nutritional security. *Food Chem.* 2019 Sep 30;293:561-570.
 12. Pir et al., (2019). Diversity and Abundance of Fishes Inhabiting the Western region of Narmada River Madhya Pradesh India. *IJLS*, 9(1) 2019 11-17
 13. Pradeep Kiran JA.(2019)- Aquaculture role in global food security with nutritional value: a review. *Transl Anim Sci.* 2019 May 10;3(2):903-910.
 14. Preena PG, Arathi D, Raj NS, Arun Kumar TV, Arun Raja S, Reshma RN, Raja Swaminathan T.(2020)- Diversity of antimicrobial-resistant pathogens from a freshwater ornamental fish farm. *Lett Appl Microbiol.* 2020 Jul;71(1):108-116.
 15. Rao P.S. (2000) - Problems of management of fish marketing and co. operative FIE PC/73/10 Bombay.
 16. S. Krishna (2023) "STUDY OF FISH DIVERSITY IN COKA DAM PAPARA SATNA (M.P.)" *International Journal of Applied and Universal Research* Volume X, Issue III, pp-12-16
 17. Sakhare V.B. (2001) - Ichthyofauna of Jawalgaon Reservoir in Solapur district of (M.S) *Aqua Biol.* 16(1) 31-33.
 18. Sarkar L. and Banerjee S. (2000) Ichthyofauna of Damodar river system pro. *zoosoci.* Calcutta 53(1) : 41-54
 19. Shi Z, Zhang J, Wu H, Yang J, Hu M. (2020)- Taxonomic diversity pattern and composition of fish species in the upper reaches of Ganjiang River, Jiangxi, China. *PLoS One.* 2020 Nov 16;15(11):e0241762.
 20. Shukla Minakshi, Pandey Umesh (2019), Analysis of fish productivity of Govindgarh Lake, Rewa (M.P.), *International Journal of Zoology Studies* ;4(5):58-61
 21. Srinivasan (1993) - Reservoir fishery of India, *fishing chimes* 13(1) : 18-21
 22. Sugunan (2000) - Reservoir fishery of India *FAO fisheries Tech. paper* No. 345. *FAO Rome* 1-424.
 23. Talwar P.K. and Jhingra A.G. (1991) - *Inland Fishes of India and Adjacent countries* Vol. 1 & 2. Oxford & BH Publishing co. Privt. Ltd.