

**STUDY OF THE CO-EXISTENCE OF THE FISHES IN THE FLOOD PRONE AREAS  
WITH REFERENCE TO THE PADDY FIELD****Dr. Mukesh Kumar Napit\***Department of Zoology, Govt. Dr. Shyama Prasad Mukherjee Science and Commerce P.G. College (Old Benazeer)  
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**ABSTRACT**

The Bundelkhand region of north India is encompassed by two states, i.e., M.P. and U.P. Its greater part falls in M.P. covering 5 district viz, Damoh, Sagar, Chhatarpur, Tikamgarh and Panna. Its terrain being rocky has reduced water level, and due to this, the area has much irrigation potentiality. With a view to meet this demand of the region M.P. state irrigation department is giving greater importance to the development of irrigation projects in Bundelkhand region. Accordingly, many major, medium and minor irrigation reservoirs are constructed.

**INTRODUCTION**

Rajnagar lake, Ponds and river's (Kopra, Sunar and Viyarma), are located in Damoh district of M.P. The entire surrounding of the water bodies is covered by deciduous forest. A sparsely bushy Jungle also exists at the basin of the reservoirs. Although, the district is rich in having natural water bodies, like lake, Ponds, reservoir and rivers. Very scanty work is available on the fresh water, fish fauna. These water bodies are main source of water supply, which is utilized for drinking, bathing, washing etc. But now a days, these water bodies are highly polluted due to the Industrial effluents, insecticides, herbicides, weedicides, fungicides and other human activities, Nitrate, Calcium chloride and non soluble Phosphate have increased to alarming level and decomposition of excessive bloom releases the methane and ammonia gases in water.

Fresh water fish culture aims at achieving the highest possible fish production from pond, tanks, swamps, hill streams, lakes, and reservoirs. The techniques of fish cultivations involve both management of soil and water physicochemical and biological parameters. However, unlike major agricultural crops, fish do not consume water and compared to any bird or mammal used for husbandry process. They have the highest fecundity. These two criteria go very much in favor of fish cultivations. Besides fish have the property to high food quality rich in protein and vitamin and contain fat calcium, phosphorous and other nutrients necessary for human health and growth.

Besides fish culture in flood prone areas of Rural areas of central Madhya Pradesh, it is extensive and well developed in India, though it has suffered a setback

through the use of pesticides for the rice crop. Recently areas occupied for this composite fish culture declined. The declining is also partially due to use of fruitful yielding rice varieties which make fish culture relatively less profitable. High yielding rice variety IR26 was tested for its suitability for paddy-fish culture with encouragement results.

Recently this system of culture has been tried in a number of countries in Africa, widely practiced in Central Countries of Europe, Latin America, Southern State of the USA. Nepal has introduced paddy cum fish culture into certain areas where common carp is cultured. In India it is practiced in Bengal and Kerala on large scale. The fish-cum-paddy culture in flood prone areas in central region of Madhya Pradesh was carried. For extensive and huge apply of this culture we selected areas that is accumulated with water annually or more.

**MATERIALS AND METHODS**

The water samples were collected during July 2018, June 2020. The Method of collection, preservation and enumeration of Plankton were as per standard method. 1,2 Eleven Physico-chemical parameters were analyzed and planktons were grouped accordingly.

Fish collected seasonally, from all polluted and non polluted selected sites by hand picking or fishing nets and would be preserved in 5-10% formaldehyde in glass or plastic bottle. Authentic keys for identification and classification of fish, would be used. Days fauna. (1958), fish identification by H.R. Singh, Jhingaran (1985).

A large part of the water accumulated areas due to flood activity were selected for this purpose, and prepared for

physico-chemical analysis for one year applying special kit for water analysis. Various parameters were selected to check the status of water, *i.e.* Temperature, pH, DO, TDS, EC, and BOD. After calculating physico-chemical properties of paddy field which contained Sonan variety and hybrid variety of rice where fishes *Catla catla*, *silver carp golden carp*, were reared. Ultimately the measurement of the fishes growth and per ha yield of rice in that backward area was calculated.

## RESULT AND DISCUSSION

The present investigation is planned to emphasize, the correlation of physico-chemical component with fresh water Fish fauna of Damoh. Efforts would be made to find out the factors relating with the decline or increase in the biodiversity, for morphological variations and

populations density, Because of pollution, human invasion and production of selective many species of fish has fallen to alarming level, because of this also the biodiversity of this region has become unaffordable.

For the preparation of various type of fish culture in paddy field there was monthly analysis of aforesaid parameters of water collected from different flood prone areas. After culture the fish community attained their growth with the development of 4-8% in the gross body weight while paddy yielding increased up to 70-10%, however, this change of fish species and paddy types during the growth in whole year. Variation could vary with the change of fish species and paddy types during the growth in whole year.

**Table 1: Physical Features.**

S. No	Name of the Water Body	Water temperature (°C)	Colour (Pt. Co. Unit)	Turbidity (FAU)	TDS (mg/l)
1	Rajnagar Lake	20.8	12	7	128
2	Purena Pond	19.8	38	12	139
3	Kopra River	20.6	52	22	156
4	Sunar River	21.1	58	21	188.6
5	Viyarma River	21.7	54	18	178.6

**Table 2: Chemical Features.**

S. No	Name of the Water Body	DO (mg/l)	BOD (mg/l)	COD (mg/l)	Total Alkalinity (mg/l)	pH	Nitrate (mg/l)	Orthophosphate (mg/l)
1	Rajnagar Lake	8.8	12	42	122	8.2	1.234	0.78
2	Purena Pond	16.4	12	102	132	7.8	2.778	6.45
3	Kopra River	12.4	28	112	148	7.1	5.664	16.56
4	Sunar River	10.6	12.8	44	178	8.1	3.1.12	8.89
5	Viyarma River	10.2	22.8	78	164	8.4	4.114	7.89

**Table 3: Analysis of water for fish cum paddy field ( 2018-2019).**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug.	Sept.	Oct.	Nov.	Dec.
pH	7.12	7.26	7.31	7.48	7.31	7.39	7.48	7.28	7.26	7.22	7.21	7.21
DO	5.3	6.3	5.3	5.2	5.3	5.4	6.2	6.1	5.4	5.3	5.2	5.3
TDS	191	202	209	220	216	217	216	231	244	312	221	235
EC	341	346	317	342	347	311	316	317	343	349	350	357
BOD	3.1	3.1	3.3	3.1	3.0	3.8	3.7	3.8	3.8	3.7	3.6	3.7

**Table 4: Analysis of water for fish cum paddy field (2019-2020)**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug.	Sept.	Oct.	Nov.	Dec.
pH	7.51	7.68	7.72	7.62	7.63	7.61	7.62	7.69	7.67	7.43	7.51	7.51
D.O.	5.3	5.8	5.7	5.3	5.4	5.5	5.7	5.8	5.6	5.7	5.7	5.3
TDS	202	203	209	241	246	262	261	300	301	311	344	361
EC	422	421	417	432	424	461	446	451	411	393	400	401
BOD	5.2	4.2	4.4	4.1	4.7	4.5	4.10	4.11	4.12	4.32	4.32	5.18

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