



Study on fish diversity and fish production of “Moghat Reservoir Khandwa” (M.P.)

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Abstract

Khandwa is one of the districts of the state M.P. The Moghat reservoir is situated three Kilometers away in the Northwest area of Khandwa town on 21° 49' 36" N latitude and 76° 20' 56" E longitudes. It is a man made reservoir built in 1897. The present study aims to identify the fish fauna presented in reservoir and to give an initial idea about fish production of Moghat reservoir of Khandwa M.P.

Key words: *Fish production, diversity, Reservoir, nutrition*

Introduction

The most important gift for mankind is water which plays a significant role in different vital and structural activities. Water is inevitable for all living organisms as it has a great social and economical value ultimately affecting mans health. It is essentially required for industrial development, fisheries, irrigation, hydro electrical generations and human life survival. Fishes are believed to be the oldest vertebrates and it is thought that all other vertebrates are evolved from them. They have adapted themselves to a wide range of environments. They are found in the icy waters of the Polar Regions on one hand, while they exist miraculously uncooked in the hot desert pools up to a temperature well above 100°F on the other hand. On the whole it can be said that where there is water there are fishes, and three fourth of the earth's surface is covered with water. The logical work in fish and fisheries is to have an exact knowledge of the position of fish fauna in animal kingdom. Proper identification of fishes is of great importance and many workers have done this job on different water bodies in India.

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Limnological studies on the Garhwal Himalayan Rivers were started in 1979 by the work of Badola (1979) who observed the lchthyofauna of some fresh water resource of Garhwal region. Badola and Singh (1982) made a study on fish and fisheries of river Alakananda, they also studied the hydrobiology of the river of Garhwal Himalaya. Dobriyal and Singh (1981) investigated the diurnal variation in some aspect of limnology of river Mandakini from Garhwal Himalaya. Khanna and Badola (1993) observed lchthyofauna of the river Ganga at the foothills of Garhwal Himalaya. Dynamics of limnology with respect to fish production were studied by various other scientists also. In view of inland fish production in the world, the position of India is next to China and Russia. The total fish production is 47.89 lakh tones contributed 20.97 lakh tones from inland and 26.92 lakh tones from marine sector respectively in the year 1994-95. Thus fish production from inland sector has great significance. It contributes the major share in the protein rich food for domestic consumption. Kumar (1995) studied pollution in river Mayurkashi; Rao *et al.* (1988) discussed environmental status and fish fauna of Gandhisagar reservoir (M.P.)

Materials and Method

Khandwa is one of the district of Madhya Pradesh which is famous for its historical and holly place Omkareshwar where one of the jyotirlinga of Lord Shiva is situated on the bank of river Narmada. On the other hand the Indirasagar dam is situated on the same river in Khandwa district.

The Moghat reservoir of Khandwa is situated 3 kilometer away in the North West area of the city on 21° 49' 36" N latitude, 76° 20' 56" E longitude and 324.4 meter above from mean sea level. It is a man made reservoir built in 1897 which receives rainwater through two main sources one is called Ajanti canal and other is a local nalaha called barud nalla, from its 23.30 sq. kms catchment's area. The storage area of Moghat reservoir is 2.02 sq.km., which has 5.36 kms shore line surrounded by hills with some large trees shrubs and agricultural land.

Moghat reservoir was initially manufactured to sort the water problem of local people of Khandwa Township but later on this water body is also used for fish production/culture. So far limited knowledge has been available on the fish fauna of Moghat reservoir, therefore the present study was undertaken to collect information regarding the availability and the production of fish fauna of Moghat reservoir at Khandwa. The present study revealed some important information regarding natural fish production at Moghat reservoir and its economics. Jaal, Triangular net, Scoop net, dragnets and Angling were used to collect the fishes, samples and data of production were collected every month during October 2005 to September 2007. After collection, fishes were preserved in 5 percent formalin and identified with the help of keys given by Jhingran (1975), Sehgal (1973), Badola (1979) and Day (1879). Two year data of fish production and the income of fishermen were assessed as per month fish catching and the rate of per kilogram of different species of fishes found in the reservoir according to fish market Khandwa.

Results and Discussion

The fish fauna of the Moghat reservoir was surveyed. As a result of this survey 18 species,

of 4 families have been reported, in which Catla catla showed its dominance among all. Nearly all fishes found in Moghat reservoir are edible and have been an important source of protein.

Table 1: List of Fishes found in Moghat Reservoir Khandwa, M.P. (India)

ORDER	- CYPRINIFORMES
DIVISION	- CYPRINI
FAMILY	- CYPRINIDAE
SUB FAMILY	- CYPRINAE
SCIENTIFIC NAME	
<i>Catla catla</i>	Major carp
<i>Labeo rohita</i>	Major carp
<i>Labeo calbasu</i>	Major carp
<i>Labeo bata</i>	Major carp
<i>Labeo fimbriatus</i>	Major carp
<i>Labeo bogut</i>	
<i>Cirrhinus mrigla</i>	Major carp
<i>Cyprinus carpio</i>	
SUB FAMILY	- RASBORINAE
<i>Rasbora daniconius</i>	
DIVISION	- SILURI
FAMILY	- SACCOBRANCHIDAE
<i>Heteropneustas fossilis</i>	
FAMILY	- BAGRIDAE
<i>Mystus vitatus</i>	
ORDER	- OPHIOCEPHALIFORMES
FAMILY	- OPHIOCEPHALIDAE
<i>Channa (Ophiocephalus) marulius</i>	
<i>Channa (Ophiocephalus) gachua</i>	
<i>Channa (Ophiocephalus) punctatus</i>	
<i>Channa (Ophiocephalus) striatus</i>	
<i>Ctenopharyngodon idilus</i>	(Grass carp)
<i>Hypothalamichthyes molitrix</i>	(Silver carp)



Today's ever-increasing population with decreasing cultivable land and increasing rate of unproductive land, the world is highly depending on non-vegetable sources of food including fishes which are one of the most important food source. All the fishes which were found in Moghat reservoir during the study period, have economic importance and food value, besides this these fishes have good market and nutritional value.

Natural fish production at Moghat reservoir and its economics

Total Fish production during study period (Oct.2005-Sep.2007) in this reservoir is presented in Table. 2. During course of study it was observed that maximum production is of *Catla*

(148.00 kg/ ha) and minimum production is of *Ophiocephalus punctatus* (12.00 kg/ha). The total income for 2 years will range between Rs. 59,758 - 69,670 and the annual income will range between Rs. 29,879 – 34835 Total income from fish production during study period is given in Table. 2.

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Table 2 Showing the Total Fish production (Oct.2005-Sep.2007) at Moghat Reservoir, Khandwa

S. No.	Fish Species	Total Quantity (kg/ha)	Rate/kg	Total Income (Rs.)
1	<i>Catla catla</i>	148.00	40-45	5920-6660
2	<i>Labeo rohita</i>	133.00	40-55	5320-7315
3	<i>Labeo calbasu</i>	123.00	35-45	4305-5535
4	<i>Labeo bata</i>	90.00	55-60	4950-5400
5	<i>Cirrhinus mrigla</i>	93.00	43-50	3999-4650
6	<i>Labeo fimbriatus</i>	40.00	70-85	2800-3400
7	<i>Cyprinus carpio</i>	35.00	65-70	2275-2450
8	<i>Cyprinocarpus communis</i>	29.00	65-70	1885-2030
9	<i>Labeo boga</i>	80.00	45-55	3600-4400
10	<i>Rasbora daniconius</i>	22.00	70-85	1694-1870
11	<i>Heteropneustas fossilis</i>	38.00	80-100	3040-3800
12	<i>Mystus vitatus</i>	49.00	65-70	3185-3430
13	<i>Ophiocephalus marulius</i>	37.00	45-55	1665-2035
14	<i>Ophiocephalus gachua</i>	29.00	65-70	1885-2030
15	<i>Ophiocephalus punctatus</i>	12.00	55-70	660-840
16	<i>Ophiocephalus striatus</i>	15.00	65-75	975-1125
17	<i>Ctenopharyngodon idilus</i>	80.00	75-80	6000-6400
18	<i>Hypothalamicthyes molitrix</i>	70.00	80-90	5600-6300
Total Income for 2 years				59,758 - 69,670
Annual Income				29,879 - 34835



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