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FISHERIES OF WAN RESERVIOR, MAHARASHTRA

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INTRODUCTION

The Wan reservoir is a medium sized reservoir near Parli (Vaijyanath) city in Marathwada region.The reservoir was constructed in year 1963 across the river Wan. The reservoir is bounded by latitude 18°53'N and Longitude 76°27'.It is the oldest reservoir in district with water spread area of 347 ha.The reservoir has an opportunity to irrigate 7567 ha of agricultural land. Besides supply of water for irrigation, the reservoir also supplies drinking water to ParliVaijnath town and Vaijnath Co-operative Sugar Factory.The area around reservoir comprises forest-covered hills.The reservoir has two small canals through which water supply goes to agricultural lands of the villages like Nagapur, Pangri, Deshmukhtakli, Talegaon, Limbota, Kowthali,Sangam, Gopalpur, Mandekhel, Bhilegaon, Tandoli,Selu, Parchondi, Sirsala, Kanadi and Pimpalgaon. The salient features of the reservoir are depicted in Table 1.

Table 1: Salient features of Wan reservoir, Maharashtra

River	Wan
Year of construction	1963
Nearest city	Parli (Vaijyanath)
Water spread area (ha)	347
Height of dam (m)	19.81
Length of dam (m)	2188
Gross storage capacity (mcm)	25.181
Catchment area (km^2)	379.92
Full tank level	454.87
High flood level (m)	456.40
Irrigation potential (ha)	7567
Length of canal • Right canal (m) • Left canal (m)	 12.03 9.65
Rainfall at catchment area (mm)	535

MATERIALS AND METHODS

Fishes for the purpose of study were collected with the help of local fishermen in spite of buying from the market. Three different sampling sites were selected for study; the outlet, the inlet and an approximate intermediate of the water body. The collected fishes were brought to the laboratory after noting their original colour and capturing photographs. The collected fishes were preserved in 5% formalin solution in to the laboratory for further study. The identification of fishes was done with the help of standard keys (Talwar and Jhingran, 1991 and Day, 1875-1878).

A personal contact and interview method was used to gather data on fish seed stocking, fish catch, catch composition and environmental impact of exotic fishes on indigenous fish species.

RESULTS AND DISCUSSION

Fish fauna: In the present study 26 fish species have been identified (Table 2). They include carps, feather backs, catfishes and other. Out of 26 species *Labeorohita, Channa spp., Cyprinuscarpio and Oreochromismossambicus*were noted to be predominant and occurred throught the year. The fishery of *Catlacatla*was badly affected by the accidental entry of *O. mossambicus.* The exotics such as *Cyprinuscarpio*and *O. mossambicus*together contribute to about 14.79% of the total fish catch.

The details of the fish production in Wan reservoir are depicted in Table 3.The study of the data revealed that the maximum fish production was recorded at 82.88 kg/ha/yr in year 2013-14.The minimum fish production was during 2012-13at 66.92 kg/ha/yr.During the present investigation the catch of local fishes showed the higher catches than those of carps (Table 3).

During first year of investigation (2011-12), Indian major carps,common carp,tilapia and local fishes contributed to 28.36%,11.67%,12.05% and 47.92% of the total catch respectively.

During second year of investigation (2012-13),local fishes formed 46.42% of the total catch,while Indian major carps,common carp and tilapia contributed to about 19.80%,13.04% and 20.74% of the total fish catch.Exotic species (common carp and tilapia) together contributed to about 33.78% of the total fish catch.

During third year (2013-14) of the investigation,local fishes dominated over the carps and contributed to about 39.57% of the total catch.Indian major carps,common carp and tilapia contributed to 29.21%,18.08 % and 13.14% of the total catch.The contribution from two exotics (common carp and tilapia) was more than 31% of the total catch.

In Wan reservoir tilapia (*Oreochromismossambicus*) affected the phenomenal growth of *Catlacatla.* The growth of *Catlacatla*never exceeded 850 gms after entry of tilapia. From the interview with fishermen it is learned that tilapia accidentally entered in reservoir in last five years. It may be due to other predatory fishes present in the reservoir, tilapia population could not proliferate much. Tilapia is a non-predatory fish, comes to maturity early and starts breeding, almost continuously, from the age of three months. The new recruits also multiply, compete for food and space, not only among themselves, but also with fish fauna present in the water body, which results in an over population of small sized fishes of very low/no market value. Hence, many regard tilapias as a pest and it affect adversely indigenous fish population, mainly *Catlacatla.*Though this fish became a favorite of fish culturists through the world it has certain undesirable traits such as early maturity, prolific breeding and stunted growth. Being a prolific breeder, it over-populates, and very small sized tilapia are obtained due to its precocious breeding. It is therefore difficult to culture all the progeny to a marketable size and hence there is market decline, in its culture operations and is now called as a ‘trash fish’. It is not suitable for stocking with carps as it is competed with carps for space, food and oxygen besides predating on the carp fry. The accidental entry of tilapia in wan reservoir caused a great challenge for its effective control.

Table 2: Fish Diversity in Wan Reservoir of Beed district

Order:Clupeiformes **Suborder:Notopteroidei** **Family:Notopteridae** *1.Notopterus notopterus (Pallas)*
2. Notopteruschitala (Ham.)
Order: Cypriniformes **Suborder:Cyprinoidei** **Family:Cyprinidae** *3.Chelaphulo (Ham.)*
4.Catlacatla (Ham.)
5.Labeorohita (Ham.)
6.Labeo fimbriatus (Bloch)
7.Cirrhinusmrigala (Ham.)
8.Cyprinus carpio(Linn)
9.Amblypharyngodonmola (Ham.)
10.Osteobramacotio (Ham.)
11. Puntiussaranasarana (Ham.)
12. Puntiustictoticto (Ham.)
13. Puntiuschola (Ham.)
14. Rasboradaniconius (Ham.)
Order:Siluriformes **Family:Bagridae** *15.Mystuscavasius (Ham.)*
16.Mystus seenghala (Sykes)
17.Mystus vittatus (Bloch)
Family: Claridae *18.Clariasbatrachus (Linn.)*
Family:Siluridae *19.Wallago attu (Bloch and Schneider)*
Order:Mugiliformes **Family:Mugilidae** *20.Mugilcephalus (Linn.)*
Order:Channiformes **Family:Channidae**
21.Channa striatus (Bloch)
22.Channamarulius (Ham.)
Order:Perciformes **Family:Anabantidae** *23.Anabas testudineus (Bloch)*
Family:Cichlidae *24.Oreochromis mossambicus (Peters)*
Family:Gobiidae

25.Glassogobiusgiuris (Ham.)
Family:Ambassidae *26.Chandaranga (Ham.)*

Table 3: Year wise fish catch in Wan Reservoir (kg)

Year	Indian major carps	Common carp	Tilapia	Local fishes	Total	Fish yield (kg/ha/yr)
2011-12	7895	3250	3355	13340	27840	80.23
%	28.36%	11.67%	12.05%	47.92%		
2012-13	4600	3027	4815	10780	23222	66.92
%	19.80%	13.04%	20.74%	46.42%		
2013-14	8400	5200	3780	11380	28760	82.88
%	29.21%	18.08%	13.14%	39.57%		

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