J. Exp. Zool. India Vol. 14, No. 1, pp. 129-132, 2011 *ISSN 0972-0030*

ICHTHYOFAUNA OF PRAVARA RIVER IN RELATION TO PISCICULTURE, AHMEDNAGAR DISTRICT, MAHARASHTRA

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Accepted 13 October 2010)

ABSTRACT – Pravara river selected as a freshwater body for the present investigation is an important tributary of Godavari, Ahmednagar district, Maharashtra was assessed for its potential towards pisciculture. The assessment was based on the study of fish diversity during July 2008 to June 2009. Altogether 17 fish species belonging to 14 genera, 8 families and 4 orders were found to be present in the river. Among fish species order Cypriniformes and family Cyprinidae dominated the river. The study revealed the river subsistence fishery and served the need of local fishermen community and also protein rich food to the local people. However, the population of predatory and weed fishes should be under control in order to favour the fish culture. Since the fishes are the important resources as food and ornamental items, it is the need of hour to conserve their population which at present is under intense anthropogenic pressure.

Key Words : Pravara river, ichthyofauna, pisciculture.

INTRODUCTION

Fishes are one of the important elements in the economy of many nations as they have been a stable item in the diet of many people. For sustained exploitation and simultaneous conservation of fisheries resources, basic scientific information on biodiversity is vital (Sone and Malu, 2000; Shendge, 2008).

Contemporary freshwater fish diversity has seen a constant decline in recent years due to destruction of habitat on account of various natural and anthropogenic factors (Dudgeon *et al,* 2006). The pollution adversely affects the water quality and its biota including benthos fauna. The discharges of industrial effluents, sewage, domestic wastes etc., have not only affect only water quality and its aquatic life including micro and macro invertebrates and vertebrates such as fish community etc., but makes the river a threat to human health.

Productions of fish from water bodies basically depend on right selection of cultivable varieties and control of predatory and weed fishes (Sone and Malu, 2000). Earlier studies on fish diversity of some rivers in relation to fish culture were made by Laishram *et al* (2007), Shinde *et al* (2009) and Dua and Parkash (2009). Pravara river passes through Ahmednagar district of Maharashtra state and water is being extensively harnessed from both of its banks for domestic, industrial, fishing and irrigation purpose. River suffers from pollution due to urbanization and agricultural run off, domestic waste, municipal sewage and over fishing in to the river. However, no investigation is so far taken upon the status of river with respect to fish diversity. Hence, in the present study an attempt has been made to study the fish diversity of Pravara river in relation to pisciculture and should lead to development of strategies for their conservation.

MATERIALS AND METHODS

Pravara river selected as a freshwater body for the present investigation is an important tributary of Godavari, Ahmednagar district, Maharashtra. It originates at Ghatgar in Akole tahsil, in the eastern slopes of the Sahyadris and flowing through the northern part of Ahmednagar district and meets to the Godavari at village Toka in Nevasa tahsil. Pravara river has a length of about 200 kms. A big dam known as 'Wilson Dam' (Bhandardara) has been constructed on the Pravara river at village Shendi in Akole tahsil. Some smaller dams are also constructed across the river for the purpose of water resource for drinking, agriculture, domestic uses and fisheries.

Fishes for the present study were collected with the help of fishermen during July 2008 to June 2009 from Shendi, Akole and Jorve reservoirs in Pravara river. After noting their original colour and general pigmentation, the specimens brought to the laboratory and preserved in 5% formaldehyde solution. Identification of fishes was done with the help of standard texts (Dutta Munshi and Srivastava, 1988; Day, 1994; Jayaram, 1999).

RESULTS AND DISCUSSION

The present investigation involves the assessment of

a Pravara river in Akole and Sangamner taluka in order to find out its potential towards pisciculture. The above assessment was based on the study of fish diversity.

The fish fauna is an important aspect of fishery potential of a water body. It was observed that the distribution of fish species is quite variable because of geographical and geological conditions. In the present study different fish species have been identified from Pravara river and represented in table 1. Altogether 17 fish species belonging to 14 genera, 8 families and 4 orders were reported from the Pravara river. The orders Cypriniformes was dominant with 12 species followed by order Siluriformes and Perciformes with 2 species each and order Synbranchiformes with 1 species. Among the 8 families (Fig. 1), family Cyprinidae was dominant with 10 species followed by family Balitoridae, Cobitidae, Bagridae, Siluridae, Mastacembelidae, Chandidae and Gobiidae with 1 species each. Dominance of fish species belonging to family Cyprinidae was also reported from other freshwater bodies (Ahirrao and Mane, 2000; Khedkar, 2005; Kadam and Gaikwad, 2006; Mishra and Gupta, 2007; Srikanth *et al,* 2009). In the present study a moderate number of fish species availability and there production in Pravara river may be related to the sort of unsuitable ecology of water body.

In the present study the collected fish species (Table 1) were classified on the basis of their economic importance (Lagler, 1956). Out of 17 species recorded, only 3 species were found to be of commercially important. All these commercial fish species were observed to be having food value. Seven species of fish have been classified as coarse food fishes that are of minor importance as food fish but form a substantial protein rich food for the poor people of this region. Four fish species have ornamental value due to small size and bright colours, suitable for aquarium purpose. Seven fish species are useful in public health as larvivorous fishes.

Based on the food and feeding habits, the fishes were classified into predatory, herbivorous, omnivorous and weed fishes (Table 1). Four fish species were found to be predatory, 1 species herbivorous and 7 species were weed fishes. The weed fishes are active competitors with the major carps. They generally consume large quantities of zooplankton, the main food of carp spawn. The young weed fishes directly feed on carp hatchlings and spawn. On the basis of relative abundance (Table 1) the fish species were classified in to abundant, moderate and rare.

Rajbanshi (1996) reported that all most all carnivorous fishes are dangerous as they go on hunting the fries, fingerlings and yearlings of cultivable fishes. Among the carnivorous fish, *Wallago, Mystus, Channa, Heteropneusteus* and *Notopterus* species are most dangerous wild fish and these fishes must be avoided from the fish pond. The presence of such carnivorous fishes in the fish pond especially in nursery and rearing ponds causes serious loss of fries and fingerlings. Sometimes due to negligence, some of these fishes enter the ponds and while harvesting only a limited number of carnivorous fishes are obtained out of the stocked and causes a big loss in fish culture. In the present study, Pravara river contained 4 species of predatory fishes, among these, *Wallago* and *Mystus* species are most dangerous wild fish. River also contained 7 species of weed fishes. Hence, in order to pisciculture activities in the river, the population of predatory and weed fishes should be under control.

The observations on the Pravara river selected for

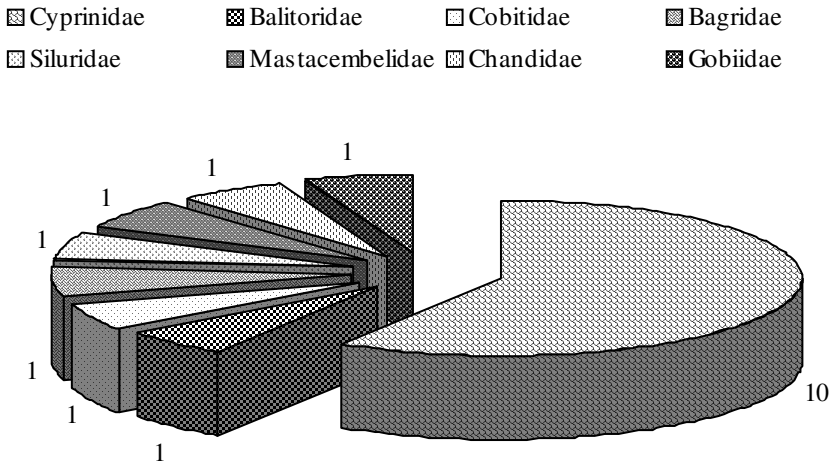

Fig. 1 : Number of fish species in a family from Pravara river during July 2008 to June 2009.

Table 1 : Systematic fish diversity, feeding habits, relative abundance (July 2008 to June 2009) and economic importance of fish species from Pravara river.

Name of the fish	Common name	Feeding habits	Relative abundance	Economic importance
Class : Actinopterygii				
Sub class : Neopterygii				
Division : Teleostei				
Sub division : Euteleostei				
Order – I : Cypriniformes				
Family – I : Cyprinidae				
1) *Amblypharyngodon melettinus* (Valenciennes)	Attentive carplet	W	M	CF
2) *Barilius vagra* (Ham-Buchanan)		W	M	LV
3) *Cirrhinus latia*		M	FF	
4) *Garra lamta* (Ham-Buchanan)	Garra		A	CF
5) *Garra modestus*		M	FF	
6) *Labeo angra* (Ham-Buchanan)			A	FF
7) *Labeo boga* (Hamilton)	Boga		A	FF
8) *Labeo fimbriatus* (Bloch)	Minor carp	H	A	FF
9) *Oxygaster bacaila* (Hamilton)	Chilwa	W	A	LV, CF
10) *Puntius conchonius* (Ham-Buchanan)	Carp Minnows	W	A	LV, CF
Family – II : Balitoridae				
1) *Nemacheilus botia*	Botio	W	M	AF, CF
Family – III : Cobitidae				
1) *Lepidocephalichthys berdmorei* (Blyth)	Mooree	W	R	AF, CF
Order – II : Siluriformes (Cat fishes)				
Family – I : Bagridae				
1) *Mystus bleekeri* (Day)	Cat fish	P	A	FF, CO
Family – II : Siluridae				
1) *Wallago attu* (Schneider)	Freshwater shark	P	M	CO, LV, FF
Order – III : Synbranchiformes				
Family – I : Mastacembelidae				
1) *Mastacembelus pancalus* (Ham-Buchanan)	Vam	P	M	CO, LV, FF, AF
Order – IV : Perciformes (Trash fishes)				
Family – I : Chandidae				
1) *Chanda nama* (Ham)	Glass fish	W	M	AF, LV, CF
Family – II : Gobiidae				
1) *Glossogobius giuris* (Ham-Buchanan)	Tank goby	P	A	FF, LV

§ P – Predatory fish; H – Herbivorous fish; W – Weed fish.
§ A – Abundant; M – Moderate; R – Rare.
§ CF – Coarse food; FF – Fine food; CO – Commercial food.
§ LV – Larvivorous; AF – Aquarium fish.

present study revealed that : 1) The occurrence of total 17 fish species indicated moderate fish diversity. 2) Fishes belonging to order Cypriniformes and family Cyprinidae dominated the river. 3) In order to carp culture, the population of predatory and weed fishes should be under control.

Conservation of biological diversity is considered to be one of the major goals for sustainable management freshwater renewable reverine resource. Since the fishes are the important resources as food and ornamental items, it is the need of hour to conserve their population which at present is under intense anthropogenic pressure. Pravara river consisted only 17 fish species, indicated moderate diversity. Hence, it is necessary to conserve and improve the fish fauna by adopting the conservation strategies. For the conservation of the fish diversity overexploitation by harvesting should be prevented and exploitation of juveniles should be curbed entirely.

ACKNOWLEDGEMENTS

Authors are thankful to Principal, P.V.P. College, Pravaranagar for providing requisite facilities for completion of this work. The financial assistance received from UGC, Western Regional Office, Pune is gratefully acknowledged.

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