

Biodiversity of Fish Fauna of Amarja Reservoir

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ABSTRACT

The present study deals with the biodiversity of fish fauna of Amarja reservoir in aland Taluka Gulbarga district, Karnataka. The study was undertaken for a period of one year and monthly collections were made from April-2011 to March-2012. In 3 sites in the Amarja reservoir. The results of present investigation reveals the occurrence of fifteen fish (15) species belonging to 3 orders. Order Siluriformes was dominant with 8 species, *Mystus krishnenis*, *Proeutropi ichtthys taakree taakree*, *Ompak bimaculatus*, *Wallago attu*, *Amblypharygodon mola*, *Xenentodon cancila*, *Channa striatus*, *Mastacembelus armatus* followed by Cypriniformes order with 6 species *Cirrihinus reba*, *Labeo rohita*, *Catla Catla*, *Puntius sophore*, *Puntius sarana sarana*, *Tor Mussullah* and Osteoglossiformes with one species *Notopterus notopterus*

KEYWORDS : amraja, reservoir, biodiversity, fish fauna

Introduction

Fishes form one of the most important groups of vertebrates, influencing its life in various ways. Millions of human beings suffer from hunger and malnutrition and fishes form a rich source of food and provide a meal to tide over the nutritional difficulties of man. In addition to serving as an important item of food, fishes provide several by-products to us. Fishes have formed an important item of human diet from time immemorial and are primarily caught for this purpose. Fish diet provides proteins, fat and vitamins A and D. A large amount of phosphorous and other elements are also present in it. They have a good taste and are easily digestible.

Ichthyofaunal diversity refers to variety of fish species depending on context and scale; it could refer to alleles or genotypes within of life forms within a fish community and to species or life forms across aqua regimes (Burton et al., 1992). About 21,723 living species of fish have been recorded in the world of these 8,411 are freshwater species and 11,650 are marine forms. India is one of the mega biodiversity countries in the world and occupies the ninth position in terms of freshwater mega biodiversity (Mittermeier and Mitemeir, 1997). In India there are 2,500 species of fishes of which 930 live in freshwater and 1,570 are marine (Kar et al., 2003). Studies of spatial and temporal patterns of diversity, distribution and species composition of freshwater fishes are useful to examine factors influencing the structure of the fish community (Galactos et al., 2004). The distribution and composition of the fish species in each habitat were closely associated with various factors such as the availability of food, breeding sites, water current, depth, topography and physico-chemical properties of water (Harris, 1995).

Materials and Methods

Amarja dam is located near aland Taluka in Gulbarga district. It is born at Duttargoan village, aland Taluka and flows up to 50-60 kms and will merge into Bheema River at sangam Kshetra, Ghangapur Gulbarga district, sangam kshetra is a meeting point of Bheema and Amarja Rivers. The water of these rivers especially at their confluence, called sangam will be freed from their sins. The Amarja dam is built across the Amarja River, the dam was constructed in the year 1998. This is a multipurpose dam; the reservoir is used for irrigation of the surrounding areas for providing water supply and for solving the problems of drinking water in the area.

The dam is 960 meters long and 31.85 meters high from the foundation. It covers a catchment area of 53,095 Th ha. The design flood of the dam is 2837 cumec. The dam has an ogee type of spillway and 5 spillway gates. The maximum water level of the dam is 461.5 meters.

The present work is an attempt to study the biodiversity of fish fauna of Amarja reservoir. Fishes were collected from different selected localities with the help of local fishermen using different types of nets, namely taken prior to preservation since formalin decolorizes the fish colour on long preservation. Formalin solution was prepared by diluting one part of concentration formalin or commercial formaldehyde with nine parts of water i.e., 10% formalin (Hamilton, 1822; Misra, 1962; Munro, 2000). Fishes brought to the laboratory were fixed in the solution in separate jars according to the size of species. Smaller fishes were directly placed in the formalin solution while larger fishes were given an incision on the abdomen before they were fixed.

The fishes collected and fixed were labeled giving serial numbers exact locality from where collected, date of the collection spots where ever possible. The common local name of fish used in this region was labeled in each jar. Identification was done based on keys for fishes of the Indian subcontinent (Day 1958; Jayaram; 1981; Jayaram 1999; Talwar and Jhingram 1991). Classification was carried out on outlines of day (1889), Jayram (1961), Nelson (1976) and Jayaram (1981).

The identification of the species was done mainly on the basis of the colour pattern, specific spots or marks on the surface of the body shape of the body, structure of various fins etc. and also with the help of Dr. Arunachalam, Dept of Environmental sciences, M.S. university, Thirunaveli, Tamilnadu for his valuable suggestions and identifying the fish fauna of Amarja reservoir.



Fig.1 and 2. Bird eye view of Amarja Reservoir



Results and Discussion:-

The following fish fauna of Amarja Reservoir, Gulbarga District.

I	Order:	CYPRINIFORMES
	Family:	Cyprinidae
	Species:	Cirrihinus reba
		Labeo rohita
		Catla Catla
		Puntius sophore
II		Puntius sarana sarana
		Tor Mussullah
	Order:	SILUROFORMS
	Family:	Bagridae
	Species:	Mystus krishnenis
	Family:	Schilbeidae
	Species:	Proeutropi ichthys taakree taakree, Ompak bimaaculatus
		Wallago attu
		Amblypharygodon mola
	Family:	Belonidae
	Species:	Xenentodon cancila
	Family:	Channidae
	Species:	Channa striatus
	Family:	Mastacembelidae
Species:	Mastacembelus armatus	
III	Order:	Osrtioglossiformes
	Family:	Notopteridae
	Species:	Notopterus notopterus

The results of present investigation confirmed the occurrence of 15 fifteen fish species in Amarja Reservoir during April 2011 to March 2012. The distribution of fish species is quite variable because of geographical and geological conditions.

The fish species found in Amarja Reservoir are Order Siluriformes family Bagridae with (1) species, *Mystus krishnenis*, family schilbeidae with (4) species *Proeutropi ichthys taakree taakree*, *Ompak bimaaculatus*, *Wallago attu*, *Amblypharygodon mola*, family Belonidae with (1) species *Xenentodon cancila*, family channidae with (1) *Channa striatus*, mastacembelidae with (1) species *Mastacembelus armatus* followed by Cypriniformes order, Cyprinidae family with (6) species *Cirrihinus reba*, *Labeo rohita*, *Catla Catla*, *Puntius sophore*, *Puntius sarana sarana*, *Tor Mussullah* and Osteoglossiformes order, Notopteridae with (1) species *Notopterus notopterus*. were found during sampling in Amarja reservoir.

The results of present investigation confirmed the occurrence 15 (fifteen) species belongs to 3 orders Siluriformes order was dominant with 8 (eight) species, followed by Cypriniformes with 6 (six) species, followed by order Osteoglossiformes with 1 (one) species.

Efforts have been made recently in bringing together the studies of the fish diversity in various parts of the southern Western Ghats. The Western Ghats while being extremely rich in fish biodiversity has been investigated with regards to species distribution (Bhat, 2003). The present study largely focuses on the fish species richness in Amarja Reservoir which is the part of Amarja river basin. During the study altogether 15 species of fishes were recorded.

Due to multiple uses of fisheries resources, fishing has become a major industry and a large number of these aquatic communities are under a big threat of extinction. Habitat loss of environmental degradation has seriously affected the fish fauna. Knowledge of available resources and the biological characters of species serve the base line information for further studies on resource conservation and maintenance. Further there is a need for survey of diversity of fish fauna in different types of habitats all over the country. Industries effluents and manmade pollutants also contribute towards the disruption in the balance on aquatic ecosystem. The work will provide further strategies for development and fish conservation. Conservation measures requires forestation in catchments and awareness on illegal fishing and killing of fishes.

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