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## The study on fish diversity of Madduvalasa reservoir Srikakulam district, Andhra Pradesh, India

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### Abstract

The fish fauna of Madduvalasa reservoir Vangara Mandalam in Srikakulam District, Andhra Pradesh were collected for the present study. The results of the present study confirmed the occurrence of 31 species of fishes belonging to 5 orders, 21 genera of 13 families. The order Cypriniformes was dominant with 14 species, followed by the order Siluriformes with 7 species. While the order Perciformes were represented with 6 species and Channiformes with 3 species was represented with one species. Thus the reservoir was good potential for fish fauna.

**Keywords:** Channiformes, siluriformes, perciformes

### Introduction

A survey was conducted on the diversity of fish fauna and their conservation status of a freshwater reservoir, Vangara Mandalam in Srikakulam District of Andhra Pradesh. The aquatic environment is an enormously rich resource that offers a good base of food. Fishes form one of the most important groups of vertebrates, influencing life in various ways. Fish plays an important role, as it is not only useful for food but also be used in recreation and biological control. Fish catches are mainly for the human diet enriched by proteins, fats and vitamins A and D. The Phosphorus and other elements present in it give good taste and are easily digestible. Fishes of the inland water bodies of the Indian subcontinent have been a subject of study since the last century, Hamilton and Buchanan (1822) [4], Day (1878) [2], Misra (1962) [7], Jayaram (1981), Talwar and Jhingran (1991) [17]; Rao *et al.* (1999) [11]. The lack of information on fish fauna is a big handicap in popularizing less known fish varieties in a particular ecosystem. Thus there is a need to know fish fauna of freshwater habitats, which will help in planning scientific methods for their effective exploitation for fish production. The basic objective of the present study is made to document the fish fauna of Madduvalasa Reservoir in the Srikakulam district, as there is no earlier studied on the fish fauna of this lake, this is being the first attempt. The main scope of this lake is irrigation and fishing purpose.

### Material and Methods

The Fishes were collected from the Reservoir at different stations during the year from Feb-2019 to January-2020 with the help of fishermen and examined for colour patterns, preserved in 10% formaldehyde and identified by following the key of Day (1878) [2], Lagler (1956) [6], Datta Munshi and Srivastava (1968) [1], Talwar and Jhingran (1991), Rao *et al.*, (1999) [11].

### Results and Discussion

The Fish fauna is an important aspect of the fishery potential of a water body. Fish is one of the major components of the aquatic ecosystem and Fish also form food for various animals and human beings. More work has been carried out on fish fauna in Indian reservoirs. The distribution of Fish species is quite variable because of geographical and geological conditions. Srikakulam district contains large freshwater bodies' canals, reservoirs, lakes and ponds etc. The vast stretch of these freshwater bodies offers a good score for fisheries. It is the highest fish producing Centre in the Andhra Pradesh region. This district has rich fish fauna, however, some species found in this region have started disappearing, there is a need to take contemplate measures to protect the genetic resources.

The main threat for the decline of various fish fauna may be due to overfishing of juveniles, industrialization, urbanization and destruction of the natural environment. Therefore in the present study, emphasis was given to verify the fish germplasm. The evaluation of fish genetic resources found here in the Madduvalasa Reservoir of Srikakulam district reveals that there are 31 species of fishes belonging to 5 orders, 21 genera of 13 families were presented in the table. Among the collection, 13 species of order Cypriniformes, i.e., *Catla catla*, *Cirrhinus reba*, *Cirrhinus mrigala*, *Labeo rohita*, *Labeo potail*, *Labeo calbasu*, *Cyprinus carpio*, *Punctius sarana sarana*, *Punctius chola*, *Amblypharyngodon mola*, *Amblypharyngodon microlepis*, *Esomus denricus*, *Rasobora elanga* belonging to family Cyprinidae, only 01 species belonging to family Cobitidae namely *Lepidocephalus guntea*. Order, Siluriformes consists of 7 species belonging to 4 families, *Mystus vittatus*, *Mystus cavasius*, *Mystus bleekeri* 3 species belong to Bagridae, *Wallago attu*, *Ompok bimaculatus*, 2 species belongs to family siluridae, *Clarius batrachus*, belongs to family Clariidae and *Heteropneustes fossilis* belongs to family Heteropneustidae. Order, Channiformes consists of 3 species, *Channa orientalis*, *Channa punctatus* and *Channa straitus* belong to the family Channidae. Order, Perciformes consists of 6 species, *Chanda nama* belongs to the family Chanidae, *Nandus Nandus*, belongs to the family Nandidae, *Glossogobius giuris giuris* belongs to the family Gobidae. *Anabas testudineus* belongs to family Anabantidae. *Mastacembulus armatus*, *Mastacembulus pancalus* belongs to family Mastacembelidae. Order Osteoglossiformes consists of 01 species, *Notopterus Notopterus* belongs to the family Notopteridae. The survey of fish fauna has been done by a number of workers. Swarup (1953) gave an account of the fishes of Sagar lake, Dubey and Mehra (1959) have reported 71 species of fishes from the Chambal river. Malaviya (1961) reported the fish fauna of

Jabalpur. Mishra made some references of the fishes found in Madhya Pradesh. Sugunan and Yadava (1992) [16] mentioned 40 fish species from the Hirakhud reservoir of Orissa forming the commercial fishery. A similar type of investigations by the Central Inland Capture Fisheries Research Institute (1997) reported the presence of 49 species belonging to 30 genera and 12 families in the Bhatghar reservoir and the institute also recorded 44 endemic and 7 introduced fish species in the Aliyar reservoir. Sakhare (2001) [13] reported the occurrence of 23 fish species belonging to 7 orders in Jawalgaov reservoir in Solapur district of Maharashtra. The fishes belonging to order Cypriniformes were dominant with 11 species to be followed by fishes of order Siluriformes with 4 species, while orders like Osteoglossiformes, Perciformes and Channiformes were represented by 2 species and the rest of orders by single species. Singh (2001) reported a total of 27 fish species belonging to six families in the Pong reservoir of Himachal Pradesh. Gopinath and Jayakrishan (1984) [3] mentions 17 species of fishes from the Idukki reservoir of Kerala. Pisca *et al.*, (2000) [10] reported a genera fish belonging to four orders and 28 species from the Ibrahimbagh reservoir of Hyderabad. Sakhare and Joshi, (2002) observed 28 fish species, including 9 species of carps, 5 of cat fishes 2 of feather base, 5 of live fishes and 7 belonging to miscellaneous fishes. Paik Tapaskumar *et al.*, (2003) [9] stated that 75 species of fishes belonging to 50 genera are recorded, 23 families and six orders in the Subarnerekha river in Singbhum district of Jharkhand, India. Salasker and Yeergi, (2004) [14] recorded by 10 main fish species from Powai lake, Mumbai in Maharashtra. During the present investigation altogether 33 fish species belonging to 23 genera falling in 6 orders have been identified in the three years study on four lake of Warangal district. The present investigation was some what similar with earlier studies on the fish fauna of Warangal district reported by Nampally (1987) [8].



**Fig 1:** Map Shows Fish collection site Madduvalasa Reservoir

**Table 1:** Showing Fish Fauna of Madduvalasa Reservoir Srikakulam District. A.P.

Order	Family	Genus	Species	Local name	
Cypriniformes	Cyprinidae	<i>Cattla (valenciennes)</i>	1. <i>Catla cattla (Hamilton-Buchanan)</i>	Botcha	
			2. <i>Cirrhinus reba(Hamilton-Buchanan)</i>	Arju	
			3. <i>Cirrhinus mrigala (Hamilton-Buchanan)</i>	Merige	
		<i>Labeo (cuvier)</i>	4. <i>Labeo rohita (Hamilton-Buchanan)</i>	Rohu	
			5. <i>Labeo potail (Sykes)</i>	Bocche	
			6. <i>Labeo calbasu (Hamilton – Buchanan)</i>	Kaki bochhe	
		<i>Cyprinus (Linnaeus)</i>	7. <i>Cyprinus carpio carpio</i>	Bangaru theega	
			<i>Puntius (Hamilton)</i>	8. <i>Puntius sarana sarana (Hamilton – Buchanan)</i>	Gunda
		9. <i>Puntius chola (Hamilton –Buchanan)</i>		Parka	
		Siluriformes	Bagridae	<i>Amblypharyngodon (Bleeker)</i>	10. <i>Amblypharyngodon microlepis (Bleeker)</i>
<i>Esomus (Swainson)</i>	11. <i>Esomus denricus (Hamilton)</i>				Attapakka
	12. <i>Rasobora (Bleeker)</i>				Katte kodipe
Cobitidae	<i>Lepidocephalus (Bleeker)</i>			13. <i>Lepidocephalus guntea(Bleeker)</i>	Ulshe
				Bagridae	<i>Mystus (Scopoli)</i>
15. <i>Mystus cavasius (Hamilton)</i>	Guddi jella				
16. <i>Mystus bleeker (Day)</i>	Jella				
Siluridae	<i>Wallago (Bleeker)</i>			17. <i>Wallago attu (Schneider)</i>	Waaluga
				18. <i>Ompok bimaculatus (Bloch)</i>	Bugga dumma
Clariidae	<i>Clarius (Scopoli)</i>			19. <i>Clarius batracus (Linnaeus)</i>	Marphoo
		20. <i>Heteropneustes fossilis (Bloch)</i>	Inglikam		
Osteoglossiformes	Notopteridae	<i>Notopterus (Lecepede)</i>	21. <i>Notopterus notopterus (Pallas)</i>	Vollenka	
			22. <i>Notopterus chitala (Hamilton)</i>	Vollenka	
Channiformes	Channidae	<i>Channa (Scopoli)</i>	23. <i>Channa orientalis</i>	Malapankidi	
			24. <i>Channa punctatus (Bloch)</i>	Mottapilla	
			25. <i>Channa sriatus (Bloch)</i>	Murrel	
Perciformes	Chanidae	<i>Chanda (Hamilton)</i>	26. <i>Chanda nama (Hamilton)</i>	Bommadarra	
	Nandidae	<i>Nandus (Valenciennes)</i>	27. <i>Nandus nandus (Hamilton)</i>	Pandi parka	
	Gobiidae	<i>Glossogobius (Gill)</i>	28. <i>Glossogobius giuris giuris (Hamilton)</i>	Ushkedhanthi	
	Anabantidae	<i>Anabus (cuvier)</i>	29. <i>Anabus testudineus (Bloch)</i>	Burka	
	Mastacembelidae	<i>Mastacembelus (Gronovius)</i>	30. <i>Mastacembelus armatus</i>	Paapera	
			31. <i>Mastacembelus punctatus</i>	Chinni paapera	

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