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## A STUDY ON ICTHYOFAUNAL DIVERSITY IN MUPPARAM LAKE JAGTIAL, TELANGANA.

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### Authors contributions

Author1 and 2 has visited the lake and the fishermen during the study period and collected the specimens and photographs. Author 3 has identified the specimens and tabulated the data.

### Abstract:

The life on the earth extended from underground to the weather and water. The life in the water is named as aquatic life. Among the aquatic organisms fish occupy the first place. Now days the fishery sector has gained much importance in the food, industry sector and it contributing the major to the GDP of the country. The government of Telangana constructed the Kaleshwaram project which making all the lakes in the state with full of water in all seasons. It stimulated us to take the present study. During the study period a total number of 41 fish species were identified, which belong to 10 orders and 14 families. Out of all this the order Cypriniformes and the family Cyprinidae is dominant. The Telangana is a new state with immense resources and the progressive schemes introduced by the Govt. is enhancing fish production in the state.

### Key words:

Ichthyofauna, Diversity, Kaleshwaram, Fishermen, Pollution

### Introduction

In our solar system planet earth has the unique feature of life. The life on the earth extends from underground to weather and water. The life in the water is termed as aquatic life. The earth is composed of 71% of water and 29% only is the land. Out of the 71% of water fresh water is very low and supports many forms of life. In Telangana every village and town is surrounded with lakes and these lakes are connected in a chain manner. These lakes will support diverse of

fish species. In recent years the construction of Kaleshwarm, a major irrigation project made the Telangana to rise its groundwater, as well as all the lakes are seeing with full of water throughout the year. The existences of lakes with full of water in Telangana stimulated us to review the fish fauna in Mupparam Lake, Jagtial.

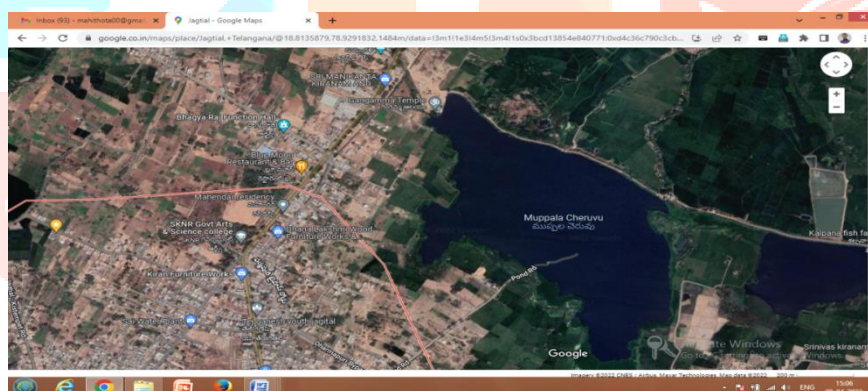
The history of fish introductions dates back several hundred years, relatively little is known about the reasons for success or failure of an introduced species and ecological consequences have been poorly documented. It is generally agreed that introductions involve a level of risk and the certainty of success is unpredictable. Many feel that the introduction of an aquatic organism will always have some impact on the recipient ecosystem and that the immediate effects on an ecosystem by an introduced species is not always indicative of the long term or permanent impact. India has endowed with wide diversity of water resources, which sustain a large fisheries sector in the country. India has a coast line of 8118 Km. with an exclusive economic zone stretching over 2.02 million Km<sup>2</sup> and a continental shelf covering 0.53 million Km<sup>2</sup>. The marine sub sector contributing approximately 39 percent of total fish production. The balance, termed inland fisheries was accounted by fresh water aquaculture, inland capture and coastal aqua culture. Our country has many lentic and lotic water bodies. Lentic water bodies are reservoirs, lakes, ponds and lotic water bodies include the rivers, canals and small streams. Among the water bodies rivers such as Ganga, Yamuna, Brahmaputra, Godavari, Cauvery, Krishna etc. are the major rivers and they are contributing Indian economy in various ways. One of them is the fish production, depending on the fishes of these rivers many fishermen families are surviving. Total fish production from India's fisheries sector in 2019-20 was estimated 14.60 million tons (Government of India, 2020). The country ranks third in the world in total fish production and second in inland aquaculture. Maintenance of the quality of waters is pre-requisite for all culture systems for better yield (Shigeno, 1978). Fresh water lakes and ponds will probably contribute a major role to fulfill the additional requirement of fish and to improve the socio economic status of the rural areas of a particular region. (Jaya Bai *et al.*, (2006). The studies have been made on the ecology and fish yield from small reservoirs (Khan *et al.*, 1996). The availability of these fish fluctuate due to the wide degree of variation in their morphometry, nature and degree of water shed, climatic factors and human interference and the problems related to fishery management and their solution are location specific.

## Material and methods:

The Jagtial town is in north Telangana region, it was included with the erstwhile Karimnagar district. The town is major municipal council and is surrounded with four lakes in its all directions. It has plenty of water resources which supports the irrigation and fish culture. Mupparam Lake is located in the villages of Thippannapet and Thimmapur mandal of Jagtial urban, of Jagtial district. It is situated at 18°49'.00.86" (N) latitude and 78°51'.48.45" (E) longitude. The catchment area of the lake is 2856 ha.

## Collection of samples:

Fishes were collected by using the gill net, drag net, hand net, cast net and purely help of local fishermen society, Jagtial during 2021 to 2022. The sample collection is not only from the lake but also collected from the inlet streams and the outlet streams. The fish also collected from the muddy fields in the catchment of the lake. Collected fish photographed immediately and the specimen were preserved in 10 % formalin after giving abdominal cut then brought to laboratory for identification. The fish were identified with standard identification keys (Days volumes- 1875, 1878; Langer, 1956; Jayaram, 1991; Talwar and Jhingran, 1991 and Gupta, 2006).



**Figure: 1. Google Image showing the study area**

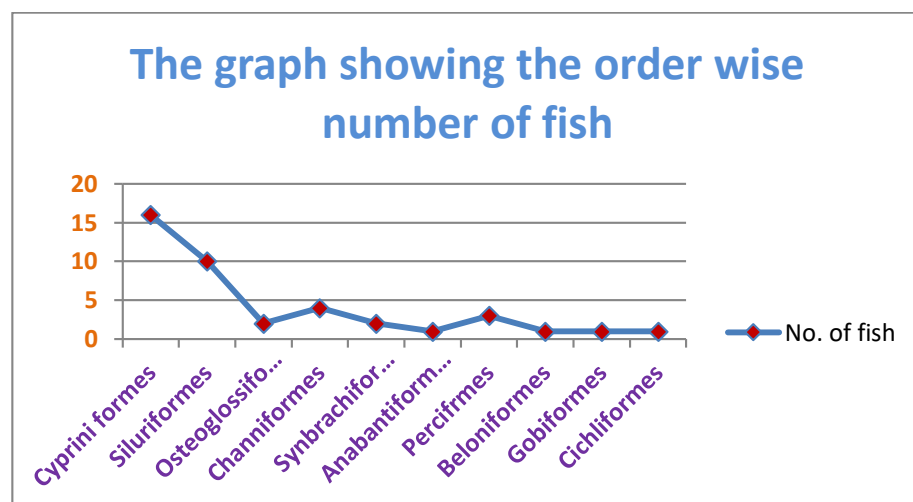
## Results and discussion:

During the present study total 41 fish species were identified.

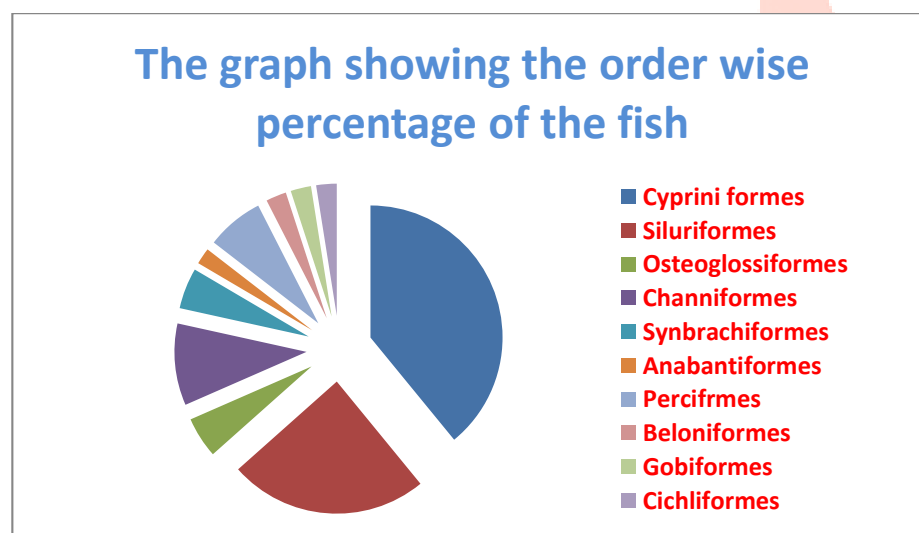
**Table: Showing the identified fish**

S.No	Order	Family	Scientific Name	Common Name	Vernacular Name
1	Cyprini formes	Cyprinidae	Catla catla	Catla	Botchea
2			Labeo rohita	Rohu	Erramosu
3			Cyprinus carpio	Common carp	Bangarutheega
4			Cirrihinus mrigala	Mrigal	Mrigala
5			Ctenopharyngodon idella	Grass carp	Gaddi chepa
6			Hypophthalmichthys molitrix	Silver carp	Vendi Chepa
7			Cirrihinus reba	Reba carp	Moyya
8			Labeo bata	Bata carp	Chinna ravvu
9			Labeo calabus		Kakirekka
10			Punctius ticto	Ticto barb	Paraka
11			Punctius chola	Chola barb	Paraka
12			Punctius sarana	Olive barb	Gandaparaka
13			Punctius sophore	spot fin swampy barb	Buddaparaka
14			Salmostoma bacaila	Large minnow	Chandamama
15		Cobitidae	Lepidocephalus guntea	Guntea loach	Vuliche
16			Lepidocephalus thermalis	common spiny loach	Vuliche
17	Siluriformes	Bagridae	Mystus aor	Mystis	Jella
18			Mystus bleekeri	Cat fish	Chinna jella
19			Mystus cavasius	Gangetic mystus	Ganga jella
20			Mystus menoda	Menoda cat fish	Jella
21			Mystus vittatus	Striped dwarf cat fish	jella
22			Sperata aor	Long whiskered cat fish	Jella
23			Ompok bimaculatus	Butter cat fish	Pedda Jella
24		siluridae	Wallago attu	Fresh water shark	Valuga
25		Claridae	Clarius batrachus	Batchwa vache	Marupu
26		Heteropneusti dae	Heteropneustes fossilus	Stinging cat fish	Ingulikam
27	Osteoglossiformes	Notopteridae	Notopterus notopterus	Grey feather back	Vellenka/Cheppu thatta
28			Chitala chitala	Knife fish	Cheppu thatta
29	Channiformes	Channidae	Channa marulias	spotted snake head	Korramatta
30			Channa gachua	Dwarf snake head	Erra matta
31			Channa punctatus	Giant Snake head	Pubomme
32			Channa straitus	Banded snakehead	Bomme
33	Synbranchiformes	Mastacembali dae	Mastacembalus armatus	Zig zag spiny eel	Papera
34			Macrognathus pancalis	Barbed spiny eel	Papera
35	Anabantiformes	Anabantidae	Anabus testudineus	Climbing perch	Gourami

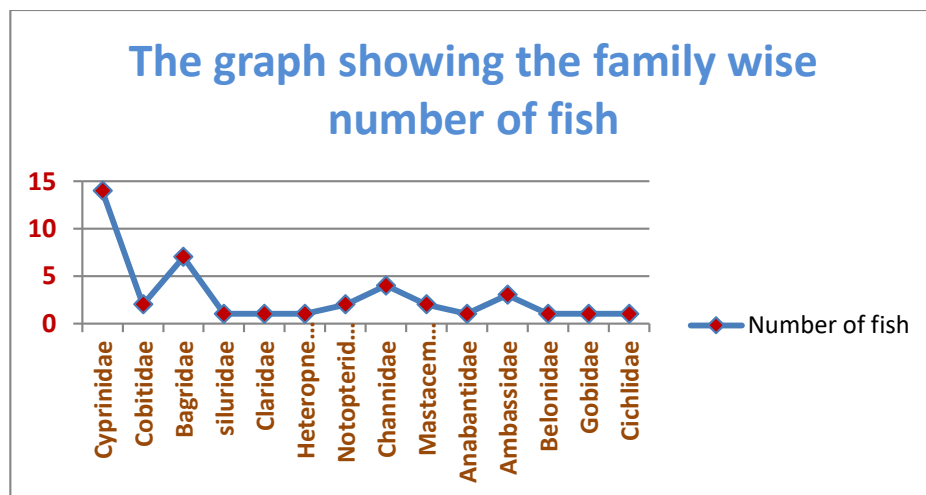
36	Perciformes	Ambassidae	Chanda baculis	Glossy perchlet	Gaju kodipe
37			Chanda nama	Elongate glossy perchlet	Chinna kodipe
38			Parambasis ranga	indian glossy perch	Erra kodipe
39	Beloniformes	Belonidae	Xenotodon canila	Gar fish	Konga moothi chepa
40	Gobiformes	Gobiidae	Glossogobius giuris	Tank goby	Isuka motta
41	Cichliformes	Cichlidae	Etroplus suratensis	Pearl spot fish	Alchippa



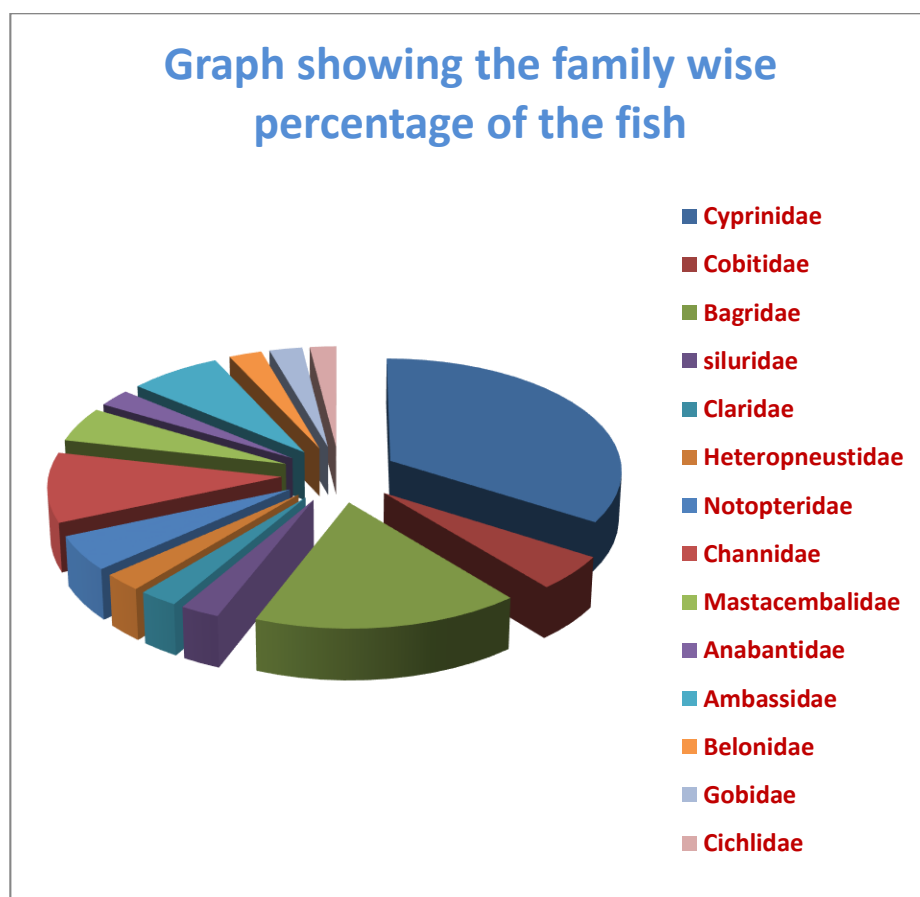
**Figure: 2: Showing the order wise number of fish**



**Figure: 3: Showing the order wise percentage of the fish**



**Figure: 4: Showing the family wise number of fish**



**Figure: 5: Showing the family wise percentage of fish**

During the present study a total number of 41 species were identified. They belong to 10 orders and 14 families. Among all the orders the cypriniformes is dominant with 16 number of fishes and 39% of total identified sample. The second dominant order is Siluriformes with 10 number of fishes and 24.3%, followed by Channiformes with 04 number and 10%, Perciformes with 3 number and 7%, Synbranchiformes with 2 number and 5 % and the remaining Anabantiformes, Beloniformes, Gobiformes, Cichliformes with one number of fish and 2.5%.

The fish identified belong to total 14 families. The dominant family Cyprinidae with 14 number of fish and 34%. The second dominant family is Bagridae with 7 number of fish and 17%, followed by Channidae with 4 number of fish and 10%, Ambassidae with 3 number of



fish and 7%, Cobitidae, Notopteredae, Mastacembalidae each with 2 number of fish and 2.5%. The least dominant families are Siluridae, Heteropneustidae, Anabantidae, Belonidae, Gobidae and Cichlidae with one number of fish and 2%.

The dominant species belong to the order cypriniformes and family cycprinidae because the fishes of this category are reared in the lake. As per the information collected from the fishermen the Govt. of Telangana is freely distributing the fish seed to the societies for the fish production enhancement. So this is found dominant. This lake is connected with the Sriram Sagar project canal for the filling purpose, so it always receiving the river fish species like mastacembalus and many glossy perchlets.

### Conclusion:

The lake is observed that it has filling with the floating plants like Pistia, Icornia and some algal blooms are also found at some areas of the lakes. The reason behind this it receiving the water from the drainage of the Jagtial town. So to promote the fish growth and production, to create livelihood for the fishermen there is need to conserve the lake from the pollution and conserve the rich biodiversity of fish.

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