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A STUDY ON ICHTHYOFAUNAL DIVERSITY OF MUNNERU RIVER OF KHAMMAM (D) TS, INDIA

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ABSTRACT

“Ichthyofaunal diversity” refers to the variety of fish species within a particular region or ecosystem. It encompasses the different species, their abundance, and the overall ecological balance within aquatic environments at munneru river. Ichthyofaunal diversity plays a crucial role in maintaining the balance of aquatic ecosystems. Fish species contribute to nutrient cycling, control populations of prey species, and serve as indicators of environmental health. Species ranges may shift, leading to altered community compositions and potential loss of endemic species. Conservation strategies need to consider the long-term effects of climate change on ichthyofaunal diversity. This study was conducted in the munneru river from November 2022 to march 2024 the fish species are collected monthly with the help of local fishermen. in our study area we identified around 80 Fish species following 09 orders & 20 Families.

KEY WORDS

Ichthyofaunal diversity, Species, Aquatic ecosystem, compositions.

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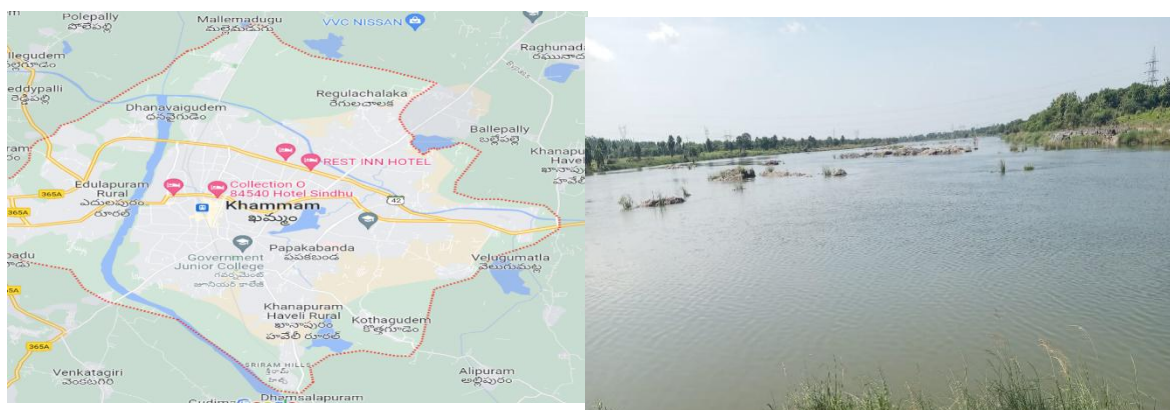
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INTRODUCTION

Munneru river is a left tributary of river Krishna , that begin in mahabubabad district . and flows through the Khammam district .The river is named by Rishi Maudgalya, who is said to creator of this river with his spiritual power and performed a penance ritual in Khammam.It flows through Dornakal Eru and comes via Kamanchikal and theerdhala village here two more tributaries(Akeru&Buggeru) of munneru adjoined at theerdhalavillage popularly known as thrivenisangamam . where it has a small Dam in order to facilitate water collection. Munneru acts as a water source to Khammam city andIt supplies irrigation water to 6,650 hectares land. Ichthyofaunal diversity is a scientific term which used for fish diversity or referred to the variety of fish species (burton et.al.,1992). Telangana has a largest ichthyofaunal diversity there are 166 fish species out of 877 freshwater fish species habituating in Telangana major and minor rivers and reservoirs .whereasmunneru river provides shelter for many migratory fish species, which migrates from Krishna river. Munneruhas a length of ~198 Kms and has largest ichthyofaunal diversity approximately 50% of different fish species are available in munneru which available throughout Telangana state .during our study we have identified 80 fish species at different locations of munneru river.By Following 09 orders and 20 families. Order cypriniforms are the most dominant fish species of munneru river there are 36 fishes from order cypriniformes . the number of population composition follows order .

MATERIAL AND METHODS

Fish samples were collected from different areas of munneru river with the help of local fishermen, fish collectors, local fish market, with the help of Cast net and fishing gears.



Aerial view of munneru river

Identification of the species was done by the morphometric and meristic characters

Table -1. List of fish species , order and families of munneru river

S.No	Scientific name	Common name	order	Family	IUCN Status
1	<i>Catlacatla</i>	katla	cypriniformes	cyprinidae	LC
2	<i>Labeorohita</i>	Rohu	cypriniformes	cyprinidae	LC
3	<i>Cirrhinusmrigala</i>	Mrigal	cypriniformes	cyprinidae	LC
4	<i>Labeocalbasu</i>	Kalbasu	cypriniformes	cyprinidae	LC
5	<i>Amblypharayngodonmola</i>	Indian carplet	cypriniformes	cyprinidae	LC
6	<i>Amblypharayngodonmicrolepis</i>	Indian carplet	cypriniformes	cyprinidae	LC
7	<i>Cirrhinuscirrhosa</i>	White carp	cypriniformes	cyprinidae	LC
8	<i>Barbodessarana</i>	Olive barb	cypriniformes	cyprinidae	LC
9	<i>Cirrhinusfulungee</i>	Deccan white carp	cypriniformes	cyprinidae	LC
10	<i>Cirrhinusreba</i>	Reba carp	cypriniformes	cyprinidae	LC
11	<i>Ctenopharayngodon Idella</i>	Grass carp	cypriniformes	cyprinidae	I
12	<i>Cyprinus carpio</i>	Common carp	cypriniformes	cyprinidae	I
13	<i>Danio aequipinnatus</i>	Giant danio	cypriniformes	cyprinidae	LC
14	<i>Devariodevario</i>	Sind danio	cypriniformes	cyprinidae	LC
15	<i>Garralamta</i>	Stone sucker	cypriniformes	cyprinidae	LC
16	<i>Garramullya</i>	Stone sucker	cypriniformes	cyprinidae	LC
17	<i>Hypothalamicthys molitrix</i>	Silver carp	cypriniformes	cyprinidae	I
18	<i>Hypselobarbuskolus</i>	Kolus carp	cypriniformes	cyprinidae	VU
19	<i>Labeobata</i>	Bata	cypriniformes	cyprinidae	LC
20	<i>Labeoboga</i>	Jamuna fish	cypriniformes	cyprinidae	LC
21	<i>Labeodussumieri</i>	Common labeo	cypriniformes	cyprinidae	LC
22	<i>Labeodyochelius</i>	Dyochelius	cypriniformes	cyprinidae	LC
23	<i>Labeofimbriatus</i>	Fringe lipped	cypriniformes	cyprinidae	LC

		carp			
24	<i>Laubucalaubuo</i>	Indian glass barb	cypriniformes	cyprinidae	LC
25	<i>Osteobramabelangeri</i>	Manipur osteobrama	cypriniformes	cyprinidae	NT
26	<i>Osteobramacunma</i>	Cunmaosteobrama	cypriniformes	cyprinidae	NE
27	<i>Osteobramavigorsii</i>	Deccan cotio	cypriniformes	cyprinidae	LC
28	<i>Puntius chola</i>	Swamp barb	cypriniformes	cyprinidae	LC
29	<i>Puntius sophore</i>	Spot fin barb	cypriniformes	cyprinidae	LC
30	<i>Puntius ticto</i>	Fire-fin barb	cypriniformes	cyprinidae	LC
31	<i>Rasbora daniconius</i>	Slender barb	cypriniformes	cyprinidae	LC
32	<i>Salmophasiabalooke</i>	Bloch razor belly minnow	cypriniformes	cyprinidae	LC
33	<i>Salmophasiabacaila</i>	Large razor belly minnow	cypriniformes	cyprinidae	LC
34	<i>Salmophasiauntrahi</i>	Mahanandirazor belly minnow	cypriniformes	cyprinidae	LC
35	<i>Bariliusbakeri</i>	Malabar baril	cypriniformes	cyprinidae	LC
36	<i>Hypselobarbuscurmuca</i>	Zebra danio	cypriniformes	cyprinidae	LC
37	<i>Hemibargusmaydelli</i>	Krishna mystus	Siluriformes	Bagridae	LC
38	<i>Mystuscavasius</i>	Gangetic mystus	Siluriformes	Bagridae	LC
39	<i>Mystusguilo</i>	Long whiskered catfish	Siluriformes	Bagridae	LC
40	<i>Mystustengra</i>	Tengra cat fish	Siluriformes	Bagridae	LC
41	<i>Mystusvittatus</i>	Stripped dwarf catfish	Siluriformes	Bagridae	LC
42	<i>Sperataaor</i>	Long whiskered catfish	Siluriformes	Bagridae	LC
43	<i>Sperataseenghala</i>	Giant river catfish	Siluriformes	Bagridae	LC

44	<i>Clariasgariepinus</i>	African cat fish	Siluriformes	clariidae	I
45	<i>Clariasbatrachus</i>	Air breathing catfish	Siluriformes	clariidae	LC
46	<i>Heteropneustesfossilis</i>	Stinging catfish	Siluriformes	Heteropneusti dae	LC
47	<i>Pterygoplichthyspardalis</i>	Amazon sail fin catfish	Siluriformes	Loricariidae	I
48	<i>Pangasius</i>	Pangash	Siluriformes	pangasiidae	LC
49	<i>Ailiacoila</i>	Gangetic ailia	Siluriformes	Schilbeidae	NT
50	<i>EutropiichthysGoongwar ee</i>	Goongwarevac ha	Siluriformes	Schilbeidae	DD
51	<i>Rita bakalu</i>	Rita	Siluriformes	bagridae	LC
52	<i>Ompokbimaculatus</i>	Butter cat fish	Siluriformes	siluridae	NT
53	<i>Ompokpabda</i>	Pabda catfish	Siluriformes	siluridae	NT
54	<i>Ompokpabo</i>	Pabo catfish	Siluriformes	siluridae	NT
55	<i>Wallago attu</i>	Freshwater shark	Siluriformes	siluridae	LC
56	<i>Macrognathusaral</i>	One stripe spiny eel	Synbranchiform es	Mastacembeli dae	LC
57	<i>Macrognathuspacalus</i>	Barred spiny eel	Synbranchiform es	Mastacembeli dae	LC
58	<i>Macrognathusarmatus</i>	Zigzag spiny eel	Synbranchiform es	Mastacembeli dae	LC
59	<i>Chanda nama</i>	Indian glassy fish	Perciformes	Ambassidae	LC
60	<i>Parambassisranga</i>	Indian glassy fish	Perciformes	Ambassidae	LC
61	<i>Anabas testudineus</i>	Climbing perch	Perciformes	Anabantidae	DD
62	<i>Channagachua</i>	Dwarf snakehead	Perciformes	Channidae	LC
63	<i>Channamarulius</i>	Giant snakehead	Perciformes	Channidae	LC
64	<i>Channapunctata</i>	Spotted snakehead	Perciformes	Channidae	LC

65	<i>Channa striata</i>	Striped snakehead	Perciformes	Channidae	LC
66	<i>Eetroplus maculatus</i>	Orange chromide	Perciformes	Cichlidae	LC
67	<i>Eetroplussuratensis</i>	Green chromide	Perciformes	Cichlidae	LC
68	<i>Oreochromius mossambicus</i>	Mosombique tilapia	Perciformes	Cichlidae	I
69	<i>Oreochromius niloticus</i>	Nile tilapia	Perciformes	Cichlidae	I
70	<i>Awaous grammepomus</i>	Scribbled goby	Perciformes	Gobiidae	LC
71	<i>Glossogobius giuris</i>	Bar-eyed goby	Perciformes	Gobiidae	LC
72	<i>Anguilla bengalensis</i>	Long finned eel	Anguilliformes	Anguillidae	NT
73	<i>Anguilla bicolor</i>	Short finned eel	Anguilliformes	Anguillidae	NT
74	<i>Xenentodon cancila</i>	Freshwater gar fish	Beloniformes	Belonidae	LC
75	<i>Hyporhamphus limbatus</i>	Congaturi half beaked	Beloniformes	Hemiramphidae	LC
76	<i>Hyporhamphus xanthopterus</i>	Red tipped half beaked	Beloniformes	Hemiramphidae	VU
77	<i>Gambusia affinis</i>	Mosquito fish	cyprinodontiformes	Poeciliidae	I
78	<i>Rhinomugil corsulla</i>	Corsula mullet	Mugiliformes	Mugilidae	LC
79	<i>Chitala chitala</i>	Clown knife fish	Osteoglossiformes	Notopteridae	NT
80	<i>Notopterus notopterus</i>	Bronze feather back S	Osteoglossiformes	Notopteridae	LC

*NT-Near threatened, *NE-Not Evaluated, *DD-Data Deficient, *LC-Least concern,

*I-Introduced, *VU-Vulnerable.

RESULT & DISCUSSION :

The present study results were revealed that the occurrence of 80 fish species belonging to 9 orders and 20 families list of fishes including their order family, genus, species, common

name & IUCN status were recorded in the present study. Was listed in (table:1)the number and families and species were under 9 orders are shown in below (table:2)

Table-2 : orders of fish species available at munneru river

S.NO	ORDERS	FAMILIES
01	Cypriniformes	01
02	Anguilliformes	01
03	Cyprinodontiformes	01
04	Mugiliformes	01
05	Osteoglossiformes	01
06	Perciformes	05
07	Siluriformes	07
08	Synbranchiformes	01
09	Beloniformes	02

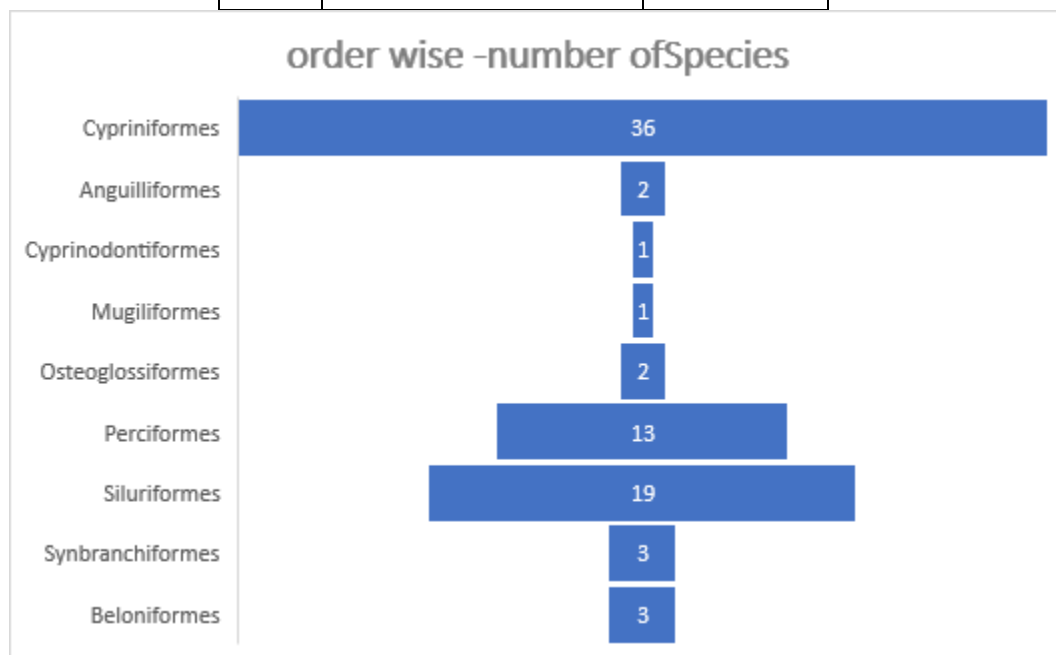
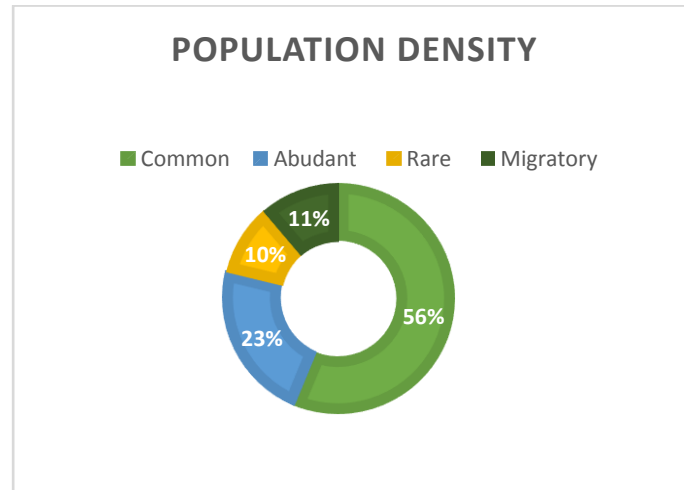
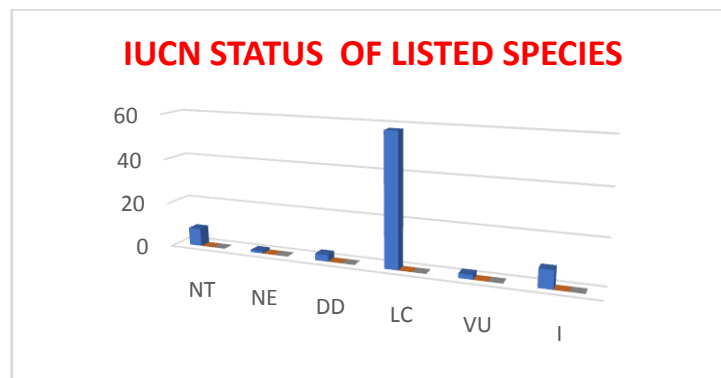


Fig2. ORDER- WISE DISTRIBUTION OF SPECIES



POPULATION DENSITY



**NT=NEAR THREATENED , NE= NEAR ENDANGERED , DD= DATA DEFICIENT
 ,LC= LEAST CONCERN,VU=VULNERABLE , I = INTRODUCED**

The important fish species of munneru river

Munneruriver has a largest fish diversity some fishes are native to this river and some migrates to the munneru and some fishes migrates from here also, at duration of this study, we identify some native fish species which available at all common seasons .

S.No	Scientific Name	Local Name
01	<i>Salmophaisabacaila</i>	Chandamamaparaka
02	<i>Puntius chola</i>	Buddaparaka
03	<i>Cirrhinusreba</i>	pullers
04	<i>Systemussarana</i>	gaenda
05	<i>Amblypharyngodonmola</i>	Irlamparaka
06	<i>Labeo rohu</i>	ravva

07	<i>Ctenopharayngodonidella</i>	Gasskattu
08	<i>Cirrhinus mrigal</i>	Meriga / pulasa
09	<i>Labeokalbasu</i>	Nallachitra
10	<i>Macrognathusarmatus</i>	papera

The present study is carried out by Dr.P.Ayodhyareddy ,BhukyaSaikumar, Dharavath Ram Kumar, Dr.T. Jagadeeshwara Chari and at munneru river of Khammam for the distribution of different fish species which available at munneru river ,in this study we reported that the distribution of different order wise species as follows (cypriniformes 36 fishes) and among these cypriniformes nearly 25 fishes are common and available throughout the year and shows potamodromous migration for breeding and feeding purpose , and the second dominant order are the cat fish family (siluriformes 19 fishes) which shows a seasonal distribution and the number of species distribution may be different from season to season during rainy season the most abundant number are observed , third dominant order (perciformes13 fishes) and in this perciformes family channadae and chichilidae shows dominant distribution total fishes of this family which are available throughout Telangana available at munneru river.Distribution of family wise includes(Notopteridae-2),(mugilidae-1),(hemiramphidae-2),(belonidae-1),(anguillidae-2),(gobiidae-2),(chichilidae-4), (channadae-4),(anabantidae-1),(ambassidae-2),(mastacembelidae-3),(siluridae-4),(schilbeidae-3),(pangasiidae-1),(loricariidae-1),(heteropneustidae-1),(clariidae-2),(bagridae-7),(cyprinidae-36)

Discussion :

Regarding the data of the ichthyofaunal diversity in themunneru river the most dominant fishes are the major carps and minor carps are largely found during the study period of this munneruichthyofaunal diversity .

Owais Ahmad Wani, Uma Shankar Gupta(2015)A Study On Ichthyofaunal Diversity Of Sagar Lake, Madhya Pradesh,India described the distribution of the fishes in Sagar lake during this study a total 21 species of freshwater fishes' belongings to 6 order 11 families and 17 genera were recorded from the study sites of the lake.

Dr.S. Thirumala ,Dr.B.R. Kiran (2016) reported the occurrence and distribution of cyprinid fishes in three lentic water bodies of shivamogga district , Karnataka the distribution of 15

species of labeo and cirrhinus consists of 3 species and Puntius having 4 species and the rest of genera consists of single species each.

T.JagadeeshwaraChari,A.V.Rajashekar (2020) reported the species abundance in the Singaraya reservoir and the occurrence of 33 species belonging to 6 orders, the cypriniformes 15 species, siluriformes 8 species, osteoglossiformes 2 species, channiformes 3 species, perciformes 4 species, anthuriformes 1 species were identified. order wise percentage wise composition

Kante Krishna prasad, chelmalasrinivasulu (2021) a checklist of fishes of Telangana state, India they had concluded 143 species of freshwater following 14 orders and 34 families are recorded in Telangana state in this study while 39 are endemic to India

G.Paramesh.,TJagadeeshwara Chari(2023) reported the ichthyofaunal diversity of Ranganyaka, in this study the authors identified 41 fish species following 8 orders and 15 families, among these cypriniformes are dominant 14 species belonging to this cyprinidae family.

Devi (1997) studied the ichthyofauna of Ibrahimbagh and Shathamarj reservoirs of Hyderabad and twenty-one genera of fishes were found in the two reservoirs. Order Cypriniformis genera were dominated and followed by order Siluriformis, Anabantiformis and Perciformis.

Sukumaran and Rahman (1998) stated that majority of the reservoirs of Karnataka state have a large population of predatory fish. Sakhare and Joshi (2003), reported the ichthyofauna of Bori reservoir of Maharashtra. A total 20 species of fishes belonging to 14 genera falling under 4 orders (Cypriniformes, Perciformes, Siluriformes and Osteoglossiformes). They also reported 34 species of fishes in reservoirs of Pharbhani District of Maharashtra. Suresh (2003) reported 54 fish species in Loktak Lake, Manipur and 15 species are commercially important.

Mahapatra(2003) recorded abundance of cat fishes in Hirakud reservoir. About 43 species present in which 18 are economically important. These statistics are significant to be mentioned in the study because of our geographical area of study comes under the Godavari river drainage system, the second largest in the country.

Rao (2005) reported that the Indian reservoirs harbour a rich variety of fish species. This is basically a consequence of the rich faunal diversity of the parent river system, Large reservoirs average will harbor about 60 fish species (range 40-90 species) with at least 40 fish

species contribute to the commercial fishery. The fast-growing genetic carps (Indian major carps) occupy an important place both as natural and stocked species. Sultan and Chauhan (2005) reported 39 ichthyofauna in Pohnuj reservoir. (UP)

Srinivas (2005) reported 32 species in Edulabad reservoir, Ranga Reddy District, out of which 13 species of cypriniformis, 9 species of siluriformis, 4 species each of channiformis declined from 32 (2000-01) to 13 (2001-02) and further to 8 (2002-03) and only rohu, catla, grass carp and tilapia found most abundantly in the reservoir.

Conclusion :

We here by conclude that the present study will help to the fisheries department and fisheries students to know about the distribution of the fishes at munneru river and easy to implement fishery mesh size regulations and conservation strategies at different seasons to overcome from the loss of some rare fishes and easy to study the relation between different fishes and migration of fishes ,The diversity of fish is more in munneru river and dominant by order cypriniformes.



1.Oreochromis niloticus



2.Notopterus Notopterus



3.labeo rohita



4.Etroplus suratensis



5. *Catla catla*



6. *Anguilla bengalensis*



7. *Sperataseenghala*



8. *Labeobata*



9. *Cirrhinus mrigal*



10. *Labeocalbasu*



11. *Ompokpabda*



12. *Hemibargusmaydelli*



13. *Pterygoplichthyspardalis*



14. *Channa striatus*



15. *Ctenopharyngodonidella*



16. *Systomussarana*



17. *Hypselobarbus kolus*



18. *Glossogobius giuris*



19. *Rhinomugilcorsulla*



20. *Mystustengra*





21. *Labeodyochelius*

22. *Macrornathus aral*



23. *Etroplus maculatus*



24. *Cirrhinus reba*

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