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B. Laxmappa

Fisheries Development Officer,
Department of Fisheries,
Gadwal - 509125, Mahabubnagar
District, Telangana, India.

D. Venkata Siva Narayana

Lecture in Zoology, Department of
Zoology, M.A.L.D Govt. Arts &
Science Degree College, Gadwal.

Study of the species *Hemibagrus maydelli* (Rössel) from Krishna river in Mahabubnagar district, India

B. Laxmappa, D. Venkata Siva Narayana

Abstract

Krishna mystus, *Hemibagrus maydelli* is a giant catfish was investigated from 2012 to 2014. Documentation of this species in Krishna river is scanty. The paper describes a wide range of traditional as well as modernized fishing gears used by subsistence and professional fishers in the river Krishna to catch this fish. The present account is an attempt to document the occurrence and abundance of this esteemed food catfish in the entire stretch of the Krishna river in Mahabubnagar district of Telangana state, India.

Keywords: Mahabubnagar district, Krishna river, Krishna mystus, *Hemibagrus maydelli*

1. Introduction

The Krishna is one of the longest rivers of India and flows about 1400 km in length. It originates at Mahabaleswar in Maharashtra, flows through the states of Maharashtra, Karnataka, Telangana and Andhra Pradesh and meets the sea in the Bay of Bengal at Hamasaladeevi in Andhra Pradesh (A.P). Mahabubnagar is the largest district in Telangana state (T.S) in India (Fig.1) in terms of the spread, with geographical area of 18,432 sq. km. The river Krishna enters in to Telangana in Mahabubnagar district. Approximately 300 Km stretch of the river Krishna passes through the district of Mahabubnagar play an important role in ecology and fishery of the district (Fig. 2).

Detailed reports are available on the fish fauna for most of the lakes, rivers and reservoirs in the country. However, only very limited works have been done on fish fauna of the rivers and none on rare catfishes in Mahabubnagar district. In the present study, a detailed investigation was undertaken to document the Krishna mystus fishery in the entire stretch of river Krishna in Mahabubnagar district of Telangana state.

Hemibagrus maydelli was originally described as *Mystus maydelli* from Bhima river at Wadgaon, Maharashtra, India [7]. *Hemibagrus maydelli* considered as a synonym of *Mystus malabaricus* [4, 9], while considering the species valid [2] but thought that it could be a juvenile of another species *Mystus krishnensis* described from Nagarjuna sagar reservoir, Andhra Pradesh, India [6]. In a review on *Hemibagrus*, changed the status of this fish to *Hemibagrus maydelli* and considered *Mystus krishnensis* as a synonym, which is now considered as valid [1-5].

Taxonomy

Phylum : Chordata
Class : Actinopterygii
Order : Siluriformes
Family : Bagridae
Genus : *Hemibagrus*
Species : *Hemibagrus maydelli* (Rössel, 1964)

2. Materials and Methods

Catching particulars of Krishna mystus were collected from selected 15 stations along the entire stretch of river Krishna, from Krishna village in upstream to Somasila village in downstream from 2012 to 2014. The stations can be divided in to 5 in upstream (above Priyadarshini Jurala Project), 5 in midstream, i.e. below the project and 5 in downstream i.e. Srisailem Backwaters (above Srisailem Project). Fish were measured and descriptions were recorded from each sampling area ((Fig.3 & Table 1). If a species contributed < 1% or 1% of

Correspondence:

B. Laxmappa

Fisheries Development Officer,
Department of Fisheries,
Gadwal - 509125, Mahabubnagar
District, Telangana, India.

the total catch in a sample it was considered as rare, and if the

species contributed > 1% it was considered as moderate

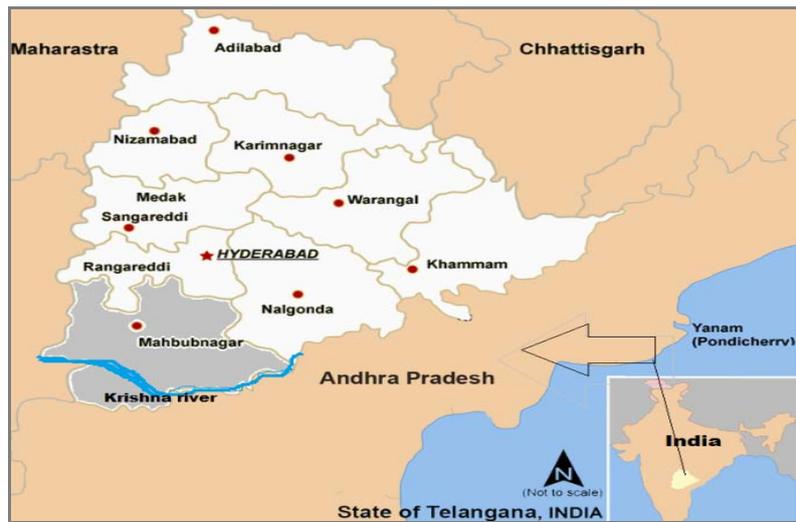


Fig 1: Location of Mahabubnagar district in Telangana state



Fig 2: Krishna river in full spate at Beechpally in Mahabubnagar district

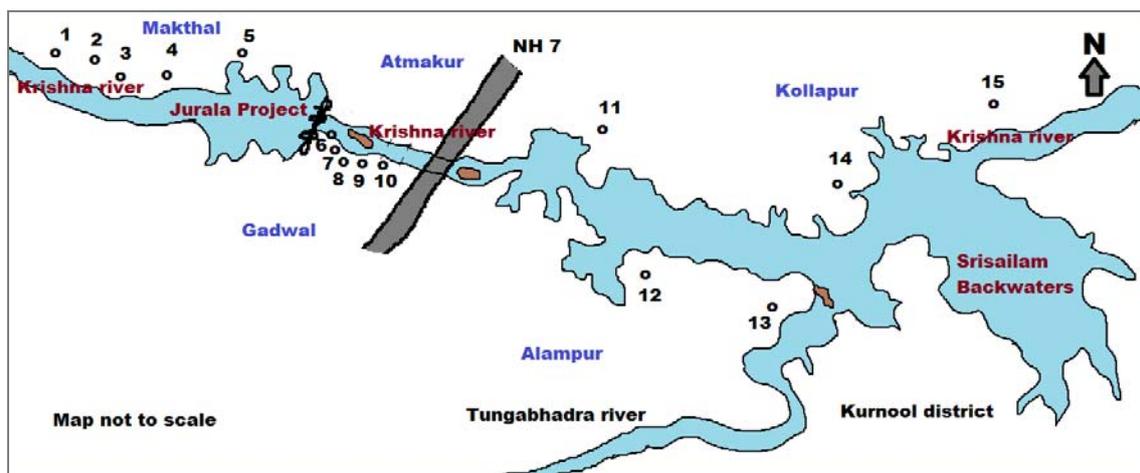


Fig 3: Study area in the Krishna river in Mahabubnagar district

1. Krishna, 2. Mudumal, 3. Pachadevpadu, 4. Mustipally, 5. Peddakadumur, 6. Revulapally, 7. Rekulapally, 8. Chenugonipally, 9. Nadiagramam, 10. Bearol, 11. Yaparla, 12. Kyathur, 13. Gondimalla, 14. Chellepad and 15. Somasila

Table 1: Sampling stations on Krishna mystus from Krishna river in Mahabubnagar district.

Name of the village	Mandal	Abundance
Upper Stretch		
Krishna	Maganoor	M
Mudumal	Maganoor	M
Pachadevpadu	Makthal	M
Mustipally	Makthal	R
Peddakadumur	Narwa	R
Middle Stretch		
Revulapally	Dharoor	M
Rekulapally	Gadwal	M
Chenugonipally	Gadwal	M
Nadiagraram	Gadwal	R
Bearol	Gadwal	R
Lower Stretch		
Yaparla	Alampur	R
Kyathur	Alampur	R
Gondimalla	Alampur	-
Chellepad	Weepangandla	-
Somasila	Kollapur	-

Note: R = Rare, M = Moderate, - = Not reported

3. Results and Discussion

Krishna mystus (Fig. 4) belong to the Bagrid catfishes in which the adipose dorsal fin is well-developed. Body elongated and compressed. Head moderate thick rounded and mouth terminal. Barbels 4 pairs; maxillary pair thick in size and extends to middle of anal fin. Dorsal spine weak, its upper one-third finely serrated; adipose fin long; inter dorsal distance equal to adipose base. Caudal fin forked, with sharp lobes, its upper lobe longer than the lower. The fish is in life olive-green above and dirty white below lateral line. Fins are hyaline, with orange tips.

The Krishna mystus are native to Krishna river and its tributaries Bheema and Tungabhadra in India. Krishna mystus, *Hemibagrus maydelli* is a highly esteemed catfish and locally

called "Ponduga". Bagridae family consists of 46 native freshwater species of India. Among this Krishna mystus is known to be a very large size species and is an excellent food fish. *Hemibagrus maydelli* is found in the middle and upper reaches of Krishna river system in Maharashtra, Karnataka, Telangana and Andhra Pradesh. It is recorded from Bhima river [7], Tungabhadra river [5, 8] and Nagarjuna sagar reservoir [3, 6]. *Hemibagrus maydelli* is found in rivers and reservoirs and it can attain a total length of 1650 mm and a total weight of 58.5 kg [3].

Hemibagrus maydelli was found in rare in moderate numbers in the Krishna river in Mahabubnagar district. It grows to a large size; about two meters long and weights over 50 kg. Nevertheless, the species is highly preferred as a food fish and fetches a good value in the fish market. In Gadwal fish market this species fetches Rs. 300/- to 350/- per kg, which is higher cost after murrel fish in the district. Therefore, it is likely that the species could be under fishing pressure.

As per the field survey, fishermen caught this species of 18 kg at Krishna village (Fig. 5), 11 kg at Mudumal village (Fig. 6) and 42 kg size of Chenugonipally village (Fig. 7) from the river in Mahabubnagar district. Discussion with fishermen in this area also indicates that about 60-70 kg size Krishna mystus species caught previously and about 5-20 kg size catches are common round the year. The main gear was used to catch this species was Cast net and multi-filament gill nets (Fig. 8 & 9). Hook-line with bait was also used to catch this species in the district (Fig. 10). This species catching are common at upper and middle stretches of the river Krishna, particularly Krishna, Panchadevpad, Revulapally, Rekulapally and Chenugonipally villages where the river bottom consists of rocky (Fig. 11) whereas in lower stretch availability was very rare or absent where the river bottom was without rocky (Table.1). The catching was common during monsoon season and rare in other seasons.



Fig 4: Krishna mystus (*Hemibagrus maydelli*)



Fig 5: Fishermen caught Krishna mystus at Krishna village



Fig 6: The author observing 11 Kg Krishna mystus species at Mudmal village



Fig 7: Fishermen caught 42 Kg size Krishna mystus at Chenugonipally village and kept ready for sale in Gadwal fish market.



Fig 8: Cast net operation in Krishna river.



Fig 9: The author observing gill net operation in Krishna river



Fig 10: Hook-line used to catch Krishna mystus



Fig 11: Krishna river with rock bottom at Panchadevpad village in Mahabubnagar district

4. Conclusion

Krishna mystus are the king of the river among Bagridae family and esteemed food catfish. Owing to its high exploitation as a food fish, this might have resulted in drastic declines in the population of this species from the last couple of years. No detailed information is available on the population status of *Hemibagrus maydelli*. Research is needed in understanding the population status, life history, ecology, harvest, trade and threats to the species. Meanwhile, check on the fishing activities on the Krishna river, especially during the breeding season, i.e. July to August is essential to conserve the river fauna in the district.

5. Acknowledgements

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