



## Scaly teleosts in local fish markets of Nanded city, Maharashtra

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### Abstract

For determination, evaluation and availability of the scaly teleosts in markets and to know number of fishermen, size of fish, quantity and quality of fish, the present survey was carried out of four weekly fish markets of Nanded city Maharashtra during the period of one year from 2018-2019. The fishes were caught at different sites of Godavari River and its tributaries. They were identified and classified and it was found 7- orders, 8-families, 16- genera, 24- species of fishes. Cobitidae, Cyprinidae, Gobiidae, Channidae, Mastaceambelidae, Mugilidae, Notopteridae, and Chichlidae among all these families Cyprinidae family was dominating. The current status of all species also found out through IUCN and fishbase version 2021.

**Keywords:** scaly teleosts, Godavari River, Nanded fish-markets

### Introduction

Fish species differ widely from each other in shape, size, habits and habitats. Some of them are very small, not more than an inch in length while a few attain a length up to in meters. They live in all the seas, rivers, lakes, canals, dams and in almost every place where there is water. Khanna (2006) [1]. The fish species belonging to various orders vary considerably in shape, size and life span. The maximum size and age are specific for every species. The growth and weight of particular fish species depend on its environment like pH, temperature, dissolved CO<sub>2</sub> and availability of food in water. The good ecosystem results in better growth and attaining proper weight of fishes. Each species has its survival capability and growing ability and comfortable reproducing. In the field of Ichthyology valuable contributions were made by various investigators such as Rahimulla (1943) [2], David (1963) [3], Das (1966) [4]. With the reference of Nelson 2016, Gupta and Gupta 2018 [5, 6] There are about 482 fish families of recognized living species. There are 8 largest families viz (in order of decreasing numbers of species) Cyprinidae, Gobiidae, Cichlidae, Characidae, Loricaridae, Labridae, Balitoridae, Serranidae. Each of these families includes over 400 species (i.e., 33% of all species, numbering about 8,039). Interestingly, about 66% of the species in the above referred 8 largest families, are freshwater fishes. (about 40% of all fishes occur in or almost always freshwater). 67 families contain only 1 species, while 58 families each has 100 or more species; 3 of which have over 1000. The average number of species per family is 51. According to Hiware 2010 [7] in India freshwater bodies occupy an area of 1.37 million hectares in which the more than 2, 44, 000 hectares are under fish cultivation. In Maharashtra, Marathwada region is one of the richest aquatic resources that include tributaries of river Godavari, Purna, Painganga, Dudhna apart from reservoirs and lakes. Further, there is great scope for developing fisheries in this region. The result shows that the area under study has rich Ichthyofaunal diversity with total of 66 fish species belonging to 33 genera, 16 families and 08 orders. The Nanded district is rich among all with 53 fish species. During this present survey of local fish markets

(table.1) found variability in fish size and shapes. Some fishes were healthy and fresh while some were poor in health. Some teleosts are scaly (table.2) and some are without scales like *Wallago attu*, *Mystus seenghala*, *M. bleekeri*, *M. cavasius*, *Clarias batrachus* etc. were found in markets but the aim of this survey was to find scaly teleosts and its availability in markets. Total 24 fish species were found (table.2).

### Materials and methods

#### Study area-Nanded city and Godavari River

Nanded is a city in Maharashtra state (India) and situated on the bank of Godavari River. This river is the second longest river in India after the Ganges and originates from Trimbakeshwar (Western Ghats) at Nasik, Maharashtra. Its main tributaries are Purna, Dudhna, Asna rivers and also Vishnupuri and Baser dams there are Boral and Loha reservoirs in Nanded also. (table.1).

#### Fish Markets

Nanded city has four A-B-C-D main markets for fish sale named (table.1).

A fish market is a place where fishermen sell their fishes to consumer or whole sellers. Nanded is situated on the banks of Godavari River. The fish catch is by local fishermen using various fishing nets and gears and brought to the markets for sale. Fishes are also caught from nearby dams, reservoirs, ponds. Fishes are also brought from neighbouring state like Telangana. The fish catch is brought to the Nanded fish markets. Generally freshwater fishes are brought.

Usually different people have different demands of fishes depending upon their financial conditions and favor. Here dried sea-fishes like Bombay duck are also sold. having good market demand. There are many shops of dried marine fishes. We know that there is less chance of reaching of fishes directly from producer to consumer. There are always whole sellers in between the fishermen and consumer. These are the reason that fishermen are becoming poorer. The whole sellers purchase the fishes at local market and also send them to other states. This business is the most flourishing one in Nanded. The wholesalers are making a lot of money out of

this business. In the present survey 24 scaly teleosts were collected from different markets, caught by local fishermen from Godavari river and its tributaries.

**Collections of fishes**

For collection of the fish species four weekly fish markets A-B-C-D (table.1) in the Nanded city were visited during June 2018 to June 2019 regularly. The fishes were purchased and tried to collect a new species every time. Sometimes every market had same fish species sold by the same fishermen. 24 species were collected during this survey (Table.2).

**Identifications**

The identification of the fishes was carried out with the help of standard literature, Day 1981<sup>[8]</sup>, Datta Munshi and

Srivastava MP 1988<sup>[9]</sup>, Talwar and Jhingran 1991<sup>[10]</sup>, Qurishi TA and Qurishi NA 1983<sup>[11]</sup>, Jayram KC 1999<sup>[12]</sup>.

**Current status**

To determine the current status of these species fishbase version (06/2021)<sup>[13]</sup> and iucnredlist version IUCN (2021-2)<sup>[14]</sup> studied.

**Preservation**

All 24-species are preserved in 4% formalin in laboratory of Zoology Dept. SRTM University Nanded for further study.

**Results and Discussions**

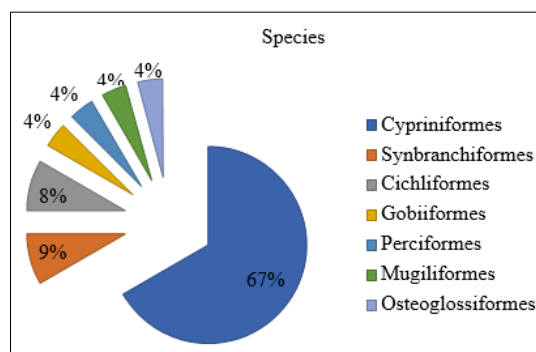
**Table 1:** Fish Markets and sites of fish catch

Sr. no	Markets	Name of fish market & nearby land mark	No. of fishermen	Sites of fish catch
1.	A	Itwara fish market near mutton market Itwara, old Nanded.		Purna river, Godavari river, Asna river, Baser dam
2.	B	Friday market, stadium road, near Gokul nager Railway station Road.	15-20	Godavari and Asna river, Purna and Dudhna river
3.	C	Budhwar Bazar, Taroda Naka, Nanded To Malegaon road.	10-15	Parbhani and Dudhna river, Purna river
4.	D	Kautha bazaar, near new bridge of Godavari river Nanded to latur road	12-15	Vishnupuri dam, Boral and Loha reservoirs, Godavari river

**Table 2:** Species Collection From four different Markets in Nanded City

Sr. No	Order	Family	Fish Species	(IUCN 2021) Status	Markes	
1.	Cypriniformes	Cobitidae	<i>Lepidocephalichthys thermalis</i> (Valenciennes,1846)	LC	A	
2.		Cyprinidae		<i>Labeo rohita</i> (Hamilton,1822)	LC	A
3.				<i>Labeo calbasu</i> (Hamilton,1822)	LC	A
4.				<i>Labeo boga</i> (Hamilton,1822)	LC	A
5.				<i>Labeo fimbriatus</i> (Bloch,1795)	LC	A
6.				<i>Labeo bata</i> (Hamilton,1822)	LC	B
7.				<i>Pethia ticto</i> (Hamilton,1822)	LC	C
8.				<i>Cirrhinus mrigala</i> (Hamilton,1822)	LC	D
9.				<i>Cirrhinus reba</i> (Hamilton,1822)	LC	A
10.					<i>Catla catla</i> (Hamilton,1822)	LC
11.				<i>Amblypharyngodon Mola</i> (Hamilton,1822)	LC	D
12.		<i>Chela bacaila</i> (Hamilton,1822)		LC	B	
13.		<i>Chela phulo</i> ( <i>Salmophasia phulo</i> ) (Hamilton,1822)		LC	B	
14.		<i>Neolissochilus hexastichus</i> (McClelland, 1839)		NT	A	
15.		<i>Osteobrama vigorsii</i> (Sykes,1839)		LC	A	
16.		<i>Osteobrama cotio</i> (Hamilton,1822)		LC	B	
17.	Gobiiformes	Gobiidae		<i>Glossogobius giuris</i> (Hamilton,1822)	LC	B
18.	Perciformes	Channidae	<i>Channa striata</i> (Bloch,1793)	LC	D	
19.	Synbranchiformes	Mastaceambelidae	<i>Mastacembelus armatus</i> (Lacepede,1800)	LC	A	
20.			<i>Macrognathus pancalus</i> (Hamilton,1822)	LC	A	
21.	Mugiliformes	Mugilidae	<i>Rhinomugil corsula</i> (Hamilton,1822)	LC	D	
22.	Osteoglossiformes	Notopteridae	<i>Notopterus notopterus</i> (Pallas,1769)	LC	D	
23.	Cichliformes	Chichlidae	<i>Oreochromis mossambicus</i> (Peters,1852)	VU	C	
24.			<i>Etroplus suratensis</i> (Bloch,1790)	LC	A	

- 7-orders, 8-families, 16-Genera, 24- Species A-B-C-D- Fish Markets in Nanded city.
- LC- Least Concern, NT- Near Threatened, VU- Vulnerable



**Fig 1:** Order wise scaly fish distribution at Nanded markets.

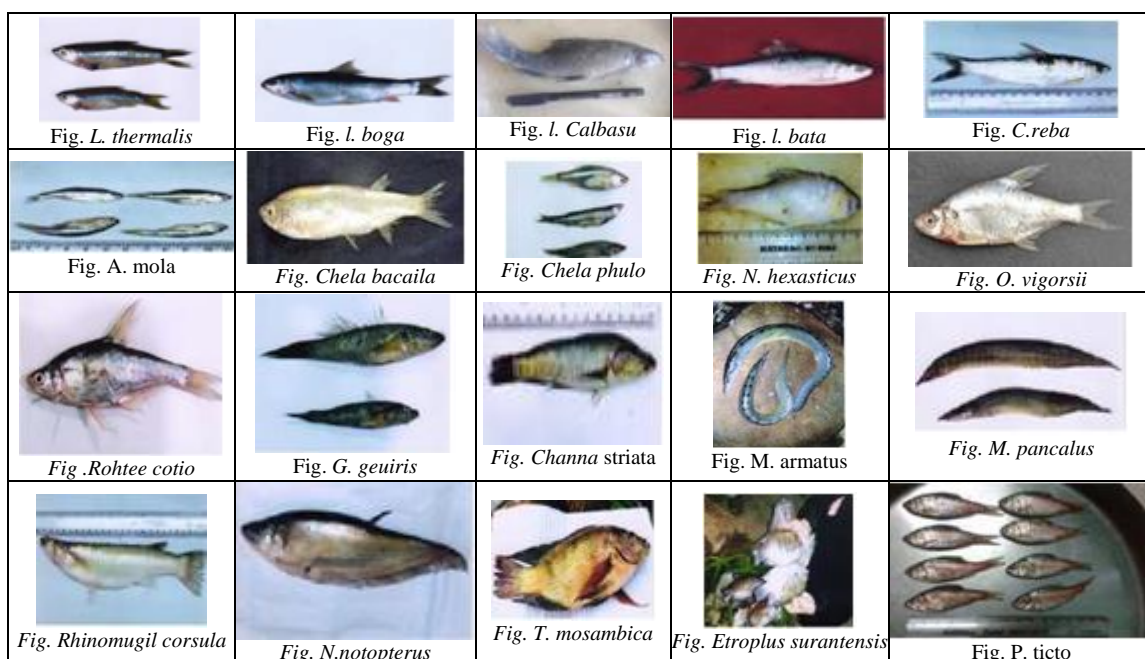
We have included figures of selected 20 species (Fig.2) and rests of the species are given in the table. During present survey 24- species were recorded and as per IUCN (2021) [14] status of 24-species were classified under (22-least Concern, 01-Vulnerable, 01-Near Threatened). It was determined that about 70-80 % fish sellers were same in all markets but the sites of fish catch were different. The order viz. percentage of the fish species showed in (fig.1). And the family viz. Cobitidae, Cyprinidae, Gobiidae, Channidae, Mastaceambelidae, Mugilidae, Notopteridae, and Chichlidae among all these families Cyprinidae family was dominating. Researcher [7] surveyed the four major districts of Marathwada region viz. Aurangabad, Nanded, Parbhani, Osmanabad at different places and monthly samples were collected over a period of one year. The specimens were collected from local fishermen as well as from local fish markets. From these districts some of the places having small and big water resources with fishery potential were selected for collection of Ichthyofauna and cestode parasites. The researcher revealed that the area under study has rich Ichthyofaunal diversity with total 66 fish species belonging to 33 genera, 16 families and 08 orders and according to their survey the Nanded district is rich among all with 53 fish species. In the present survey of markets found 24 scaly teleosts among them 17 species are common whereas 8 are different from above literature. The [15] researchers who conducted survey of two year study tenure and selected 3-stations of Godavari river basins Nanded. The fishes were collected through different fish-nets. After two years of collection of fishes they reported and confirmed that the occurrence of 39 fish species belonging to 6 orders, 13 families and 20 genera in which cypriniformes was dominant. In this present investigation 7 orders- Cypriniformes, Gobiiformes, Perciformes, Synbranchiformes, Mugiliformes, Osteoglossiformes, Cichliformes were similar and 8-families, 16-Genera, 24- species among the total species 19 species were found common whereas *Lepidocephalichthys thermalis*, *Labeo boga*, *Neolissochilus hexastichus*, *Osteobrama vigorsii*, *Channa striata* were different. Cypriniformes was dominant in this present investigation.

The researchers [16, 17, 18] from the same study area which was Vishnupuri Dam on Godavari River district Nanded Maharashtra during the years 2015 to 2017 reported occurrence of 15, 21 and 29 species respectively. They also reported that species diversity and order Cypriniformes was dominant. In the present survey 24- scaly teleosts were found. According to reviewers [19], various authors have recorded and confirmed the freash water fish diversity of Maharashtra (India) that was 165 species belonging to 09 orders, 24 families and 82 genera in for the period of 2000 to 2014. The focus of earlier studies was on fishes of economic importance and scope of fish and fisheries in Maharashtra as a prime interest. They also focused on freash water resources of Maharashtra, documented diversity of fish species and appealed for conservation strategies for fish species to prevent the fish species for declining. In present survey of fish markets for the collection of scaly teleosts found 24 species, among them *Neolissochilus hexastichus* and *Oreochromis mossambicus* were under Near Threatened and Vulnerable respectively category of IUCN [14]. According to researchers [7, 15, 17, 18] *Notopterus chitala* species was found in their studies but in present survey it was not found during this period and according to IUCN [14] the present status of *N. chitala* is under Near Threatened category. All over India in different states such type of investigation were also conducted by other researchers [20, 21, 22, 23, 24, 25].

**Conclusion**

It was concluded that Nanded city is rich in natural freshwater resources. Godavari River has a huge diversity of fishes. But due to pollution and improper conservation strategies some species reached under the near threatened category. Thus it is urgent need for investigation, identifications and documentation of fish diversity.

It was concluded that there is variety of fresh water fishes available in markets but their prices were high according to fish species. Some species were costly so that it is difficult for every consumer to buy them. It is need of time to conserve the fishes so that more availability of fishes is possible and consumers can buy them according to their economic status.



**Fig 2:** Figures of selected 20 species and rest of the species are given in the table.

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