

# Documentation of ornamental fish species in fish markets of Kamrup, Assam

Ornamental fish are attractive, colourful species kept in aquariums or garden pools for enjoyment. Their appeal comes not only from bright colors but also from unique traits like body shape, feeding habits, and behavior. Freshwater ornamental fish make up about 80% of the trade, while brackish and marine species contribute around 20%. India offers 374 freshwater and about 700 marine ornamental fish species, contributing to the 1,539 species traded globally. Ornamental fish keeping is a popular hobby with aesthetic and financial value. Globally, there are about 600 species, with India home to over 100 native and many exotic varieties. The Western Ghats have 155 ornamental species (117 endemic), while northeastern India, especially Assam, hosts 250 species, with 187 found in the state (Mahapatra et al. 2004). Ornamental fishes-popularly known as aquarium fishes-occupy a unique niche. Beyond their visual appeal, they offer therapeutic benefits and serve as a source of livelihood and self-employment, particularly in rural and peri-urban areas (Kaushik et al. 2017).

India, with its vast network of freshwater ecosystems, favourable climate, and cost-effective labour, is uniquely positioned to contribute significantly to the global ornamental fish trade. The northeastern region of India, particularly Assam, along with states such as West Bengal, Kerala, and Tamil Nadu, is noted for its richness in native ornamental fish species. Approximately 85% of India's indigenous ornamental species are found in

northeast India, many of which are in high demand in both domestic and international markets.

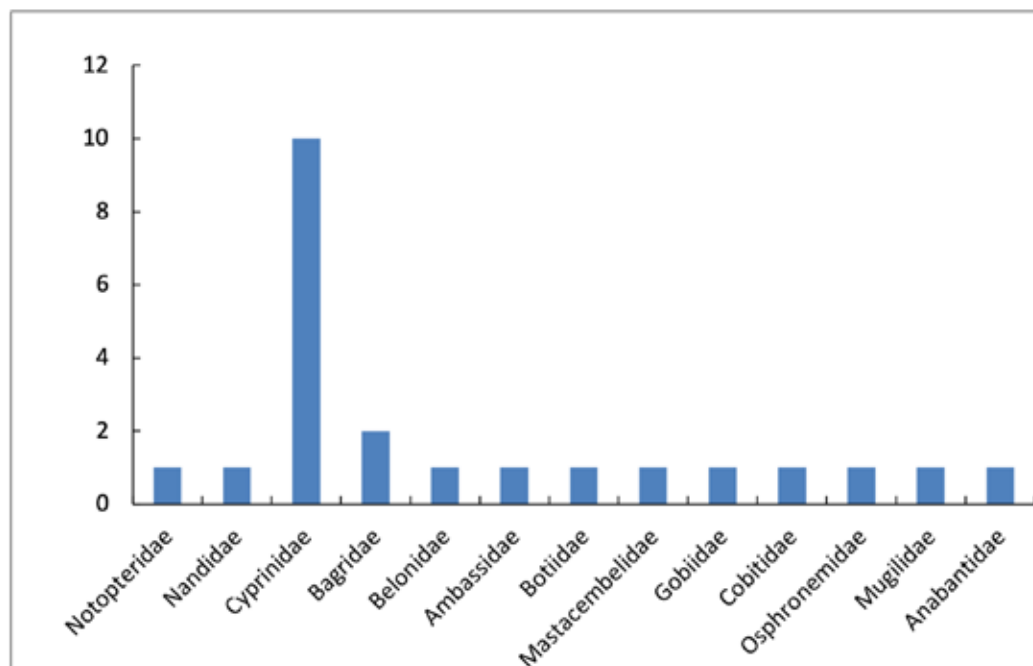
In Assam alone, around 150 species of ornamental fishes have been documented (Biswas & Baruah 2000). Rahman et al. (2014) documented 28 species from North Guwahati. These species are not only kept for ornamental purposes but are also used as food in certain communities, illustrating their dual socio-economic and cultural significance. Among Assam's districts, Kamrup Metropolitan stands out due to its rich aquatic ecosystems comprising rivers, beels (floodplain lakes), wetlands, and ponds. These diverse habitats provide ideal conditions for a wide array of ornamental fish species to thrive, making the district a significant area for both scientific study and aquaculture development. Despite this rich biodiversity and economic potential, the ornamental fish sector in Assam, particularly in Kamrup M, remains under documented. There is a pressing need for systematic studies to assess species diversity, usage patterns, and conservation challenges. Such efforts are essential not only for biodiversity preservation but also for fostering sustainable aquaculture practices that can contribute to local livelihoods and rural development. The fascination with ornamental fish is not a modern phenomenon.

The present study was carried out in four major fish markets in Kamrup (M) District: Uzan

List of ornamental fishes recorded with their order, family, scientific name, local name and IUCN Red List (2025) status.

Scientific name	Order	Family	UB	MB	PB	RB	IUCN Red List status	Local name
1. <i>Notopterus notopterus</i>	Osteoglossiformes	Notopteridae	+	+	+	+	LC	Kanduli
2. <i>Nandus nandus</i>	Perciformes	Nandidae	+	+	+	+	LC	Gedgedi
3. <i>Pethia ticto</i>	Cypriniformes	Cyprinidae	+	-	+	+	LC	Chakariputhi
4. <i>Tor putitora</i>	Cypriniformes	Cyprinidae	+	+	+	+	EN	Mahasheer
5. <i>Rasbora rasbora</i>	Cypriniformes	Cyprinidae	-	-	+	+	LC	Elong
6. <i>Mystus tengara</i>	Siluriformes	Bagridae	+	+	+	-	LC	Tengera
7. <i>Xenentodon cancila</i>	Beloniformes	Belonidae	+	-	+	-	LC	Kokila
8. <i>Chanda nama</i>	Perciformes	Ambassidae	+	+	+	+	LC	Chanda
9. <i>Botia dario</i>	Cypriniformes	Botiidae	-	+	+	+	LC	Gethu
10. <i>Tor tor</i>	Cypriniformes	Cyprinidae	+	-	+	-	DD	Pithia
11. <i>Macrogathus aral</i>	Synbranchiformes	Mastacembelidae	+	+	+	+	LC	Tura
12. <i>Devario assamensis</i>	Cypriniformes	Cyprinidae	+	+	-	+	VU	Sal darikana
13. <i>Batasio batasio</i>	Siluriformes	Bagridae	+	+	+	+	LC	Batasia
14. <i>Glossogobius giuris</i>	Gobiiformes	Gobiidae	+	-	+	+	LC	Patimutura
15. <i>Puntius sophore</i>	Cypriniformes	Cyprinidae	+	+	+	+	LC	Puthi
16. <i>Lepidocephalichthys guntea</i>	Cypriniformes	Cobitidae	-	+	-	+	DD	Botia
17. <i>Trichogaster fasciata</i>	Anabantiformes	Osphronemidae	+	-	+	+	LC	Kholisa
18. <i>Amblypharyngodon mola</i>	Cypriniformes	Cyprinidae	+	+	+	+	LC	Mowa
19. <i>Oreochthys cosuatis</i>	Cypriniformes	Cyprinidae	+	-	+	-	LC	Puthi
20. <i>Cestraeus plicatilis</i>	Mugiliformes	Mugilidae	+	+	+	-	LC	Banak
21. <i>Anabas testudineus</i>	Anabantiformes	Anabantidae	+	+	-	-	LC	Kawoi
22. <i>Pethia conchonius</i>	Cypriniformes	Cyprinidae	+	+	+	+	LC	Puthi
23. <i>Puntius sp.</i>	Cypriniformes	Cyprinidae	+	+	+	-	LC	Puthi

UB—Uzan Bazar | MB—Maligaon Shuttle Gate Bazar | RB—Rest Camp Bazar | PB—Pandu Bazar | LC—Least Concern | VU—Vulnerable | DD—Data Deficient | +—Present | -—Absent.



Graphical representation of fish species in respective families.





1—*Notopterus notopterus* | 2—*Nandus nandus* | 3—*Pethia ticto* | 4—*Tor putitora* | 5—*Rasbora rasbora* | 6—*Mystus tengara* | 7—*Xenentodon cancila* | 8—*Chanda nama* | 9—*Botia dario* | 10—*Tor tor* | 11—*Macrogathus aral* | 12—*Devario assamensis* | 13—*Batasio batasio* | 14—*Glossogobius giuris* | 15—*Puntius sophore* | 16—*Lepidocephalichthys guntea* | 17—*Trichogaster fasciata* | 18—*Amblypharyngodon mola* | 19—*Oreochromis mossambicus* | 20—*Cestraeus plicatilis* | 21—*Anabas testudineus* | 22—*Pethia conchonius* | 23—*Puntius sp.* © Mallika Gogoi.

Bazar, Shuttle Gate (Maligaon), Rest Camp Bazar, and Pandu Bazar. These markets were selected based on fish diversity, availability of ornamental species, and their significance in local fish trade. Observations and data collection from these sites formed the basis of this study.

Surveys were conducted primarily in the morning, with additional data obtained from local aquariums. Identification was done using standard taxonomic keys (Talwar & Jhingran 1991; Vishwanath 2002). The current status of conservation for each species was verified using the IUCN Red List 2025. During the survey a total of 23 fish species were recorded from various fish markets in Kamrup (M) District during the survey. All the recorded fish species have both the food value as well as ornamental value. Based on the IUCN Red List, 19 species are classified as 'Least Concern' (LC), one is 'Vulnerable' (Vu), two 'Data Deficient' (DD) and one species is 'Endangered' (EN). This indicates

a predominance of non-threatened species, with some requiring conservation attention. Specimens were photographed using a mobile camera on a plain white background for clarity.

This study documented 23 ornamental fish species which were taxonomically classified into 20 genera, 13 families, and six orders. The *Cyprinidae* family exhibited the highest species richness with 10 representatives, reflecting its dominant presence in the local ornamental fish fauna. Other families recorded were *Notopteridae*, *Nandidae*, *Bagridae*, *Belonidae*, *Ambassidae*, *Botiidae*, *Mastacembelidae*, *Gobiidae*, *Cobitidae*, *Osphronemidae*, *Anabantidae*, and *Mugilidae*, each contributing one or two species. This diversity underscores Kamrup (M)'s rich ichthyofaunal composition and its significance as a hotspot for ornamental fish diversity.

Field observations and interviews with local fishermen and market vendors revealed a declining trend in fish populations over recent

years. Several anthropogenic and environmental factors contribute to this decline, including overexploitation due to unregulated fishing, pollution from sewage and agricultural runoff, destruction and fragmentation of natural habitats, and climatic variations impacting water quality and availability. Such pressures have resulted in the degradation of aquatic ecosystems, thereby threatening the survival of both common and rare fish species in the district.

Among the species recorded, Golden Mahseer (*Tor putitora*), *Devario assamensis*, *Batasio batasio*, and Climbing Perch (*Anabas testudineus*) were identified as species of conservation concern due to their declining populations and ecological significance. The presence of these species highlights the urgent need for targeted conservation and management strategies to ensure their long-term survival.

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