

## **A Study on Ornamental Fish Species of Dhing Area, Nagaon, Assam**

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### **ABSTRACT**

Ornamental fishes usually mean attractive colourful fishes of different characteristics or of various patterns. The present study was undertaken from March 2013 to July 2013 in Dhing area of Nagaon district of Assam. These are also known as aquarium fishes kept as pets in confined spaces for fun or fancy. Assam, a north-eastern state, is blessed with abundance of ornamental fishes in nature and contributes the lion's share of total ichthyospecies in North Eastern region of India. However there are vast unexplored potential for indigenous ornamental fishes in Assam. Scientific & systematic exploration of these potential will definitely ensure employment generation & will help to earn foreign exchange. Henceforth, this paper investigates the varieties of ornamental fishes found in four water bodies of Dhing area of Nagaon district in Brahmaputra valley of Assam.

**Key words:** Dhing; ornamental fish; IUCN.

### **INTRODUCTION**

Fishes are the most ancient and most numerous among the vertebrates comprising about 30,000 species with global distribution. They live in every conceivable type of aquatic habitat and exhibit great variation in size, shape and colour and behaviour. Apart from forming an important item of human diet since the dawn of human civilization they also occupy an important part in our lives for their sporting and aesthetic qualities fishes are conserved as the most beautiful cheerful and fascinating among the aquatic creature and it is no wonder that they find a place in many house hold and different public places as decorative item (Das and Biswas, 2005). Ornamental fishes form an

important commercial component of aquaculture providing for aesthetic requirement and upkeep of the environment. Ornamental fishes mean attractive colourful fishes of various characteristics. These fishes are kept as pets in confined spaces like aquarium or a garden pool for fun and fancy but this living jewels need not always have bright colours as sometimes their peculiar characteristics such as body colour morphology, mode of taking food etc. may also add to their attractiveness. Ornamental fishes are usually kept in glass aquarium and hence popularly known as aquarium fishes. (Bailey and Stanford, 1998). Already 217 fish species belonging to 136 genera have been identified in

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Assam, of which about 150 species have been reported to ornamental value, which over 50 species have huge overseas demand (Biswas and Baruah, 2000). All these species are high demand in international market. Assam is gifted with many extensive water bodies commonly known as Beels (Jhingran, and Pathak. 1987) that are the only source of fish for the poor people in the surrounding villages. Beels (wetlands) are major fishery resources contributing to about 25 % of the fish production in Assam. However, major portions have been rendered unproductive due to excessive siltation and growth of weeds and only about 33 % of the potential is being utilized for fisheries (Chakravarty *et al.*, 2012). But, now- a- days, the production of the fish species is declined and according to the fishermen communities living in and around wetlands are of the opinion that this is because of the degradation of the Beel. So, it is very important to list out the ornamental fish species available in the wetland. Only a detailed study of ornamental fish population of the wetland can help us to determine the present productivity or the status of the wetland. We may then, able to propose some valuable measures for the better productivity of the wetland, if necessary. Keeping these in view, an attempt has been made to study on the diversity of ornamental fish species in and around Dhing area, Nagaon, Assam.

#### Study Area

Assam is located in the tropical latitudes (24.3<sup>o</sup>N and 28<sup>o</sup>N) and Eastern longitudes 89.5<sup>o</sup>E and 96.1<sup>o</sup>E) and it is surrounded by hills and mountains on its three sides .The state of Assam has an area of 78,434 km<sup>2</sup> representing 2.39 percent of the Indian landmass. Dhing is situated in the Nagaon district of Assam, India at 26.47<sup>o</sup> N 92.47<sup>o</sup>E in the flood plains of the river Brahmaputra. Dhing is about 25 km from Nagaon town, the district headquarter of the Nagaon district of Assam. The survey area includes four wetlands of Dhing in Nagaon

district of Assam. Locations of these four wetlands are Brahmaputra River, Talibarh Beel, Salkata Beel, and Roumari Beel. During the study period the total tributaries were divided into four stations on the basis of geographical variation as follows:

Station: 1.Brahmaputra River

Station: 2.Talibarh Beel

Station; 3.Salkata Beel

Station: 4.Roumari Beel

#### MATERIALS AND METHODS

To study of the ornamental fish species of the four stations of Dhing area were studies during the period starting from March to July, 2013. Fish samples were collected throughout this month from this wet lands i.e. Talibarh beel, Salkata beel, Roumari beel and the river Brahmaputra. The fish were collected with the help of skilled local fishermen by using various fishing gears like Cast net (Khewali) Dip net ( Dhekijals), Langi net, Tongi net, Sip net, Fasi net, Gill nets(gill nets are of three varieties-Puthilangi, Garoilangi and Kawoilangi locally), Drag nets, local Bamboo trap, Chepa(valve trap), Hook, Jakoi, Polo, Hapa, Juluki, Ghoni, Dolonga, Ghukuta, Saloni and other local contrivances with different baits according to the food of choice and the on the basis of their habitat.

Survey was conducted by active searching and trial guided by local people, especially fisherman in this region. Survey was done during morning hour and evening also. The fish species were also collected from the local market of Dhing area during this period and this were also preserved in formalin solution in the department of Zoology, Dhing College for identification purpose. Some living species were kept in aquariums. On the other hand the secondary information was gathered through the local fisherman and experienced person in this field.

Collected fishes were preserved in 5%

formalin solution by following the methods of Jayaram, 1999 directly in the department of Zoology, Dhing College and the identification of collected fish samples were done by the subject experts of Department of Zoology, Gauhati University and with reference to Vishwanath Singh (2002), Jayaram (2000), Nath & Day (2000) and Kar & Sen (2007). On the other hand the latest scientific names of the fish species were followed with the website [www.fishbase.org](http://www.fishbase.org) also. Photographs are taken by digital camera (Sony DSC-W710).

The fish statuses were defined by the

IUCN search engine through internet.

## RESULTS & DISCUSSION

The collected fish were kept in Glass jar for identification as well to study their morphology by following standard procedure. The fish were collected mainly from the said four stations where, Station: 1 is Brahmaputra river and the other 3 stations i.e. Talibharh Beel, Salkata Beel, Roumari Beel were wetland.

Descriptions of some of the fishes are as follows:

**Table:** List of collected fish species and their status :

Sl. No.	Scientific Name	Collecting Spot	Availability	IUCN Status	Local name
1.	<i>Chitala chitala</i>	Brahmaputra	Rare	NT	Chital
2.	<i>Notopterus notopterus</i>	Salkata	High	DD	Kanduli
3.	<i>Gudusia chapra</i>	Brahmaputra	Rare	Decreasing	Koroti
4.	<i>Amblypharyngodon mola</i>	Talibharh	High	LC	Mowa
5.	<i>Aspidoparia morar</i>	Roumari	Moderate		Boriola
6.	<i>Chela laubuca</i>	Salkata	High	Yet to be assessed	Haarbhagi
7.	<i>Esomus danricus</i>	Talibharh	High	LC	Darikana
8.	<i>Puntius sophore</i>	Do	High	LC	Puthi
9.	<i>Salmophasia bacaila</i>	Brahmaputra	High	LC	Selekona
10.	<i>Botia Dario</i>	Roumari	Rare	LC	Gethu(Koina)
11.	<i>Mystus menoda</i>	Brahmaputra	Rare	Yet to be assessed	Gagal
12.	<i>Mystus villatus</i>	Talibharh	High	Do	Singora
13.	<i>Xenentodon cancila</i>	Brahmaputra	Moderate	Do	Kokila
14.	<i>Macrornathus aral</i>	Salkata	High	LC	Tura
15.	<i>Pseudambassis baculis</i>	Talibharh	High	LC	Chanda
16.	<i>Glossogobius giuris</i>	Salkata	Do	Do	Patimutura
17.	<i>Tetradon cutcutia</i>	Salkata	Moderate	Yet to be assessed	Gangatop
18.	<i>Channa gachua</i>	Talibharh	High	LC	Chengeli
19.	<i>Channa marulius</i>	Do	Do	Do	Sol
20.	<i>Channa punctata</i>	Do	Do	Do	Goroi
21.	<i>Barilius bendelisis</i>	Brahmaputra	Moderate	Do	Korang
22.	<i>Devario aequipinnatus</i>	Talibharh	High	Do	Sal darikana
23.	<i>Rasbora daniconius</i>	Do	Do	Do	Darikana
24.	<i>Puntius conchonus</i>	Roumari	Do	Do	Puthi
25.	<i>Puntius ticto</i>	Do	Do	Do	Chakariputhi

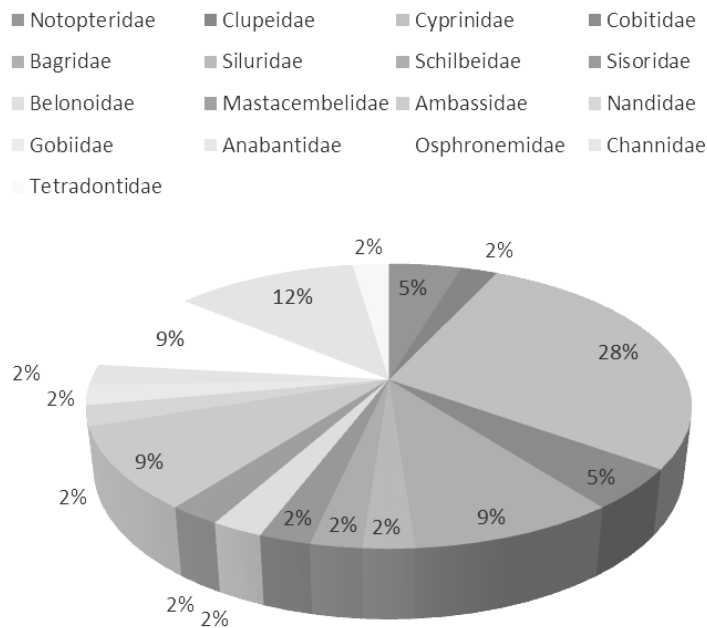
26.	<i>Rasbora rasbora</i>	Brahmaputra	Rare	Do	Eleng
27.	<i>Lepidocephalichthys guntea</i>	Roumari	High	Yet to be assessed	Botia
28.	<i>Mystus tengara</i>	Salkata	High	LC	Ronga Singora
29.	<i>Mystus cavasius</i>	Do	Do	Do	Singora
30.	<i>Ompok pabda</i>	Roumari	Rare	NT	Pavo
31.	<b><i>Pseudeutropius atherinoides</i></b>	Brahmaputra	Moderate	Yet to be assessed	Borduwa
32.	<i>Pseudambassis baculis</i>	Talibarh	High	LC	Chanda
33.	<i>Pseudambassis lala</i>	Do	Do	NT	Chanda
34.	<i>Chanda nama</i>	Roumari	Do	LC	Chanda
35.	<i>Nandus nandus</i>	Do	Rare	Do	Gedgedi
36.	<i>Anabus testudineus</i>	Talibarh	High	Yet to be assessed	Kawoi
37.	<i>Polyacanthus fasciata</i>	Salkata	Do	LC	Kholihona
38.	<i>Polyacanthus labiosus</i>	Do	Rare	Yet to be assessed	Kholihona
39.	<i>Polyacanthus sota</i>	Do	High	Not found	Vecheli
40.	<i>Ployacanthus lalia</i>	Do	Moderate	Do	Ronga vecheli
41.	<i>Channa aurantimaculata</i>	Brahmaputra	Rare	Do	Cheng
42.	<i>Channa striata</i>	Talibarh	High	Do	Sal
43.	<i>Gagata cenia</i>	Brahmaputra	Rare	Do	Kyaketta

N. B. **DD**- Data deficient, **LC**- Least Concern, **NT**- Near threatened

It is found that Dhing area harbours a great variety of ornamental species. For the better convenience of the study about the fishes available, it is very essential to place them into some groups. After completion of the study a total of 43 species belonging to 31 genera, 17 families and 8 orders have been recorded from the Dhing area. The species of area belong to following orders: i.e. Osteoglossiformes, Clupeiformes, Siluriformes, Cypriniformes, Beloniformes, Synbranchiformes, Perciformes and Tetradontiformes. Out of these 43 species, 2 species belong to the family Notopteridae (Featherfin

knife fishes or Old world Knife fishes), Clupeidae (1 no ), Cyprinidae (Minnows or Carp, 12 no's), Cobitidae or Loaches( 2 no's), Bagridae or Bagrid catfishes( 4 nos) , Siluridae(1 nos), Schilbeidae or Schilbeid catfishes(1 no), Sisoridae or Sisorid catfishes (1 no), Belonoidae or Needlefishes (1 no), Mastacembelidae or Spring eels(1 no), Ambassidae/Chandidae or Asiatic glassfishes(4 nos), Nandidae or Loaf fishes(1 no), Gobiidae or Gobies) (1 no), Anabantidae or Climbing gouramies(1 no), Osphronemidae (4 nos), Channidae or Snakeheads (5 nos) and Tetradontidae or Puffers(1 no).

**Fig.** Percentage contribution of different orders of fish in Dhing area



Photographs of collected Ornamental Fish Species

**CONCLUSION**

The present study is the first ever documentation of potential ornamental fish species from the Dhing area in Nagaon District, Assam, which exhibits a good number of ornamental fishes. The illegal fish capturing methods for food fishes are the major cause of depletion of ornamental fishes. So, for conservation of these living jewels of aquatic world, a long term and effective management plan should be adopted to control the illegal fishing and export trade. Further works particularly in the following areas will yield valuable results and findings in determining detailed status of fresh water ornamental fish and will very much helpful in conservation of these valuable species.

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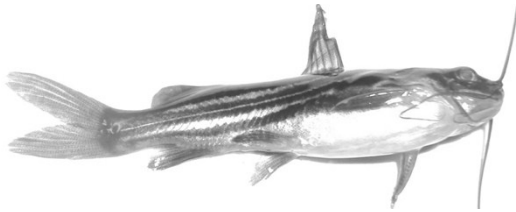
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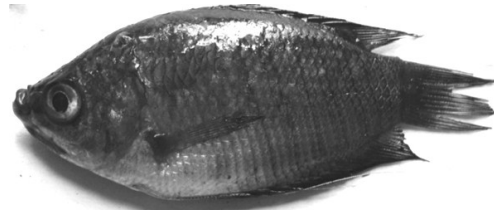
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**Plate1: Photographs of collected Ornamental Fish Species**



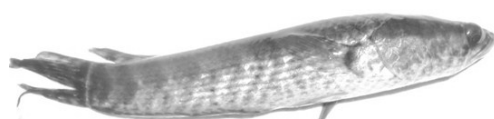
*Mystus tengara*



*Polyacanthus fasciatus*



*Glossogobius giuris*



*Channa punctata*



*Botia guntea*



*Aspidoparia morar*



*Anabas testudineus*



*Botia dario*