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ORIGINAL ARTICLE

Fish Diversity in Chandakhola Wetland of Dhubri District, Assam, India

Samuel Sheikh[1], M.M. Goswami[2]
[1] Department of Zoology, Gauhati University, Guwahati, Assam, India
[2] Department of Zoology, Gauhati University, Guwahati, Assam, India.
E-mail: samuel_sheikh@rediffmail.com

ABSTRACT
The study finds a total of 58 numbers of fish species representing 20 'families' under 9 'orders' in Chandakhola wetland of Dhubri district of Assam, India. Family Cyprinidae is represented by a maximum of 20 numbers of species followed by Bagridae (7 numbers) and Channidae (4 numbers). Family Cobitidae, Mastacembelidae, Scheilbeidae and Chandidae are having 3 numbers of species each. At the same time Family Notopteridae and Claridae are represented by 2 numbers of species each in the wetland, while the rest, out of the 20 Families, are represented by single species each. From conservational point of view, the wetland is found to harbour a good number of fish species of different conservational status as conferred by CAMP (1998) and IUCN.
Keywords: *Chandakhola, order, family, species, CAMP, IUCN.*

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INTRODUCTION

Fish constitutes almost half of the total number of vertebrates in the world [1]. In India, there are 2,500 numbers of fish species, out of which 930 are in fresh waters and belong to 326 genera, 99 families and 20 orders [2]. India is one of the mega biodiversity countries in the world and occupies ninth position in terms of fresh water mega biodiversity [3]. The north eastern region of India falls within the eastern Himalaya biodiversity hotspot zone. This region is represented by 267 species belonging to 114 genera under 38 families and 10 orders [4]. The study area, Chandakhola wetland, commonly known as Chandakhola beel is a tubular riverine wetland situated 26° 02' 06" North and 89° 55' 00" East in the western most part of the state of Assam near the Indo – Bangladesh border. Though the wetland is perennial in nature but partial drying up during dead storage level is often observed. Apparently it has connectivity with the mighty river Brahmaputra at the Indo – Bangla international boundary but the connectivity seldom continues because of the construction of sluice gate at the site of its confluence. However, there is scope of fish entry from river Brahmaputra to it during the flooding. Keeping all these in views, the present study was taken to know the diversity of fishes prevailing in the wetland and their respective conservational status.

MATERIALS AND METHOD

It is an analytical study based on the data collected by random sampling of fish from the fish catch in the wetland during two consecutive years 2010 – 2011 and 2011 – 2012. Continuous monitoring and sampling was done to ensure collection of data in different seasons during the period in all the landing sites randomly. Data was collected in the form of specimens of small fishes and photographs for large fishes. The data was taken to the Laboratory for identification and confirmation following the taxonomic tools. For identification literatures like Talwar and Jhingran [2], Jayaram [1], Vishwanath et al [5] etc. are followed. For nomenclature Fishbase (http://www.Fishbase.org) and www.calacademy.org/catalogue were consulted. Their conservational status is ascertained with the help of IUCN Red data list

(www.iucnredlist.org, The IUCN Red List of Threatened Species 2012.2) and C.A.M.P. report on freshwater fishes of India [6].

RESULT AND DISCUSSION

The study brings about the finding of 58 numbers of fish species falling under 20 families within 9 orders (Table 1). The family wise distribution of species is shown in the form of bar diagram (Figure 1). The study reveals maximum fish species falling under family: Cyprinidae. There are 20 cyprinids constituting 34.5% of the total fish species found to be harboured in the wetland. Family Bagridae is represented by 7 numbers of species while family Channidae has 4 numbers of species. Family Cobitidae, Mastacembelidae, Scheilbeidae and Chandidae are represented by 3 numbers of species each. At the same time Family Notopteridae and Claridae are represented by 2 numbers of species each in the study area while the rest of the families namely, Clupidae, Siluridae, Chacidae, Belonidae, Symbranchidae, Badidae, Nandidae, Anabantidae, Belontidae, Gobiidae and Tetraodontidae are represented by single species each. Thus, a total of 58 Nos. of species belonging to 43 genera have been recorded in the study area. Similar line of studies conducted by different researchers show different numbers of fish species in different wetlands of Assam. A study on fish biodiversity in Koyakujia beel in the adjacent district of the present study area has a record of 45 species of fishes[7]. The present result shows more fish diversity in Chandakhola wetland than the Koyakujia beel. However, the present result is lesser than the record of Chakravartty et al (75 species) in Kapla beel of Barpeta district of Assam [8] and Kar et al (69 ichthyo species belonging to 49 genera, 24 families and 11 orders) in lake Sone of Barak valley of Assam [9]. This may be because of various anthropogenic stresses including the disruption of connectivity with the river Brahmaputra by way of construction of sluice gate at the confluence and negating the auto stocking of the wetland.

The consultation with CAMP report 1998 reveals that there are 4 numbers of endangered species viz. *Ompok bimaculatus, O. pabda, Pseudotropius atherinoides* and *Chitala chitala* recorded in the wetland. The wetland is also found to harbour 9 numbers of vulnerable species namely *Clarius magur, Heteropneustes fossilis, Mystus vittatus, M. bleekeri, Pethia conchonius, Systomus sarana, Cirrhinus reba, Catla catla* and *Anabas testudineus* in the wetland. In addition to this, there are records of 21 numbers of species in the wetland found under 'lower risk near threatened' category. While consulted with IUCN, 2012 the wetland is found harbouring two 'near threatened' species viz. *Chitala chitala* and *Wallago attu* and one 'vulnerable' species, *Cyprinus carpio*.

Table 1: Fish species recorded in Chandakhola Wetland

Order: Osteoglossiformes			
Family	Species	Conservational status	
		IUCN	CAMP
1. Notopteridae	*1. Notopterus notopterus* Pallas,1769	LC	LRnt
	2. Chitala chitala Hamilton,1822	NT	EN
Order: Clupeiformes			
2. Clupeidae	3. *Gudusia chapra* Hamilton,1822	LC	LRlc
Order: Cypriniformes			
3. Cyprinidae	*4. Labeo rohita* Hamilton,1822	LC	LRnt
	5. Labeo calbasu Hamilton,1822	LC	LRnt
	6. Labeo gonius Hamilton,1822	LC	LRnt
	7. Labeo bata Hamilton,1822	LC	LRnt
	8. Cirrhinus mrigala Hamilton,1822	LC	LRnt
	9. Cirrhinus reba Hamilton,1822	LC	VU
	10. Catla catla Hamilton,1822	NA	VU
	11. Ctenopharyngodon idella Valenciennes, 1844	NA	NE
	12.Hypophthalmichthys molitrix Valenciennes, 1844	NA	NE
	13. Cyprinus carpio Linnaeus, 1758	VU	NE
	14. Systomus sarana Hamilton,1822	LC	VU
	15. Puntius sophore Hamilton,1822	NA	LRnt
	16. *Puntius guganio* Hamilton,1822	NA	LRnt
	17. Pethia conchonius	NA	VU

	Hamilton, 1822		
	18. Pethia gelius Hamilton,1822	NA	NE
	19. Rasbora daniconius Hamilton, 1822	NA	NE
	20. Chela laubuca Hamilton,1822	NA	LRlc
	21. Esomus danricus Hamilton,1822	LC	LRlc
	22. Amblypharyngodon mola Hamilton, 1822	LC	LRlc
	23. Salmophasia phulo Hamilton,1822	LC	NE
4. Cobitidae	*24 Lepidocephalichthys guntea* Hamilton,1822	LC	NE
	25. Botia dario Hamilton,1822	NA	NE
	26. Somileptes gongota Hamilton, 1822	NA	LRnt
Order: Siluriformes			
5. Bagridae	*27. Sperata aor* Hamilton,1822	NA	NE
	28. Sperata seenghala Sykes,1839	NA	NE
	29. Hemibagrus menoda Hamilton,1822	NA	NE
	30. Mystus cavasius Hamilton,1822	NA	LRnt
	31. Mystus bleekeri Day, 1877	NA	VU
	32. Mystus vittatus Bloch, 1794	NA	VU
	33. Mystus tengera Hamilton,1822	NA	NE
6. Siluridae	*34. Wallago attu* Bloch and Schneider,1794	NT	LRnt
7. Scheilbeidae	*35. Ompok bimaculatus* Bloch,1794	NA	EN
	36. Ompok pabda Hamilton, 1822	NA	EN
	37. Pseudeutropius atherinoides Bloch, 1794	NA	EN
8. Claridae	*38. Clarias magur* Linnaeus, 1758	NA	VU
	39. Heteropneustes fossilis Bloch,1794	LC	VU
9. Chacidae	*40. Chaca chaca* Hamilton, 1822	NA	NE
Order: Beloniformes			
10. Belonidae	*41. Xenontodon cancila* Hamilton, 1822	NA	LRnt
Order: Symbranchiformes			
11. Symbranchidae	*42. Monopterus cuchia* Hamilton, 1822	NA	LRnt
Order: Mastacembeliformes			
12. Mastacembelidae	*43. Mastacembelus armatus* Lacepede, 1800	NA	NE
	44. Macrognathus aral Bloch and Schneider,1801	NA	LRnt
	45. Macrognathus pancalus Hamilton, 1822	LC	LRnt
13. Badidae	*46. Badis badis* Hamilton, 1822	NA	NE
Order: Perciformes			
14. Chandidae	*47. Parambassis ranga* Hamilton, 1822	LC	NE
	48. Chanda nama Hamilton, 1822	LC	NE
	49. Pseudambassis baculis Hamilton, 1822	LC	NE
15. Nandidae	*50. Nandus nandus* Hamilton, 1822	NA	LRnt
16. Anabantidae	*51. Anabas testudineus* Bloch, 1792	NA	VU
17. Belontidae	*52. Colisa fasciatus* Bloch and Schneider, 1801	NA	LRnt
18. Gobiidae	*53. Glossogobius giuris* Hamilton, 1822	LC	LRnt
19. Channidae	*54. Channa marulius* Hamilton, 1822	LC	LRnt

	55. Channa striatus Bloch, 1793	NA	LRlc
	56. Channa punctatus Bloch, 1793	NA	LRnt
	57. Channa gachua Hamilton,1822	LC	NE
Order: Tetraodontiformes			
20. Tetradontidae	*58. Tetradon cutcutia* Hamilton, 1822	NA	LRnt

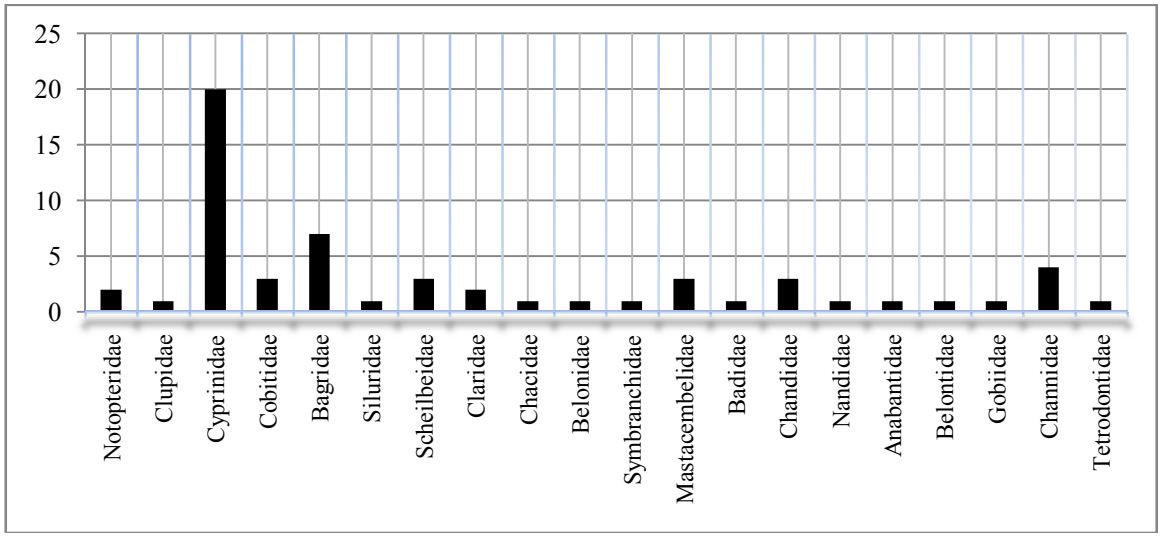

Figure 1: Bar diagram showing Family wise distribution of species

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