International Journal for Multidisciplinary Research (IJFMR)
E-ISSN : 2582-2160 ● Website: www.ijfmr.com ● Email: editor@ijfmr.com

Fish Diversity of Pahumara River of Barpeta District, Assam

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Abstract

A study was undertaken in the Pahumara River of Barpeta District, Assam during the year 2022 to document the fish fauna and its conservation status. The result reveals the presence of 51 species belonging to 7 orders and 17 families from four sampling station. The most dominant order is Cypriniformes from station-1 followed by Perciformes from station-2. The IUCN status of the fishes were also evaluated as lower risk near threatened, vulnerable, lower risk least concern, endangered, not evaluated and critically endangered. The total number lower risk near threatened was found to be 20 followed by vulnerable which is found to be 13, not evaluated 13, lower risk least concern 2, and endangered 3. The study on the Pahumara river calls an urgent need for conservation of the species in the river of the Barpeta District.

Keywords: Conservation, IUCN, Fish Fauna, Vulnerable, Barpeta, Sampling Station.

INTRODUCTION:

The North-East States Constitute 8% Of India's Territory And 4% Of Population And It Is One Of The Richest Hotspot Of World. The Assam Is Situated In The Eastern Himalayan Region Between 24^0N To $28^0$18′N Latitude And 89^0E To $97^0$4′E Longitude. Assam Is Very Rich In Freshwater Resources. There Are Two Important River Systems In The State ,The Brahmaputra And The Barak, Which Connect The Numerous Tributaries And Have A Combined Length Of 4820kms(Bhattacharja Et.Al.2000). Besides The River A Large Number Of Foodplain, Wet Lands, Swamps,Ponds And Lowlying Areas Exist,Which Are Of Considerable Importance As Fishery Resources. Goswami Et.Al.2007 Reported 288 Fish Species From North-East Region . Sen(2000) Reported 200 Fish Species Available In Assam Belonging To 100 Genera Under 36 Families And 10 Order. The Study Deals With The Survey Of Fish Diversity With Status Of "Pahumara River" And Causes Of Decline Of Fish Diversity.

STUDY AREA:

The Studied Area Was Located On The Barpeta District In Assam With $26^0$45′ To $26^0$49′North Latitude And $90^0$45′ To $90^0$15′East Latitude With A Total Geographical Area Of 324500 Ha. The Pahumara River Is Located At Latitude $26^0$17′0″ And Longitude $26^0$17′0″. It Is A Tributary Of Brahmaputra River . It Flows Through The Areas Of Puthimari, Medhikuchi, Pathsala, Dhumarkur, Bhawanipur, Kayakuchi, And The BajaliDistrict. Medhikuchi, Puthimari, Dhumarkur And Bhawanipur Are Taken As Four Sampling Station For This On Going Project.

Fig: Map of Assam Showing Study Area

Fig: View of Pahumra River (Study Area)

AIM and OBJECTIVES

I) To Document The Fish Diversity Of Pahumara River Along Its Abundance.
II) To Know The Present Status Of Fishes Present In The River.
III) To Know The Economic Value Of Species.

MATERIALS and METHODS:

Collection Of Fish Species Were Made During 2022 with The Help of Local Fishermen And Collected Fish Specimen Were Preserved In 10% Formaldehyde Solution. Later The Identification Were Followed After Standard Books Talwar(1991), Jhingran(1991) . Conservation Status Were Evaluated By IUCN And Abundance Of Fishes Were Found Out By Detail Survey With Questionaries With Fringe Villagers.

RESULT and DISCUSSION:

During This Investigation 51 Fish Species Belonging To 17 Families And 7 Orders Have Been Recorded From The Four Station Of Pahumara River. The Ichthyo Species Of The Tributary Belong To Following Orders Cypriniformes Followed By Perciformes, Siluriformes, Synbranchiformes, Osteoglossiformes, Clupeiformes, And Beloniformes. Out Of 51 Species , 20 Belong To Cyprinidae Family Followed By Channidae(5) , Ambassidae(5), Schilbeidae(3), Notopteridae(2), Mastacambelidae(2), Clupeidae(2), Bagridae(2), Siluridae(1), Claridae(1), Heteropneustidae(1), Synbranchidae(1), Gobidae(1), Belonidae(1), Schilbidae(1), Psilorhynchidae(1), Balitoridae(1).

An Account Of Station Wise Occurance Of The Fish Species Revealed That 37 Fish Species Was Reported From Station -1(Maximum), 26 Species Were Reported From Station-2 , 29 Were Species Reported From Station-3, And 23 Species Were Reported From Station 4 (Minimum). The Collected Fish Species From The Four Different Stations Are Depicted In Table 1. Das (2012) Recorded 71 Fish Species From Pagaldiya River, Nalbari And Sarma(2014) Reveales The Presence Of 116 Species From Kaldiya River, Barpeta.

The Threats To Fish Diversity Prevailing In The River Are The Use Of Destructive Fishing Gear, Capture Of Gravid Fish During Breeding Season, Use Of Poison,Pesticide, Pollution, Electric Fishing By People Etc. The Fishes Of PohumaraRiver Have Witnessed A Drastic Decline In Last Few Years And The Devasting Trend In Fish Yield Pattern Are Clearly Discremenable.

Table 1 : Fish Diversity Of Pohumara River From Four Sampling Station

Sl .No	Name of Species	Station				Conservation Status	Family	Order
		1	2	3	4			
1	Labeo rohita(Ham)	+	+	+	+	LRnt	Cyprinidae	Cypriniformes
2	Catla catla(Ham-buch)	+	+	-	-	Vu	Cyprinidae	Cypriniformes
3	Labeo calbasu	+	+	-	-	LRnt	Cyprinidae	Cypriniformes
4	Cirrhinus mrigala(hambuch)	+	-	+	+	LRnt	Cyprinidae	Cypriniformes
5	Wallagu attu(Bloch)	-	-	+	-	LRnt	Siluridae	Siluriformes
6	Clarius magur(Ham)	+	+	-	+	Vu	Claridae	Siluriformes
7	Heteropneustes fossilis(Bloch)	-	-	+	+	Vu	Heteropneustidae	Siluriformes

8	Notopterus chitala(Ham)	-	+	-	-	NE	Notopteridae	Osteoglossiformes
9	Notopterus notopterus(pallas)	+	-	+	+	LRnt	Notopteridae	Osteoglossiformes
10	Channa striatus(Bloch)	+	+	-	-	LRnt	Channoidae	Perciformes
11	Channa marulius(Ham)	+	+	-	-	LRnt	Channidae	Perciformes
12	Channa punctatus(Bloch)	-	-	+	+	LRnt	Channidae	Perciformes
13	Channa gachua(Ham)	+	+	-	+	Vu	Channidae	Perciformes
14	Anabus testudineus(Bloch)	+	-	+	-	Vu	Ambassidae	Perciformes
15	Labeo gonius(Ham)	-	+	-	+	LRnt	Cyprinidae	Cypriniformes
16	Puntius sarana(Ham)	+	-	+	-	Vu	Cyprinidae	Cypriniformes
17	Mastacembalus armatus(Lacep)	-	-	-	+	NE	Mestacambelidae	Synbranchiformes
18	Mastacembalus puncalus(Ham)	+	-	-	-	NE	Mestacambelidae	Synbranchiformes
19	Monopterus cuchia(Ham)	+	+	+	+	LRnt	Synbranchidae	Synbranchiformes
20	Glossogobius giuris(Ham)	-	+	-	-	LRnt	Gobidae	Perciformes
21	Xenentodon cancila(Ham)	+	+	+	+	LRnt	Belonidae	Beloniformes
22	Eutropichthys vacha(Bloch)	+	-	+	-	NE	Schilbeidae	Siluriformes
23	Bagarius bagarius(Ham)	+	+	+	-	Vu	Sisoridae	Siluriformes
24	Gagata cenia(Ham)	+	+	+	+	NE	Sisoridae	Siluriformes
25	Tor tor(Ham)	+	-	-	-	EN	Cyprinidae	Cypriniformes
26	Tor putitor(Ham)	+	+	-	-	EN	Cyprinidae	Cypriniformes
27	A. hexagonolepes(McClell)	+	+	+	+	EN	Cyprinidae	Cypriniformes
28	Barilius bendelisis(Ham)	+	-	-	-	LRnt	Cyprinidae	Cypriniformes
29	Barilius bola(Ham)	+	-	+	-	LRnt	Cyprinidae	Cypriniformes
30	Barilius barna(Ham)	+	-	+	-	LRnt	Cyprinidae	Cypriniformes
31	A.mola(Ham-Buch)	+	-	-	-	LRIc	Cyprinidae	Cypriniformes
32	Psllorhynchus balitora(Ham)	+	+	-	-	NE	Psilorhynchidae	Cypriniformes
33	Clupisoma garua(Ham)	-	-	+	-	Vu	Schilbeidae	Siluriformes
34	Puntius chola(Ham)	+	+	-	+	Vu	Cyprinidae	Cypriniformes
35	Hilsa ilisha(Ham-Buch)	-	+	+	+	Vu	Clupeidae	Clupeiformes
36	Garra gotyla(Gray)	+	-	+	+	Vu	Cyprinidae	Cypriniformes
37	Mystus tengra(Ham-Buch)	+	+	+	+	NE	Bagridae	Siluriformes
38	Rita rita(Ham-Buch)	-	-	-	+	Vu	Bagridae	Siluriformes

39	Ailia colia(Ham-Buch)	+	-	+	-	Vu	Schilbeidae	Siluriformes
40	Chanda nama(Ham-Buch)	+	-	+	-	NE	Ambassidae	Perciformes
41	Chanda ranga(Ham-Buch)	+	-	+	+	NE	Ambassidae	Perciformes
42	Colisa fasciatus(Bloch and Schn.)	+	+	+	-	LRnt	Ambassidae	Perciformes
43	Colisa lalia(Ham)	+	+	+	+	NE	Ambassidae	Perciformes
44	Labeo bata(Ham)	+	-	-	+	LRnt	Cyprinidae	Cypriniformes
45	Cyprinus carpio(Ham)	-	-	+	-	NE	Cyprinidae	Cypriniformes
46	Ctenopharyngdon idella(Ham)	+	-	+	-	NE	Cyprinidae	Cypriniformes
47	Balitora brucei(Gray)	+	+	-	-	LRnt	Balitoridae	Cypriniformes
48	Channa sterwartti(Bloch)	-	-	+	+	LRnt	Channidae	Perciformes
49	H.molitrix(CV)	-	+	+	+	NE	Cyprinidae	Cypriniformes
50	Barilus guttatus(Ham)	+	+	-	-	LRnt	Cyprinidae	Cypriniformes
51	Gudusia chapra(Ham)	+	+	+	-	LRIc	Clupeidae	Clupeiformes

CR=Critically endangered; EN=Endangered; Vu=Vulnerable;LRnt=Lower Risk near threatened;LRlc=Lower Risk least concern;DD=Data Deficient;NE=Not Evaluated at CAMP workshop;+=Presence;-=Absence;

Station:1.Medhikuchi
Station:2.Pthimari
Station :3. Dhumarkur
Station:4. Bhawanipur

Table 2 :Order Of Identified Species With No. Of Species :-

SL No	Order	No. Of Species
1	Cypriniformes	22
2	Perciformes	11
3	Siluriformes	10
4	Synbranchiformes	3
5	Osteoglossiformes	2
6	Clupeiformes	2
7	Beloniformes	1

Table 3: Family of Identified Species With No. Of Species:-

SL. No	Family	No. Of Species
1	Cyprinidae	20
2	Channidae	5
3	Ambassidae	5
4	Schilbeidae	3
5	Notopteridae	2
6	Mastacembelidae	2
7	Sisoridae	2
8	Bagridae	1
9	Clupeidae	1
10	Heteropneustidae	1
11	Siluridae	1
12	Synbranchidae	1
13	Claridae	1
14	Gobidae	1
15	Belonidae	1
16	Psilorhynchidae	1
17	Balitoridae	1

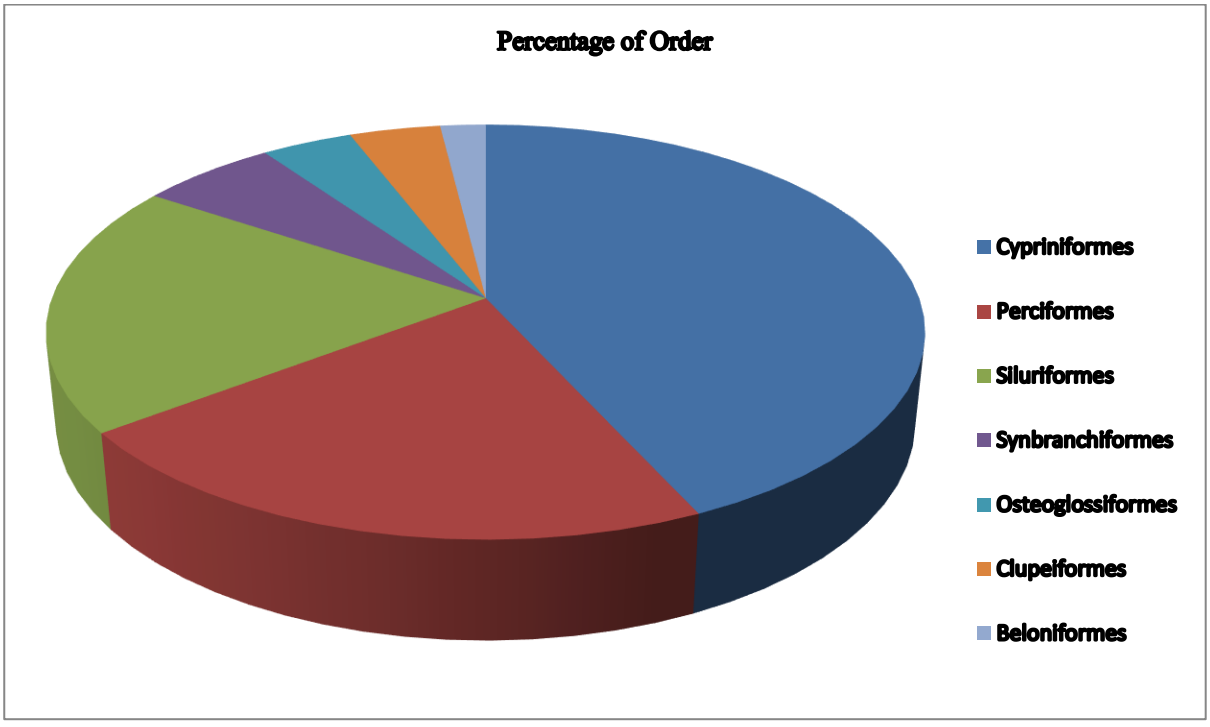

Fig: Pie Diagram Of Different Order Of Fishes

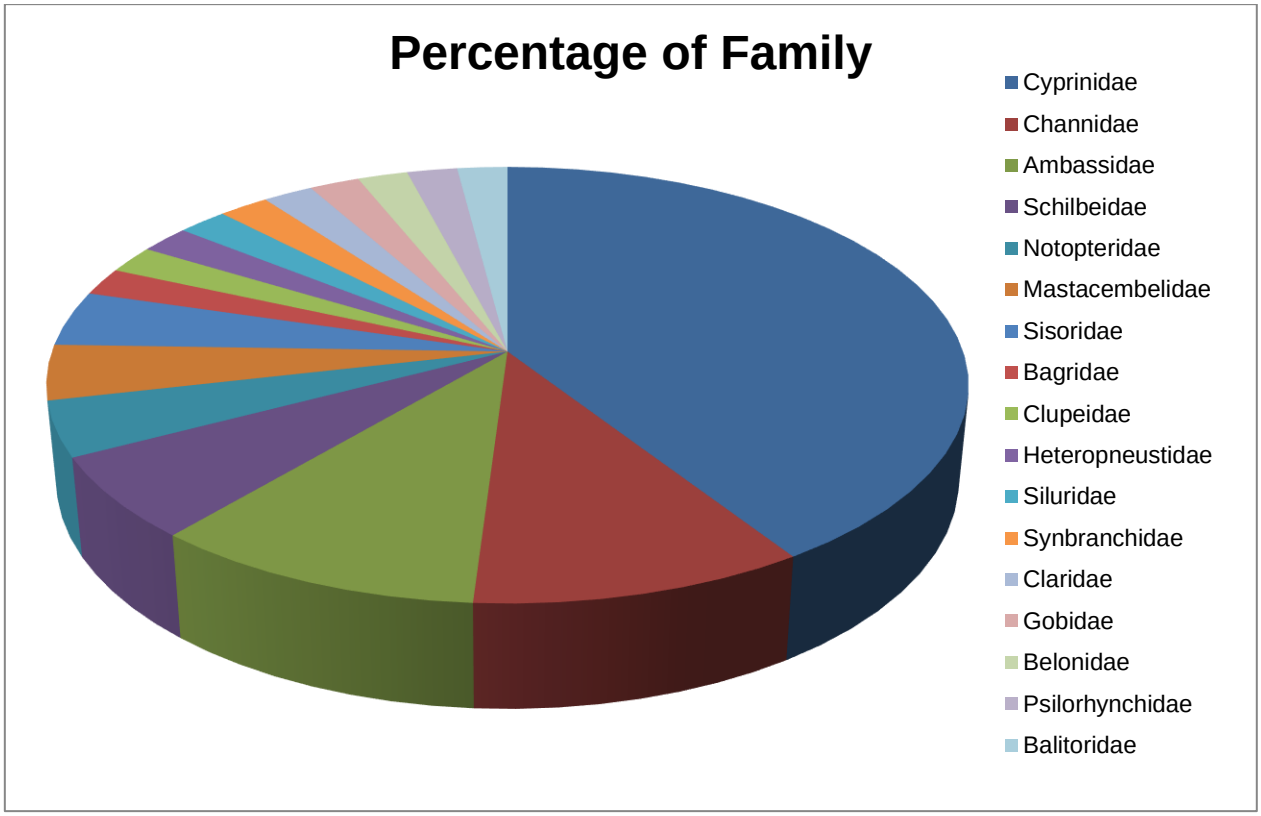

Fig: Pie Diagram Of Different Family Of Fishes

CONCLUSION:

In Conclusion Documentation Of Biodiversity Of Fish Is One Of The Most Important Aspects Of Study From Ichthyological Point Of View.NoFishing Should Be Allowed During Spawning Season Especially With Mosquito Nets For Sustainable Ecosystem Management As Well As To Sustain The Identified Fish Fauna In The Beel. People Should Be Aware About The Threatening Factors Responsible For Declining Of Fish Fauna Of The River.

ACKNOWLEDGEMENT:

I Would Like To Acknowledge To Faculty Member Of DeptOf Zoology ,Bhattadev University For The Help In Preparing The Manuscript And The Laboratory Staff For Their Guidance During Field Visit. I Would Also Like To Thank To Mr. TilakBaroFor Rendering His Valueable Time In Laboratory With Me And Special Thanks To Mr. Nilim Kr. Goswami For His Help .

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