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RESEARCH ARTICLE

ICHTHYOFAUNISTIC RESOURCES OF TRIPURA: AN OVERVIEW

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ABSTRACT

Being a part of North – East India, which is one of the hot spots of freshwater biodiversity in the world, Tripura afford lucrative habitats for variety of Ichthyo fauna in its lotic and lentic ecosystems and shares fish genetic resources with Indo-Gangetic plains. Among the North Eastern States, in terms of number of available fish species, Tripura stands third. It posses 147 species belonging to 79 genera under 34 families and 11 orders, which is 18% of Indian fresh water fishes and 54.3% of fish species of North East India. Among these species, 12 are exotic and rest are endemic, 5 species are endangerd and 10 are vulnerable.Except few almost all have food value and 64% have ornamental value. The state possess 6 species of cold water fishes. *Barilius nelsoni*, is a species, which has only been recorded from Tripura by Barman (2002). Marine/estuarine species (6 in number) are also available, which are migratory. Anthropogenic stress, which includes exploitation by wild collection and destruction of natural habitats is playing role in depletion of number of species. Though there are steady growth in fish production, emphasis on semi-intensive major carps culture playing negative role in depleting Inchthyo fauna resources of the state, which necessitates relook the issue.

INTRODUCTION

Tripura is a small state located at the south western extremity of North Eastern Region of India. It covers an area of 10,491.69 sq km and is bounded by the latitude 22.56' – 24.32' and longitude 91.10' – 91.51'. The state has only rainfed freshwater facilities covering rivers/rivulets, reservoir/lakes, ponds/tanks and mini barrages. Category wise aqua – resource pattern of the state (2012 – 13) is as follows:

Rivers/rivulets –4728.96 hac.
Reservoir (Gomti) – 3049.34 hac.
Natural Lake (Rudrasagar)-100.46 hac.
Mini barrages-8864.54 hac.
Ponds/Tanks-14620.19 hac.
Total=31363.49 hac.

North – East India is considered as one of the hot spots of freshwater biodiversity in the world (Kottelat and Whilten, 1996), and being a part of this, the state of Tripura afford lucrative habitats for variety of Ichthyo fauna in its lotic and lentic ecosystems, which constitute 25.12 percent and 74.88 percent respectively of its total water bodies. Though in recent times, production of fish in the state has increased manifold, it is feared that, its Ichthyo diversity might have decreased. Number of researchers (Barman, 2002; Mahanta *et al.*, 2004; Sarkar *et al.*, 2004; Singh, 2004, Annonymous, 2004) have given different and fragmented figures in regards to availability of total number of fish species, which necessitate a consolidated updated list. In this context, an attempt has been made in this communication to provide a comprehensive and updated account of the ichthyo faunistic resources of the state with information on local name, exotic or endemic, status utilization pattern, conservation status based on extensive literature review, interactions and field observations.

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MATERIALS AND METHODS

With a view to prepare a consolidated updated list of the Ichthyo-faunistic resources of Tripura, in first phase, the authors collected all available published reports and informations (Barmam, 2002; Mahanta *et al*., 2004; Sarkar *et al*., 2004; Singh, 2004; Annonymous, 2004). Second phase was screening of the same and preparation of a draft list. In third phase, interactions with fish growers fishers, fish traders, fishery officials and field observations were made at different locations of the state. In fourth and final phase, the results obtained from field observations and interactions/discussions were collated with the draft list. During field observations, certain species were found which needed identification. In most of the cases, these were identified in the field itself. Specimens, that could not be identified in the field were preserved in 5% formalin and identified in the laboratory. Identifications were based on standard manuals (Sen, 1985; Talwar and Jhingran, 1991) and nomenclature was as per Talwar and Jhingram (1991) and Jayaram(1999).

Observations

A consolidated updated list of the Ichthyofaunistic Resources of Tripura, which could be prepared given at Table – I. The list also contains species wise information on local name, habitat, utilization value, whether endemic or exotic and conservation status. It appears that, as per CAMP report(1998) 5 out of 147 species are endangered (viz., *Notopterus chitala, Puntius clavatus clavatus, Pseudeutropius atherinoides, Laguvia ribeiroi ribeiroi, Glyptothorax cavia* are endangered) and 10 species (viz., *Aspidoparia jaya, Barilus barila, Puntius chola, Puntius conchonius, Mystus vittatus, Ailla coila, Clarius batrachus, Sicamugil cascasia, Anabas testudineus, Puntius sarana sarana*) are vulnerable. All most all the fishes have food value except few and 64 percent of the total available fish species have ornamental value. As many as 12 species, viz., *H. motitrix, H. nobilis, O. mossambica, O. nilotica, P. javanicus, P. suchi, C. idellus* are exotic and rest are indigenous. The species *Barilius nelsoni* is one, which has only been recorded till date from Tripura (Barman, 2002).

Table 1. Ichthyo faunistic Resources of Tripura

Order	Family	Genus	Scientific Name	Local Name	Exotic or Indigeneous Endemic	UtilisationValue (Food/ Ornament/ Sport	Conservation Status (As per CAMP report, 1998)
Anguilliformes	Anguillidae	Anguilla	*A.bengalensis bengalensis*		Indigeneous	F	NE
	Ophichthidae	Pisodonophis	*P. boro*	Ghaoura	Indigeneous	F,O	NE
Clupei formes	Clupeidae	Hilsa	*H.ilisha*	Ilish	Indigeneous	F	NE
		Gudusia	*G.chapra*	Chapila	Indigeneous	F	LR-nt
		Nematolosa	*N. nasus*		Indigeneous		NE
Osteoglossiformes	Notopteridae	Notopterus	*N. notopterus*	Kanla	Indigeneous	F,O	LR-nt
			N. chitala	Chital	Indigeneous	F,O,S	EN
Cypriniformes	Cyprinidae	Chela	*C. cachius*	Chapkhowari/ Kachhi	Indigeneous	F,O	NE
			C. laubuca	Chapkhowari	Indigeneous	F,O	LR-lc
		Esomus	*E. danricus*	Darkina	Indigeneous (Endemic)	F,O	LR-nt
		Danio	*D. aequipinnatus*	Rakhali/ Ghila	Indigeneous	F,O	NE
			D. dangila	Naptamach	Indigeneous	F,O	NE
			D. devario	Nipati	Indigeneous	F,O	LR-nt
			D. rerio	Anju	Indigeneous	O	LR-nt
		Rasbora	*R. daniconius daniconius*	Darkina	Indigeneous	F,O	LR-nt
			R. elanga	Ramdarkina/Baradarkia	Indigeneous	F,O	
		Salmostoma	*S. bacaila*	Katari	Indigeneous	F,O	LR-lc
			S.clupeoides	Katari/Selkona	Indigeneous	F	NE
		Hypophthalmichthys	*H.molitrix*	Silver Carp	Exotic	F	
			H. nobilis	Big head	Exotic	F	
		Aspidoparia	*A. jaya*	Chola/Bariala	Indigeneous	F,O	Vu
			A. morar	Morari/Morar	Indigeneous	F,O	LR-nt
		Amblypharyngodon	*A. mola*	Maka / Malaya	Indigeneous	F,O	LR-lc
		Barilius	*B. bendelisis*	Khoksa / Joia	Indigeneous	F,O	NE
			B. barila	Gilland / Caedora	Indigeneous	F,O	Vu
			B. barna	Bhola / Ghol	Indigeneous	F,O	LR-nt
			B. gatensis		Indigeneous		LR-nt
			B. shacra	Koksha	Indigeneous (Endemic)	F,O	LR-nt
			B. tileo		Indigeneous	F,O	LR-nt
			B. nelsoni		Indigeneous		
		Raiamas	*R. bola*	Bola/Bhola/Goha	Indigeneous	F,S	
		Cyprinus	*C. carpio communis*	Carpio/Japanirui	Exotic	F	
			C. carpio spcularis	Carpio/Japanirui	Exotic	F	
			C. carpio nudus	Carpio/Japanirui	Exotic	F	
		Semiplotus	*S. semiplotus*		Indigeneous	F	Vu

	Puntius	*P. clavatus clavatus*	Titputi	Indigeneous (Endemic)	F	EN
		P. chola	Titputi	Indigeneous (Endemic)	F	Vu
		P. conchonius	Titputi / Kanchan Puti	Indigeneous	F.O.	Vu
		P. gelius	Puti	Indigeneous	F.	NE
		P. sophore	Titputi	Indigeneous	F.O.	LR-nt
		P. ticto ticto	Titputi	Indigeneous	F.O.	LR-nt
		P. filamentosus	Puti	Indigeneous	F.O.	NE
		P. sarana sarana	Puta/ Sar Puti	Indigeneous	F	Vu
		P. sarana orphoides	Puta/ Sar Puti	Indigeneous	F	
		P. terio	Puti	Indigeneous	F	LR-nt
		P.javanicus	Japani Puti	Exotic	F	LR-nt
	Osteobrama	*O. cotio cotio*	Ghila Khani	Indigeneous	F.O	LR-nt
	Schismatorhynchus	*S. nukta*	Nakpachi	Indigeneous	F	
	Labeo	*L. bata*	Bata	Indigeneous	F	LR-nt
		L. boga	Babum bata	Indigeneous	F	LR-nt
		L. calbasu	Baush / Kalibaush	Indigeneous	F, S	LR-nt
		L. dero	Kursha	Indigeneous	F	Vu
		L. gonius	Goinya	Indigeneous	F	LR-nt
		L.dyocheilus	Nuktuli	Indigeneous	F	Vu
		L. nandina	Nandina	Indigeneous	F	NE
		L. pangusia	Loannee/Utti	Indigeneous	F	LR-nt
		L. rohita	Rui/Ruhu	Indigeneous	F.S	LR-nt
	Chagunius	*C. chagunius*		Indigeneous		NE
	Tor	*T. putitora*	Mahasol/Mahaseer	Indigeneous	F	EN
		T. tor	Mahasol/Mahaseer	Indigeneous	F	EN
	Cirrhinus	*C. mrigala*	Mikra/Mrigal	Indigeneous	F	LR-nt
		C. reba	Bhagna	Indigeneous	F	Vu
	Catla	*C. catla*	Katla/Catla	Indigeneous	F, S	Vu
	Ctenopharyngodon	*C. idella*	Grass carp	Exotic	F	
	Crossocheilus	*C. latius latius*	Kala bata	Indigeneous (Endemic)		NE
	Garra	*G.gotyla gotyla*	Ghor poia	Indigeneous	O	Vu
Psilorhynchidae	Psilorhynchus	*P. balitora*		Indigeneous	O	NE
		P. sucatio		Indigeneous	O	EN
Homalopteridae	Noemacheilus	*N. aurius*	Gutum	Indigeneous	F, O	
		N. botia	Gutum	Indigeneous	F, O	LR-nt
		N. scaturigina	Gutum	Indigeneous	F, O	Vu
		N. spilopterus	Gutum	Indigeneous	F, O	
Cobitidae	Botia	*B. dario*	Ranimach / Betrangi	Indigeneous	F, O	NE
		B. rostrata	Ranimach / Betrangi	Indigeneous	F, O	NE
	Somileptes	*S. gongota*	Ghorpoia	Indigeneous	O	LR-nt
	Lepidocephalus	*L. annandalei*	Gutum	Indigeneous (Endemic)	F, O	LR-nt

		L. berdmorei	Gutum		Indigeneous	F, O	EN
		L. guntea	Gutum		Indigeneous	F, O	NE
Siluriformes	Bagridae	Rita	*R. rita*	Rita	Indigeneous	O	NE
		Batasio	*B. batasio*	Bajari	Indigeneous	F	NE
		Mystus	*M.bleekeri*	Kala gulaya	Indigeneous	F, O	Vu
			M. vittatus	Tengra	Indigeneous	F, O	Vu
			M. tengara	Bajori	Indigeneous	F, O	LR-nt
			M. gulio	Tengra	Indigeneous	F, O	
			M. cavasius	Sadagulaya	Indigeneous	F	LR-nt
		Aorichthys	*A. aor*	Aor / Aire	Indigeneous	F	NE
			A. seenghala	Guchiaire	Indigeneous	F	NE
	Siluridae	Ompok	*O. bimaculatus*	Pabda/Nanipabda	Indigeneous	F, O	EN
			O. pabda	Pabda	Indigeneous	F, O	EN
			O.pabo	Pabda	Indigeneous	F, O	NE
		Wallago	*W. attu*	Boal	Indigeneous	F	LR-nt
	Schilbeidae	Ailia	*A. coila*	Baspati/Kajuli	Indigeneous	F, O	Vu
		Pseudeutropius	*P. atherinoides*	Aaoiuya	Indigeneous	F, O	EN
		Clupisoma	*C. gaura*	Gaoura	Indigeneous	F	Vu
			C. montana	Gaoura	Indigeneous	F	
		Eutropiichthys	*E. murius*	Muribacha	Indigeneous	F	LR-nt
			E. vacha	Bacha.	Indigeneous	F	EN
		Silonia	*S. silondia*	Silon	Indigeneous	F	LR-nt
	Pangasiidae	Pangasius	*P. pangasius*	Pangash	Indigeneous	F	CR
			P. sut chi	Pangash	Exotic	F	
	Amblycipitidae	Amblyceps	*A. mangois*		Indigeneous		LR-nt
	Sisoridae	Bagarius	*B.* bagarius	Baghmaach/Baghaie	Indigeneous	F, O	Vu
		Gagata	*G.cenia*	Ghoratengra/Jungla	Indigeneous	O	NE
		Nangra	*N.viridescens*		Indigeneous	O	NE
		Erethistoides	*E.montana montana*		Indigeneous	O	NE
		Hara	*H. hara*	Gagot	Indigeneous	O	NE
		Laguvia	*L. ribeiroi ribeiroi*		Indigeneous	O	NE
		Glyptothorax	*G. cavia*		Indigeneous (Endemic)	O	NE
			G. conirostrae conirostrae		Indigeneous	O	
			G. telchitta telchitta		Indigeneous	O	LR-nt
	Clariidae	Clarias	*C. batrachus*	Magur/Jagur	Indigeneous	F, O	Vu
			C.gariepinus	African magur	Exotic	F	
	Heteropneustidae	Heteropneustes	*H.fossilis*	Sing/Singhi	Indigeneous (Endemic)	F, O	Vu
	Chacidae	Chaca	*C. chaca*	Kut kutya	Indigeneous	O	EN
	Olyridae	Olyra	*O.kempi*	Bhot singhi	Indigeneous	O	
			O.longicaudata	Bhot singhi	Indigeneous (Endemic)	O	NE
	Belonidae	Strongylura	*S. strongylura*	Ek-thutta	Indigeneous	O	
		Xenentodon	*X.cancila*	Kakya	Indigeneous	F, O	LR-nt

Atheriniformes	Cyprinodontidae	Aplocheilus	*A. panchax*	Chokhoni	Indigeneous	O	Vu
	Oryziatidae	Oryzias	*O. melastigma*	Sadachokhoni	Indigeneous	O	
Channiformes	Channidae	Channa	*C.barca*	Boracheng	Indigeneous	O	NE
			C. marulius	Gajar/Sal	Indigeneous	F, O	LR-nt
			C.orientalis	Cheng	Indigeneous	F, O	Vu
			C. punctatus	Taki/Lati	Indigeneous	F, O	LR-nt
			C. striatus	Sholmaach	Indigeneous	F, O	LR-nt
Synbranchiformes	Synbranchidae	Monopterus	*M.cuchia*	Kuchia	Indigeneous	F, O	LR-nt
Perciformes	Chandidae	Chanda	*C.baculis*	Chanda	Indigeneous	F, O	LR-ic
			C. nama	Chepta Chanda	Indigeneous	F, O	NE
			C.ranga	Taka Chanda	Indigeneous	F, O	NE
	Sciaenidae	Johnius	*J.coitor*		Indigeneous		NE
	Nandidae	Badis	*B.badis*	Bot-Koi	Indigeneous	O	NE
		Nandus	*N.nandus*	Meni/Bheda	Indigeneous	F, O	LR-nt
	Cichlidae	Oreochromis	*O.mossambica*	Tilapia	Exotic	F, O	
			O.nilotica	Nilotica/Tilapia	Exotic	F, O	
	Mugilidae	Sicamugil	*S.cascasia*	Nadirbata	Indigeneous	F	Vu
		Rhinomugil	*R.corsula*	Corsula	Indigeneous	F	NE
	Gobiidae	Glossogobius	*G.giuris*	Belay/Bhalia	Indigeneous	F, O	NE
		Apocryptes	*A.bato*		Indigeneous		NE
	Anabantidae	Anabas	*A.testudineus*	Koi	Indigeneous	F	Vu
	Belontidae	Colisa	*C.fasciata*	Khalisha	Indigeneous	F, O	LR-nt
			C. sota/chuna	Chuna/Dora Khalisha	Indigeneous	F, O	NE
			C.lalia	Boicha	Indigeneous	F, O	NE
	Osphronemidae	Osphronemus	*O.goramy*	Gouramy	Exotic	O	
Mastacembeli formes	Mastacembelidae	Macrognathus	*M.aculeatus*	Goichibaim	Indigeneous	F, O	LR-nt
		Mastacembelus	*M.armatus armatus*	Tara Baim	Indigeneous	F, O	NE
			M.pancalus	Baim	Indigeneous	F, O	NE
Tetraodonti formes	Tetraodontidae	Tetraodon	*T.cutcutia*	Futka/Tepa	Indigeneous	O	Lr - nt

6 migratory species i.e. marine / estuarine species also enters freshwater rivers in Tripura which are *Pisodonophis boro, Nematolosa nasus, Hilsa ilisha, Strogylura strongyhura, Rhinomugil corsula and Apocryptes bato*. Cold Water (temp between 0 – 20^{0}C with optimal range 10 - 12^{0}C) fishes found in the state are *T. tor, T. putitora, Garra gotyla, Barilius bendelisis, Barilius gatensis and Barilius shacra*.

DISCUSSION

The North Eastern States which includes Assam, Arunachal Pradesh, Meghalaya, Tripura, Manipur, Nagaland and Mizoram share its fish genetic resources with that of the Indo-Gangetic plains and to a lesser extent with the Mynmar's and South Chinese fauna (Sugunan, 2004). However, Tripura shares its fish genetic resources only with that of Indo-Gangetic plains. So far, 267 fish species belonging to 114 genera under 38 families and 10 orders have been recorded and reported from entire North Rastern Region, which is approproximately 33.13% of total Indian freshwater fishes (Sen, 2000). In this communication, consolidated updated list of 147 fish species of Tripura belonging to 79 genera under 34 families and 11 orders has been presented, which is 18 % of Indian freshwater fishes and 54.3% of the available fish species of entire north east. The diversity of Ichthyo fauna available in the state reveal a wide range of both riverine and torrential forms alongwith some freshwater visiting marine forms (6 species in number) or in other words the migratory forms (Barman, 2002). Among the different states of North-East India, in terms of number of available fish species, Tripura stands third. Assam has largest number of ichthyospecies (200), followed by Arunachalpradesh (167). In Tripura, number of Ichthyospecies is 147, followed by Manipur (121). Nagaland and Mizoram have 68 and 48 species respectively (Sugunan, 2004). From interactions/discussion as well as observations, it appeared that, number of different species reported in the Table are presently not frequently found. Anthropogenic stress, which includes exploitation by wild collection and destruction of natural habitats might have played role in depletion of the number of different species. Tripura recorded steady growth in its fishery sector in last few years as the state Government has adopted a Perspective Plan to achieve self sufficiency in fish production. The emphasis on semi-intensive major carps culture, also playing negative role seriously in depletion of species diversity. There are also negative role of the use of piscicide of inorganic origin. In this context, need of the hour is to keep vigilance on the diversity of Ichthyo fauna of the state through regular surveys, stoppage of overexploitation and habitat destruction. To attain self – sufficiency in fish production, the state certainly needs steady growth of fish production, but it should not be at the cost of Ichthyo fauna destruction. Hence, present initiation of semi-intensive major carps culture is needed to be relooked.

REFERENCE

Annonymous. 2004. Fish Fauna of Tripura (Vol.1) Department of Fisheries, Govt. of Tripura, 23 p.

Barman, R.P. (2002). Pisces: Fresh water Fishes. *In*: Fauna of Tripura (Part 1), State Fauna Series – 7. ZSI, Calcutta. pp. 191 – 320.

CAMP. 1998. Report of the workshop on conservation assessment and management plan (CAMP) for freshwater fishes of India. Zoo outreach organization and NBFGR, Lucknow, 22 – 26 September, 1997, 156p.

Joyram, K.C. 1999. The fresh water fishes of the Indian Region. Narendra Publishing House, Delhi, p. 551.

Kottelat, M and Whitten, T.1996. Fresh-water biodiversity in Asia with special reference to fish. World Bank Tech. Paper No. 343. The World Bank, Washington, DC, pp. 17 – 22.

Mahanta, P.C, Tyagi, L.K, Kapoor, D. and Ponniah, A.G. 2004. Integration of Fish biodiversity conservation and development of Fisheries in North Eastern Region : Issues and Approach. pp. 14 –20. *In*: P.C.Mahanta and L.K. Tyagi (Eds). Participatory Approach for Fish biodiversity conservation in North East India. NBFGR Publ., Lucknow. 412 p.

Sarkar, U.K, Pathak, A.K, Tyagi, L.K, Singh, S.P, Basheer, V.S. and Paul, S.K. 2004. Need for creation of fresh water aquatic conservation zone in North Eastern Region in India. pp. 353 – 358. *In*: P.C.Mahanta and L.K. Tyagi (Eds). Participatory Approach for Fish biodiversity conservation in North East India. NBFGR Publ., Lucknow. 412 p.

Sen, N. 2000. Occurance, distribution and status of diversified fish fauna of north east India, pp. 33 – 48. In: Fish Biodiversity of North East India (Eds. Ponniah, A.G and Sarkar, U.K.). NATP Publ. NO. 2, NBFGR, Lucknow.

Sen, T.K. 1985. The fish fauna of Assam and the neighbouring Northeastern States of India. Occasional paper No. 64, Records of Zoological Region of India. In: Threatened fishes of India (Eds. Dehadrai, P.V., Das, P and Verma, S.R), Nature Conservators, Muzaffarnagar, p. 173 – 176.

Singh, A.K. 2004. Participatory approach to develop the threatened fishery of North Eastern Region. pp. 315 – 320. *In*: P.C.Mahanta and L.K. Tyagi (Eds). Participatory Approach for Fish biodiversity cons ervation in North East India. NBFGR Publ., Lucknow. 412 p.

Sugunan, V. V. 2004. Fishery Resource potential of the North Eastern Region. In: Participatory approach for fish biodiversity conservation in North East India (Eds. Mahanta, P.C. and Tyagi, L.K.), NBFGR, Lucknow. p. 21 – 32.

Talwar, P.K. and Jhingran, A.G. 1991. Inland Fishes of India and Adjacent countries. (vols 1 & 2). New Delhi: Oxford and IBH.

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