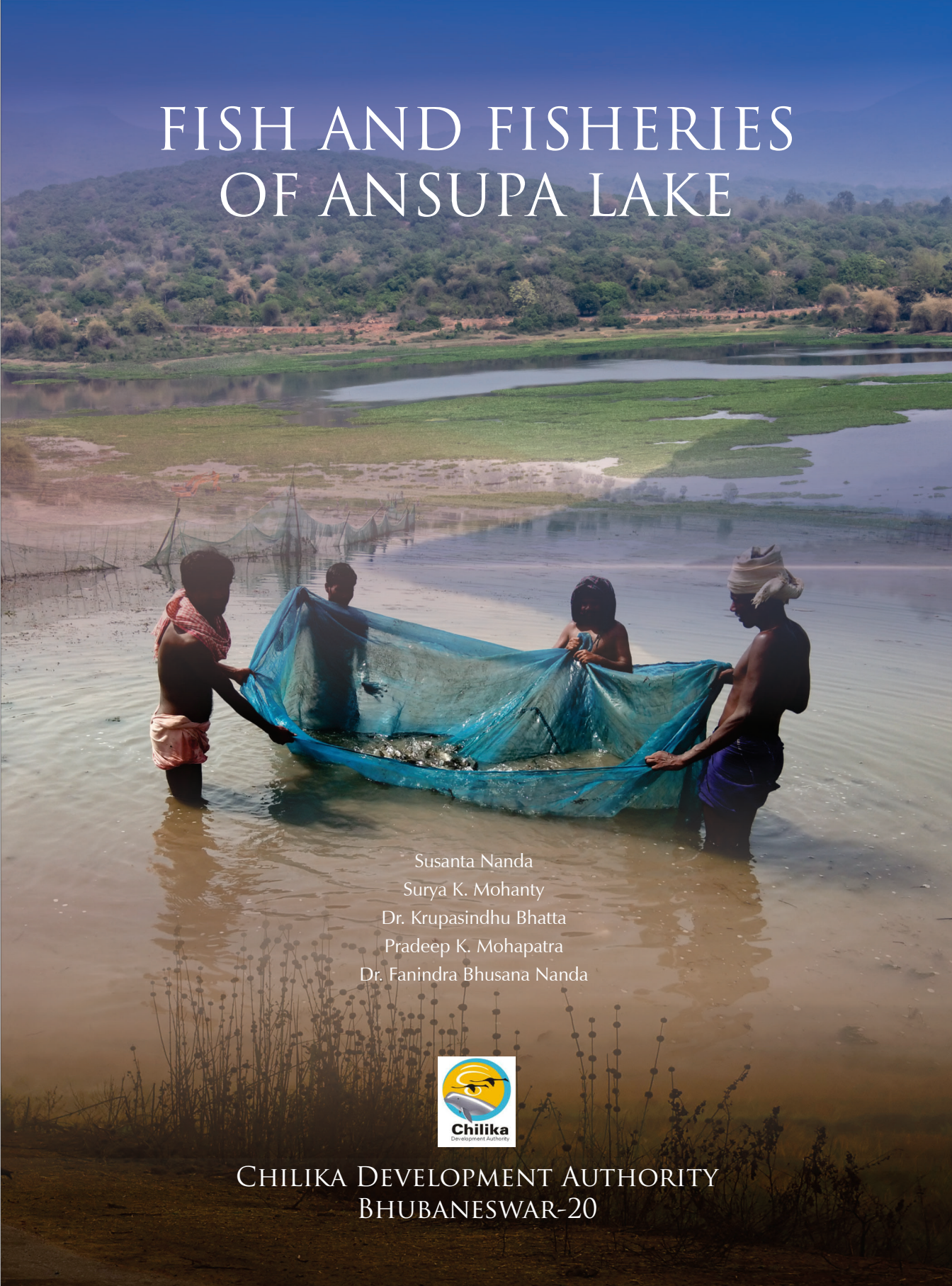
FISH AND FISHERIES OF ANSUPA LAKE



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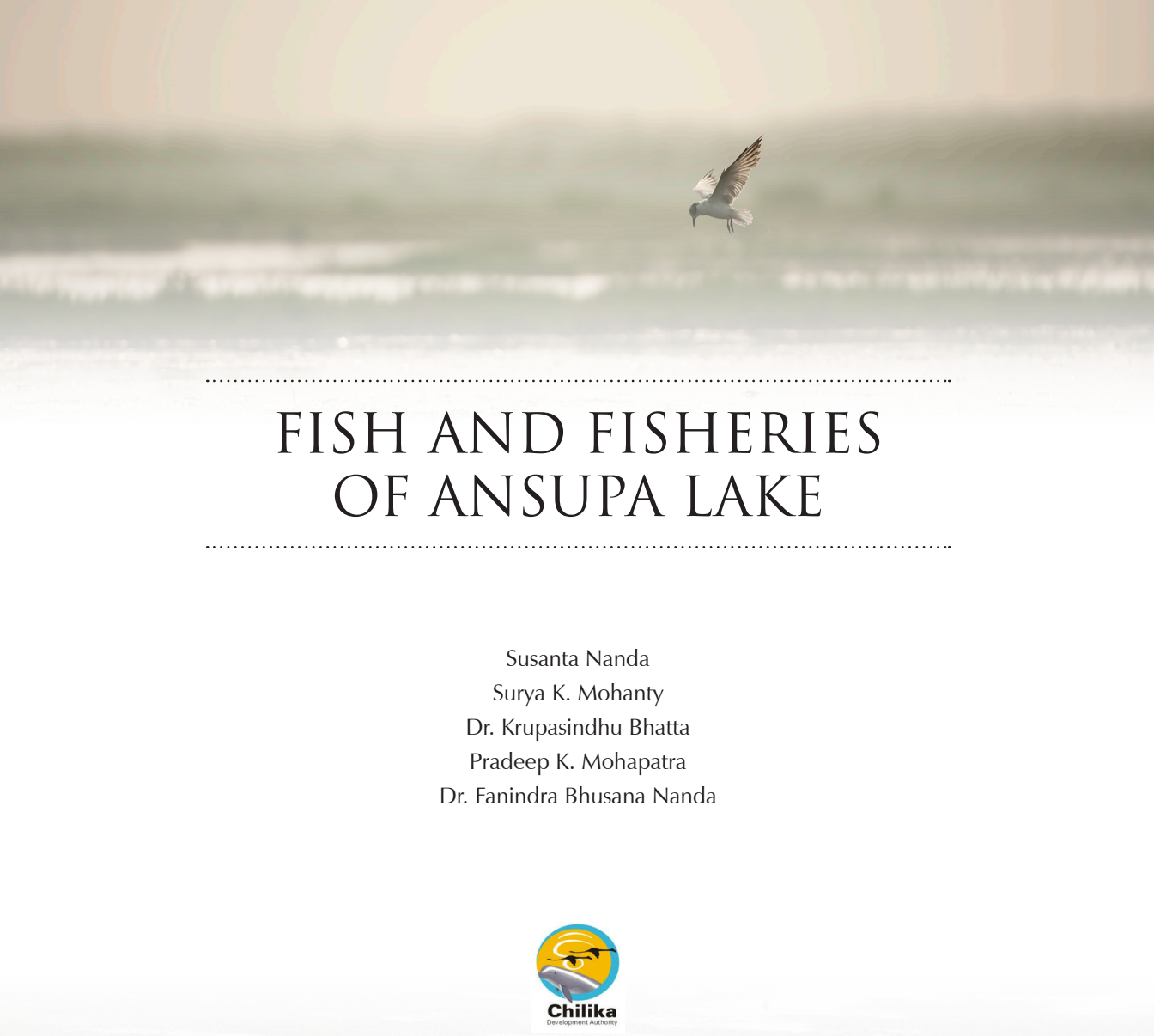
CHILIKA DEVELOPMENT AUTHORITY
BHUBANESWAR-20



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PREFACE

Ansupa is the largest freshwater lake in Odisha situated in Banki subdivision of Cuttack district and lying on the northern bank of Mahanadi River (20.26'28.43" to 28.28'34.44" latitude and 85.35'56.74" to 85.36'30.01" longitude) and is an extremely picturesque lake holding a prominent position in the tourist map of Odisha for its beauty. This freshwater lake is bounded by the "Saranda" hills on the western side and the "Bishnupur" hills on its north eastern side being a part of eastern ghats. Ansupa is known as an important inland wetland in Odisha being categorized as floodplain wetland performing many important ecological functions. The water spread area of the lake is 382 acres (154.5 ha) with 5231 ha catchment area. Ansupa is connected with Mahanadi River on its southern side with a channel called Kabullah nullah through which the flood water of the River Mahanadi passes the wetland. Due to the enriched flora and fauna and its attractive surroundings, the lake is known as a famous eco-tourism spot. People living in and around the wetland are dependent on its resources including fisheries and aquatic macrophytes for their livelihoods.

Importance of wetlands for sustainable livelihoods are well known and therefore Ansupa wetland is also important to the livelihood improvements of the local communities, who are dependent on the wetland resources. Macrophytes and fisheries resources are quite rich in Ansupa wetland. It is understood from the historical records that Ansupa fisheries was very much flourished in the past, producing, on an average, about 60 – 70 tonnes of freshwater fishes comprising Indian major and minor carps, catfishes, murrels and small indigenous fish species during 1950s and 60s. Due to various ecological degradation like siltation, decease in flow circulation of water, closure of inlet and outlet mechanism of flow of water, weed infestation and eutrophic condition, eco-degradation in the lake started in 1970s. The pristine blue water beauty of the lake gradually became covered with invasive weeds with the passage time. The connectivity of the lake with River Mahanadi became gradually squeezed and auto recruitment of fishes from River was adversely affected and there was a gradual decline in fisheries of Ansupa lake. The fish production gradually declined from mid 70s and sharp decline started from 1984 onwards.

However, the management intervention by the Department of Fisheries with stocking of carp fingerlings in the lake during mid 80s contributed to the improvement in the fisheries of Ansupa. Regular stocking of the lake with Indian major carp and grass carp fingerlings by Chilika Development Authority has significantly enhanced the annual fish yield to the extent of 28.8 tonnes during 2017-18. Fisheries Resources Development program in Ansupa with the funding support from the MoEF and CC under National Plan for Conservation of Aquatic Eco-systems (NPCA) with effect from 2017-18 are being implemented by Chilika Development Authority, mainly focusing on raising of large size healthy fingerlings of major carps and grass carps through in-situ cage culture in the lake.

Comprehensive review of literatures has revealed that a total of 61 fish species and 5 number of freshwater prawn species have been reported from Ansupa lake so far. Although a good number of ornamental fishes were available in Ansupa wetland but those were neither identified nor documented earlier. Similarly small indigenous fish species were not listed earlier and evaluated for their nutritional values. In the present publication both ornamental fish species of Ansupa has been listed and small indigenous fish species have been evaluated. The book has been prepared in easy-to-read manner, supported by images (monograph of fish and prawn species). A comprehensive systematic checklist of 61 fish species of Ansupa lake along with their conservation status and biodiversity assessment have been provided in this book. Besides, traditional fishing crafts, gears and fishing methods and issues related to ecosystem health and fish production are also provided and discussed in this document. An utmost attempt has been made to include all aspects of fish and fisheries of Ansupa lake in this book which was hitherto remained undocumented. We hope the book will be highly useful for researchers, fisheries / wetland managers, teachers, students and common man, besides adding value to the information on Ansupa lake eco-system.

Authors

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1.0 INTRODUCTION

1.1 General Features:

Ansupa, the largest fresh water lake (fig.1) in the state of Odisha is situated in Banki subdivision and Athagarh forest division in Cuttack district being connected with Athagarh town by a 10 kms all-weather road and extends between (20.26'28.43" to 28.28'34.44" latitude and 85.35'56.74" to 85.36'30.01" longitude). The lake lies on the left side of the River Mahanadi. Ansupa lake as seen today comprises about 382 acres (154.5 ha) of total water spread area which includes 152 acres (61.5 ha) of kadalibadi mouza, 138 acres (56 ha) of Bishnupur mouza and 92 acres (37 ha) of Subarnapur mouza.

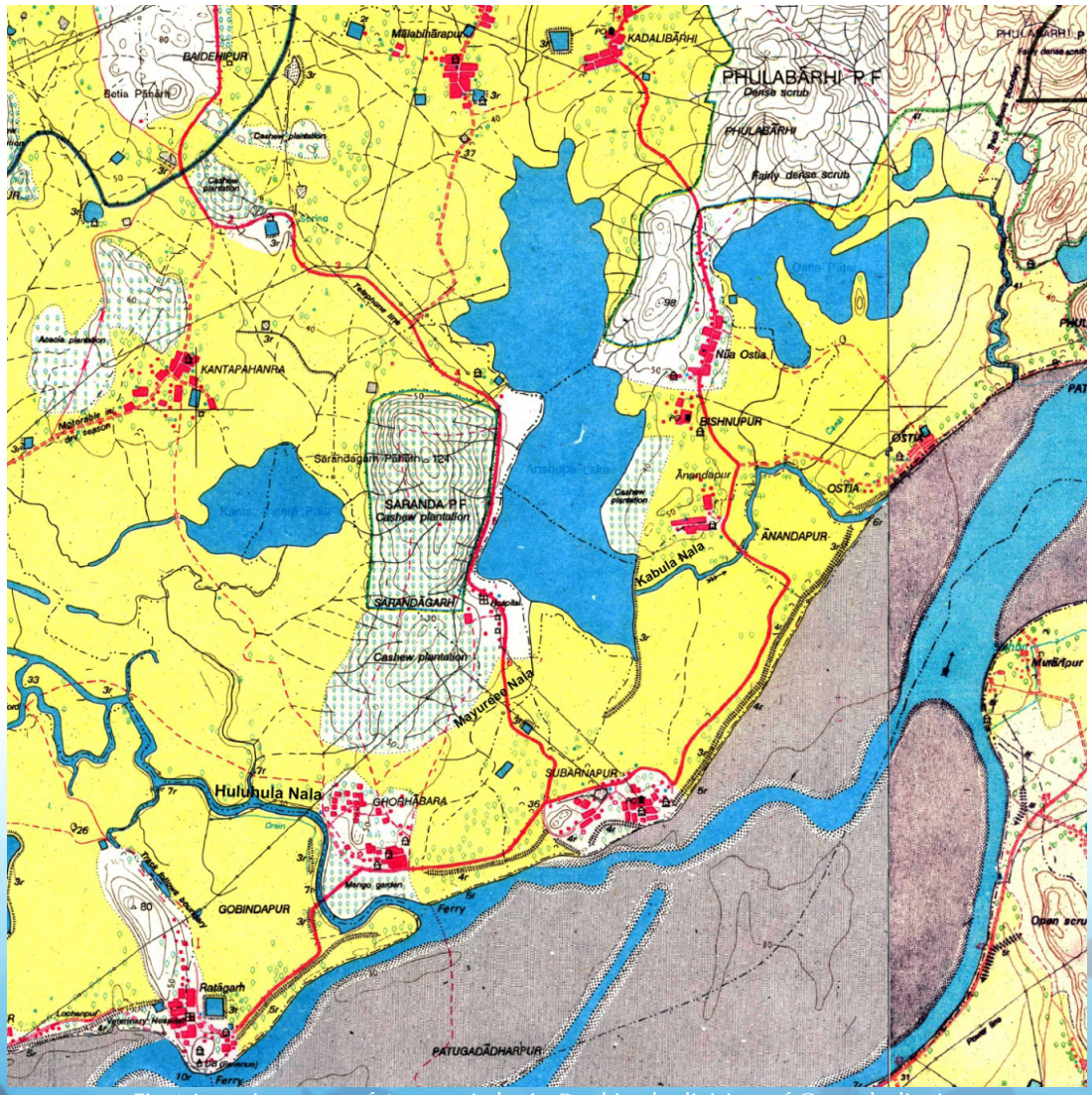


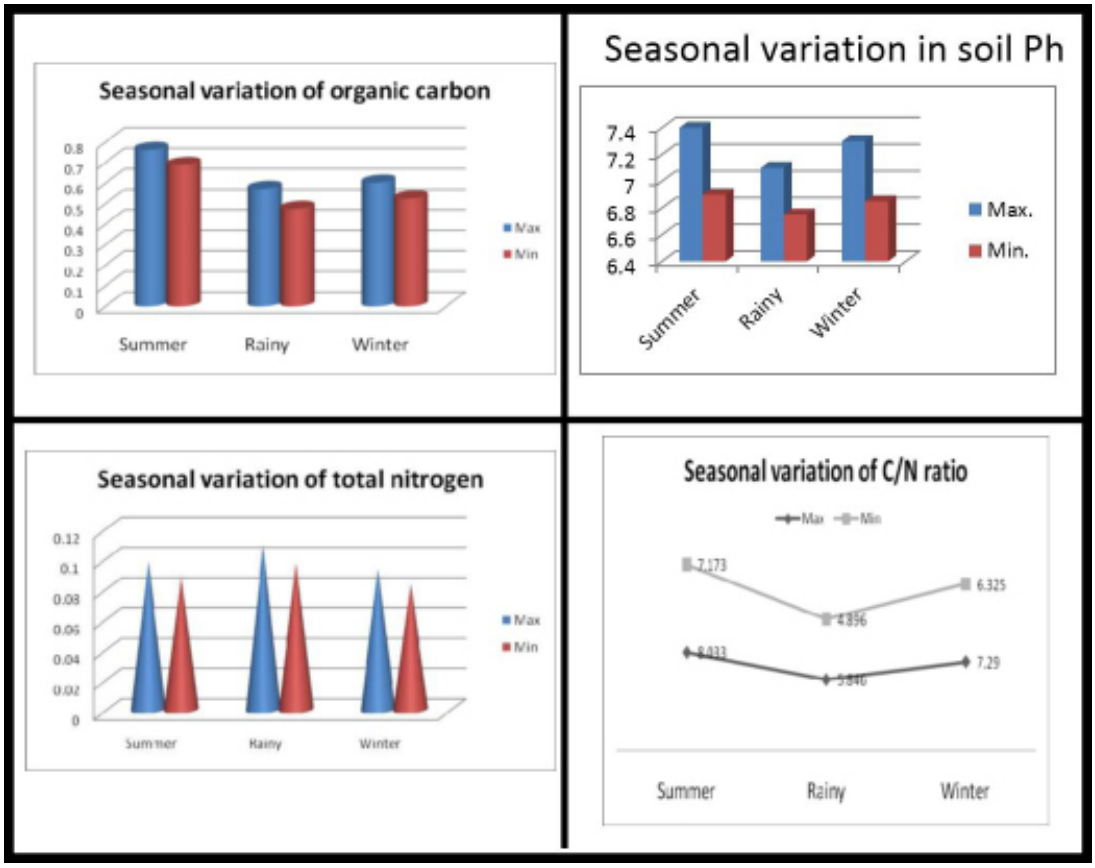
Fig 1 Location map of Ansupa Lake in Banki sub-division of Cuttack district

The lake is bounded by the "Saranda" hills on the western side and the "Bishnupur" hills on its north eastern side. The lake represents the characteristics of a typical ox-bow lake and back swamp lying within the alluvial plane of River Mahanadi on its left. The lake is separated from the River by high natural levee and gets connected with the River only during Monsoon floods through a nallah called kabula nallah near Anandapur village in its south – west side. Kabula nallah acts as both inlet and outlet through which flood water enters the lake and excess water also goes out after the flood. Another channel called "Huluhula" nallah, which was acting as an inlet in the past is now defunct. During a survey in 2001, Chilika Development Authority recorded the maximum death of 3.58 m in the central part of the lake. The department of Fisheries, Odisha in 1992 recorded the death of silt in the lake ranging from 1.5 to 2.5 meter (unpublished report, 1992).

Panda *et.al.,* (2016) reported the water and soil quality of Ansupa lake. The soil of the lake consists of silt loam or clay loan. The margin of the lake is sandy in nature often mixed with clay. The seasonal variation in physico-chemical parameters of Ansupa (table 1) and seasonal variations in organic carbon, soil PH, total nitrogen and C/N ratio fig.2 indicated that the alkaline soil quality is favorable for fishery output.

Table no. 1: Seasonal variation in physico-chemicl parameters on Ansupa Lake

Sl. no.	Parameters	Winter (November - Feb-ruary)		Rainy (July - October)		Summer (March – June)	
		Max.	Min.	Max.	Min.	Max.	Min.
1	Transparency	34.1	30.5	31	20.8	33.0	8.0
2	Air temp. (°C)	28.2	21.8	32.8	29.4	36.3	30.0
3	Water temp. (°C)	25	19.5	34	24	36.0	25.3
4	PH	7.9	7	7.8	7.4	7.6	7.0
5	Total alkanity (Mg/l)	127	100	120	95	132	120
6	Oxygen Demand (DO) (Mg/l)	9.6	8.3	9.8	8	10.5	8.0
7	Biological Oxygen Demand (BOD) (Mg/l)	3.5	2.5	3.1	2.2	4.9	3.0
8	Hardness (Mg/l)	98	73	87	88	99	50
9	Total solid (Mg/l)	20.19	14	24.4	20.2	18.2	14
10	Free CO2 (Mg/l)	19	14	26.2	16	26	12
11	Chloride (Mg/l)	11.36	7.81	12.2	8.2	10.71	8.0
12	Nitrate (Mg/l)	3.16	0.32	3.87	2.28	3.19	0.28
13	Phosphate (Mg/l)	0.076	0.024	0.094	0.032	0.049	0.012
14	Calcium (Mg/l)	15.9	14	16.9	16.2	16.5	14.4
15	Magnesium (Mg/l)	2.73	2.11	2.74	2	2.56	2



Source: Panda et.al.,(2016)

Fig 2: Seasonal variations in organic carbon, soil PH, total nitrogen and C/N ratio

1.2 Biodiversity

The lake is of national importance due to its unique biodiversity character and is a famous natural heritage in the state of Odisha (Das & Mohanty, 2008). This inland wetland is a productive eco-system and represents rich diversity of flora and fauna. The peculiarity in the geographic location coupled with micro – climatic conditions enables the lake for the growth and development of different life forms (Panda *et.al.,* 2016). The biodiversity of Ansupa lake can be mentioned as below.

Phytoplankton:	44 species (Patra and patra, 2007)
Zooplankton:	33 species (Patra and patra, 2007)
Macro-zoobenthos:	4 groups (Annelida, Insecta, Gastropoda, Bivalves) (Mahapatro, 2019 (unpublished).
Fishes:	61 species (Pati, 2008; Das Sarkar *et.al.*,2015; Das *et.al.*,2017; Dash *et.al.*,2018;)
Fresh water prawns:	3 species (CDA, 2014)
Wetland Birds:	85 species (Nanda *et.al.*, 2019)
Mammals:	26 species (Sajan *et.al.,* 2017)
Butterflies:	88 species (Payra, 2019) (unpublished)
Dragonflies & Damselflies:	54 species (Payra, 2019) (unpublished)
Amphibians & Reptiles:	10 species (CDA, 2014)
Wetland Vascular Macrophytes:	244 species (Panda *et.al.,* 2018)

The rich floral diversity of Ansupa is represented by a total of 244 macrophyte species that includes 182 semi-aquatic and 62 obligatory aquatics macrophytes (Panda *et.al.*, 2018). So far 61 finfish species have been recorded from Ansupa lake by various workers. The updated diversity of wetland birds in Ansupa lake has been listed out as 85 species (Nanda *et.al.,*2019). The updated diversity of macrobenthic fauna (7 genera / species) under 4 groups in the lake has been reported by Mahapatro, 2019 (unpublished).

Eco-degradation of Ansupa lake became faster from mid 80s due to various environmental perturbations like siltation, decrease in flow circulation of water, closure of inlet and outlet mechanism of flow of water, highly eutrophic condition, weed infestation and gradual decay leading to increasing organic sedimentation etc., There is rapid proliferation of fresh water weeds in the lake, was due to heavy nutrient loading from peripheral paddy fields.

2.0 Fish Fauna

Das, (2008) reported the occurrence of 24 fish species in Ansupa lake for the first time but he did not provide the list of species. The comprehensive investigation on fish fauna for a period of 2 years study commencing from April-2006 was carried out by Pati, (2008), who reported the maximum Ichthyofaunal diversity of 48 species under 21 families in Ansupa lake. Later, few other workers reported less number of fish species from the lake, most probably due to short period investigation. The major carps, minor carps, large catfishes, small cat fishes, feather backs, air breathing fishes and weed fishes constitute the fish population of the lake. Das Sarkar *et.al.*, (2015) reported 28 fish species from Ansupa lake belonging to 22 genera under 12 families and 7 orders during a short investigation in 2014-15. Das *et.al.,* (2017) while investigating on the present status of fish diversity with special focus on carps and small indigenous fish species in Ansupa lake during a four month study (April to July), 2017, reported a total of 26 fish species belonging to 20 genera under 12 families and 4 orders. They also documented 13 species of carps and 15 small indigenous fish species (SIFs) from the lake. Dash *et.al.,* (2018) conducted a comprehensive study on the Ichthyofaunal diversity during a 9 months investigation (January-September), 2015, recorded 33 finfish species belonging to 8 orders, 18 families and 28 genera. This was the report of second largest diversity after Pati, (2008). This report showed that Perciformes was the most dominant order followed by Cypriniformes. After reviewing the documented fish fauna of Ansupa lake by various workers, a total of 61 finfish species are now documented as updated Ichthyofaunal diversity of Ansupa lake. (table no.2). All 61 species recorded from Ansupa lake are native to Mahanadi River system, since they are auto recruited to the lake from Mahanadi River through inlet connections mainly during monsoon season.

2.1 Checklist of Ansupa Fishes

The systematic checklist of 61 recorded fish species from Ansupa lake with latest valid names and taxonomic positions as per Eschmeyer's catalog of fishes classification (**https://www.calacademy.org/eschmeyers-catalog-of-fishes-classification** visited on 19.10.2019) has been prepared and presented in table no.2. All recorded 61 species are placed under 45 genera, 25 families and 12 orders. The family Anabantidae has been placed under a new order **Anabantiformes** in the latest classification of fishes.

Table 2: Updated Checklist of Ansupa Fishes

(n = 61)

(45 genera; 25 families and 12 orders)

Class	Order	Family	Genus	Species	English common name	Odia local name	IUCN Conservation status
Actinopterygii	Anguilliformes	Anguillidae	*Anguilla*	*Anguilla bengalensis* (Gray, 1831)	Indian mottled eel	Bomi	NT
	Osteoglossiformes	Notopteridae	*Chitala*	*Chitala chitala,* (Hamilton, 1822)	Clown knifefish	Chithala	NT
			Notopterus	*Notopterus notopterus,* (Pallas, 1769)	Bronze featherback	Phali	LC
	Clupeiformes	Clupeidae	*Gudusia*	*Gudusia chapra* (Hamilton, 1822)	Indian river shad	Gudua / Orati	LC
				Gudusia variegata (Day, 1870)	Burmese river shad	Chadma	LC
	Cypriniformes	Cyprinidae	*Amblypharyngodon*	*Amblypharyngodon mola* (Hamilton, 1822)	Mola carplet	Mohurali	LC
			Cirrhinus	*Cirrhinus mrigala* (Hamilton, 1822)	Mrigal carp (Indian major carp)	Mirikali	LC
				Cirrhinus reba (Hamilton, 1822)	Reba carp (Minor carp)	Pohola	LC
			Ctenopharyngodon	*Ctenopharyngodon idella* (Valenciennes, 1844)	Grass carp	Grass carp / dalakhia machha	NE
			Cyprinus	***Cyprinus carpio,*** (Linnaeus, 1758)	Common carp	Bilati rohi	(VU)
			Esomus	*Esomus danrica,* (Hamilton, 1822)	Flying barb	Dandikiri	LC
			Gibelion	*Gibelion catla* (Hamilton, 1822)	Catla (Indian major carp)	Bhakura	LC
			Labeo	*Labeo bata* (Hamilton, 1822)	Bata	Bata	LC
				Labeo calbasu (Hamilton, 1822)	Orangefin labeo	Kala Bainsi	LC
				Labeo rohita (Hamilton, 1822)	Roho labeo / Rohu (Indian major carp)	Rohi	LC
			Laubuka	*Laubuka laubuca* (Hamilton, 1822)	Indian glass barb	Bankoe	LC
				Pethia phutunio, (Hamilton, 1822)	Spotted sail barb	Kuji Kerandi	LC
				Pethia ticto, (Hamilton, 1822)	Ticto barb, Firefin barb	Kuji Karandi	LC

			Pethia				EN in India
			Puntius	*Puntius sophore* (Hamilton, 1822)	Pool barb	Putia Karandi	LC
				Puntius terio (Hamilton, 1822)	Onespot barb	Kakachia kerandi	LC
			Rasbora	*Rasbora daniconius,* (Hamilton, 1822)	Slender rasbora / Blackline rasbora	Jilo / Dandikiri	LC
			Salmostoma	*Salmostoma bacaila* (Hamilton, 1822)	Large rozerbelly minnow	Jaralli / Jellari	LC
			Systomus	*Systomus sarana* (Hamilton, 1822)	Olive barb	Serena	LC, VU/N
			Osteobrama	*Osteobrama cotio* (Hamilton, 1822)	Cotio	Chilti	LC
		Cobitidae	*Lepidocephalichthys*	*Lepidocephalichthys guntea,* (Hamilton, 1822)	Guntea loach	Jimani Todi / Konda Tudi	LC
	Siluriformes	Bagridae	*Mystus*	*Mystus cavasius,* (Hamilton, 1822)	Gangetic mystus	Mani Sira Kantia	LC
				Mystus tengara (Hamilton, 1822)	Tengara catfish	Tengara kantia	LC
				Mystus vittatus (Bloch, 1794)	Striped dwarf catfish	Kantia	LC
			Rita	*Rita Kuturnee* (Sykes,1839)	Deccan Rita	Mussiari	LC
			Sperata	*Sperata seenghala* (Sykes, 1839)	Giant river-catfish	Nadi adi kantia	LC
				Sperata aor (Day, 1870)	Long-whiskered catfish	Ari	LC
		Siluridae	*Ompok*	*Ompok bimaculatus* (Bloch, 1794)	Butter catfish	Ghee Pabata	NT
			Wallago	*Wallago attu* (Bloch & Schneider, 1801)	Wallago/Fresh water shark	Balia	NT
		Ailiidae (Asian schilbeids)	*Ailia*	*Ailia coila* (Hamilton, 1822)	Gangetic ailia	Baunsa patri	NT
		Schilbeidae	*Pachypterus*	*Pachypterus atherinoides* (Bloch,1794)	Indian Potasi	Patasi pabta	LC
			Eutropiichthys	*Eutropiichthys vacha* , (Hamilton, 1822)	Batchwa vacha	Bachha	LC
		Clariidae	*Clarias*	*Clarias magur,* (Hamilton, 1822)	Walking catfish	Magura	EN
		Heteropneustidae	*Heteropneustes*	*Heteropneustes fossilis,* (Bloch, 1794)	Stinging catfish	Singi/Rata	LC
	Synbranchiformes			*Macrognathus pancalus* , (Hamilton, 1822)	Barred spiny eel	Todi	LC

		Mastacembelidae	*Macrognathus*	*Macrognathus aculeatus* (Bloch, 1786)	Lesser spiny eel	Todi	NE
			Mastacembelus	*Mastacembelus armatus* (Lacepède, 1800)	Zig-zag eel	Todi	LC
		Synbranchidae	*Monopterus*	*Monopterus cuchia* (Hamilton, 1822)	Cuchia	Cuchia	LC
	Anabantiformes	Anabantidae	*Anabas*	*Anabas testudineus,* (Bloch, 1792)	Climbing perch	Kau	DD
	Cyprinidontiformes	Poeciliidae	*Gambusia*	*Gambusia affinis* (Baird & Girard, 1853)	Mosquitofish	Masakhia Machha	LC
	Beloniformes	Belonidae	*Xenentodon*	*Xenentodon cancila* (Hamilton, 1822)	Fresh water gar fish	Ekadantigangatudi	LC
		Zenarchopteridae	*Zenarchopterus*	*Zenarchopterus ectuntio* (Hamilton, 1822)	Ectuntio halfbeak	Dantakathi	NE
	Mugiliformes	Mugilidae	*Rhinomugil*	*Rhinomugil corsula* (Hamilton, 1822)	Corsula	Kekenda / Endula	LC
	Tetradontiformes	Tetraodontidae	*Leiodon*	*Leiodon cutcutia* (Hamilton, 1822)	Ocellated pufferfish	Bengafula	LC
	Perciformes	Ambassidae	*Chanda*	*Chanda nama* (Hamilton, 1822)	Elongate glass-perchlet	Chandi / Gua chupi	LC
			Parambassis	*Parambassis lala* (Hamilton, 1822)	Highfin glassy perchlet	Nali nai chandi	NT
				Parambassis ranga, (Hamilton, 1822)	Indian glassy fish	Nai chandi	LC
		Nandidae	*Nandus*	*Nandus nandus,* (Hamilton, 1822)	Gangetic leaffish	Bhutusi	LC
		Badidae	*Badis*	*Badis badis,* (Hamilton, 1822)	Badis/Dwarf chameleon fish	Badisi / Kunkakie / Bundej	LC
		Gobiidae	*Glossogobius*	*Glossogobius giuris,* (Hamilton, 1822)	Tank goby	Bali garada	LC
		Osphronemidae	*Trichogaster*	*Trichogaster fasciata,* (Bloch & Schneider, 1801)	Banded gourami	Bada Khasikari	LC
				Trichogaster lalius, (Hamilton, 1822)	Dwarf gourami	Chhota Khasikari	LC
		Channidae	*Channa*	*Channa gachua* (Hamilton, 1822)	Dwarf Snakehead	Chenga	LC
				Channa marulius, (Hamilton, 1822)	Great snakehead	Shala	LC
				Channa orientalis (Bloch & Schneider, 1801)	Walking snakehead	Dian seula	NE
				Channa punctata, (Bloch, 1793)	Spotted snakehead	Gadisha	LC
				Channa striata, (Bloch, 1793)	Striped snakehead	Seula	LC

2.2 Fresh water prawns of Ansupa Lake

Several freshwater prawn species have been documented from Mahanadi River of which Macrobrachium rosenbergii, (De.Man, 1879), Macrobrachium malcolmsonii, (Hamilton, 1822), Macrobrachium lamarrii,(H.Milne Edward, 1837), Macrobrachium rude, (Heller, 1862), Macrobrachium equidens, (Dana, 1852), Macrobrachium scabriculum, (Heller, 1862), Exopalemon styliferus, (H.Milne Edwards, 1840) and Nematopalaemon tenuypes, (Henderson, 1893) are important contributing substantially to the freshwater prawn fisheries of Mahanadi River. Ansupa lake in Banki subdivision lying north of Mahanadi River and connected with River through a narrow channel, locally known as Kabula nullah. Department of Fisheries, Odisha reported in 1980s four species of freshwater prawn belonging to Palaemonidae family; they are:

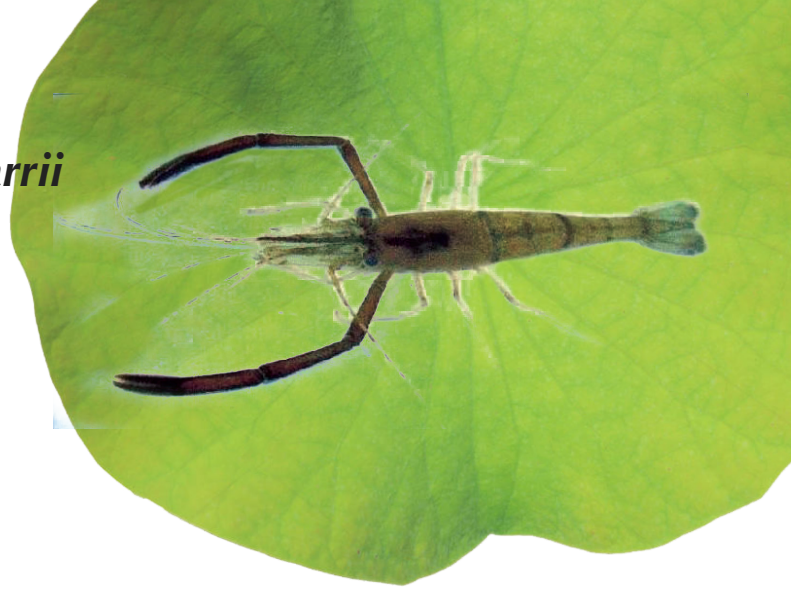
I. Macrobrachium malcolmsonii, (Hamilton, 1822)

II. Macrobrachium lamarrii,(H.Milne Edward, 1837)

III. Macrobrachium rude, (Heller, 1862)

IV. Exopalemon styliferus, (H.Milne Edwards, 1840)

V. Nematopalaemon tenuipes, (Henderson, 1893)



Macrobrachium lamarrii

(H.Milne Edward, 1837)

Indian whisker shrimp
Odia: Nai petaki chingudi

Systematic accounts
Class : Malacostraca
Order : Decapoda
Family : Palaemonidae
Genus : Macrobrachium
Species : Macrobrachium lamarrii

Diagnostic features

Macrobrachium lamarrii is a creamy white to light brownish white with greenish brown pigmentation all over the cephalothrox. Male can reach total length of 75 to 80mm while female 75 mm long. Rostrum bears 7 – 9 teeth dorsally and 5 – 8 ventrally. Juvenile and adult prawns are omnivorous and feed on algae, planktonic organisms, small muscle pieces of their own kind of prawn. Post larvae prawn feed on pure animal diet than on mixed diet of algae and naupli. Prawn of different size do not attack each other but when they welk or abort to die others attack them make their food. Long sword shape rostrum, less than 9 dorsal side of rostrum is irregular with greater space in between the teeth. 2nd chelliped is must shorter than total length of body. more bulky and broader body shape. Vertical or oblique bends on the carapace.

Habitat / Environment

Freshwater prawn with nocturnal feeding habit, also occurs in brackish water.

Distribution
Inedo-west pacific: India; Bangladesh.

IUCN Red List Status - Least concern (LC)

Fishery Importance

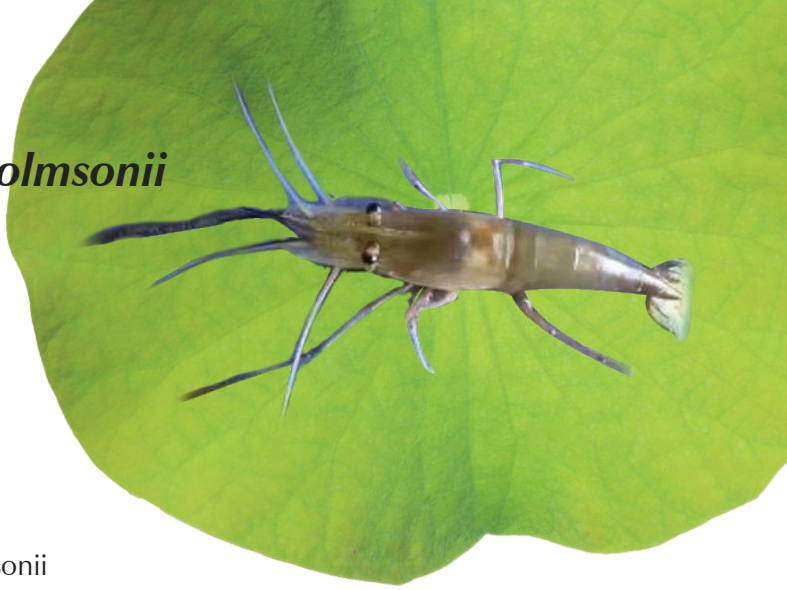
It is a small freshwater prawn not commercially important, available in freshwater rivers, creeks, lakes and river mouths.

Other information - Ansupa specific

The species is locally known as “Nai petaki chingudi”. This is a riverine prawn found in Ansupa throughout the year mostly in rainy season being auto recruited from Mahanadi River. It is an edible tasty prawn and liked very much by consumers. The price of the prawn ranges from Rs.100/- to Rs.120/- per kg. It does not form a sizable prawn fishery in Ansupa.

Macrobrachium malcolmsonii

(Hamilton, 1822)



Monsoon River prawn
Odia: Golda Chingudi

Systematic accounts
Class : Malacostraca
Order : Decapoda
Family : Palaemonidae
Genus : Macrobrachium
Species: Macrobrachium malcolmsonii

Diagnostic features

Rostrum projects beyond the antennular peduncle for about 1/5 of its length. Dorsally the proximal portion is highly convex and this distal part more or less straight and much shorter, carrying one or two teeth near the apex. The proximal portion is relatively deep and the distal portion much narrower. The tooth formula is 9 to 11 + 1 or 2 (most commonly 10 to 11 + 1) and ventrally 5 to 7 (most commonly 6). As in M.rosenbergii the first 3 upper teeth or rarely the first 2 are on the carapace.

Habitat / Environment

M.malcolmsonii is more tolerant to environmental fluctuation and comparatively more resistant to contaminants. Males grow bigger than females even in the same sex heterogeneity in growth. Those grow fast became dominant while others remains stunted Cannibalistic in nature feeds on decomposing plants & animals, small worms, insects and their larvae. This species is nocturnal in habit feeds more actively in night.

Distribution

India, Pakistan, Bangladesh, all fresh water rivers, ponds, creeks, & Lakes of Chilika & Ansupa connecting river mouth areas. Andhra, Odisha, Gujarat & Kerala (states). It also found in peninsular rivers that drain into Bay of Bengal and river of Mahanadi delta.

IUCN Red List status - Least concern (LC)

Fishery Importance

M.malcolmsonii is the second largest Macrobrachium species after *Macrobrachium rosenbergii*. It contributes substantially to the freshwater prawn fishery of Mahanadi River. It is one of the major fresh water culturable prawn species having good market demand, commercially. *M.malcomsonii* in India is most common in the estuaries and lakes in Tamilnadu and Andhrapradesh and also in Chilika Lake. The fisheries is active during monsoon months. It is the only freshwater prawn of commercial importance in river Godavari with annual yield of about 80 tonnes . It can attain maximum weight of 40 – 80 gm in 1st year

Other information - Ansupa specific

The species is locally known as “Golda chingudi”. Although *M.malcomsonii* contribute substantially to the freshwater prawn fishery

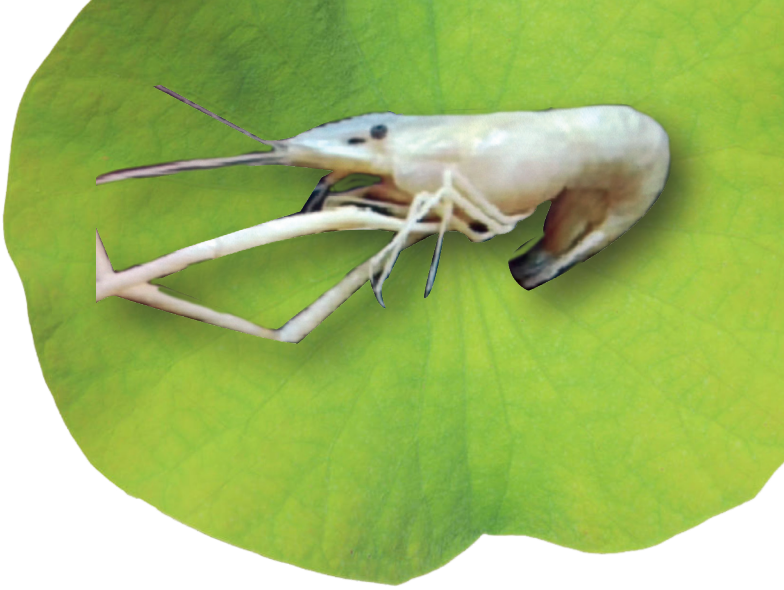
of Mahanadi river, it was forming a minor freshwater prawn fishery in Ansupa lake in the long past up to early 90s. Thereafter the recruitment of the prawn juveniles in to the lake gradually decreased due to siltation in kabulla nullah and the prawn is occasionally caught in the lake at present. It is an edible tasty prawn and liked very much by consumers. The price of the prawn ranges from Rs.150/- to Rs.200/- per kg.

Macrobrachium rude

(Heller, 1862)

Hairy River prawn
Odia: Goda Chingudi

Systematic accounts
Class : Malacostraca
Order : Decapoda
Family : Palaemonidae
Genus : Macrobrachium
Species: Macrobrachium rude



Diagnostic features

Rostrum straight, reaching upto the tip of antennal scale, tapering distally, rostral formula 9-10/3-4 with 2 post orbitals; hepatic spine situated at lower level than antennal spine; posterior margin of telson distinct, with 2 pairs of spines, anterior one longer the tip of telson;2nd pair of pereopods very long and heavy, all segments covered with a short and dense pubescence; cutting edges of fingers with 1 or 2 large proximal teeth, rest of the edges entire, with a row of granules at each side, carpus shorter than propodus and much longer than merus; exopod of uropod with a subapical spine.

Habitat / Environment

Fresh and brackishwater

Distribution

Indo-West pacific: East Africa; Madagascar; India; Bangladesh.

IUCN Red List status – Least concern (LC)

Fishery Importance

This species is common in West Bengal from August to October when large numbers of egg bearing female are brought to the markets. In the Chilika lake this is the common freshwater prawn fished in larged quantities from September to November. It forms a good seasonal fishery in West Bengal and Odisha.

Other information - Ansupa specific

The species is locally known as “Goda chingudi”. The species contributes to a minor commercial value however the prawn forms a stray fishery in Ansupa lake. At present the prawn is caught by local fisherman rarely. However the price of the prawn is Rs.100/- per Kg. in the local market.

Exopalemon styliferus

(H.Milne Edwards, 1840)

Roshna prawn
Odia: Ghora Chingudi

Systematic accounts
Class : Malacostraca
Order : Decapoda
Family : Palaemonidae
Genus : Exopalemon
Species: Exopalemon styliferus

Diagnostic features

The rostrum was long and slender with an elevated basal crest of 3 to 7 teeth over the eye; 2-3 sub-distal teeth were present on the dorsal margin of the rostrum of the prawmn; ventral margin with 6 to 10 teeth. The number of ventral marginal teeth of E. Styliferus recorded in the literature coincides with the count reported here. However 5 to 7 teeth over the eye and 1-2 sub-distal teeth. Whereas, the maximum number of ventral marginal teeth of the species is 4 (range: 1-4). Shrimps were whitish translucent, with the distal part of rostrum dark reddish brown and some darker spots on the tips of uropods and telson. Ovigerous females with large dark spots on the first 4 abdominal pleura. Eggs of berried females were yellowish. The shrimp Exopalaemon styliferus is recorded for the first time in Iran. This finding extends our knowledge of the global distribution of E. styliferus.

Habitat / Environment

Shallow coastal waters and fresh waters.

Distribution

The geographic distribution of the above species is extending from the Far East, namely the northern coast of Borneo and Indonesia westward via Thailand and India to Pakistan. Meanwhile, it has been reported from the southwestern Iraq and Kuwait adjacent to the Persian Gulf. According to the present field research, it was found in the Iranian locality, Abadan where there was no any report or information regarding its presence in the Iranian inland waters, and hence extending its geographical distribution records. There is the possibility that the species may occur along the northern coastal part of the Persian Gulf from Khuzestan in the west to the east (Pakistan) and the apparent geographic gap may be due to poor samplings.

IUCN Red List status – Not Evaluated (NE)

Fishery Importance

The fishery of this prawn is more active in the west coast of India. The species is of considerable commercial value in the gangetic delta region of West Bengal. Stray occurrence of this species in Ansupa lake was encountered in long past. Presently the species is not found in the lake.

Other information - Ansupa specific
The species is locally known as “Ghora chingudi”. Presently the prawn is not found in Ansupa lake.

Nematopalaemon tenuipes

(Henderson, 1893)

Spider prawn
Odia: Budhiani Chingudi

Systematic accounts
Class : Malacostraca
Order : Decapoda
Family : Palaemonidae
Genus : Nematopalaemon
Species: Nematopalaemon tenuipes

iagnostic features

Members of the order Decapoda are mostly gonochoric. Mating behavior: Precopulatory courtship ritual is common (through olfactory and tactile cues); usually indirect sperm transfer.

Habitat / Environment

Benthic; Brackish

Distribution

Indo-West Pacific: India, Kenya and Philippines.

IUCN Red List status – Not Evaluated (NE)

Other information - Ansupa specific
The species is locally known as “Budhiani chingudi”, rarely encountered in Ansupa lake. It does not contribute to prawn fishery of the lake.

2.4 Ichthyofaunal Biodiversity Assessment

A comprehensive review of published literatures relating to the IUCN red list status (www.iucnredlist.org & www.fishbase.org 2019) and conservation status at national level (Molur & Walker (eds.), 1996) shows that all 61 freshwater fish species referred from Ansupa lake have been evaluated for conservation status and documented in (table no.3). The assessment summary for conservation status of Ansupa fishes shows that 2 species Clarias magur (Clariidae) and Cyprinus carpio (Cyprinidae) are under threatened category being assessed as endangered (EN) and vulnerable (VU) respectively. Out of the remaining 59 species, 6 species are assessed as near threatened (NT), 48 species are assessed as least concern (LC), 4 species are not evaluated (NE) and 1 species do not have sufficient data to be assessed (DD).

Table 3: Conservation status of fishes of Ansupa Lake

Sl. no.	Order	Family	Threatened species (In no.)				NT	LC	DD	NE	Total	National Conservation status (nos.)
			CR	EN	VU	Total						
1	Anguilliformes	Anguillidae					1				1	EN-1
2	Osteoglossiformes	Notopteridae					1	1			2	EN-1 NT - 1
3	Clupeiformes	Clupeidae						2			2	
4	Cypriniformes	Cyprinidae			1	1		17		1	17	LC – 2 NT – 7 VU - 3
5		Cobitidae						1			1	
6	Siluriformes	Bagridae						6			6	NT – 2 VU - 1
7		Siluridae					2				2	EN - 1
8		Ailiidae (Asian schilbeids)					1				1	VU-1
9		Schilbeidae						2			2	EN-1
10		Clariidae		1		1					2	VU-1
11		Heteropneustidae						1			1	VU - 1
12	Synbranchiformes	Mastacembelidae						2		1	3	NT - 1
13		Synbranchidae						1			1	NT - 1
14	Anabantiformes	Anabantidae							1		1	VU - 1
15	Cyprinidontiformes	Poeciliidae						1			1	
16	Beloniformes	Belonidae						1			1	
17		Zenarchopteridae								1	1	

18	Mugiliformes	Mugilidae						1			1	
19	Tetradontiformes	Tetraodontidae						1			1	NT - 1
20	Perciformes	Ambassidae					1	2			3	
21		Nandidae						1			1	NT - 1
22		Badidae						1			1	
23		Gobidae						1			1	NT -1
24		Osphronemidae						2			2	NT - 1
25		Channidae						4		1	5	NT – 2 VU - 1
TOTAL:			0	1	1	2	6	48	1	4	61	

2.5 Ornamental Fishes:

Indian rivers are richer with qualitative ornamental fishes in respect of their docile nature, characters suitable for domestication with fascinating, attractive and brilliant colouration and potentiality for developing techniques for captive breeding (Singh et.al., 2013). However, no attempt has so far been made to introduce most of these species in the international trade and securing positions in the national as well as international markets for which they deserve (DoAH, D & F, MoA, GoI, 2013). The hobby of ornamental fish keeping in India is nearly 70 years old. Out of the 800 ornamental fish species from various aquatic environments seen in the world, it is estimated that more than 100 varieties of indigenous ornamental fishes are available in our freshwater eco systems in addition to an equal no. of exotic species that are bred in captivity (MPEDA, www.mpeda.com (2013)); (DoAH, D & F, MoA, GoI, 2013).

As per the statistic of the Marine Product Export Development Authority (MPEDA) of India (2000, 2001), India exports ornamental fishes worth about Rs.22.8 million. During the year 2009, the Indian Export of Ornamental Fishes was valued at more than Rs.50 million (Singh et.al., 2013).

An attempt was made to identify the ornamental fishes of Ansupa lake basing on the works of (Singh et.al., 2013) who identified the ornamental fishes of Mahanadi River. In total, 30 species of Ansupa fishes have been identified as ornamental fishes which are furnished in table 4.

Table 4: Ornamental Fishes of Ansupa Lake

(n = 30)

Sl.no.	Family	Species
1.	Notopteridae	*Notopterus notopterus*
2.		*Chitala chitala*
3.	Mastacembelidae	*Mastacembelus armatus*
4.		*Macrognathus pancalus*
5.	Cyprinidae	*Amblypharyngodon mola*
6.		Pethia phutunio
7.		Pethia ticto
8.		*Puntius sophore*
9.		*Puntius terio*
10.		*Rasbora daniconius*
11.		*Laubuka laubuca*
12.		Cyprinus carpio
13.		*Esomus danrica*
14.		*Osteobrama cotio*
15.	Cobitidae	*Lepidocephalichthys guntea*
16.	Clariidae	*Clarias magur*
17.	Heteropneustidae	*Heteropneustes fossilis*
18.	Siluridae	*Ompok bimaculatus*
19.	Perciformes	*Parambassis lala*
20.		*Parambassis ranga,*
21.	Anabantidae	*Anabas testudineus*
22.	Nandidae	*Nandus nandus*
23.	Badidae	*Badis badis*
24.	Gobiidae	*Glossogobius giuris*
25.	Osphronemidae	*Trichogaster fasciata,*
26.		*Trichogaster* lalius,
27.	Belonidae	*Xenentodon cancila*
28.	Ambassidae	*Chanda nama*
29.	Bagridae	*Mystus vittatus*
30.	Tetraodontidae	*Leiodon cutcutia*

3.0 Species Descriptions:

Description of 61 fishes of Ansupa lake are arranged alphabetically for the convenience of the readers. The list of fishes described is furnished in table 5.

Table 5: List of fish Species of Ansupa Lake Described

Sl.no.	Alphabet	Species
1	A	*Ailia coila* (Siluriformes:Ailiidae)
2		*Amblypharyngodon mola* (Cypriniformes:Cyprinidae)
3		*Anabas testudineus* (Anabantiformes:Anabantidae)
4		*Anguilla bengalensis* (Anguilliformes: Anguillidae)
5	B	*Badis badis* (Perciformes: Badidae)
6	C	*Chanda nama* (Perciformes: Ambassidae)
7		*Channa gachua* (Perciformes: Channidae)
8		*Channa marulius* (Perciformes: Channidae)
9		*Channa punctata* (Perciformes: Channidae)
10		*Channa striata* (Perciformes: Channidae)
11		*Channa orientalis* (Perciformes: Channidae)
12		*Chitala chitala* (Osteoglossiformes: Notopteridae)
13		*Cirrhinus mrigala* (Cypriniformes:Cyprinidae)
14		*Cirrhinus reba* (Cypriniformes:Cyprinidae)
15		*Clarias magur* (Siluriformes:Clariidae)
16		*Ctenopharyngodon idella* (Cypriniformes:Cyprinidae)
17		Cyprinus carpio (Cypriniformes:Cyprinidae)
18	E	*Esomus danrica* (Cypriniformes:Cyprinidae)
19		*Eutropiichthys vacha* (Siluriformes: Schilbeidae)
20	G	*Gambusia affinis* (Cyprinidontiformes:Poeciliidae)
21		*Gibelion catla* (Cypriniformes:Cyprinidae)
22		*Glossogobius giuris* (Perciformes: Gobiidae)
23		*Gudusia chapra* (Clupeiformes: Clupeidae)
24		*Gudusia variegata* (Clupeiformes: Clupeidae)
25	H	*Heteropneustes fossilis* (Siluriformes: Heteropneustidae)
26	L	*Labeo bata* (Cypriniformes:Cyprinidae)
27		Labeo calbasu (Cypriniformes:Cyprinidae)
28		*Labeo rohita* (Cypriniformes:Cyprinidae)
29		*Laubuka laubuca* (Cypriniformes:Cyprinidae)

30		*Leiodon cutcutia* (Tetradontiformes: Tetraodontidae)
31		*Lepidocephalichthys guntea* (Cypriniformes: Cobitidae)
32	M	*Macrognathus aculeatus* (Synbranchiformes: Mastacembelidae)
33		*Macrognathus pancalus* (Synbranchiformes: Mastacembelidae)
34		*Mastacembelus armatus* (Synbranchiformes: Mastacembelidae)
35		*Monopterus cuchia* (Synbranchiformes: Synbranchidae)
36		*Mystus cavasius* (Siluriformes: Bagridae)
37		*Mystus vittatus* (Siluriformes: Bagridae)
38		*Mystus tengara* (Siluriformes: Bagridae)
39	*N*	*Nandus nandus* (Perciformes: Nandidae)
40		*Notopterus notopterus* (Osteoglossiformes: Notopteridae)
41	O	*Ompok bimaculatus* (Siluriformes: Siluridae)
42		*Osteobrama cotio* (Cypriniformes:Cyprinidae)
43	P	*Pachypterus atherinoides* (Siluriformes: Schilbeidae)
44		*Parambassis lala* (Perciformes: Ambassidae)
45		*Parambassis ranga* (Perciformes: Ambassidae)
46		Pethia phutunio (Cypriniformes:Cyprinidae)
47		Pethia ticto (Cypriniformes:Cyprinidae)
48		*Puntius sophore* (Cypriniformes:Cyprinidae)
49		*Puntius terio* (Cypriniformes:Cyprinidae)
50	R	*Rasbora daniconius* (Cypriniformes:Cyprinidae)
51		*Rhinomugil corsula* (Mugiliformes: Mugilidae)
52		*Rita Kuturnee* (Siluriformes: Bagridae)
53	S	*Salmostoma bacaila* (Cypriniformes:Cyprinidae)
54		*Sperata aor* (Siluriformes: Bagridae)
55		*Sperata seenghala* (Siluriformes: Bagridae)
56		*Systomus sarana* (Cypriniformes:Cyprinidae)
57	T	*Trichogaster fasciata* (Perciformes: Osphronemidae)
58		*Trichogaster* lalius (Perciformes: Osphronemidae)
59	W	*Wallago attu* (Siluriformes: Siluridae)
60	X	*Xenentodon cancila* (Beloniformes: Belonidae)
61	Z	*Zenarchopterus ectuntio* (Beloniformes: Zenarchopteridae)

Ailia coila

(Hamilton, 1822)

Gangetic ailia
Odia: Baunsa Patri

Taxonomy
Class : Actinopterygii
Order : Siluriformes
Family : Ailiidae
Genus : Ailia
Species: Ailia coila

Diagnostic features

The species has short and laterally compressed body with short and compressed head. Ventral profile of the body is not prominently arched. Snout is over-hanging has a crescentic, subterminal mouth. Colour of the body is uniform silvery to brown. Dorsal fin absent and only adipose fin present. Anal fin is long and not confluent with caudal fin. Caudal fin is deeply forked. Villiform teeth present in two patches on the palate. Presence of four pairs of barbels, which are longer than head. It has a complete lateral line. No blotches on body or fins.

Habitat

Occurs in fresh to brackish water environments; pelagicin in habit. This fish is found in large rivers and connected waters. It takes feed from two layers (surface and middle) of water body and lives in shoals.

Distribution

Asia: Pakistan, India, Bangladesh and Nepal.

IUCN Red List Status - Near Threatened (NT). Vulnerable (Nationally)

Importance to Fishery

Used as food fish in Bangladesh and marketed in fresh condition.

Other information - Ansupa specific

The species was first reported from Ansupa Lake by Pati, 2008, locally known as “Baunsa patri”. This is a riverine fish found in Ansupa throughout the year mostly in rainy season being auto recruited from Mahanadi River. It is an edible tasty fish and liked very much by consumers. The price of the fish ranges from Rs.120/- to Rs.130/- per kg.

Amblypharyngodon mola

(Hamilton, 1822)

Mola carplet
Odia: Mohurali

Taxonomy
Class : Actinopterygii
Order : Cypriniformes
Family : Cyprinidae
Genus : Amblypharyngodon
Species : Amblypharyngodon mola

Diagnostic characters

Body moderately compressed, dorsal profile more convex than ventral, snout rounded, covered with thin skin, caudal deeply forked. Lateral line incomplete and extend up to 15 scales. Scale small. Colour silvery, a dark band, runs on both sides of the body from head to tail. Dorsal and anal with black edge, longest specimen in collection 6.5cm from Barnai river. this species attains a maximum length of 20cm.

Habitat / Environment

Freshwater; benthopelagic.

Distribution

Asia: Pakistan, India (throughout India except Kerala), Bangladesh, Nepal and Myanmar.

IUCN Red List Status

Least Concern (LC); LC (Nationally)

Fishery Information

Used as food fish.

Other information – Ansupa specific
The species was first reported from Pati, 2008, locally known as “Mohurali”. The fish is very popular among local people and is highly in demand. The nutritional value of this SIF is very high with 13.83% protein, 3.85% lipid & 1.43% ash (Islam MJ et.al., 2012). This SIF species commonly occurs in Ansupa and comes in daily catches of local fishers. Its average sailing price at Ansupa varies from Rs.100/- to Rs.120/- per Kg . This fish in Ansupa lake grows to a maximum size of 4 cm.

Anabas testudineus

(Bloch, 1792)

Climbing perch
Odia: Kau

Taxonomy
Class : Actinopterygii
Order : Anabantiformes
Family : Anabantidae
Genus : Anabas
Species: Anabas testudineus

Diagnostic characters

The fish species has an elongated and compressed body with a depth of nearly 1/3rd of standard length. The length of snout is nearly 1/5th of standard length. The body is rifle green in colour, very pale below, back dusky to olive. It has more than four vertical bands on sides, which disappears with age. Head with longitudinal stripes ventrally and the iris is golden reddish. Posterior margin of opercle has a dark spot. It has a large mouth with villiform teeth on jaws. The lateral line is interrupted about the seventeenth scale. It grows to a maximum length of 12.5 cm.

D. XVI-XX, 8-10; A. IX-XI, 8-11; P. 15; V. I, 5; Ll. 28-32.

Habitat/Environment

The species resides in fresh as well as brackish water; it is demersal and potamodromous in nature.

Distribution

Distributed in Asian countries: India to Wallace line including China.

IUCN Red List Status

Data deficient (DD); Vulnerable (Nationally)

Fishery importance

It is a commercially important fish of Ansupa. It grows in water bodies with low dissolve oxygen. This is a very hardy fish and is of considerable fisheries interest. It is regarded as a highly esteemed food fish for its fine flavour, restorative values and prolonged freshness out of water. The fish is suitable for cultivation in ponds, reservoirs and rice fields. The species is an important and staple food fish over the whole country. Its importance to man arises from the inherent edible quality of its flesh.

Other information – Ansupa specific

The species was first reported from Ansupa by Pati, 2008, locally known as “Kau”. The fish breeds in the lake as well as peripheral ponds and paddy fields nearby the lake. It migrates to the ditches and nearby ponds and nalha during rainy season. The average local price of the species is Rs.70/- per kg. It is caught in the lake by bamboo traps, cast nets, rod and line etc.

Anguilla bengalensis

(Gray, 1831)

Indian mottled eel
Odia: Bami

Taxonomy
Class : Actinopterygii
Order : Anguliformes
Family : Anguillidae
Genus : Anguilla
Species: Anguilla bengalensis

Diagnostic characters

Dorsal soft rays (total): 250-305; Anal soft rays: 220 - 250; Vertebrae: 106 - 112. Body elongate, head conical, flattened dorsally. Mouth terminal, lips prominent and tail compressed, narrow bands of teeth on jaws, broad band on vomer. Anterior nostril tubular, Scales small and rounded. Distinct and complete lateral line present. No barbels and pelvic fins. Body color yellowish to olive-brown, mottled with dark brown. Juveniles are not mottled. Lighter below. Upper surface with darker spots and blotches. It grows to a maximum length of 200 cm.

Habitat / Environment

Marine; freshwater; brackish; benthopelagic; catadromous. inhabits hill streams, rivers, ponds and Lakes. Commonly found in deep rock pools of Rivers. in estuaries and sea during early life and near maturity.

Distribution

Asia: Pakistan, India, Sri Lanka, Burma, and the East Indies. Reported from Nepal and Bangladesh

IUCN Red List Status

Near Threatened (NT); Endangered (Nationally)

Fishery Importance

It has good export markets for both live elvers (eel larvae) and large eels. It is used as food fish in Maharashtra of India. Highly prized because of its nutritional value.

Other information – Ansupa specific

The species was first recorded from Ansupa by Das Sarkar et.al. (2015), locally known as “Bami”. The fish has high market value ranging from Rs.180/- to Rs.220/- per Kg There is high demand for this fish in West Bengal. Its catch in Ansupa Lake is not substantial and hardly the annual catch is limited to few kilograms in a year.

Badis badis

(Hamilton-Buchanan,1822)

Dwarf chameleon fish
Odia - Badisi

Taxonomy
Class : Actinopterygii
Order : Anabantiformes
Family : Badidae
Genus : Badis
Species: Badis badis

Diagnostic characters

Body moderately elongated, relatively low and slightly compressed with small oblique mouth. Eyes large, mouth small, teeth villiformes on jaws, tongue elongated. Dorsal spine somewhat slender, anal spine short, caudal fin rounded, scales moderate size ctenoid. Lateral line interrupted at 20 or 21 scales, often absent 26 to 30 scale in longitudinal series. Colour variable typically variegated with alternatives belts of black & green, in older fish it is black and dirty red, a bluish-black spot behind gill opening & on shoulder. Fins are yellowish-green, bluish or dark blue. another on opercle and a third one is near caudal base. Arrow of black spot along base of dorsal fin. A solitary fish spends most of time motionless. Maximum length - 8 cm.

Habitat/Environment

Inhabits in fresh water, river, ponds and ditches. Attains maximum size 8 cm. A column feeder, feeds on mosquito larvae, in aquarium a bottom feeder nibbing at vegetable detritus. Changeable colour in nature, because of its amazing pigmentation. A predator eats on live moving animals. Found more in water body with aquatic vegetation. Adult males are highly territorial .Swift in movement .

Distribution

Bangladesh, India, Myanmar, Pakistan (Indus plain) and Sri Lanka . In India It is distributed in Assam, Punjab, West Bengal, Odisha and Andhra Pradesh.

IUCN Red list Status

Least Concern (LC)

Fishery importance

It is an important aquarium fish because of its ornamental value. Less importance to fisheries.

Other information – Ansupa specific

The species was first reported from Ansupa by Dash, et.al., 2018, locally known as “Badisi”. This species had got less importance in fishery point of view, but It has a good ornamental value or use in home aquarium. It rarely occurs in the Lake and its average selling price varies from Rs.40/- to Rs.50/- per kg.

Chanda nama

(Hamilton, 1822)

Elongate glass perchlet
Odia: Chandi / Gua chupi

Taxonomy
Class : Actinopterygii
Order : Perciformes
Family : Ambassidae
Genus : Chanda
Species: Chanda nama

Diagnostic features

Body is strongly compressed and laterally almost flat. Dorsal and ventral profile of this fish is almost equally convex. Lateral line is partly distinct, partly absent. Second dorsal spine is longest. Spines of first dorsal and rays of second dorsal gradually decrease in height. Scales are minute and rounded. Caudal fin forked. Body is transparent yellowish white with numerous tiny black dots. First dorsal and tip of second dorsal is deep black. Caudal fin is black and orange. A small black spot is found at the origin of the base of anal fin. Lower jaw is longer than upper jaw. It grows to a maximum length of 11 cm.

Habitat / Environment

Freshwater; brackish; benthopelagic; potamodromous . This small fish is seen in the clear freshwater of rivers, streams, canals and beels. Specially in the rainy season these are abundantly found from the marginal area of the jute and paddy fields . *Chanda nama* feeds at all layers of water, subsisting mainly on the minute entomostracans. It is hardy and can stand foul water.

Distribution

Asia: Pakistan, India, Nepal, Bangladesh, and Myanmar.

IUCN Red List Status

Least Concern (LC)

Fishery Importance

This fish is well known as a small Indigenous Species (SIS) of fish of Bangladesh. Most of them are taken for drying in Northern region of Bangladesh. These drying chanda fish consume in local market. People use it as the part of their delicious food item. It is very much famous food in rural Bangladesh. Good source of nutrition and low price in the market . Fisheries: minor commercial; aquarium: public aquariums.

Other information – Ansupa specific

The species was first reported from Ansupa by Pati, 2008, locally known as “Gua chupi” and grouped as Small Indigenous Fishes (SIF). The fish commonly occurs in Ansupa and forms a fishery of SIF. Annual catch is around 1.00 tonne. The fish is locally consumed and average selling price of the fish in the local market is Rs.120/- per Kg.

Channa gachua

(Hamilton, 1822)

Dwarf snakehead
Odia: Chenga

Taxonomy
Class : Actinopterygii
Order : Perciformes
Family : Channidae
Genus : Channa
Species: Channa gachua

Diagnostic features

White dorsal, anal and caudal margins; 3-3+1/2 scales between the lateral line and the base of the anterior dorsal rays; relatively small size This species can reach 28 cm (11 in) in total length, but most individuals are much smaller. It feeds on small fish, insects, and crustaceans. It is a mouthbrooder, with the male brooding the eggs and juveniles in his mouth. Males have more-extended dorsal and anal fins than females, and develop more intense color pattern. It grows to a maximum length of 29 cm.

Habitat / Environment

Freshwater; benthopelagic, Occurs in fresh water swampy areas.

Distribution

Asia: Afghanistan in the west to Indonesia through South and Central Asia.

IUCN Red List Status

Least Concern (LC)

Fishery Importance

Aquarium: commercial.

Other information – Ansupa specific

The species was first reported from Ansupa by Das Sarkar, *et.al.* (2015), locally known as "Chenga". The fish commonly occurs in Ansupa and forms a good fishery. Annual catch is around 1.5 tonne. The fish is locally consumed and average selling price of the fish in the local market is Rs.120/- per Kg .

Channa marulius

(Hamilton, 1822)

Great snakehead
Odia: Saala

Taxonomy
Class : Actinopterygii
Order : Perciformes
Family : Channidae
Genus : Channa
Species: Channa marulius

Diagnostic characters

The fish has an elongated, anteriorly sub-cylindrical body with rounded abdomen. The head is large and depressed with plate like scales. Snout somewhat obtuse and mouth fairly large, opening moderate to wise that may extend to below orbit. An accessory respiratory organ in the form of a thin bony lamina present in a cavity in gill chamber. Both dorsal and anal fins free from caudal. A black white-edged ocellus present on basal portion of caudal fins.15-16 pre-dorsal scales and 10 scales between orbit and angel of preopercle present. It grows to a maximum length of 183 cm.

D. 45-55; A. 28-36; P.18; V.6; Ll.60-70.

Habitat/Environment

It is a freshwater species, benthopelagic and potamodromous in habit.

Distribution

It is distributed in India to China, south to Thailand, Cambodia and Pakistan.

IUCN Red List Status

Least Concern (LC); Near Threatened (Nationally)

Fishery importance

It is a commercially important fish fetching high value in Kolkata market.

Other information – Ansupa specific

The species was first reported from Ansupa by Pati, 2008, locally known as “Saala”. This murrel species are caught by Cast nets, gill nets, hook and line and also in the split bamboo traps. It is found round the year in the lake more during rainy season. Average annual catch of the fish is around 1.2 tonnes. Demands high market price at Calcutta market at the rate Rs.250/- per Kg. Due to small catch from the lake local vendors are not interested to export the fish to Howrah market. The average price of the species at Ansupa ranges from Rs.120/- to Rs.150/- per kg. It is consumed fresh locally.

Channa punctata

(Bloch, 1793)

Spotted snakehead
Odia: Gadisha

Taxonomy
Class : Actinopterygii
Order : Perciformes
Family : Channidae
Genus : Channa
Species: Channa punctata

Diagnostic characters

The fish has an elongated and rounded body, cylindrical anteriorly. Scales on body are large and on head are plate like. Cheek scales are 5 and predorsal scales are 12 in number. Eyes are moderate in size. Its diameter is 1/12th of head length. Mouth is large. Lower jaw has 3 to 6 canines located behind a single row of villiform teeth. Caudal fin is rounded. Body colour varies from black to light green on dorsal sides and flanks, ventral side white to pale yellow. Sometimes it has a reddish tinge, several dark blotches on flanks, some with numerous black spots on body and also on dorsal, anal and caudal fins. It grows to a maximum length of 31 cm.

D. 28-33; A. 21-23; P. 17; V. 6; Ll. 37-40.

Habitat/ Environment

The fish dwells in fresh to brackish water; benthopelagic in nature and perform potamodromous migration.

Distribution

The species is commonly distributed in Asia: Afghanistan, Pakistan, India, Sri Lanka, Nepal, Bangladesh, Myanmar and Yunnan in China.

IUCN Red List Status

Least Concern (LC); Near Threatened (Nationally) (Molur & Walkar, 1998)

Fishery importance

It is a commercially important fish of Ansupa. It grows in water bodies with low dissolved oxygen. Fisheries: commercial, aquaculture, aquarium (Juvenile), used as bait occasionally.

Other information – Ansupa specific

The species was first reported from Ansupa by Pati, 2008, locally known as “Gadisha”. It breeds in Ansupa lake and nearby ponds, small ditches and nalha drained to the lake. In rainy season, the juveniles of the species along with the mother observed in the fringe areas. The species migrate the local paddy field during first rain in July / August and breeds there. The juveniles nourished in the paddy field and forms fishery of paddy field along with other indigenous species. The local average price of the species is Rs.50/- per kg and consumed locally. It has a good market. Harvesting by hooks, rod and line with bait & also in split bamboo murrel traps.

Channa striata

(Bloch, 1793)

Striped snakehead
Odia: Seula

Taxonomy
Class : Actinopterygii
Order : Perciformes
Family : Channidae
Genus : Channa
Species: Channa striata

Diagnostic characters

Body elongate. Head broad and flattened reminiscent of a snake's head. Top and sides of head covered with scales. Mouth large; only small teeth on palate. Eyes in anterior part of head. Lateral line with 42-57 very large scales. Dorsal fin longer than anal fin and beginning above pectoral fin. Caudal rounded. Oblique bars on body. It grows to a maximum length of 100 cm.

Habitat/Environment

Very common in freshwater plains; survive dry season by burrowing in bottom mud of lakes, canals and swamps as long as skin and breating apparatus remain moist. Feeds on fishes and crustaceans.

Distribution

Found in sluggish or standing water from Sri Lanka to Indonesia, the Philippines and China. One of the most common snakeheads in Cambodia.

IUCN Red List Status

Least Concern (LC)

Fishery importance

It is highly commercially important species.

Other information – Ansupa specific

The species was first reported from Ansupa by Pati, 2008, locally known as "Seula". It is caught by local people by nets and hook and line. The small juveniles of the species found in groups in shore line during rainy season in the lake with parental care and the mother guards her off springs moving around them. The fish is caught round the year and more during summer season. It forms a good fishery in Ansupa forming about 16% of the total catch. The fish is marketed fresh locally and often people send the fish to Calcutta market for fetching higher price of more than Rs.200/- , locally sold at Rs.120/- to Rs.150/- per Kg.

Channa Orientalis

(Bloch & Schneider,1801)

Walking Snakehead
Odia: Dian seula

Taxonomy
Class : Actinopterygii
Order : Perciformes
Family : Channidae
Genus : Channa
Species: Channa Orientalis

Diagnostic features

Body elongate and fairly rounded in cross section. Anterior nasal opening produced into a tubular process. Eyes moderate, mouth moderately cleft and large. Pectoral fin extend to anal fin and pelvic fin (often absent) less than 50% of pectoral fin length. Head scales large and situated behind the orbit. 40-45; 42-45 scales on lateral line. It grows to a maximum length of 33 cm.

Color of the dorsal side flanks greenish, ventral side pale with a faint bluish or reddish tinge. Dorsal, anal and caudal with scarlet or orange margin. Pectoral fins with a series of distinct alternating blue and pale orange vertical bands. A row each of dark oblique bands run above and below the lateral line. HL 33.3% SL and 27.3% TL. Height 23.8% SL and 19.5% TL. Eye 19% HL.

Habitat / Environment

Inhibits ponds and weedy ditches. Found in small streams, ponds, ditches, beels and inundated fields; abundant during rainy season.

Distribution

Bangladesh, India, Pakistan, Afghanistan, Nepal, Sri Lanka, Iran, Myanmar and East Indies; Vietnam, Thailand and Cambodia.

IUCN Red List Status

Not Evaluated (NE); Vulnerable (Nationally) (Molur & Walka, 1998)

Fishery Importance

Fisheries: minor commercial; aquarium: commercial. Used as food fish in Bangladesh. But people do not generally prefer it. Its soup is nourishing. Good sport on hooks especially from inundated fields and ditches with sufficient vegetation.

Other information – Ansupa specific

The species was first reported from Ansupa by Das Sarkar, *et.al.* (2015), locally known as “Dian seula”. The fish commonly occurs in Ansupa and forms a good murrel fishery. Annual catch is around 1.5 tonne. The fish is locally consumed and average selling price of the fish in the local market is Rs.120/- per Kg.

Chitala chitala

(Hamilton, 1822)

Clown knifefish
Odia: Chithala

Taxonomy
Class : Actinopterygii
Order : Osteoglossiformes
Family : Notopteridae
Genus : Chitala
Species : Chitala chitala

Diagnostic characters:

Dorsal spines (total): 0; Dorsal soft rays (total): 9; Anal spines: 0; Anal soft rays: 117 - 127. The only species in which subadults and adults have a series of transverse gold or silver bars on the dorsum, but this color feature is not always present. Body elongated; head and body strongly compressed laterally. Dorsal profile is highly convex. Scales are very minute and short dorsal fin. Anal fin is long and confluent with caudal fin. Pectoral fins are reduced. Dorsal portion is coppery green colored and silvery at sides and below. 15 silvery bars present on each side of dorsal ridge. 5-9 small black spots near the end of the caudal fin. Lateral line is complete. Maximum length reported 122 cm .

Habitat / Environment

Freshwater; demersal, Found in freshwater bodies such as rivers, beels, canals, reservoirs, ponds etc., particularly in large rivers. Chitala chitala of River Ganges is famous in the country.

Distribution:

Asia: Indus, Ganges-Brahmaputra and Mahanadi river basins in India. No valid records from Irrawaddy, Salween or other river basins of Myanmar. Reports of *Chitala chitala* from Thailand and Indo-China were based on *Chitala ornata* and those from Malaysia and Indonesia on *Chitala lopis*. Bangladesh, India, Pakistan, Myanmar and Philippines

IUCN Red List Status

Near Threatened (NT); Endangered (Nationally)

Fishery Importance

Used as food fish in India and Bangladesh. Always this fish is marketed in fresh and sometimes in live condition. Flesh is of good flavor but full of small bones.

Other information - Ansupa Specific

The fish was first reported from Ansupa Lake by Das Sarkar *et al*., 2015, locally known as “Chithala” and rarely caught in Ansupa . This is a highly prized fish which is known as high value fish, locally sold at Rs.150/- per Kg and in urban markets the average selling price is even higher (Rs.180/- per Kg). The fish is auto recruited from Mahanadi River during flood times.

Cirrhinus mrigala

(Hamilton, 1822)

Mrigal carp (Indian Major Carp)
Odia: Mirikali

Taxonomy
Class : Actinopterygii
Order : Cypriniformes
Family : Cyprinidae
Genus : Cirrhinus
Species : Cirrhinus mrigala

Diagnostic characters

The body is elongated and streamlined or laterally compressed. Dorsal profile more convex than that of abdomen. Ventral profile slightly convex. Grayish or greenish colour on the back and silvery at the sides and below. Fins are slightly orange coloured in larger specimen. Lateral line present and complete with about 40-45 scales. Maximum length recorded 99cm (TL).

Head 21.4% of standard length (SL) and 17.1% of total length (TL). Height 28.6% of SL and 22.9% of TL. Diameter of eye 16.7% of head length (HL).

Habitat / Environment

Freshwater; demersal (rivers, reservoirs, canals, ponds and lakes).

Distribution

Asia: Pakistan, Northern India, Nepal, Bangladesh, Myanmar, now transplanted in peninsular India.

IUCN Red List Status

Least Concern (LC); Near Threatened (Nationally)

Fishery Importance

Used as aquaculture species. Used as food fish. Often used as game fish in India but widely used in other countries. Always marketed in fresh condition. This species command a good market price and consumer demand.

Other information – Ansupa Specific

This Indian major carp species was first reported from Ansupa by Pati, 2008, locally known as “Mirikali” . It is a bottom feeder omnivore. In Ansupa Lake, the fish occurs in less numbers. It is a highly prized carp fish fetching high value in the market (Rs.150/kg av.). The average annual landing in Ansupa Lake has been estimated at 1.40 tonnes per year forming about 20% of the total Indian Major carp catch.

Cirrhinus reba

(Hamilton, 1822)

Reba carp (Minor carp)

Odia: Pohola / Pohada

Taxonomy
Class : Actinopterygii
Order : Cypriniformes
Family : Cyprinidae
Genus : Cirrhinus
Species : Cirrhinus reba

Diagnostic characters

The fish has an elongated body having depth more than head length. Snout is projected beyond the mouth; mouth is broad and it has a complete upper lip. A thin cartilaginous cover lies inside the lower jaw.One pair of small rostral barbelpresent. The height of dorsal fin is less than the body depth. Pectoral fins are almost equal to head length and caudal fin is deeply forked. Body is covered with hexagonal scales. It grows to a maximum length of 30 cm.

D. 17-19; A. 8; P. 19; Ll. 34-38.

Habitat / Environment

Freshwater in nature; benthopelagic.

Distribution

Distributed in Asian countries like Pakistan, India, Nepal, Bangladesh and Myanmar.

IUCN Red List Status

Least Concern (LC); Vulnerable (Nationally)

Fishery Information

Used as food fish with high consumer demand and high market price.

Other information - Ansupa Specific

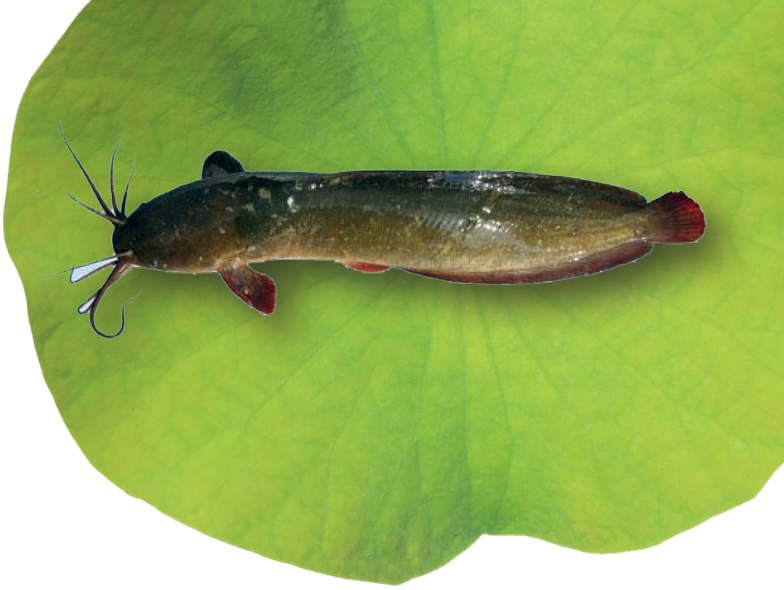
The species was first reported from Ansupa by Pati, 2008, locally known as “Pohola / Pohada”;. The fish is normally auto recruited in to Ansupa from Mahanadi during flood time. In fact the fish being one of the minor carps forms a good population in the Lake with about 25% of the total carp catch. There is high local demand for the fish & daily catch is sold at the Lake site after harvest. The selling price of the fish is Rs.170/- per kg.

Clarias magur

(Hamilton, 1822)

Walking catfish
Odia: Magura

Taxonomy
Class : Actinopterygii
Order : Siluriformes
Family : Clariidae
Genus : Clarias
Species: Clarias magur



Diagnostic characters

Clarias magur, the walking catfish, has an elongate body that is broader at the head, tapering towards the tail. Body compressed posteriorly. Upper jaw a little projecting. Spine of pectoral fins rough on its outer edge and serrated on its inner edge. Occipital process more or less triangular, its length about 2 time in its width ; distance between dorsal and occipital process 4-5.5 times in distance from tip of snout to end of occipital process . Genital papilla in males is elongated and pointed. It is readily recognizable as a catfish with four pairs of barbels (whiskers) and fleshy, papillated lips. The teeth are villiform (small and bristle-like), occurring in patches on the jaw and palate. The eyes are small. The pectoral spines are large and robust and finely serrated along the margins. There is no dorsal spine. The dorsal fin is continuous and extends along the back two-thirds of the length of the body. The dorsal, caudal, and anal fins together form a near-continuous margin; the caudal fin is rounded and not eel-like though it is occasionally fused with the other fins. The complete spine/ray count is: Dorsal = 62-72; Anal = 45-58; Pectoral = I + 8-11. Color is drab but variable among individuals: olive to dark brown or purple to black on the dorsal surface; pale to white on the ventral surface; and blue-green on the sides. The fins are grey-green and small white specks are present on the back half of the body. An albino variant occurs naturally and has been commercialized for the aquarium hobby trade. Possesses tree-like accessory respiratory organ commonly known as aborescent organ and air fan . It grows to a maximum length of 21.3 cm.

Habitat/Environment

Freshwater (rivers, ponds, swamps, reservoirs, canals etc) and also brackishwater, demersal, potamodromous.

Distribution

Endemic to India. Distributed throughout India. Southeast Asian Countries; Bangladesh; Philippines etc.

IUCN Red List Status

Endangered (EN); Vulnerable (Nationally)

Fishery importance

It is a commercially important fish of Ansupa. It grows in water bodies with low dissolved oxygen. This cat fishes has both the high nutritive value and high market price. It has delicious taste and nutritive properties, for this Physicians prescribe it for the convalescents. The species captured by bamboo traps, hooks, rod and line from the lake. The living fishes are of great demand in the market fetches about Rs.300/- per Kg

Other information - Ansupa Specific

The species was first reported from Ansupa by Pati, 2008, locally known as “Magura”. During first rain, the species migrate from Ansupa lake to small nalha. It breeds in the lake as well as nearby ditches and paddy fields. It is a good tasty fish which has high commercial value. The local average price is Rs.200/- or more per kg. During rainy season, the landing of the fish is higher than other seasons. The average landing during the rainy season is about 08 kg per day.

Ctenopharyngodon idella

(Valenciennes, 1844)

Grass carp
Odia: Dala khia Machha / Grass carp

Taxonomy
Class : Osteichthyes
Order : Cypriniformes
Family : Cyprinidae
Genus : Ctenopharyngodon
Species : Ctenopharyngodon idella

Diagnostic characters:

Elongated body is compressed in posterior part. Head is depressed and flattened. Mouth is terminal and lips are thin. The upper jaw is slightly longer than the lower jaw. Eyes are large and lateral in position. Barbells are absent. Dorsal fin is inserted slightly ahead of pelvics. Anal fin is short caudal fin is found. Scales are cycloid . Colour in life, dark gray above, silvery on flanks and belly, base of each scale dark brown. Fins are dark. It grows to a maximum length of 150 cm.

Fin formula:

D. 3/7, P_1. 1/17, P_2. 1/8, A. 3/7-8.

D. 3/7, P_1. 1/17, P_2. 1/8, A. 3/7-8

Scales number on the lateral line is 40 to 45.

Habitat / Environment

Freshwater; brackish; demersal; potamodromous. This is a middle dweller and extremely herbivorous fish. Ponds, rivers, lakes, canals, beels, baors etc. both open and closed water bodies. This is a preferred fish for aquaculture ponds used in composite / polyculture practices

Distribution

Asia: China to eastern Siberia. Widely transported around the world. Persists only in Europe by stocking. Introductions often brought with it the parasitic tapeworm *Bothriocephalus opsarichthydis* (synonym of *B. acheilognathi*). Several countries report adverse ecological impact after introduction.

IUCN Red List Status - Not evaluated (NT)

Fishery Importance

Grass carp is a culturable highly growing species chinese carp species. If it gets proper food, it may weigh at 4.5 kg at only one year. Very delicious food and protein supply food.

Other information - Ansupa Specific

The fish was first reported from Ansupa Lake by Das Sarkar *et.al.,* 2015, locally known as "Dala khia Machha" but as per the records of Fishers department, Odisha (Unpublished) the fish was first stocked in Ansupa lake by the department of Fisheries in the year 1985-86. Since then grass carp fingerlings have been stocked during some years periodically with a main objective of reducing excessive growth of Hydrilla weed. Since 2010-11 Grass carp fingerlings are reared to bigger size in pen culture and released in to the Lake at about more than 100-150 gram size. Systematic pen rearing of grass carp in Ansupa in two batches was done during 2018-19 and 2019-20. The average selling price of the fish ranges from Rs.110/- to Rs.140/- per Kg. The average annual yield of Grass carp from Ansupa was 6.7 tonnes.

Cyprinus carpio

(Linnaeus, 1758)

Common carp
Odia: Bilati rohi

Taxonomy
Class : Actinopterygii
Order : Cypriniformes
Family : Cyprinidae
Genus : Cyprinus
Species : Cyprinus carpio

Diagnostic characters

Body elongated and head comparatively very small. Dorsal of the body is very convex and abdomen bulky. Body is compressed and snout rounded. Whole body covered with moderate size scales. Abdomen rounded. Dorsal side of this fish is brownish.

Fin formula:
D. 3-4/14-19, P_1. 1/16-18, P_2. 1/7-8, A. 2-3/5.
D. 3-4/18-20, P_1: 1/15, P_2: 1/8, A. 3-5

Scales number on the lateral line series is 30 to 41. Scales number mentioned by is 30-40 scales on the lateral series. It grows to a maximum length of 120 cm.

Habitat / Environment

Freshwater; brackish; benthopelagic; potamodromous. Subtropical; Bottom dweller and detrivorus fish. Ponds, rivers, lakes, canals, beels, baors etc. both open and closed water bodies.

Distribution

Europe to Asia: Black, Caspian and Aral Sea basins. Introduced throughout the world. Wild stocks are only present naturally in rivers draining to the Black, Caspian and Aral Sea. A reophilic wild population in the Danube is assumed to be the origin of the European species; this population is now under threat.

IUCN Red List Status

Vulnerable (VU)

Fishery Importance

Cyprinus carpio is a culturable highly growing species. Very delicious food and protein supply a huge number of the people.

Other information - Ansupa Specific

Although the fish from Ansupa lake has not been reported by any worker but its occurrence in Ansupa has been confirmed by the local fisherman (unpublished). It is locally known as “Bilati Rohi”. This is a non native fish occurring in Ansupa lake being introduced by local people along with major carp seeds. With rare occurrence in the Lake the fish does not form a fishery. Having local demand for the fish it fetches an average price of Rs.100/- to Rs.120/- per Kg.

Esomus Danrica

(Hamilton,1822)

Flying Barb
Odia: Dandikiri

Taxonomy
Class : Actinopterygii
Order : Cypriniformes
Family : Cyprinidae
Genus : Esomus
Species : Esomus danrica

Diagnostic features

Body elongate and compressed laterally with pointed head. Lower jaw longer. Body depth 3.3-4.8 times in SL and head length 3.5-5 times in SL. Mouth small and 2 pairs of barbels of which maxillary pair is extremely long reaching middle of the body. Pectoral long and pointed. Lateral line incomplete. 29-32; 27-30 scales in longitudinal series. It grows to a maximum length of 13 cm.

Body color olive-green to gray-green. A broad dark lateral band from mouth to caudal base. In juvenile, this band is bordered by a fine gold stripe. Pelvic reddish and other fins are brownish to orange.

Habitat / Environment

Freshwater; brackish; benthopelagic; Inhibits ponds and weedy ditches. Found in small streams, ponds, ditches, beels and inundated fields; abundant during rainy season .

Distribution

Asia: Pakistan, India, Nepal, Bangladesh, Afghanistan, Sri Lanka and Myanmar.

IUCN Red List Status

Least Concern (LC)

Fishery Importance

Used as food fish in India and Bangladesh.

Other information – Ansupa specific

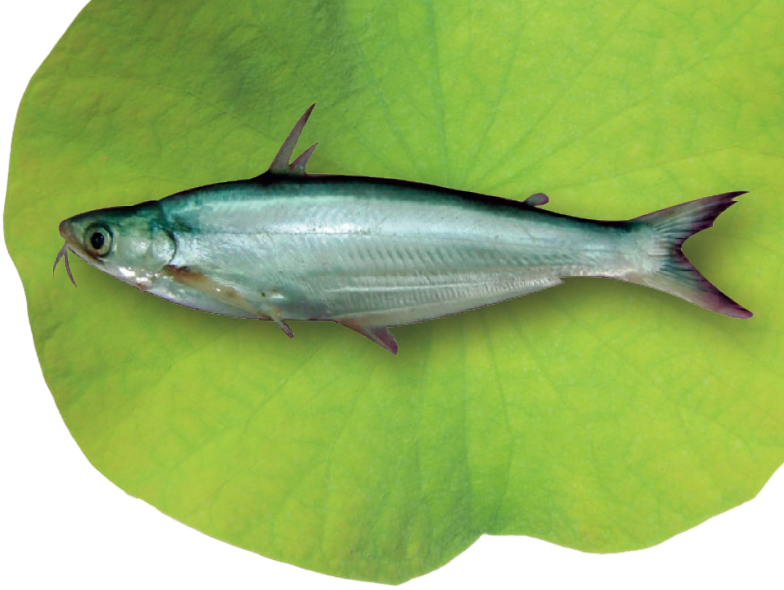
The species was first reported from Ansupa by Pati, (2008), locally known as “Dandakiri”. The fish commonly occurs in Ansupa and forms a good SIF fishery. Annual catch is around 1.5 tonne. The fish is locally consumed and average selling price of the fish in the local market is Rs.120/- per Kg .Although the fish is consumed mostly by poor class people, it is a high class protein rich fish with 14.29% protein to fight malnutrition (Hossain, *et.al.,* 2015).

Eutropiichthys vacha

(Hamilton, 1822)

Batchwa vacha
Odia: Bachha

Taxonomy
Class : Actinopterygii
Order : Siluriformes
Family : Schilbeidae
Genus : Eutropiichthys
Species : Eutropiichthys vacha



Diagnostic features

Body elongated and laterally compressed. Dorsal and ventral profile almost equally convex. Upper jaw slightly longer than lower. 4 pairs of barbels. Silvery colored body with grayish back. Dorsal spine serrated posteriorlly and pectoral serrated internally. Adipose fin always present and caudal deeply forked. Pectoral and anal fins with reddish margin. Lateral line present and complete. It grows to a maximum length of 38 cm.

Head 18.1% SL and 15.2% TL. Height 23.8% SL and 20% TL. Eye 26.3% HL.

Habitat / Environment

Freshwater; brackish; pelagic; potamodromous, Fresh and tidal waters. Surface feeder.

Distribution

Asia: Pakistan, India, Bangladesh, Nepal, Myanmar and Thailand.

IUCN Red List Status

Least Concern (LC); EN (Nationally)

Fishery Importance

Serve as tasty food fish and got an excellent market demand. Always marketed in fresh condition. this fish is an excellent fish for the dining table.

Other information – Ansupa specific

The species was first reported from Ansupa by Pati, (2008), locally known as “Bachha”. The fish was forming a good fishery in Ansupa in the past but in recent years its population has declined in the lake. Annual catch is around 1.00 tonne. The fish is locally consumed and average selling price of the fish in the local market is Rs.120/- per Kg.

Gambusia affinis

(Baird & Girard, 1853)

Mosquitofish
Odia: Masakhia machha

Taxonomy
Class : Actinopterygii
Order : Cyprinodontiformes
Family : Poeciliidae
Genus : Gambusia
Species : Gambusia affinis

Diagnostic features

Mosquitofish is a small, live-bearing fish, is dull grey or brown in color with no bars of bands on the sides, and has a rounded tail. Its body is short, its head flattened, and its mouth pointed upward for surface feeding. Dorsal fin rays 6-7, Anal fin rays ≤ 10. Bony claw on 4th gonopodial ray segmented. Mosquitofish are small and of a dull grey coloring, with a large abdomen, and have rounded dorsal and caudal fins and an upturned mouth. Sexual dimorphism is pronounced; mature females reach a maximum overall length of 7 cm (2.8 in), while males reach only 4 cm (1.6 in). Sexual dimorphism is also seen in the physiological structures of the body. The anal fins on adult females resemble the dorsal fins, while the anal fins of adult males are pointed. This pointed fin, referred to as a gonopodium, is used to deposit milt inside the female. Adult female mosquitofish can be identified by a gravid spot they possess on the posterior of their abdomens.

Habitat / Environment

Freshwater; brackish; benthopelagic. They are found most abundantly in shallow water protected from larger fish. Mosquitofish can survive relatively inhospitable environments, and are resilient to low oxygen concentrations. This fish has been described as the most widespread fresh water fish in the world.

Distribution

North and Central America: Mississippi River basin from central Indiana and Illinois in USA south to Gulf of Mexico and Gulf Slope drainages west to Mexico. One of the species with the widest range of introductions which acquired for itself a near pan-global distribution. Several countries report adverse ecological impact after introduction.

Mosquitofish were introduced directly into ecosystems in many parts of the world as a biocontrol to lower mosquito populations. In February 2014, Chennai Corporation in India introduced western mosquitofish in 660 ponds to control the mosquito population in freshwater bodies.

IUCN Red List Status - Least Concern (LC)

Fishery Importance

Because of their reputation as mosquito-control agents, G.affinis has been stocked routinely and indiscriminately in temperate and tropical areas around the world. In the United States the first known introductions of mosquitofish took place in the early 1900s .

Other information – Ansupa specific

The species was first reported from Ansupa by Dash, et.al. (2018), locally known as “Masakhia machha”. Although the author reported the fish from Ansupa Lake, it still remains as a question as to how the fish came to this habitat. This might have introduced by someone in the past. The fish rarely found in the catch of small indigenous fishes (SIF). The fish does not have any economic importance to the local people. The selling price of the fish is Rs.50/- per kg.

Gibelion catla

(Hamilton, 1822)

Catla (Indian Major Carp)
Odia: Bhakura

Taxonomy
Class : Actinopterygii
Order : Cypriniformes
Family : Cyprinidae
Genus : Gibelion
Species : Gibelion catla

Diagnostic characters

The fish has a short and deep body with depth 2.5 to 3 times more in standard length. The species has a very large head and a large, upturned mouth, with a prominent protruding lower jaw. The upper lip is absent and lower lip is thick. Fins are usually dark in color; pectoral fins being long, extending to pelvic fins. Body is covered with large cycloid scales and the colour is grayish above and silvery on sides and beneath. It grows to a maximum length of 182 cm.

D. 17; A. 7-8; Ll. 40-43.

Habitat / Environment

The fish is fresh water in nature; benthopelagic and show potamodromous migration.

Distribution

Distributed in Asian countries like Pakistan, India, Bangladesh, Nepal and Myanmar.

IUCN Red List Status

Least Concern (LC); Vulnerable (Nationally)

Fishery Importance

Used as culture species in aquaculture. Used as food fish and widely used in other countries. Always marketed in fresh condition. This species command a good market price and consumer demand.

Other information - Ansupa Specific

The species was first reported from Ansupa by Pati, 2008, locally known as “Bhakura”. The fish forms one of the major carp fishery in the lake but the fish does not exhibit good growth due to low zooplankton population in the lake. However its average annual catch is around 1.2 tonnes. It is one of the prized Indian major carp species which fetches good market price of Rs.120/- to Rs.140/- per Kg.

Glossogobius Giuris

(Hamilton, 1822)

Tank Goby
Odia: Baligirida

Taxonomy
Class : Actinopterygii
Order : Perciformes
Family : Gobidae
Genus : Glossogobius
Species : Glossogobius Giuris

Diagnostic characters

Body elongated, antiriorly cylindirical, posteriorly compressed with rounded abdomen. Head is depressed, pointed, scalled above behind eye, caudalfin is pointed or somewhat rounded, eye large placed in the middle of the head. Lower jaw longer than upper jaw, Mouth is slightly oblique and lips are thick. Body olive colour with dusky green above, lighter below. Pelvics are united forming a sucking disc. 5 to 6 large blotches present in the body. Dorsal fin having small spots, forming longitudinal stripes. 9 to 14 scales in the transverse line. First dorsal fin is with or without black spot. Second dorsal, anal fin is posteriorly pointed. The two dorsal fins are separated by a short inter space. Dorsal and caudal fins are yellowish green, spotted with dark edges. Pectoral is lightly spotted but pelvic and anal whitish. Breeding period is May-October.

Habitat/Environment

It is a freshwater, brackish water marine species; demersal in habit. It is bentho pelagic in nature and amphi dromous in migration. In the rainy season this is available in the rivers, streams and beels. It is somewhat hardy, but it cannot live in muddy water for long. It feeds on unicellular and multicellular algae, higher plants, protozoans, worms and crustaceans .

Distribution

Africa to Oceania, Red sea, east Africa and most inland bodies of Indian ocean& Western pacific. Most common in coastal and estuarine water from Africa and Madagascar to India and South China.

IUCN Red List Status

ICUN- Least Concern. Near Threatened (Nationally)

Fishery importance

It is a commercially important food fish species for local consumption and also traded to outside state.

Other information - Ansupa Specific

The species was first reported from Ansupa by Pati, 2008. It is an important food fish mostly consumed locally. Locally the fish is known as Baligirida. The average annual catch of this fish is limited to about 120 to 150 Kg per annum. The average selling price is Rs. 100/- to Rs.120/- per Kg. It does not form a fishery in the lake.

Gudusia chapra

(Hamilton, 1822)

Indian river shad
Odia: Gudua / Orati / chenati

Taxonomy
Class : Actinopterygii
Order : Clupeiformes
Family : Clupeidae
Genus : Gudusia
Species : Gudusia chapra

Diagnostic features

Dorsal spines (total): 0; Anal spines: 0. Body fairly deep and laterally compresed; 26 to 29 scutes along belly. A single triangular pectoral axillary scale; depressed tip of dorsal fin to behind vertical from anal fin origin. Hind margin of scales smooth. Dark blotch behind gill opening (shoulder spot), often followed by a series of spots along flank. Gill rakers fine and numerous, increasing with size of fish (100 to 280 at 4 to 16 cm standard length). Maximum length recorded 20cm (TL). scales in lateral series. Body color brown on back, silvery or golden flanks. It grows to a maximum length of 20cm.

Habitat / Environment

Inhabits Rivers, Freshwater; brackish; pelagic; potamodromous.

Distribution

Asia: rivers of India and Bangladesh affluent to the Bay of Bengal (chiefly the Ganges and Brahmaputra systems and the Mahanadi River of Orissa).

IUCN Red List Status

Least Concern (LC);

Fishery Importance

Contributes to riverine artisanal fisheries. Caught in abundance from July to September

Other information – Ansupa specific

The species was first reported from Ansupa by Pati, 2008, locally known as “Gudu / Orati / chenati”. The fish commonly occurs in Ansupa and forms a good fishery. Annual catch is around 0.8 to 1.0 tonne. It is a very tasty fish. Local people like to consume this fish very much. The average price of the fish in the local market is Rs.80/- per Kg .

Gudusia variegata

(Day, 1870)

Burmese river shad
Odia: chandana

Taxonomy
Class : Actinopterygii
Order : Clupeiformes
Family : Clupeidae
Genus : Gudusia
Species : Gudusia variegata

Diagnostic features

Dorsal spines (total): 0; Anal spines: 0. Scutes along belly, 29 or 30. Three small triangular pectoral axillary scales; depressed tip of dorsal fin not reaching to vertical from anal fin origin. Hind margin of scales toothed. Dark blotch behind gill opening, followed by a series of spots along upper flank. Gill rakers fine and numerous, increasing with size of fish. It grows to a maximum length of 16 cm.

Habitat / Environment

Freshwater; pelagic; amphidromous;

Distribution

Asia: rivers of Myanmar and India, Particularly in Ganga and other rivers in Odisha (chiefly the Irrawaddy). The fish is also common in Mahanadi River.

IUCN Red List Status

Least concern (LC)

Fishery Importance

Fisheries: subsistence fisheries

Other information – Ansupa specific

The species was first reported from Ansupa by Pati, 2008, locally known as “Chandana”. In Ansupa lake the fish is grouped under Small Indigenous Fish (SIF) species. The annual catch is around 0.5 tonne. The fish is locally consumed and average selling price of the fish in the local market is Rs.80/- per Kg.

Heteropneustes fossilis

(Bloch, 1794)

Asian stinging catfish
Odia: Singhi/Rata

Taxonomy
Class : Actinopterygii
Order : Siluriformes
Family : Heteropneustidae
Genus : Heteropneustes
Species : Heteropneustes fossilis

Diagnostic characters

Body elongate and compressed. Depressed head covered with osseous plate at top and sides of the head. Barbels four pairs in which maxillary pairs extend to end of pectorals or to commencement to anal and mandibular pairs extend up to base of pelvics but nasal pair considerably shorter than mandibular pairs. Outstanding anatomical feature is a pair of accessory respiratory organ (air sacs) for which it is also called air sac catfish which extends backwards from the gill-chamber on either side of vertebral column. Caudal rounded. Maximum length recorded 30cm.

Habitat/Environment

Freshwater, brackish, demersal. H. fossilis is found mainly in ponds, ditches, swamps, and marshes, but sometimes occurs in muddy Rivers. It can tolerate slightly brackish water. It is omnivorous. This species breeds in confined waters during monsoon months, but can breed mostly in derelict ponds, and ditches when sufficient rain water accumulates.

Distribution

Occurs throughout Indian plains and the Andamans. Pakistan, Sri Lanka, Myanmar, Bhutan, Bangladesh, Thailand and Laos.

IUCN Red List Status

Least Concern (LC); Vulnerable (Nationally)

Fishery importance

It is a commercially importance fish of Ansupa. It grows in water bodies with low dissolved oxygen . It is an edible fish used in India and Bangladesh. It has high economic importance and of great demand because of medicinal value. Recommended for patients after recovery from malaria for its invigorating qualities.

Other information - Ansupa Specific

The species was first reported from Ansupa by Pati, 2008, locally known as “Singhee”. It breeds in the lake. The landing is more in rainy season. It is a good commercial fish and the local price is Rs.140/- to 160/- per kg at the landing site. It is a tasty fish. During rainy season, the average landing is 6 kg / day. It is marketed in live condition for higher price.

Labeo bata

(Hamilton, 1822)

Bata
Odia: Bata

Taxonomy
Class : Actinopterygii
Order : Cypriniformes
Family : Cyprinidae
Genus : Labeo
Species : Labeo bata

Diagnostic features

Dorsal profile is more convex than that of abdomen. Snout bluntly pointed. Body elongated. Snout slightly projecting beyond mouth of ten studded with pores. A pair of small maxillary barbells is hidden inside the labial fold. No cartilaginous support to lips. Dorsal originates midway between snout tip and anterior base of anal. Pelvics originate slightly nearer to snout tip than to caudal base. Bluish or darkish on upper half, silvery below, opercle light orange. Minimum and maximum number of scales on the lateral line is 38 and 40 respectively. Minimum and maximum number of scales in above the lateral line is 6 and 7 respectively. Minimum and maximum number of scales in below lateral line is 5 and 6 respectively. It grows to a maximum length of 61 cm.

Habitat / Environment

Freshwater; benthopelagic; potamodromous. Its food comprises crustaceous and insect larvae in early stages .Ponds, rivers, rivulets are its main habitats .

Distribution

Asia: India and Bangladesh. Reported from Pakistan.

IUCN Red List Status

Least Concern (LC); Near Threatened (Nationally)

Fishery Importance

This fish is very tasty. It provides a respected amount of fish protein.

Other information – Ansupa specific

The species was first reported from Ansupa by Das, et.al. (2017), locally known as “Bata”. The fish commonly occurs in Ansupa and forms a good fishery. Annual catch is around 1.5 tonne. The fish is locally consumed and average selling price of the fish in the local market is Rs.120/- per Kg .

Labeo calbasu

(Hamilton, 1822)

Orangefin labeo
Odia: Kala Bainsi

Taxonomy
Class : Actinopterygii
Order : Cypriniformes
Family : Cyprinidae
Genus : Labeo
Species : Labeo calbasu

Diagnostic characters

Dosal Fin rays 16-18 Barbels two pairs and fins are black. Pactoral fin as long as head length; Body deep, mouth distinctively inferior inside. Body stout and rather than deep. Head fairly large with conical and its length less than the body depth. Snout depressed and fairly pointed, devoid of lateral lobe. No pores on snout. Eyes are moderate, not visible from underside of head and diameter about 3.3 times in head. Mouth inferior, lips thick and conspicuously fringed, both lips with a distinct inner fold. Barbels are two pairs (rostral and maxillary) rostral pair longer than maxillary pair. Dorsal fin with a fairy long base, inserted midway between snout tip and base of caudal fin. Caudal fin deeply forked. Scales are moderate; lateral line with 40-44 scales; lateral transverse scale-rows 5-6 between lateral line and pelvic fin base; there are 20 rows of scales before dorsal fin and 22 rows round the caudal peduncle. Pre dorsal scales were arranged 150-180 mm. Colour: Blackish green, Lighter below, Flanks buff pink or with scarlet spots with dark edges may form stripes. Fins black; upper lobe of caudal fin usually tipped with white. It grows to a maximum length of 90 cm.

Fin Formula - D. iii-iv 13-16; A. ii-iii 5.P. i 16-18; V. i 8

Habitat / Environment

Freshwater; brackish; demersal; potamodromous , depth range 10 - 10 m , Tropical; 25°N - 16°N. Labeo calbasu attain the medium size to slow-moving in rivers and ponds. It inhabits in all natural water bodies such as rivers (relatively large water bodies), beels (static water in Ganga and Brahmaputra floodplains),

Distribution

Asia: Pakistan, India, Bangladesh, Myanmar, Nepal, Thailand and South Western China. Reported as introduced to China .

IUCN Red List Status

Least Concern (LC); Near Threatened (Nationally)

Fishery Information

5.36g oil is found from 65 cm of its liver. Its liver oil contains Vitamin "A". This fish is in great demand in the market. It is a good sport on rod and line.

Other information - Ansupa Specific

The species was first reported from Ansupa lake by Pati, 2008, locally known as “Kala Bainsi”. As heard from the local fisherman the fish was caught in good numbers in early 60s and was a common fish in the commercial catches up to end of 1970s. There after the catch of the said species gradually declined and from mid 80s’ it became a stray occurrence in the Lake. However no published reports in this regard were available until 2018. The fish is one of the tasty Indian carps fetching high selling price in the market ranging from Rs.140/- to 160/- per Kg. The fish has a local consumer preference. At Ansupa the fish is highly priced at present but its availability is much low. The fish hardly occurs in commercial catch.

Labeo rohita

(Hamilton, 1822)

Roho labeo / Rohu (Indian Major Carp)
Odia: Rohi

Taxonomy
Class : Actinopterygii
Order : Cypriniformes
Family : Cyprinidae
Genus : Labeo
Species : Labeo rohita

Diagnostic characters

Dorsal fin with 12-14 1/2 branched rays; lower profile of head conspicuously arched; short dorsal fin with anterior branched rays shorter than head; 12-16 predorsal scales ; snout without lateral lobe. Maximum length recorded 200cm (TL).

Habitat / Environment

Freshwater; brackish; benthopelagic; potamodromous. Column feeder planktophagous

Distribution

Asia: Pakistan, India (throughout India), Sri Lanka, Bangladesh, Myanmar and Nepal.

IUCN Red List Status

Least Concern (LC); Near Threatened (Nationally).

Fishery Importance

Rohu is regarded as an excellent game fish and seems to put up a better fight in a River than in a tank. It is a highly valued food fish. A number of interspecific and intergeneric hybrids have been produced.

The most promising intergeneric hybrid, male Catla female Rohu combines the quick growth of Catla and small head of Rohu. Jayanti roh u' was developed through selective breeding of rohu, Labeo rohita at the Central Institute of Freshwater Aquaculture (CIFA), Kousalyaganga, Bhubaneswar from different founder populations of North Indian Rivers. Improved Jayanti rohu is the first genetically improved fish in India. It has shown improvement in the gain of 17 % per generation for growth trait.

Other information – Ansupa Specific

The species was first reported from Ansupa by Pati, 2008, locally known as "Rohi". The fish is one of the three Indian major carps which is most popular in India and also in Odisha. It is a highly prized fish fetching an average price of Rs.150/- per Kg. It forms very good fishery in Ansupa lake with highest landing of 8-10 tonnes per year. It had highly consumer preference in fresh fish market of cuttack city in the past.

Laubuka laubuca

(Hamilton,1822)

Indian glass barb
Odia: Bankoe

Taxonomy
Class : Actinopterygii
Order : Cypriniformes
Family : Cyprinidae
Genus : Laubuka
Species : Laubuka laubuca

Diagnostic features

Body elongate, deep and compressed with slightly oblique mouth. Body depth 2.5-4.1 times in standard length. Lateral line complete with 34-36; 31-37; 34-37 scales. Pectorals wing-like and large. It Grows to a maximum length of 10 cm.

Body color translucent, shining silver to greenish-gray with a violet lustre on caudal peduncle. Vertical steel-blue markings on sides of the body. A deep black, golden-edged blotch at the base of caudal fin. Fins are yellowish.

Habitat / Environment

Freshwater; brackish; pelagic; Abundantly found in canals, beels and rivers; also in paddy and jute fields during rainy season. Prefers mud with sandy bottom.

Distribution

Asia: Pakistan, India, Bangladesh, Sri Lanka, Myanmar, Malay Peninsula, Sumatra and Indonesia. Reported from Nepal and Indochina; Mekong and Chao Phraya basins.

IUCN Red List Status

Least Concern (LC)

Fishery Importance

Used as ornamental fish in aquarium. Also as bait for *Mahaseer*, *murrels* and other large carnivorous fish. Caught by *rod and hook*, cast and drag nets etc.

Other information – Ansupa specific

The species was first reported from Ansupa by Pati, (2008), locally known as “Bankoe”. The fish commonly occurs in Ansupa and forms a good SIF fishery. Annual catch is around 1.00 tonne. The fish is locally consumed and average selling price of the fish in the local market is Rs.60/- per Kg .

Leiodon cutcutia

(Hamilton,1822)

Ocellated pufferfish
Odia: Bengafula

Taxonomy
Class : Actinopterygii
Order : Tetradontoformes
Family : Tetraodontidae
Genus : Leidon
Species : Leidon cutcutia

Diagnostic features

Broad head and back is tapering abruptly to tail. Mouth opening is a little inferior with two large teeth on each jaw. Gill-openings very reduced and restricted in front of pectoral base. Each nostril forms single orifice situated at end of a very simple short tube. Nostril is nearer to angle of mouth than to anterior margin of eyes. Eyes are large and situated slightly behind middle of head. Dorsal placed well back and above origin of anal. Distance between dorsal origin and anal base equals half the distance between dorsal and posterior edge of the mouth. All fins rounded. Body colour: Greenish yellow above, white in the abdomen. A light band is found between eyes. A large black ocellus is surrounded by a light edge, on the side anterior to the origin of anal fin. It grows to a maximum length of 15 cm.

Habitat / Environment

Freshwater; brackish; demersal. In ponds, beels, canals, rivers and other water areas throughout the study area. Its regional distribution in India: Uttarpradesh, Bihar, Odisha, Westbengal and Asam.

Distribution

Asia: India, Bangladesh, Sri Lanka, Myanmar and Malay archipelago

IUCN Red List Status

Least Concern (LC); India: Near Threatened (Nationally)

Fishery Importance

It is a very poisonous fish especially in its breeding season (rainy season) and people do not eat the fish. Fisheries: of no interest. Often people keep this fish in the home aquarium

Other information – Ansupa specific

The species was first reported from Ansupa by Dash, et.al., (2018), locally known as "Bengafula". The fish is one of the species in the ichthyofaunal diversity of Mahanadi River and might be entering in to Ansupa Lake during flood season. However it rarely occurs in the catches and has no importance to fisheries. Local people does not consume the fish.

Lepidocephalichthys guntea

(Hamilton, 1822)

Guntea loach
Odia: Jimani Todi / Konda Tudi

Taxonomy
Class : Actinopterygii
Order : Cypriniformes
Family : Cobitidae
Genus : Lepidocephalichthys
Species : Lepidocephalichthys guntea

Diagnostic characters

The body of this fish is elongated and slightly compressed anteriorly and strongly posteriorly. Dorsal and ventral profiles are nearly parallel. Caudal rounded, a light band extends from snout to caudal. A patch of scales extends from below eye to upper part of operculum. Dorsal fin inserted slightly behind pelvic fin origin. Generally lateral line absent. Colour variable. Generally the ground colour is dirty yellowish. Below and above band are a series of dark blotches. A black ocellus presents on the upper half of caudal base. Dorsal and caudal barred with spots. Dorsal spines (total): 0; Dorsal soft rays (total): 8; Anal spines: 0; Anal soft rays: 7. Pectoral fin with an osseous spine in males. Maximum length recorded 15.0 cm (TL) .

Habitat / Environment

Freshwater; brackish; demersal; potamodromous. Scavenging habit.

Distribution

Asia: Pakistan, northern India, Bangladesh, Nepal, Myanmar and Thailand. Known from the Salween basin.

IUCN Red List Status

Least Concern (LC)

Fishery Information

Good fish as food, not very costly fish. The species rear in aquarium as an ornamental fish.

Other information – Ansupa specific

The species was first reported from Ansupa by Pati, 2008, locally known as “Jimani todi”. Due to its scavenger feeding habits it is used in home aquarium as an ornamental fish. This is a small indigenous fish grouped under SIF. It does not form a fishery in Ansupa and sold as a miscellaneous small fish. Locally the fish is sold at Rs.50/- per Kg.

Macrognathus aculeatus

(Bloch, 1786)

Lesser spiny eel
Odia: Todi

Taxonomy
Class : Actinopterygii
Order : Synbranchiformes
Family : Mastacembelidae
Genus : Macrognathus
Species: Macrognathus aculeatus

Diagnostic features

Body elongated and compressed laterally. Dorsal and anal fin is long but not confluent with caudal fin. Caudal fin is small and rounded. Lateral line is present. Scales are small and cycloid. Eyes are small, snout with a tri-lobed extremity. Dorsal spines commence far behind pectoral. Head scales larger than those on body. Pelvic fins are absent. Colour on above is greenish or brownish gray and yellowish beneath. A series of 3-7 large black ocelli having white edge is present along base of dorsal. Dorsal spines (total): 14 - 20; Dorsal soft rays (total): 52-56; Anal spines: 3; Anal soft rays: 50 - 54. Body with series of obliquely oriented bars. Dorsal and anal fins with a row of isolated spines followed by a long continuous soft portion, both fins extending to but not confluent with caudal fin. Pelvic fins absent. Caudal fin rounded. Maximum length is 38.0 cm.

Habitat / Environment

Freshwater; brackish; benthopelagic; The habitat of this fish is the muddy streams. It is also available in brackish water within tidal influence. This is abundantly found in canals, beels, ponds and flooded weedy fields, paddy and jute fields in rainy season.

Distribution

Asia: Thailand, Malay Peninsula, Borneo, Indonesia, Bangladesh, Nepal, India and Viet Nam

IUCN Red List Status

Not Evaluated (NE)

Fishery Importance

This fish is highly esteemed as food. This fish has high market value.

Other information – Ansupa specific

The species was first reported from Ansupa by Pati, 2008, locally known as “Todi”. The annual catch is around 0.3 tonne. The fish is locally consumed and average selling price of the fish in the local market is Rs.60/- per Kg.

Macrognathus pancalus

(Hamilton,1822)

Barred spiny eel
Odia: Todi

Taxonomy
Class : Actinopterygii
Order : Synbranchiformes
Family : Mastacembelidae
Genus : Macrognathus
Species: Macrognathus pancalus

Diagnostic features

Body elongated and compressed. No barbels. Dorsal and anal fin long but not confluent with caudal fin. Caudal small and rounded. No pelvic fins. Scales small and rounded. Body greenish or olive-green above and yellowish or whitish below. Yellowish fins with numerous black spots. Lateral line present and complete. It grows to a maximum length of 18 cm.

Habitat / Environment

Freshwater; brackish; benthopelagic.

Distribution

Asia: Pakistan, India, and Bangladesh.
Reported from Nepal

IUCN Red List Status

Least Concern (LC); Near Threatened (Nationally)

Fishery Importance

Food fish in India and Bangladesh. It is described that this fish is highly esteemed as food. Edible portion contains 3.5% fat and 74.2% water .

Other information – Ansupa specific

The species was first reported from Ansupa by Das Sarkar, et.al. (2015), locally known as "Todi". The fish commonly occurs in Ansupa and forms a good fishery. Annual catch is around 0.6 tonne. The fish is locally consumed and average selling price of the fish in the local market is Rs.120/- per Kg .

Mastacembelus armatus

(Lacepede, 1800)

Zig-zag eel
Odia: Todi

Taxonomy
Class : Actinopterygii
Order : Synbranchiformes
Family : Mastacembelidae
Genus : Mastacembelus
Species: Mastacembelus armatus

Diagnostic features

Body is relatively slender, elongated and slightly compressed. Long dorsal and anal fin is present which is confluent with caudal fin. Pelvic fin is absent, tip of snout is tri-lobed which are a central pointed one, two lateral, short, blunt ones. Nostril situated close to front margin of eye, cleft large and lips thick. Scales is minute, head is scaled, fins scaly at base. Dorsal spines commence over middle of pectoral fin which is rounded, colour dark brown and usually with zigzag lines, yellowish beneath. An undulating black band is situated from eye to caudal, a similar thinner one below it. A row of black spots are found along base of soft dorsal fin .

Habitat / Environment

It lives in fresh to brackish water environments; demersal in nature and potamodromous in migration. Distributed in rivers, beels, ponds and inundated fields. It lives at the bottom in the mud and corners of the stones; when water dries up, it buries itself in the mud. It prefers stationary to running water. It is predatory in habit. The young fish feeds on crustaceans and insect larvae, while the adult devours fish and tadpoles. The fish breeds in monsoon period.

Distribution

The species is well distributed in Asian countries: Pakistan to Vietnam, India and Indonesia.

IUCN Red List Status

Least Concern (LC)

Fishery Importance

It is reported to be a very good food-fish. It is a popular good fish especially when freshly caught. It has high market value. Good sport on rod and line with earth worm bait. It contains oil and vitamin-C in large amounts.

Other information - Ansupa Specific

The species was first reported from Ansupa by Pati, 2008, locally known as “Todi”. This is a commercial fish available in Ansupa Lake region throughout the year. The selling price of this fish is Rs.100/- per kg.

Monopterus Cuchia

(Hamilton, 1822)

Rice eel or Mud eel
Odia: Cuchia

Taxonomy
Class : Actinopterygii
Order : Synbranchiformes
Family : Synbranchidae
Genus : Monopterus
Species: Monopterus cuchia

Diagnostic character

Eel like body (Cylindrical) and robust. Head not conspectus, eyes small covered by skin. Teeth on jaws in single row, palatine teeth. Gill opening crescentic occupying most of the central region behind head and divided in to a pair of pore like lateral apertures, gills greatly reduced. Skin of branchial region of central site of head drawn in to deep longitudinal folds. Suprabranchial pouch (respiratory organ) large and pairs. Scaley distinct longitudinally arranged in posterior half of body. Dorsal and anal fin folds or ridges rudimentary. Branchiostegal rays b.vertebral (99 - 112) + 50 – 70. Colour greenish or a chest – nut – brown becoming lighter on abdomen with many blackspot on body.

Habitat / Environment

Inhabits in fresh and brackishwater rivers, ponds, Lakes. found in shallow, well vegetated waters and mud. Inhabits plenty in mud holes in shallow beels and boro paddy field .Inhibits muddy hole of rivers and paddy fields. Also found in flooded rice fields. The freshwater mud eel is also an evasive nocturnal animal.

Distribution

Asia: Pakistan, India, Nepal, Bangladesh and Myanmar.

IUCN Red List Status

Least concern (LC); Near Threatened (Nationally)

Fishery Importance

Monopterus cuchia is a tasteful, nutritionally rich and medicinally valuable fish with high export demand which can play a unique role for socioeconomic welfare of the area. It is a food fish, attains a length of 60cm.

Other information - Ansupa Specific

The species was first reported from Ansupa Lake by Pati, 2008, locally known as “Cuchia”. It is a common edible fish leaves in the mud holes in the Lake. The fish is occasionally caught by fishermen and consumed by local people. The selling price of the fish is very low ranging from Rs.30/- to Rs.50/- per kg.

Mystus cavasius

(Hamilton, 1822)

Gangetic mystus
Odia: Mani Sira Kantia

Taxonomy
Class : Actinopterygii
Order : Siluriformes
Family : Bagridae
Genus : Mystus
Species: Mystus cavasius

Diagnostic characters

Dorsal spines (total): 1; Dorsal soft rays (total): 7; Anal spines: 0; Anal soft rays: 10 - 11. Body elongate and compressed; head conical; occipital process narrow. Maxillary barbels, in adults, extend posteriorly beyond the caudal fin base, but in young specimen, do not extend beyond the anal fin. Dorsal spine weak, often feebly serrated. Color is grayish with a more or less well-defined midlateral longitudinal stripe. A dark spot emphasized by a white or pale area along its ventral margin is just anterior to the first dorsal spine. Dorsal, adipose and caudal fins shaded with melanophores. Maximum length recorded 40cm (SL).

Habitat/Environment

Freshwater; brackish; demersal; amphidromous. This carnivorous catfish predominantly occurs in freshwater ponds, rivers, lakes and also in brackishwater.

Distribution

Asia: lowland rivers in most major basins of the Indian subcontinent (Pakistan, Nepal, India, Sri Lanka and Myanmar), including but not limited to the Indus, Brahmaputra-Ganges, Krishna, Cauvery, Irrawaddy, Salween and Tenasserim. Reports of this species from the Chao Phraya and Mekong basins, Malaysia, and Indonesia are based on misidentifications of Mystus albolineatus or Mystus singaringan. Occurs in Thailand, but only in the Salween basin.

IUCN Red List Status

Least Concern (LC); Near Threatened (Nationally)

Fishery importance

It is a commercially important species. It is used as food fish in India and Bangladesh. This species got a good demand in fish market because of its tastiness.

Other information - Ansupa Specific

The species was first reported from Ansupa by Pati, 2008, locally known as “Mani Sira Kantia”. The species is found round the year in the lake. The juveniles migrate to the lake from Mahanadi River during monsoon season. It forms a minor fishery in the lake. The fish also migrate to the local nalha and breeds there during monsoon. It is a good commercial species and the average price is Rs.150/- to Rs.170/- per kg in local market.

Mystus vittatus

(Bloch, 1794)

Striped dwarf catfish
Odia: Kantia

Taxonomy
Class : Actinopterygii
Order : Siluriformes
Family : Bagridae
Genus : Mystus
Species: Mystus vittatus

Diagnostic features

Dorsal spines (total): 1; Dorsal soft rays (total): 6-7; Anal spines: 0; Anal soft rays: 12 - 13; Vertebrae: 31 - 37. Body elongate and slightly compressed. Maxillary barbels extending beyond the pelvic fins, often to the end of the anal fin. Dorsal spine weak, finely serrated on its inner edge. Adipose fin small, inserted much behind rayed dorsal fin but anterior to the anal fin. 4 pairs of barbels, Lateral line present and straight. It grows to a maximum length of 21 cm.

Color varies with age; generally delicate gray-silvery to shining golden, with about 5 pale blue or dark brown to deep black longitudinal on side. A narrow dusky spot often present on the shoulder. The fins with dark tips. Head 23.3% SL and 18.2% TL. Height 16.3% SL and 12.7% TL. Eye 15% HL. It grows to a maximum length of 21 cm.

Habitat / Environment

Freshwater; brackish; demersal;. Found in freshwater bodies; in flooded canals, beels, paddy and jute fields, streams, haors, oxbow lakes and rivers in swarms during rainy season. Inhibits standing and flowing water bodies, even in the tidal zone.

Distribution

Asia: Indian subcontinent, including Pakistan, India, the Punjab, Sind Ceylon, Sri Lanka, Nepal, Bangladesh and probably Myanmar. Also found in Thailand.

IUCN Red List Status

Least Concern (LC); Vulnerable (VU) (Nationally)

Fishery Importance

Used as food fish in India and Bangladesh. Juveniles are also maintained in home aquarium because of its nice horizontal black stripes on body.

Other information – Ansupa specific

The species was first reported from Ansupa by Pati, 2008, locally known as “Kantia”. The fish forms a minor fishery in the lake and the average annual catch is limited to 0.4 tonne. The fish is consumed fresh locally and the average local selling price is Rs.60/- per Kg.

Mystus tengara

(Hamilton, 1822)

Tengara catfish
Odia: Tengara kantia

Taxonomy
Class : Actinopterygii
Order : Siluriformes
Family : Bagridae
Genus : Mystus
Species : Mystus tengara

Diagnostic features

Body elongated and slightly compressed. Head depressed. Dorsal spine long upto head keep out the head. Pectoral spine with 10 to13 denticulations. Pectoral spine stronger than dorsal spine, used as offence organ and injury occurred by it is very painful. 4-5 longitudinal bands along sides. Adipose short. Upper lobe of caudal fin longer. Body color yellow or brown with a dark spot on shoulder. Barbels 4 pairs. Mouth terminal. It grows to a maximum length of 18 cm.

Head 21.1% SL and 19.4% TL. Height 22.8% SL and 21% TL. Eye 25% HL. Head 2.8-3.3 in standard, 3.8-4.5 in total length, Height 2.5-3.3 in standard, 3.3-4.3 in total length , Eye 3.5 – 4.5 in head. Eye 4-4.5 in head.

Habitat / Environment

This species usually found in weedy, sandy and muddy places of the pools, streams and river in the rainy season.

Distribution

Pakistan, India (Assam, North India and Panjab), Nepal and Bangalesh .

IUCN Red List Status

Least Concern (LC)

Fishery Importance

Used as food fish in India and Bangladesh. It is very good to taste and useful in calcium deficiency.

Other information – Ansupa specific

The species was first reported from Ansupa by Das, et.al. (2017), locally known as “Tengara kantia”. The fish commonly occurs in Ansupa and forms a good fishery. Annual catch is around 1.5 tonne. The fish is locally consumed and average selling price of the fish in the local market is Rs.120/- per Kg.

Nandus nandus

(Hamilton, 1822)

Gangetic leaf fish/ Mud perch
Odia: Bodasi/Bhutusi

Taxonomy
Class : Actinopterygii
Order : Perciformes
Family : Nandidae
Genus : Nandus
Species : Nandus nandus

Diagnostic characters

Deep laterally compressed body with nearly straight belly and arched back. Head large, compressed, snout pointed, eye large comparatively small species. Body greenish brown, 3 yellow green or olive green vertically patchy bands sides. Fins greenish to yellow. Dorsal spine strong and soft portions largest caudal fin slightly rounded, pectoral spine weak, scale ctenoid scale above lateral line 8. Lateral line interrupted at 39-41 scales, LL continue below for 14-16 scales. Scale no longitudinal 48 to 50. 8 rows of scales between lateral line and origin of spinous dorsal. Maximum length recorded 20.0 cm.

Habitat/Environment

Fresh water, brackish water, benthopelagic. They are common in ditches and inundated paddy fields where it prey on small organisms. Muddy streams, rivers, pools and marshes are its main habitats. It inhabits mostly in fresh water.

Distribution

Asia: Pakistan to Thailand.

IUCN Red List Status

LC (Least Concern); Near Threatened (Nationally)

Fishery importance

It is used as ornamental fish for aquarium . Breeds in river drainage. This is a very hardy fish and is of considerable fisheries interest. It is a high priced fish inspite of its spinous fins and ugly black bands and blotches all over the body .It is very tenacious and can live in foul water. So, this fish is very suitable for cultivation in muddy water .

Other information - Ansupa Specific

The species was first reported from Ansupa by Pati, 2008, locally known as “Bodasi / Bhutusi”. This species is available in Ansupa lake, throughout the year. This fish is used in home aquarium as an ornamental fish. Sold locally for consumption and the average selling price is Rs.60/- per kg.

Notopterus notopterus

(Pallas, 1769)

Bronze featherback
Odia: Fali

Taxonomy
Class : Actinopterygii
Order : Osteoglossiformes
Family : Notopteridae
Genus : Notopterus
Species : Notopterus notopterus

Diagnostic features

The fish has an oblong and strongly laterally compressed body with minute scales. Craniodorsal profile of the species is nearly straight or slightly concave. Head laterally compressed. Abdomen is with 25-28 double serrations in pre pelvic region. Pre operculum is 1/4th of SL and has 6-8 rows of scales. Preorbital is serrated and extends to mid orbit region. Dorsal fin is inserted. Small sized pectoral fins extend beyond anal fin origin. Anal fin long and confluent with caudal fin, which is very little in size. Body color silvery-white with numerous fine gray spots on body and head.

Habitat

Rivers, canals, beels, ponds, haors, etc. also found in brackish water. If there is no small fish of other cultivated species it can be cultivated.

Distribution

Bangladesh, Pakistan, India, Nepal, Burma, Malaya and Indonesia. The fish species is distributed in Indus, Ganges-Brahmaputra, Mahanadi, Krishna, Cauvery, and other river basins in southern India; Irrawaddy, and Salween; Mekong, Chao Phraya, Mekong and virtually all coastal river basins of peninsular Thailand and Malaysia; Sumatra and Java.

IUCN Red List Status

Least Concern (LC); Near Threatened (Nationally)

Fishery Importance

It is a commercially important fish consumed locally as well as traded outside Odisha like W.B (Howrah) as live fish. Mainly used as food fish. Also used as ornamental fish species in aquarium at juvenile stage.

Other information - Ansupa Specific

The species was first reported from Ansupa Lake by Pati, 2008, locally known as “Fali”. This is a commercially important fish available throughout the year in Ansupa Lake. Attains maximum size of 250 gm. The price of the fish ranges from Rs.100/- to Rs.120/- per kg.

Ompok bimaculatus

(Bloch, 1794)

Butter catfish
Odia: Ghee pabta

Taxonomy
Class : Actinopterygii
Order : Siluriformes
Family : Siluridae
Genus : Ompok
Species : Ompok bimaculatus

Diagnostic features

Elongate body is strongly compressed. Head depressed and snout rounded. Mouth is superior. Lower jaw is longer than upper. Two pairs of barbels are present. Maxillary barbels extend posterior to (or slightly beyond) anal fin base. Nostrils widely separated from each other. Teeth found on jaws and vomer. Caudal fin is deeply forked and its upper lobe long. Dorsal side grey, a transverse blackish spot present, behind the operculum on the lateral line, caudal stripped with black spots; besides, there are purple and yellowish spots throughout the body. Anal fin with 57 or 58 branched rays. It grows to a maximum length of 45 cm.

Habitat / Environment

It is a fresh water fish, extensively in rivers, rivulets, streams, beels, canals, flooded jute fields in the rainy season. It feeds on the rainy season. It feeds on the crustacean larvae, algae, protozoans, a little mud and sand.

Distribution

Asia: Indian subcontinent and Myanmar.

IUCN Red List Status

Near Threatened (NT); Endangered (Nationally)

Fishery Importance

It has great demand and market price on account of its good taste, flavour and invigorating effect. Breeding of this fish is successful using hormone injections. Farmers culture the species in ponds.

Other information – Ansupa specific

The species was first reported from Ansupa by Pati, 2008, locally known as “Ghee pabta” .The fish commonly occurs in Ansupa and forms a minor fishery. Annual catch is around 1.5 tonne. The fish is locally consumed and average selling price of the fish in the local market is Rs.150/- per Kg and Rs.250/- per kg at Howrah market.

Osteobrama cotio

(Hamilton, 1822)

Cotio
Odia: Chilti

Taxonomy
Class : Actinopterygii
Order : Cypriniformes
Family : Cyprinidae
Genus : Osteobrama
Species : Osteobrama cotio

Diagnostic features

Body deeply compressed. Dorsal and ventral profile almost equally convex. Mouth small and terminal with no barbels. Upper jaw slightly longer than lower jaw. Gill opening wide. Body silvery with dark on back. Fins are light greenish colored. Lateral line present and complete. Head 35.7% SL and 27.8% TL. Height 42.9% SL and 33.3% TL. Eye 24% HL. It grows to a maximum length of 15 cm.

Habitat / Environment

It as an inhibitor mainly of rivers, streams, beels and jheels. Found in Freshwater Rivers, ponds and Lakes.

Distribution

Throughout Bangladesh, Pakistan, India: Assam, West Bengal, Bihar, Madhya Pradesh, Uttar Pradesh and Punjab

IUCN Red List Status

Least Concern (LC); Near Threatened (Nationally)

Fishery Importance

Used as food fish in India and Bangladesh and known to supply vitamin A to a great extent. Always marketed in fresh condition. Possibly a useful larvicide .

Other information – Ansupa specific

The species was first reported from Ansupa by Pati, 2008, locally known as “Chilti”. The fish commonly occurs in Ansupa and forms a good fishery. Annual catch is around 1.5 tonne. The fish is locally consumed and average selling price of the fish in the local market is Rs.120/- per Kg .

Pachypterus atherinoides

(Bloch, 1794)

Indian Potasi
Odia: Patasi pabta

Taxonomy
Class : Actinopterygii
Order : Siluriformes
Family : Schilbeidae
Genus : Pachypterus
Species : Pachypterus atherinoides

Diagnostic characters

Body elongated and compressed. Upper jaw slightly longer than lower. Eyes large. Body whitish or almost transparent with light greenish back. 3 or 4 longitudinal bands present on flank. Caudal forked and caudal base contains a black spot. Barbels present and 4 pairs. Dorsal spine as long as head and serrated posteriorly. Lateral line complete but not so conspicuous. Head 20.4% SL and 16.4% TL. Height 26.5% SL and 21.3% TL. Eye 30% HL . It grows to a maximum length of 15 cm.

Fin formula: D. 1/5-6; P1. 1/7; P2. 6; A. 33-40

Habitat / Environment

This species found in freshwaters and also tidal rivers. This fish found in the streams and rivulets especially in the paddy and jute fields and canals in the rainy season .The fish also occurs in low saline brackishwater habitats.

Distribution

Asia: Pakistan, India, Bangladesh, Nepal and Myanmar..

IUCN Red List Status

Least Cocern (LC)

Fishery Importance

It is a good food fish in India.

Other information - Ansupa Specific

The fish was first reported from Ansupa Lake by Das Sarkar, et.al. during 2015, locally known as “Patasi pabata”. The species maintains a low level population in Mahanadi River system and casually enters in to Ansupa lake during high flood season. It does not form a fishery in the Lake and rarely caught by Ansupa fisherman. It fetches average price of Rs.50/- to Rs.60/- per Kg.

Parambassis lala

(Hamilton, 1822)

Highfin glassy perchlet
Odia: Nali Chandi

Taxonomy
Class: Actinopterygii
Order: Perciformes
Family: Ambassidae
Genus: Parambassis
Species: Parambassis lala

Diagnostic characters

The fish has an elongated and compressed body with pointed snout and large mouth. Dorsal and abdominal profiles, both are very convex, but the profile over the eyes is slightly concave. Eyes are large and diameter is 7.9-9.5 in standard length. The maxilla reaches below the middle of the orbit. Pre-orbital with about 6 denticulation on its inferior edge and a strong one on its anterior superior angle directed towards the eye and about 5 more along the upper edge of that bone. Another spine present at the middle of the posterior edge of the orbit. Gill rakers on lower arm of first arch are 21-25. Body colour is olive with a dark spot on the shoulder. Margins of the dorsal and anal fins are dark. The caudal fin is deeply forked and the caudal peduncle depth is 8.3-9.1 in standard length. It grows to a maximum length of 4 cm.

D. VII+I, 15-16; A. III, 14-16; P.11; V. I, 5; Lr. 60-70.

Habitat/ Environment

It is a fresh water, brackish water dwelling species, demersal in habit.

Distribution

Distributed in Asian countries: India, Pakistan, Bangladesh, Myanmar, Thailand, Malaysia and Nepal.

IUCN Red List Status

It is a Near Threatened species.

Fishery importance

This is an ornamental fish for home aquarium.

Other information - Ansupa Specific

The species was first reported from Ansupa by Das, et.al., 2017, locally known as "Nali Chandi". This fish caught by the local fishermen during rainy season frequently. The average landing of the species is 4.0-5.0 kg/ day. The average price of this species varies between Rs.12.00 to Rs.14.00 per kg at the landing centre.

Parambassis ranga

(Hamilton, 1822)

Indian glassy fish
Odia: Dhala Chandi / Guachipi

Taxonomy
Class : Actinopterygii
Order : Perciformes
Family : Ambissidae
Genus : Parambassis
Species: Parambassis ranga

Diagnostic characters

The fish has an elongated and compressed body with pointed snout and large mouth. Dorsal and abdominal profiles, both are very convex, but the profile over the eyes is slightly concave. Eyes are large and diameter is 7.9-9.5 in standard length. The maxilla reaches below the middle of the orbit. Pre-orbital with about 6 denticulation on its inferior edge and a strong one on its anterior superior angle directed towards the eye and about 5 more along the upper edge of that bone. Another spine present at the middle of the posterior edge of the orbit. Gill rakers on lower arm of first arch are 21-25. Body colour is olive with a dark spot on the shoulder. Margins of the dorsal and anal fins are dark. The caudal fin is deeply forked and the caudal peduncle depth is 8.3-9.1 in standard length. It grows to a maximum length of 8 cm.

D. VII+I, 15-16; A. III, 14-16; P.11; V. I, 5; Lr. 60-70.

Habitat/ Environment

It is a freshwater to brackish water dwelling species; demersal in habit.

Distribution

Distributed in Asian countries: Pakistan, India, Bangladesh, Myanmar, Thailand, Malaysia and Nepal.

IUCN Red List status

Least Concern (LC)

Fishery importance

It is an ornamental fish for home aquarium.

Other information - Ansupa Specific

The species was first reported from Ansupa by Das Sarkar, et.al., 2015, locally known as "Dhala Chandi / Kacha chandi". It is caught maximum by local fishermen during rainy season. The fish is also seen near the paddy field adjacent to the lake. They migrate into the paddy field from the lake. When the water recedes in paddy field, they return back to the lake. The average catching of the species varies from 4.0 to 8.0 kg during rainy season and decreased in the landing during summer season. The average price is Rs.12/- per kg. The fish breeds in the lake.

Pethia phutunio

(Hamilton, 1822)

Spottedsail barb
Odia: Kuji kerandi

Taxonomy
Class : Actinopterygii
Order : Cypriniformes
Family : Cyprinidae
Genus : Pethia
Species : Pethia phutunio

Diagnostic characters

The fish will grow in length up to 3.1 inches (8 centimeters). It is a silvery fish, with three blotches on the body. An additional dark spot on the gill plate is not black, but translucent, exposing the pink of the gills. Fins are pale orange, slightly darker in the male. Sexes are difficult to recognize, except that the female has a fuller body. It grows to a maximum length of 3.9 cm.

Habitat / Environment

Freshwater; benthopelagic. It natively inhabits clear or muddy streams, and rivers, as well as standing waters, with a silty bottom. They live in a tropical climate in water with a temperature range of 72–75 °F (22–24 °C). It feeds on worms, benthic crustaceans, insects, and plant matter. The spottedsail barb is of commercial importance in the aquarium trade industry.

Distribution

Asia: Pakistan, India, Bangladesh and Myanmar.

IUCN Red List Status

Least concern (LC);

Fishery Importance

This is one of the important species in the SIF group having high nutritive value to fight malnutrition among children and pregnant woman. Poor people can afford to purchase this fish for consumption.

Other information - Ansupa Specific

The fish was first reported from Ansupa Lake by Das Sarkar et.al., 2015, locally known as “Kuji Kerandi”. The fish rarely caught by local fisherman as an indigenous small fish but commercial importance as a valuable ornamental fish. The fish does not form a fishery in Ansupa and its average selling price is Rs.40/- to Rs.50/- per Kg.

Pethia ticto

(Hamilton, 1822)

Ticto barb, Firefin barb
Odia: Kuji Karandi

Taxonomy
Class : Actinopterygii
Order : Cypriniformes
Family : Cyprinidae
Genus : Pethia
Species : Pethia ticto

Diagnostic characters

Mouth is small and its position is terminal. Barbels are absent, colour is silvery. Two black spots found on the lateral line which in incomplete. Depth of body less than one-third of the standard length. Maximum length is about 10.2 cm, longest specimen in collection is 3cm.

Habitat / Environment

Surface feeder and it feeds on Diatom, Algae, Crustaceans, Rotifer, insects etc. this is a small fresh water species of the genus Pethia found in the lower reaches of river and riverine wetlands, ponds, beels, jheels, pedifeels during monsoon, sometimes at relatively high altitudes, and apparently shows a preference for substrates of mud or silt. Endemic to India.

Distribution

Asia: Pakistan, India, Nepal, Sri Lanka, Bangladesh, Myanmar and Thailand. Occurs in the upper Mekong, Salween, Irrawaddy, Meklong and upper Chao Phraya basins.

IUCN Red List Status

Least Concern (LC); Near Threatened

(Nationally)

Fishery Importance

Puntius ticto is a very plentiful shoaling fish remaining appreciably smaller in domestic aquarium. This barb is also considered of medicinal value. Besides it is common almost everywhere and cheap price and delicious taste.

Other information – Ansupa Specific

The species was first reported from Ansupa by Pati, 2008., locally known as “Kuji karandi”. This is one of the important small indigenous fish species having high nutritive value. Its consumption helps fight malnutrition among poor people. The fish has common occurrence in Ansupa and is sold as miscellaneous small fish at the average price of Rs.50/- per Kg .The fish is in high demand as a fresh water ornamental fish for home aquarium.

Puntius sophore

(Hamilton, 1822)

Pool barb

Odia: Putia Karandi

Taxonomy
Class : Actinopterygii
Order : Cypriniformes
Family : Cyprinidae
Genus : Puntius
Species : Puntius sophore

Diagnostic characters

The fish has a short, deep and round, silvery body with a lateral blotch on the caudal peduncle.Cleft of the mouth extends below the first third of the orbit. Upper jaw is longer and lower labial fold is interrupted. Barbels are long and thin. The maxillary pair are1.5 times larger than the eye diameter. The rostral pair is slightly shorter. Dorsal spine is smooth, Complete rays are weak and osseous. The fin arises slightly before the ventral and midway between the end of the snout and the root of the caudal. Lateral line is complete; As the lateral line passes through the middle of a row of scales. 2 ½ rows of scales between lateral line and the base of the ventral fin is present and 9 rows before the dorsal fin. Scales are with numerous longitudinal striae. Pectoral, ventral and anal fins are yellowish. Black spots on mid base of dorsal fin and caudal peduncle distinguishes the fish from related species. It grows to a length of 20cm.

D. 11-12; A. 8; P. 15; V. 9; Ll. 20-26.

Habitat / Environment

Freshwater to brackish water in nature; benthopelagic in habit.

Distribution

Distributed in Asia: Pakistan, India, Nepal, Bangladesh, Myanmar, Yunnan, China, Bhutan and Afghanistan

IUCN Red List Status

Least Concern (LC); Near Threatened (Nationally)

Fishery Importance

This is an important Small Indigenous Species (SIS) of fish. it is very much famous food fish with high nutritive value.

Other information - Ansupa Specific

The species was first reported from Ansupa by Pati, 2008, locally known as “Putia karandi”. It comes under the group “Small Indigenous Fishes (SIF)” having high nutritive value. The fish grows up to 5-6 cm. in the Lake & its protein concentration is more than 15%. This SIF species exhibits adequate quantities of protein, fat, ash & minerals and can meet the daily nutritional requirements in improving the health status of poor people. The fish which is commonly available in the Lake is a very good food fish to fight malnutrition among the poor people of the locality. The average selling price Rs.60/- in the local market.

Puntius terio

(Hamilton, 1822)

Onespot barb

Odia: Kakachia kerandi

Taxonomy
Class : Actinopterygii
Order : Cypriniformes
Family : Cyprinidae
Genus : Puntius
Species : Puntius terio

Diagnostic characters

Body elongate, deep and laterally compressed. Body depth 2.4 times in SL, head length 3.3-3.8 times in SL. No barbels. Lateral line incomplete. 22-23 scales in longitudinal series.

Body color metallic green above and whitish below with a fairly weak reddish or violet lustre. Green-silvery on flanks. A large round black blotch with golden margin over anal fin. Fins are hyaline or yellowish. Dorsal fin often with numerous dark spots and streaks and often united into a longitudinal band. The fish is although comes under small indigenous fish group, but is considered as a potential fresh water ornamental fish. It grows to a maximum length of 10 cm.

Fin formula:

D. 11 (3/8); P1. 14-15; P2. 9; A. 8 (3/5)
D iii 8; A ii 5; P i 14; V i 8

Habitat / Environment

Freshwater; benthopelagic; Inhibits rivers, ponds, ditches and inundated fields throughout Bangladesh, especially during May to October .

Distribution

Asia: Pakistan, India, Bangladesh and Myanmar .

IUCN Red List Status

Least concern (LC); Near Threatened (Nationally)

Fishery Importance

Used as food fish in Bangladesh. Also important as aquarium fish, suitable for community tank.

Other information - Ansupa Specific

The fish was first reported from Ansupa Lake by Das et.al., 2017, locally known as “Kakachia kerandi”. The fish is although an indigenous small fresh water fish belonging to cyprinidae family but is considered as a potential fresh water ornamental fish to be used in home aquarium. The local fisherman catch this fish using small meshed cast nets, shore line drag nets and in traps (split bamboo screen made). The average selling price of the fish locally is around Rs.25/- to Rs.30/- per Kg. Its commercial use is mainly as ornamental fresh water fish for home aquarium.

Rasbora daniconius

(Hamilton, 1822)

Slender rasbora / Blackline rasbora

Odia: Jilo / Dandikiri

Taxonomy
Class : Actinopterygii
Order : Cypriniformes
Family : Cyprinidae
Genus : Rasbora
Species : Rasbora daniconius

Diagnostic characters

Body elongate, oblong and compressed with small mouth. No barbells. Lateral line complete and descends very gradually. 21-34 scales on lateral line. Maximum length recorded 10.0 cm (TL) .

Body color olive on back and silvery flanks and belly. A prominent blue black stripe frm eye to base of caudal fin which is delicately edged above and below by a thin and metallic golden line. A narrow dark spot above anal fin.

Habitat / Environment

Freshwater; brackish; benthopelagic.

Distribution

Asia: Mekong, Chao Phraya and Salween basins, northern Malay Peninsula, westwards to the Indus and Sri Lanka.

IUCN Red List Status

Least Concern (LC)

Fishery Information

Not so popular in aquarium for its color. Not preferred as food fish by rich people for certain reasons. Active and hardy species. Poor people's fish.

Other information – Ansupa Specific

The species was first reported from Ansupa by Pati, 2008, locally known as "Jilo / Dandikiri". This is one of the small indigenous fish species having very good ornamental value, commonly used as a home aquarium species. It commonly occurs in Ansupa and sold as miscellaneous fish with selling price ranging from Rs.50/- to Rs.70/- . This SIF species has high nutritive value, most beneficial for the poor people. This fish in Ansupa Lake grows to a size up to 3.5 cm.

Rita Kuturnee

(Sykes,1839)

Deccan Rita

Odia: Mussiari

Taxonomy
Class : Actinopterygii
Order : Siluriformes
Family : Bagridae
Genus : Rita
Species: Rita Kuturnee

Diagnostic features

Rita kuturnee is a species of bagrid catfish endemic to India where it occurs in the rivers of the Deccan Plateau up to the Krishna Riversystem. It is an inhabitant of large rivers. It grows to a maximum length of 30 cm and is commercially fished for human consumption.

Habitat / Environment

Freshwater; demersal; amphidromous, Inhabits large rivers

Distribution

Asia: Peninsular India from Deccan rivers up to Krishna river system.

IUCN Red List Status

Least Concern (LC); Near Threatened (Nationally)

Other information – Ansupa specific

The species was first reported from Ansupa by Pati, 2008, locally known as "Mussiari". It occurs rarely in the lake and occasionally comes in the catch of Bagrid cat fishes. Annual catch is around 0.5 tonne. The fish is locally consumed and average selling price of the fish in the local market is Rs.60/- per Kg.

Salmostoma bacaila

(Hamilton, 1822)

Large rozerbelly minnow
Odia: Jaralli / Jellari

Taxonomy
Class : Actinopterygii
Order : Cypriniformes
Family : Cyprinidae
Genus : Salmostoma
Species : Salmostoma bacaila

Diagnostic characters

Body is elongate and strongly by compressed; mouth is oblique, lower jaw with a well developed symphysial knob; scales are very small, dorsal fin inserted well in advance anal fin; a considerable space present between anal and caudal. Lateral line is concave. Body colour is dorsally darkish but the rest of the body silvery. Maximum length recorded 18.0cm (TL).

Habitat / Environment

Freshwater; brackish; benthopelagic; potamodromous.

Distribution

Asia: Pakistan, India (Madhya Pradesh, Rajasthan, Northern India), Bangladesh and Nepal.

IUCN Red List Status

Least Concern (LC); LC (Nationally)

Fishery Importance

Prefer by people as food, costly fish and tasty. This is used as bait and it is good in eating. It is esteemed as food on account of invigorating qualities of its flesh.

Other information – Ansupa Specific

The species was first reported from Ansupa Lake by Pati, 2008, locally known as "Jaralli" having high demand among local people for its most liking taste. This cyprinid fish forms about 1.3% in the total catch & exhibits good growth in the Lake. The fish fetches lucrative price of Rs.100/- per Kg in the fresh fish market.

Sperata aor

(Day, 1870)

Long-whiskered catfish
Odia: Adi Kantia

Taxonomy
Class : Actinopterygii
Order : Siluriformes
Family : Bagridae
Genus : Sperata
Species: Sperata aor

Diagnostic features

Body elongated, head depressed and mouth sub terminal. Eyes transversely oval situated on the dorsal portion of head. Nostril 2 pairs. 4 pairs of barbels, maxillary pair reaches to the base of caudal fin. Dorsal and pectoral fins contain a strong spine and dorsal spine finely serrated on it's posterior edge. Adipose fin well developed and originated near caudal fin. Caudal forked and upper lobe slightly longer than lower. Lateral line present and complete. It grows to a maximum length of 180 cm.

Head 26.3% SL and 21.9% TL. Height 21.3% SL and 17.7% TL. Eye 10.5% HL.

Habitat / Environment

Freshwater; demersal; potamodromous; Bottom living fish. Commonly found in freshwater and brackish water. Some common habitats are rivers, khals, canals, beels, ponds, lakes, ditches, inundated fields, reservoirs etc.

Distribution

Asia: Pakistan, India, Nepal, Bangladesh and upper Myanmar.

IUCN Red List Status

Least concern (LC)

Fishery Importance

Fisheries: subsistence fisheries. It is used as food fish in India and Bangladesh. It is reported that 78 g liver of this fish gives 6.07 g of dull reddish yellow oil. This fish has good market demand and always marketed in fresh condition.

Other information – Ansupa specific

The species was first reported from Ansupa by Pati, 2008, locally known as "Adi Kantia". The annual catch is around 1.0 tonne. The fish is locally consumed and average selling price of the fish in the local market is Rs.120/- per Kg.

Sperata seenghala

(Sykes, 1839)

Giant river catfish
Odia: Aadi / Aali

Taxonomy
Class: Actinopterygii
Order: Siluriformes
Family: Bagridi
Genus: Sperata
Species: Sperata seenghala

Diagnostic characters

S. seenghala is one of the largest fresh water catfish of Indian sub-continent. It is a commercial fish, good market demand, good test with high nutritional value. Body devoid of scale, elongated and compressed, spatulate, blunt & spatulate snout relatively 4 pairs of short barbells and mouth i.e. only 1/3 as wide as the head in long. The head is long & depressed. Length usually 40 cm, maximum-150 cm., mouth subterminal and about 1/3 of head length.. Eyes situated at the dorsal portion of head. Dorsal spine comparatively weak than pectoral and serrated posteriorly. Caudal fin deeply forked and upper lobe is longer than lower. Adipose fin present and contains a black colored spot at the end portion. Light brownish above and silvery at sides and below. Lateral line present and complete.

Habitat/Environment

It also found in tropical rivers, canals, beels. It is also food fish and sport fish. It is also called as Giant river catfish. Carnivorous in nature and predatory in habit. Bottom living fish. Commonly found in freshwater bodies, rarely in brackish water. Widely distributed in rivers, canals, ditches, inundated fields and other freshwater areas.

Distribution

Fresh water fish in Asia and also seen in India, Pakistan, Afghanistan Nepal and Bangaladesh.

IUCN Red list status - Least Concern (LC)

Fishery importance

Commercial fish for human consumption and good market value. Also a good sport fish. Used as food fish. Each g.m. flesh of *Sperata seenghala* contains 200 units of vitamin 'A' .

Other information - Ansupa Specific

The species was first reported from Ansupa by Pati, 2008, locally known as "Aadi / Aali". Ansupa Lake is connected with Mahanadi River and auto recruitment takes place mainly during monsoon. Sperata seenghala, the giant freshwater cat fish forms a good fishery in Mahanadi river. In the past, when the connectivity (kabula nallah) between Mahanadi and the Lake was very active, this fish being auto recruited in to the Lake was forming a good fishery within the Lake but with the passage of time the connectivity channel between Lake and Mahanadi got silted & the auto recruitment was adversely affected. Therefore the population of this fish in the Lake was gradually reduced. At present the fish is rarely caught in the Lake and does not form a fishery. This is a highly prized fish which is sold in the locality on an average at Rs.150/- per Kg. .

Systomus sarana

(Hamilton, 1822)

Olive barb
Odia: Serena

Taxonomy
Class : Actinopterygii
Order : Cypriniformes
Family : Cyprinidae
Genus : Systomus
Species : Systomus sarana

Diagnostic characters

Body oblong, head, small, barbels 2 pairs. Maxillary pair longer than orbit, rostral pair shorter. Dorsal spines (total): 3; Dorsal soft rays (total): 8; Anal spines: 2; Anal soft rays: 5. Maximum length (TL) = 42.0 cm.

Habitat / Environment

Freshwater; brackish; benthopelagic; potamodromous.

Distribution

India (throughout India except Peninsular), Pakistan, Bangladesh, Myanmar, Afghanistan, Bhutan.

IUCN Red List Status

Least Concern (LC); Vulnerable (Nationally)

Fishery Importance

Used as food fish in India & Bangladesh. Caught by casting, bamboo traps and long weighted nets, also good sport on rod and line.

Other information – Ansupa Specific

The species was first reported from Ansupa by Pati, 2008, locally known as “Serena kerandi”.

The fish forms a negligible composition in the catches but is highly in demand in the local market. It is largest among all Puntius species having ornamental value. Its catch is very negligible in the Lake. The selling price of the fish is Rs.80/- per kg. in the local market.

Trichogaster fasciata

(Bloch & Schneider, 1801)

Banded gourami
Odia: Bada Khasia/Kou Phasi

Taxonomy
Class : Actinopterygii
Order : Perciformes
Family : Osphronemidae
Genus : Trichogaster
Species: Trichogaster fasciata

Diagnostic characters

Body of the fish is elongated and strongly compressed. Mouth is small and slightly protrusible. Ventral side consists of a single elongated ray. Preorbital is serrated in young specimen. Color of the species is greenish with 14 or more oblique orange or bluish bars descending downwards and backwards from the back to the anal fin. Vertical fins have alternating dark and pale spots or bars. The anal fin is often with a red margin. Caudal fin is slightly notched or cut square. Immature specimens have a black spot at the root of the caudal fin. It grows to a maximum length of 12.5 cm.

D. XV-XVII, 9-14; A. XV-XVIII, 14-19; Vr. 27

Habitat/Environment

It is a freshwater dwelling species, benthopelagic in habit.

Distribution

It is distributed specifically in Asian countries: Pakistan, India, Nepal, Bangladesh and upper Myanmar.

IUCN Red List Status

Least Concern (LC)

Fishery importance

It is a very good native fresh water ornamental fish which is mostly maintained in the home aquarium.

Other information - Ansupa Specific

The species was first reported from Ansupa by Das Sarkar, et.al., 2015, locally known as “Bada Khasia”. It is found round the year in Ansupa Lake and more during rainy season. It migrates in to small nalha & nearby paddy field during first rain in the month of July. The fish comes under SIF group. The average price of the species is Rs.100/- per kg. The fish breeds in the lake.

Trichogaster lalius

(Hamilton, 1822)

Dwarf gourami
Odia: Chhota Khasia/Kou Phasi

Taxonomy
Class : Actinopterygii
Order : Percoformes
Family : Osphronemidae
Genus : Trichogaster
Species: Trichogaster lalius

Diagnostic characters

It has compressed body with terminal mouth and small cleft. Body is crimson in colour and light blue vertical bands are present extending up to dorsal, anal and caudal fins. Soft parts of dorsal and anal fins not produced. Caudal fin is slightly emarginated. It grows to a maximum length of 9.5 cm.

D. XV-XVIII, 11-20; A. XV-XXII, 11-20; P. 10; V. 1; Ll. 26-28.

Habitat/Environment

Occurs in freshwater lakes, reservoirs, rivers, canals; benthopelagic in nature.

Distribution

Well distributed in Pakistan, India and Bangladesh.

IUCN Red List Status

Least Concern (LC); Near Threatened (Nationally)

Fishery importance

It is an ornamental fish and has little commercial importance. It is consumed locally and used as aquarium fish.

Other information - Ansupa Specific

The species was first reported from Ansupa by Das, et.al., 2018, locally known as “Chhota Khasia”. The species is found abundantly in Ansupa during rainy season. It is observed round the year in the Lake. It is a very good native and hardy freshwater ornamental fish which is mostly maintained in home aquarium. The fish is caught by the caste net from the Lake and also in the split bamboo traps. The fish comes under SIF group. It is highly in demand as an attractive native fresh water ornamental fish. The average local price of the species is Rs.50/- per kg.

Wallago attu

(Bloch & Schneider, 1801)

Wallago / Freshwater shark
Odia: Balia

Taxonomy
Class : Actinopterygii
Order : Siluriformes
Family : Siluridae
Genus : Wallago
Species: Wallago attu

Diagnostic characters

Elongated body is laterally compressed. Eyes are small. Mouth wide, its gape extends posteriorly to beyond eyes. Barbels are two pairs; among them, maxillary pair is long and extend posteriorly to well beyond origin of anal fin and the mandibular pair is much shorter, about as long as snout. Dorsal fin is short. Pectoral spine is weak. Caudal fin is deeply forked. Body colour grayish or yellowish grey in above and whitish in below but the fins grey. Maximum length recorded 240.0 cm (TL)

Habitat/Environment

Freshwater; brackish; demersal; potamodromous.

Distribution

Asia: Pakistan to Viet Nam and Indonesia. Reported from Afghanistan. Lower risk - near threatened status in Western Ghats, India. This carnivorous freshwater fish occurs in rivers, reservoirs and lakes in India.

IUCN Red List Status

Near Threatened (NT)

Fishery importance

It is a commercially important fish in India and Bangladesh. It fetches good price in the market throughout the year.

Other information - Ansupa Specific

The species was first reported from Ansupa by Pati, 2008, locally known as “Balia” .The fish breeds in Mahanadi River and the juveniles migrate to the lake from Mahanadi River during flood season. It is a good commercial fish. The landing of the species is higher during rainy season and the average landing is 20 kg / day. The local price is Rs.150/- per kg . It has also been caught during summer season from the lake. Common fishing gears are gill nets, cast nets, drag nets, hook and line etc.

Xenentodon cancila

(Hamilton, 1822)

Fresh water garfish
Odia: Gangatodi

Taxonomy
Class : Actinopterygii
Order : Beloniformes
Family : Belonidae
Genus : Xenetodon
Species: Xenetodon cancila

Diagnostic features

A deep longitudinal groove is present along the upper surface of the head. Lower jaw is the longer; the maxilla, which is partially concealed by the preorbital, reaches to beneath the first-third of the eye. Eyes are rather small. Teeth: a row of large, sharp, widely separated ones in both the jaws; with an external row of numerous fine ones; none is present on the vomer. Scales are small; present over the body and in irregular rows, some over front end of the groove on head, also on sides of head except on opercles. Dorsal fin commences opposite to the anal fin; and is rather more than, or else twice as far from the anterior extremity of the orbit as it is from the posterior extremity of the tail. Pectoral fin equals half the distance of the head behind the front edge of the eye. Pelvic fin is inserted rather nearer to the base of the caudal fin than the hind edge of the eye. Caudal fin is slightly emarginated. The last dorsal fin and anal fin rays are not elongated. Color: greenish gray superiorly, becoming whitish along the abdomen. A silvery streak having a dark margin extends along the body from opposite the orbit to the centre of base of the caudal fin. The whole upper two-thirds of the body is closely marked with fine black spots ; while there are from 4 to 6 larger blotches along the side between the bases of the pectoral and anal fins, these are absent in the young. Dorsal and caudal fins are dark edged; anal fin is whitish with a greyish margin. Eyes are golden. The fish breeds during June – July.

Habitat / Environment

Marine; freshwater; brackish; pelagic- neritic. This fish is surface feeder and its feeds on small animals, algae etc. Freshwater, primarily rivers, ponds, canals, beels and inundated fields

Distribution

Asia: Sri Lanka and India eastward to the Mekong.

IUCN Red List Status

Least concern (LC)

Fishery Importance

It is very popular fish for different levels of people in India and Bangladesh. Market price of this fish is comparatively very high.

Other information – Ansupa specific

The species was first reported from Ansupa by Pati, 2008, locally known as “Gangatodi”. The annual catch is around 0.5 tonne. The fish is locally consumed and average selling price of the fish in the local market is Rs.100/- per Kg.

Zenarchopterus ectuntio

(Hamilton, 1822)

Ectuntio halfbeak
Odia: Dantakathi

Taxonomy
Class : Actinopterygii
Order : Beloniformes
Family : Zenarchopteridae
Genus : Zenarchopterus
Species: Zenarchopterus ectuntio

Diagnostic features
Body slender and slightly compressed, tapering at both ends. Triangular part of jaw nearly twice as long as broad, lower beak 3 times as long as the upper, teeth on jaws fine. It grows to a maximum length of 18 cm.

Dorsal fin originates slightly anterior to anal fin in posterior fourth of body. 3 anterior dorsal rays thickened in males. A few anterior rays of anal fin thickened and modified in males. Caudal rounded.

Head inclusive of beak 2.0-2.3 in standard, 2.5-2.7 in total length. Height 11.0 in total length. Length of beak 5.5 in total length. Lateral line running in the lower profile. Scales large, cycloid, about 46-48 on lateral line. Greenish-brown with a narrow silvery lateral stripe. End of upper jaw milky white. It grows to a maximum length of 18 cm.

Habitat / Environment
Freshwater; brackish; pelagic;

Distribution
Asia: India to Australia and north to Hong Kong. Bangladesh; India (Hooghly river), Myanmar, Thailand, Malay Peninsula, Borneo and Taiwan

IUCN Red List Status - Not Evaluated (NE)

Fishery Importance
It is of no interest to fisheries.

Other information – Ansupa specific
The species was first reported from Ansupa by Pati, 2008, locally known as “Dantakathi”. It is a good food fish consumed fresh locally, comes rarely in the catch. Annual catch is around 0.5 tonne. The average selling price of the fish in the local market is Rs.70/- per Kg.

3.1 Sustainable Management of Fish Diversity :

It is important that the ambient living world is a result of the long term biological diversification through evolution. For a long time, all levels of biodiversity (genetic, specific and eco system) forms head interacted naturally with out human involvement (Hiddink et.al, 2008). Biodiversity affects the capacity of living eco-systems to respond to changes in the environment and is essential for eco-system goods and services and sustainable of the aquatic natural resources that include commercial fisheries. A high genetic diversity within a fish population ensures more resilience against environmental stressors. The effects of changes in biodiversity on ecosystem functioning are becoming more evident; although there is uncertainty, many fishing induced changes in species and size composition of fish communities are now well documented. Fisheries managers and policy makers must therefore take a precautionary approach in managing exploitation of fish diversity (Hiddink et.al., 2008). Ansupa, the largest freshwater lake of Odisha is a famous inland wetland has found place in the list of wetlands of the state as documented by the Odisha State Wetland Authority. Owing to environmental degradation from high siltation giving rise to poor and analytic condition of water, acosiderable decrease in natural flora and faunal community has been observed (Das, 2007). Nearly 300 local fisher members belonging to about 75 households under Ansupa Primary Fisherman Cooperative Society are solely dependent on the lake fisheries. The fish fauna spectrum of 61 species in Ansupa is a reflection of fish fauna of Mahanadi River. The lake is the home for numerous Small Indigenous Fish species (SIFs) especially of ornamental importance such as Rasbora daniconius, Trichogaster lalius, Trichogaster fasciata, Puntius sp., Pethia Sp. etc. The fish species of Mahanadi River are autorecruited in to the lake through the link channel called Kabula nallah. The Kabula nallah acts as inlet during flood and also acts as outlet when the flood receeds. In this process movement of fish takes place between the lake and Mahanadi River. Ansupa like several other lakes in the country and elsewhere in the world, has undergone environmental changes owing to various natural changes coupled with Anthropogenic activities and climate change impacts has been subjected to multi dimensional stress impacting its overall biodiversity particularly that of fishes (Mohanty, 2002).

The degradation of prisitine ecological status of Ansupa lake commenced from mid 80s with the decreased function of its connectivities with the River Mahanadi amd gradual seizure of flushing of stagnet water from the lake through outlet. Proliferatin of freshwater weeds and its decay contributed to the degradation of healthy condition of the lake with increased organic sedimentation. The decreased function of inlet and outlet contributed significantly to the continuance of effective recruitment from the river which adversely affected the enhancement of species richness. The minor carp fishery and cat fish fishery were gradually affected adversely and the overall ichthyofaunal diversity was also adversely affected. The overall eco health of the lake led to decreased status of fish and fisheries.

The main factor that threatens the fish diversity is excessive fishing pressure, encroachment of fringe areas for agricultural activities using chemical fertilizers and pesticides and decrease in recruitment due to poor connectivity with Mahanadi River. The water body of the lake has undergone shrinking process dut to hydrological abnormality (Junk et.al., 2013) and in-borne production of macrophytic biomass (Goswami et.al,1999). Moreover stress due to other factors

such as habitat loss, invasive species, eutrophication, climate change impacts etc. can also inhibit or prevent recovery of degraded fishery.

3.2 Measures for sustainable management:

Keeping in view the above mentioned facts the following management measures are suggested for sustainable management of fish and fisheries of Ansupa lake in general and fish diversity inn particular.

Though Ansupa lake comes under common property resources, but its institutional management policy should be formulated by involving local stakeholders with community participation.

The entire weed-chocked Ansupa lake has to be made free from weed coverage exposing about 85 – 90% water surface. Few catches of submerged weeds like hydrilla may be maintained for grass carp fishes and birds.

The inlet kabula nallah and outlet Huluhula nallah need to be urgently renovated for maintaining effective connectivity with the River Mahanadi. This will enhance the fish recruitment and overall fishery.

Appropriate sluice gate or spill ware at Dahalia embankment need to function to expel surplus water of the lake.

Accidental entry of any alien species must be prevented with a view to protect the native species from genetic contamination and behavioral suppression impact on the native species.

Responsible fishing regime by avoiding destructive fishing gears need to be introduced. Fishing by small meshed nets (zero net) should be totally avoided.

Extranious stocking of Indian major carp seeds and grass carp seeds in the insitu net pens to grow large fingerlings for stocking of the lake is an important management measure for fishery enhancement.

Suitable habitat may be identified for breeding at nursery grounds for Small Indigenous Fishes (SIF) so that SIF population may be conserved.

Capacity building training and awareness campaign for Ansupa fishers need to be continued on regular basis.

Regeneration of the wetland ecology and reviving the fish diversity and fish catch may be done through co-management in a participatory mode by strengthening the primary fisherman cooperative society.

4.0 Historical Background of Ansupa Fisheries

The pristine Ansupa lake was known for its promising fishery in the past. Redish coloured Rohu (Labeo rohita), and minor carps such as Labeo bata, Cirrhinus reba and Labeo calbasu among the Indian carps, Large catfishes like Sperata aor, Sperata seenghala, Wallago attu and murrels such as Snakehead species were famous fish of Ansupa lake which were daily marketed at Athagarh town, Banki and in Cuttack city. There were high demand for these fishes in the Binod Bihari and municipality fish markets in cuttack city, the large sizes of Rohu and catfishes was very much attractive to the consumers.

4.1 Fish Yield

There was a fish market survey by Directorate of Fisheries in Cuttack city during 1974. It was understood from the survey that during the mid 1960s daily arrival of carp and catfishes from Ansupa lake in the Binod Bihari and Municipality market in Cuttack city was around 100 - 150 Kg. Besides, quite a good quantity of Ansupa fish were marketed locally at Banki and Athagarh towns. It was estimated in those days that about 60 – 70 tonnes of Ansupa fish was annually marketed at Cuttack, Banki and Athagarh. The fish production gradually declined from mid 70s and sharp decline started from 1984.

No fish catch records were available prior to 1960. The single Ansupa Primary Fisherman Cooperative Society was formed in the year 1960 with 64 membership. Although the fish catch from the lake were not available from society records, the annual catch was computed yearwise up to 1984 on the basis of number of fishing boats engaged in fishing, average no. of fishing days in a year and average catch per day per boat. There was no stocking of carp fingerlings in the lake either by the society or by the department of Fisheries before 1985. Therefore the annual catch during the period was mostly dominated by cat fish, murrels, minor carps and small indegenous fish species. Catch of Indian Major Carp (IMC) which was from the riverine origin was in second order. Pond – reared major carp fingerlings procured from fish farms of fisheries department was introduced in to the lake during 1985 (Das, 2007). There after fish catch from the lake increased up to 1988 which was the result of annual stocking of fingerlings. During this period the daily fish catch from the lake was estimated at around 50 Kg (Das, 2007). Fisheries department discontinued annual stocking of carp fingerlings in the lake after 1986. Fish catch again started declining due to non stocking of fingerlings and impact of eco-degradation in the lake. For the first time grass carp fingerlings were stocked in Ansupa during 1991-92 by the Department of Fisheries for biological control of Hydrilla weeds which were growing very fast in the lake. Again during 1995-96, Indian Major Carp fry (30-40 mm) and grass carp seed (50 mm) were stocked in the lake. During 1996 to 2009 there was no regular stocking in the lake and harvesting records were also not available. Again regular stocking of grass carp and major carp fingerlings continued from 2010-11 onwards. The seed stocking and annual yield data are provided in table 6.

Table no.6 Stocking, Yield and Catch value during 1960-61 to 2018-19

Table no.6 Stocking, Yield and Catch value during 1960-61 to 2018-19

Year	Species	No. of seed stocked (No. & Size)	Yield (t.)	Value (Rs. in lakh)	Per capita income (Rs.)	Remarks
1960-61	Auto stocking from riverine source	No stocking	18.00	12.24	18,830.00	
1961-62 to 1979-80	Auto stocking from riverine source	No data available				
1980-81	Auto stocking from riverine source	No stocking	12.00	9.60	13,714.00	
1981-82	Auto stocking from riverine source	No stocking	14.50	11.60	16,571.00	
1982-83	Auto stocking from riverine source	No stocking	13.15	10.52	14,026.00	
1983-84	Auto stocking from riverine source	No stocking	12.68	10.14	13,342.00	
1984-85	Auto stocking from riverine source	No stocking	12.80	10.24	12,800.00	
1985-86	IMC*	25,700 (75-100 mm)	4.82	2.89	2,752.00	
1986-87	IMC	102000 (70-85 mm)	11.85	7.11	6,463.00	
1987-88	IMC	133000 (75-90 mm)	8.50	5.10	2,550.00	
1988-89	Auto stocking from riverine source	No stocking	6.75	4.05	1,929.00	
1989-90	Auto stocking from riverine source	No stocking	2.45	1.47	668.00	High flood year
1990-91	Only grass carp	2500 (60-70 mm)	2.35	1.65	688.00	
1991-92	Only grass carp	2500 (60-85 mm)	13.0	9.10	4136.00	
1992-93	Auto stocking from riverine source	No stocking	21.60	20.95	9,744.00	

1993-94	Auto stocking from riverine source	No stocking	24.00	23.52	10,690.00	
1994-95	Auto stocking from riverine source	No stocking	20.60	17.92	7,405.00	
1995-96	IMC Grass carp	1,50,000 (30 – 40 mm) 30,000 (40 – 50 mm)	22.32	19.86	7,944.00	
1996-97	Auto stocking from riverine source	No stocking	18.60	17.86	7,567.00	
1997-98	Auto stocking from riverine source	No stocking	17.40	16.70	6,958.00	
1998-99	Auto stocking from riverine source	No stocking	15.90	15.58	6,359.00	
1999-2000	Auto stocking from riverine source	No stocking	14.25	13.68	5,516.00	High flood
2000-01	Auto stocking from riverine source	No stocking	15.80	13.59	5,414.00	
2001-02	Auto stocking from riverine source	No stocking	14.12	13.27	5,183.00	
2002-03	Auto stocking from riverine source	No stocking	16.70	16.20	6,353.00	
2003-04	Auto stocking from riverine source	No stocking	14.18	14.20	5,519.00	
2004-05	Auto stocking from riverine source	No stocking	13.80	12.97	4,988.00	
2005-06	Auto stocking from riverine source	No stocking	16.70	16.00	6,201.00	
2006-07	Auto stocking from riverine source	No stocking	18.21	17.12	6,610.00	

2007-08	Auto stocking from riverine source	No stocking	17.90	17.68	6,800.00	
2008-09	Auto stocking from riverine source	No stocking	15.80	15.55	5,759.00	
2009-10	Auto stocking from riverine source	No stocking	13.78	13.45	4,890.00	
2010-11	Auto stocking from riverine source	No stocking	10.68	8.54	3,100.00	
2011-12	IMC Grass carp	44,000 (40-60mm) 15,000 (60-80mm)	15.49	12.39	4,505.00	
2012-13	IMC Grass carp	14,000 (40-60mm) 13,000 (50-70mm)	14.92	13.91	4,712.00	
2013-14	IMC Grass carp	8,000 (40-60mm) 7,000 (50-70mm)	24.16	28.99	10,172.00	High flood
2014-15	Grass carp	5,000 (40-60mm)	22.25	19.58	6,751.00	
2015-16	Auto stocking from riverine source	Nostocking	23.60	28.32	9,765.00	
2016-17	Auto stocking from riverine source	No stocking	17.20	20.64	6,880.00	
2017-18	IMC Grass carp	6,230 (140-150 mm) 21,131 (70-80mm)	28.8	31.68	10,560.00	
2018-19	IMC Grass carp	16,740 (60-70mm) 8,250 (80-100mm)	18.90	20.79	6,930.00	

- Indian Major Carp
- Stocking and yield data prior to 1960s were not available.
- Ansupa PFCS was formed in 1960 with 64 membership
- No data available from 1961-62 to 1979-80.
- 1960-61 to 1984-85
  1988-89 to 1990-91
  1992-93 to 1994-95
  1996-97 to 2010-11
  2015-16 to 2016-17

  } There was no stocking of pond reared fingerlings in Ansupa, neither by Ansupa PFCS nor by the department of Fisheries
- Annual yield data were obtained from the department of Fisheries and the PFCS.
- Catch value and per capita income were computed.

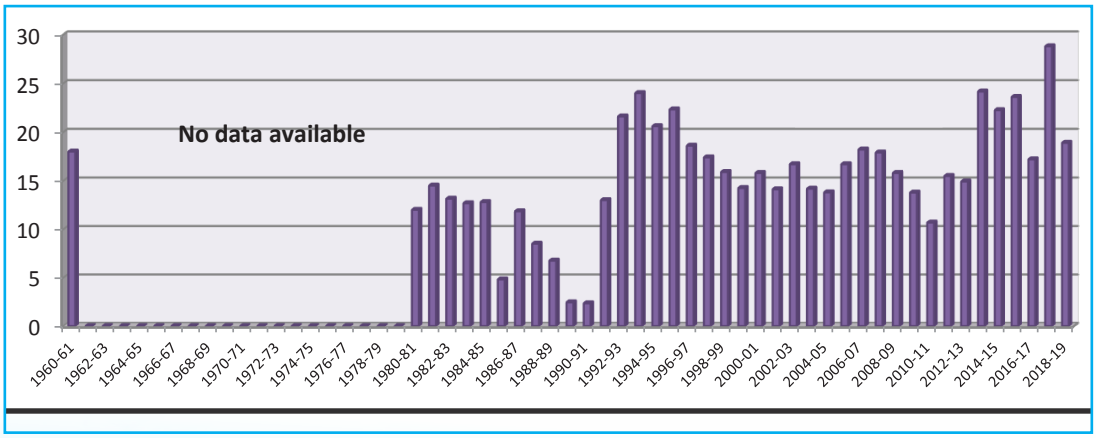
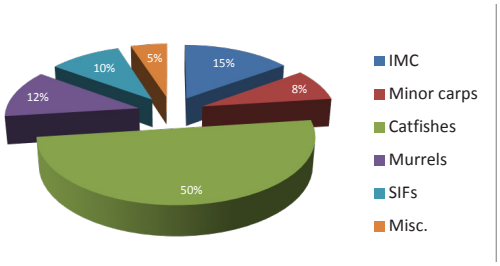


Fig. 3: Annual Fish Yield from Ansupa

4.2 Seasonal changes in catch composition

During a survey conducted by Chilika Development Authority, Bhubaneswar during June, 2001, average composition of different fish groups in the commercial catch from Ansupa Lake was collected from local enquiry for the year 1980-81 to 2000-01 (fig. 4). As depicted in the figure, catfishes formed the major catch with 50% followed by IMC with 15%, murrels 12%, SIFs 10%, minor carps 8% and misc.5%. The average catch composition for the post 2001 has been depicted in fig.5 which shows that in a subsequent years cat fish composition was gradually reduced and major carp composition gradually increased due to stocking of major carp fingerlings in the lake in different years. SIF composition in the later years increased from 10% to 12%.



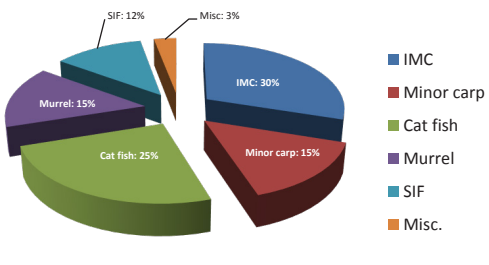


Fig 4: Average Fish catch composition of Ansupa lake prior to 2001

Fig 5: Average Fish catch composition of Ansupa lake after 2001

4.3 Seasonal Trend in Ansupa Fisheries:

Fishery survey conducted in 2001, 2011 and 2018 at Ansupa, yielded vital information on seasonal fishery trend in Ansupa lake. The overall scenario indicated that landing during monsoon season was highest with 50% of annual catch followed by summer with 40% and winter with 10% Fig. 6. Catch increases during monsoon when water from Mahanadi River and catchments increases and autorecruitment takes place from riverine sources. The local fisherman get lowest catch during winter season and their livelihood suffers hard days.

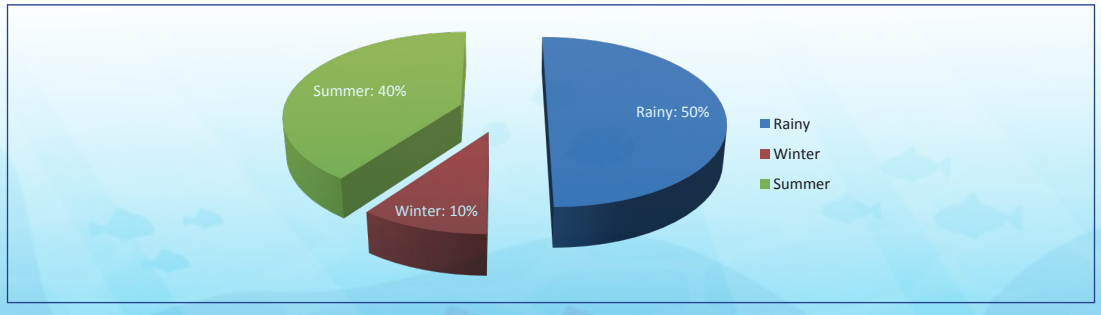


Fig 6. Seasonal catch trend in Ansupa

5.0 Traditional Fishing crafts and gears:

The traditional fisherman of two peripheral villages namely Subarnapur and Malabiharipur are dependent on Ansupa lake fisheries for their livelihoods. Traditionally, the fishers of these two villages used different fishing gears for fishing in Ansupa. Mostly the fishers of Subarnapur village use nets for fishing where as the fishers of Malabiharipur use mostly traps and also nets.

5.1 Fishing Gears and Methods:

The gear used in fishing in Ansupa lake consists of nets and traps, the former for catching fish and the latter for mainly Murrels and small indegenous fishes (SIFs). Gill nets of different types with varied mesh sizes and trammel nets and drag nets, all type of traps, single hook and line (Baghanali) with hooks are on passive gears and cast nets are active and important fishing gears. Changes have been taken place in the type of gear, dimensions, materials and mode of operation from time to time.

Gill nets and Trammel nets:

All gill nets are passive fishing gears in the lake, mostly made of polyamide (PA) (Nylon) monophylament and mainly operated for fin fishes like carps, catfishes, Clupeiformes, Beloniformes and most of the Cyprinidae fishes. Size of the nets, mesh size, rigging and mode ofoperation of the gear varies depending on the target species and other ground conditions and accordingly they are of many types with varied local names used in the lake. Of the many local names of gill nets Dangi jaal, Disco Dangi jaal, Tehandi jaal, Chouhandi jaal are some of the local names of the gill nets.

In the recent years Ansupa fishers have started using a new type of gill net made of monophylament nylon material known as “trammel net”. These nets are three walled gill nets, locally known as “Dubi Jaala”. Mainly fin fishes, cat fishes are caught in this net. Different fishes with wide size range are usally caught in this net and the net is a non selective gear which is a threat to the biodiversity of the lake. The net is operated in the lake throughout the year.

Drag net ("Vida jaal")

This is a general term which can be applied to any net which is dragged or hauled in the lake. Scine net is an example of drag net. The net is made of multifilament nylon twine with foot and head rope is a very long drag net operated by two groups of fisherman in a pair of wooden boat draging from both ends of the net. The net is mostly operated in Ansupa during summer days when the water depth is reduced and when the lake water is free of weeds. It is also called as "Kothabahani" (mass drag fishing). Carps, cat fishes, featherbacks, air breathing fishes etc. are caught in this net in good numbers. The net is operated after receed of the flood when the weed density is reduced. Mostly bigger fishes are caught in such fishing method.

Cast net

PA monophylament & PA multifilament cast nets are operated in the lake where the bottom is devoid of aquatic vegitation. Casts nets (also called "Throw net") are with fixed pockets and are operated for both small, medium and large sized fishes including cat fishes and murrels. Small fishes (SIFs) are caught in this net. It is a circular net with small metal weights distributed around the edge. The net is thrown by hand in such a manner that it spreads out while in the air before it sinks in to the water. This technique is called net throwing or net casting. Fishes are caught as the net is hauled back. The length of the cast net varies from 3.7 to 6.5 m and 7 to 14m in circumference. Cast nets are usually made of nylon, multifilament of specification 210Dx1x2 and also with nylon monofilament with 0.20-0.23 mm dia. Mesh size of the net varies from 15-30mm. Cast nets are with fixed pocket along the lower edge and are operated with or without using a wooden boat. Major catch in this net is SIFs.

Traps:

There are varities of traps used by fishers of Malabiharipur in Ansupa for catching fish. Most of the traps are operated by setting in the near shore areas of the lake during summer and winter season. It becomes difficult to operate the traps in monsson season due to increased water level. Some of the important traps used by the fishers are described below.

Beusa:-

This is a large size trap made of 6-7mm dia iron rods and multifilament HDP nets in the shape of a rectangular box with dimension 4ft. x 3ft and 3ft. height. This box trap usually set in dipper water where the water depth is 5

to 6ft. Generally bigger fishes such as Major carps, Freshwater shark, Murrels etc. are captured in this trap. There are about 300 box traps (Beusa) in Malabiharipur only.

Dhaudi / Anduri

This trap is made of split bamboo screen of dimension in rectangular shape (2ft x 1.5ft. x 1.5ft) with one or two valves through which fish and prawns can enters the trap that can not come out. Mostly murrels, SIFs, minor carps are captured in such traps.

Noli khadi (Baghanali)

“Baghanali” a robust stem of reed with 1.5 feet length with a nylon thread tied to the middle of the Baghanali stick and a hook is attached to its lower end. When the Baghanali stick (Noli khadi) is put on the lake water it floats and the hook

with the bait hangs in the water column. Murrels, featherbacks, catfishes etc. are caught in the single Noli khadi and hook. There are about 1,000 nolikhadi used by Malabiharipur fishers in the lake.

Hook and Line

This is a long HDP thread with a length of 50-150 feet length with a hanging fishing hook at every interval of 10 feet. Bait is also used in hooks. Cat fishes, murrels are commonly caught in such hook and line. Locally it is called as “Kantasuti”.

Net Polua

This is a conical shaped filment net enclosure supported by bamboo sticks. There are about 1000 poluas in Malabiharipur which are used in the lake during summer days to catch murrels from the fringe areas.

Push net

Push net is a triangular form of net forming a pocket below supported by two long bamboos. The net is made of both multifilament and monofilament nylon material with mesh size ranging from 8mm to 12mm. The length of the push net ranges from 6 feet to 8 feet. It catches mostly the small indigenous fishes (SIF) and bottom dwelling fishes. One man can operate this net by pushing the net in the water for certain distance and then is lifted and the caught fishes are gathered at the bottom pocket where the two bamboo arms are tied. The net is mostly operated at low water in the lake.

5.2 Fishing Boats

Wooden plank-built canoes donga or naha of length ranging from 24 to 26 foot, maximum width 2'10" with 1 foot depth are the common fishing crafts in Ansupa. Dugouts are also used for small scale operation close to the shoreline. The commonly used timber for construdction of boats are Sal / Mango planks. There are more than 70 nos. of fishing boats in Ansupa and normally 60 nos. are being used regularly for fishing.

6.0 Small Indigenous fish species (SIS) and their nutritional value

Small indigenous fish species (SIF) are a group of small fish in Ansupa lake which contribute significantly to the nutritional and as well as livelihood security of the local community. These fishes grow to a length of approximately 5 to 25 cm. at maturity (Felts et.al., 1996). Although small in size they constitute a major party of fish caught in the inland fisheries habitats due to their numerically large numbers. Das et.al., 2017 reported that the fish community in Ansupa wetland was dominated by small indigenous fishes in terms of numerical abundance which were contributing around 95% of the total fish population in the wetland. They also observed 20 SIF species in the lake. These small fishes are valuable and easily available source of food, rich in protein, vitamin and minerals, not commonly available in other foods. Many SIFs are consumed whole contributing calcium, phosphorous and vitamins to the human diet. The world's population consume around 16% of animal protein which are derived from fishes and more than one billion people depends on fish as their main source of animal protein (FAO,2000). As a potential source of animal protein, fish received a widespread attention for essential nutriants of human diets (Arts et.al., 2001; Fawole et.al., 2007).

Fig 20: Small fish species caught through traditional traps

20 SIF fish species in Ansupa as reported by Das et.al., 2017 and recollected by CDA during September, 2019 are presented in table 7.

Table 7: List of collected small indigenous fish species (SIF) from Ansupa and their average size

Sl. no.	Scientific name	English name	Local name	Average size (cm.)
1	Pethia phutunio	Spottedsail barb	Kuji Kerandi	3.9
2	Pethia ticto	Ticto barb	Kuji Karandi	12.5
3	Puntius sophore	Pool barb	Putia Karandi	5.0
4	Puntius terio	Onespot barb	Kakachia kerandi	10.0
5	Rasbora daniconius	Slender rasbora	Jilo / Dandikiri	15.0
6	Trichogaster fasciata	Banded gourami	Bada Khasikari	12.5
7	Trichogaster lalius	Dwarf gourami	Chhota Khasikari	9.5
8	Badis badis	Badis	Badisi / Kunkakie / Bundej	7.1
9	Amblypharyngodon mola	Mola carplet	Mohurali	8.0
10	Anabas testudineus	Climbing perch	Kou	13.5
11	Chanda nama	Elongate glass-perchlet	Chandi / Gua chupi	11.0
12	Channa punctata	Spotted snakehead	Gadisha	15.0
13	Gambusia affinis	Mosquitofish	Masakhia machha	5.1
14	Gudusia chapra	Indian river shad	Gudua / Orati	8.0
15	Esomus danrica	Flying barb	Dandikiri	13.0
16	Cirrhinus reba	Reba carp	Pohola	13.5
17	Mystus vittatus	Striped dwarf catfish	Kantia	9.0
18	Mystus tengara	Tengara catfish	Tengara kantia	7.0
19	Osteobrama cotio	Cotio	Chilti	13.0
20	Gudusia variegata	Burmese river shad	Chadma	12.5

For evaluation of nutritional properties of small indigenous fish species of Ansupa lake, the nutritional values of SIF of Bangladesh can be referred to (Hossain et.al., 2015). Although the proximate and mineral composition for Ansupa SIF species have not been determined though experiment, it could be assumed that more or less similar values can be cited for Ansupa SIF species. The proximate and mineral composition of Ansupa SIF species can be seen from table 8.

Table 8: Proximate and mineral compostion of SIF species

Sl.no.	Scientific name	Proximate composition (%)				Mineral composition mg/100g				Vitamin – A (μg) (per 100g raw, edible parts)
		Moisture	Protein	Lipid	Ash	Ca	P	Mg	Fe	
1	*Pethia phutunio*	76.19	15.20	2.01	3.06	178.02		104.42	0.68	37
2	*Pethia ticto*	71.00	16.43	7.12	5.22	2.87	2.60			
3	*Puntius sophore*	71.59	15.77	7.62	4.84	2.34	2.17			
4	*Puntius terio*									
5	*Rasbora daniconius*									
6	*Trichogaster fasciata*									
7	*Trichogaster lalius*									
8	*Badis badis*									
9	*Amblypharyngodon mola*	72.29	17.95	6.28	1.78	121.84		123.67	0.75	1960
10	*Anabas testudineus*	72.60	16.18	5.31	3.02	114.35		94.23	0.45	
11	*Chanda nama*	75.12	17.31	3.88	1.59	289.70		303.1	1.85	341
12	*Channa punctata*	76.35	15.91	3.01	3.47	167.23		182.48	0.86	
13	*Gambusia affinis*									
14	*Gudusia chapra*	75.07	15.23	5.41	1.55					
15	*Esomus danrica*	75.97	14.29	5.33	2.37	145.56		102.12	0.82	1457
16	*Cirrhinus reba*	71.82	16.62	8.75	2.83	2.30	2.78			
17	*Mystus vittatus*	79.45	13.07	2.76	4.30	2.09	2.39			
18	*Mystus tengara*									
19	*Osteobrama cotio*	76.1	19.1	2.2	3.3					937
20	*Gudusia variegata*									

Source: Hossain et.al., 1999; Hossain et.al., 2015; Thilsted et.al.,1997 (https://www.worldfishcenter.org/content/role-small-indigenous-fish-species-food-and-nutrition-security-bangladesh)

7.0 Fisherman community & Fishery Cooperative

There are only two fisherman villages namely, Subarnapur and Malabiharipur among the peripheral villages of Ansupa Lake. Subarnapur village is situated on the southern end of the lake and north of Mahanadi river and Malabiharipur village is situated towards northern part of the lake (Fig. 1). Total fisherman population in these two villages stands at 1600 living in 320 households. The fisherman of Subarnapur village and Malabiharipur village are called as "Keuta" and "Kamara" respectively. A single primary fisherman cooperative society was formed in 1960 with 64 membership from two villages. During the period from 1960 and 2000 the fisherman ppulation of Subarnapur and Malabiharipur increased many folds. The fisherman of Subarnapur village enjoy a superior social status then "Kamara" of Malabiharipur village. Traditionally, in the older age fishing by nets was done by Subarnapur fishers where as Malabiharipur fishers were operating different traps, hook and line, fishing gears other than nets. The membership of the Ansupa Primary Fisherman Cooperative Society increased to 201 by 1993 as reported by fisheries department. Presently the total membership of the PFCS is 300. After 1991-92 the fisheries situation in Ansupa lake became gradually deteriorated since most of the stocked fish which grew to more than 1 kg size were escaped to Mahanadi River during an unprecidented high flood in 1989-90 shattering the hope of fishermen to get good harvest. The society gradually suffered from organisational weakness and it gradually came to a moribund condition. Due to stocking of grass carp finger lings in Ansupa during 1990-91, fish production increased from 2.35 tonnes in 1990-91 to 13.0 tonne in 1991-92 enhancing the per capita income of active fishermembers to Rs.4,136.00 and since then the production continued to increase and the PFCS came out from moribund condition. Since then the PFCS got gradually strengthen and started functioning well.

8.0 Major contributing factors for decline of Ansupa Fisheries

The major contributing factors for the decline of fish catch and overall deterioration of the lake eco-system could be delineated as under

Gradual closure of connecting inlets and outlets with River Mahanadi in the southern part of the lake resulted in decreased autostocking of natural fish seeds from River Mahanadi and in-turn gradually reduced the fish stock.

Permanent closure of "Godighai" near Anandapur village and provision of a narrow screw gate at "Hanaghai" on Dahalia embankment. The rapid siltation and weed infestation leading to eutrophic condition and reduction in fishing area.

There was no attempt to stock the lake systematically and regularly with farm-raised Indian Major Carp fingerlings, Grass carp and common carp seeds etc. to enhance the fish stock. Though carp seed stocking in a limited scale was initiated by the department of fisheries during mid 80s, it was discontinued after 1987-88.

No attempt to release bigger size grass carp fingerlings with proper density (ideal density – 70 to 75 nos. per ha) for biological control of submerged weeds (mostly hydrilla) continuously for some years.

Consequent upon decrease of inflow and out flow of river water during flood season over years accretion of nutrient-rich marginal lend inside the lake basin took place resulting in reduction of effective water areafor fishing.

Encroachment of marginal areas by local people for peddy cultivation using chemical fertilizers and pesticides.

9.0 Issues related to ecosystem health and fish production

Das et.al., 2017 while investigating on present status of fish diversity with special focus on carps and small indigenous fish species in Ansupa lake during April – July, 2017 , outlined the above mentioned issuesin their final report submitted to CDA in October, 2017. The study embodied the issues relating to eco-system health and fish production in Ansupa as delineated below.

Weed infestation (Macrophytes)

Although aquatic macrophytes are often useful for maintenance of ecological integrity of the wetland eco-system, it can be a serious problem for the ecological health due to overcrowding of macrophytes, particularly total coverage of water surface with water hyacinth which was seen in Ansupa lake for the last several years, mostly from early 1990s. This was preventing the fisherman from harvesting fish from the lake during their traditional years. Due to non-penitration of sunlight in to the water, the phytoplankton production and productivity were reduced, which inturn led to low fish production. It also disturbed all other components of the eco-system which hampered the ecological health and fish diversity of the wetland. The GIS based analysis indicated that the macrophyte coverage in Ansupa lake was 60% in 2016 which increased to 90% during 2017.

Flood

Flood is the lifeline of the fish diversity of flood plain wetland. Auto-recruitment of large number of fish species into the lake takes place during flood time from the adjacent reverse and other inland water sources to enhance fish diversity. Floods also brings nutrients to the wetland to increase the productivity of wetland. Though Ansupa is connected with River Mahanadi with two inlets and outlets (Kabula nallah and Mayuri nallah) no auto-recruitment of fish seeds could take place due to absence of floods since many years in ansupa wetland which significantly contributed to decrease fish landing year wise year.

Siltation

Siltation is a common problem in wetlands. Shallowness of the wetlands due to mounting siltation over years allow the growth of aquatic macrophytes and spread of floating weeds which converts a considerable part of wetlands in to swamps.

Stocking of Fish seeds

Regular stocking of fish seeds in the lake in a scientific manner is essential for the enhancement of fish production in wetland. Though stocking of major carps and grass carp was initiated by State Fisheries Department and Chilika Development Authority in Ansupa, stocking was discontinued for longer time, which resulted in the declining of carp production in Ansupa.

River connectivity

River connectivity with the wetland plays a critical role in production and productivity of the flood plain wetland. Ansupa wetland is connected with River Mahanadi through a narrow channel in the southern part of the lake called "Kabula nallah" and also another man made channel (virtually defuncted at present) called "Mayuri channel". Usually river connectivity helps in migration of both brood fish and juveniles between lake and river and vice-a-versa. It is a common feature at Ansupa the local people of some peripheral villages construct artificial barriers across the channel to store water for horticulture and agriculture purposes. These artificial barriers hinders the natural migration of the fish.

Strengthening of Primary Fisherman Cooperative Society

The Ansupa Primary Fisherman Cooperative Society with 300 membership has been working at Ansupa lake since 1960. The fishers of two fishing villages are dependent on the lake fisheries having no additional income from other sources. Since the fisher member of the society are the primary resource users of the wetland, they are still living in misery.

With a view to strengthening and reactivating the PFCS, financial support in the form of soft loan with low rate of simple interest is necessary to be provided. However Chilika Development Authority has recently given a proposal to MoEF, GoI to provide Rs.10.00 lakhs towards soft loan for Ansupa PFCS, which is likely to be available from next year. The socio-economic condition of the fisherman member of the society is likely to be improved through soft loan assistance.

Capacity Building and Awareness Training

Training and education are critical to any sustainable development. For wise use of the natural resources of Ansupa lake the fishermen of Ansupa, who are the primary resource users need adequate capacity building training and education on regular basis with a set agenda of need based training program. Chilika Development Authority need to plan such training and awareness program for Ansupa fishers on regular basis which would help sustainable development and wise use of natural resources of Ansupa eco-system.

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