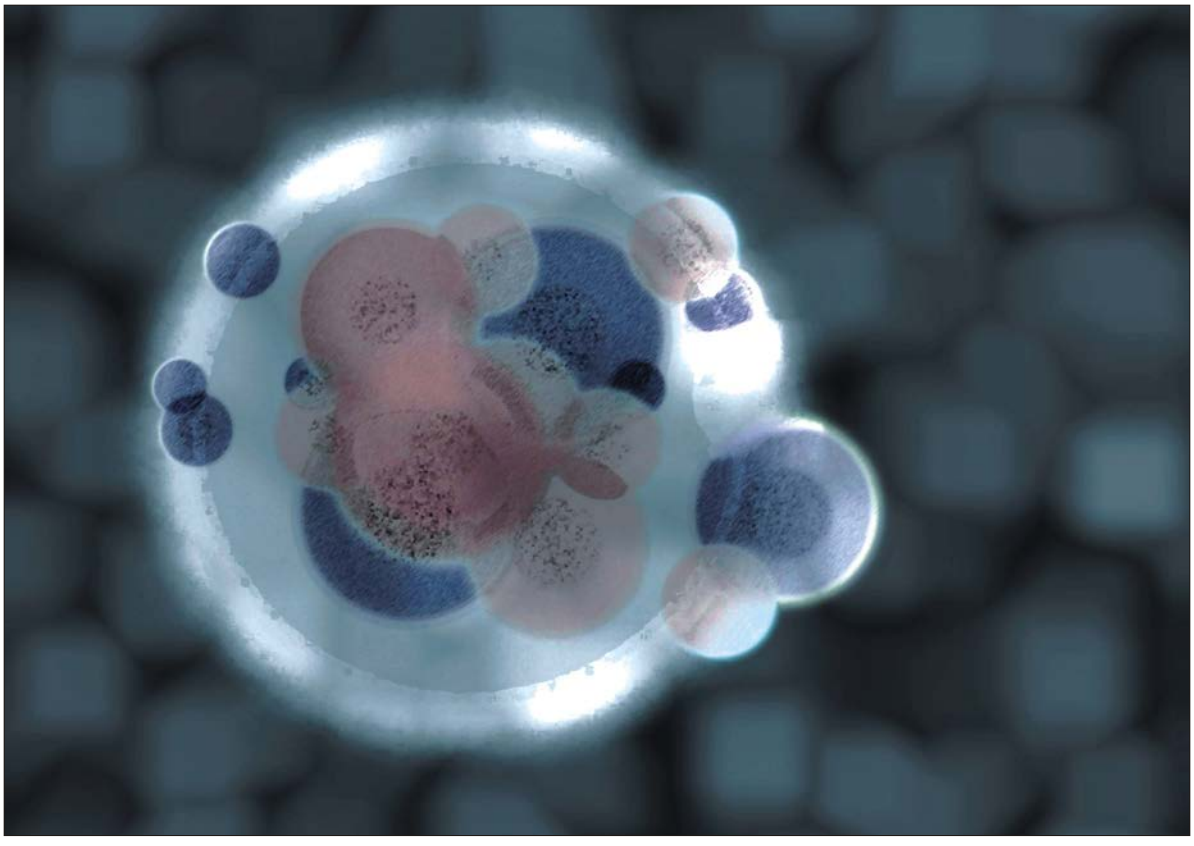

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Fish Species Availability Observed in the Fish Landing Centers of Khulna District in Bangladesh

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Abstract: An investigation was carried out on the fish species availability in the fish landing centers of Khulna district. Almost all major fish landing centers in this area were surveyed. A total of 139 inland and marine water fish and crustacean species were observed. Out of 139, 126 species belonged to fin fish and the rest 13 species to crustacean. Amongst the fin fish species, 53 were fresh water, 23 were brackish water, 11 exotic and 39 marine water species. Twenty two fish species were found both as inland and marine water species. Nineteen species were detected endangered (*Ompok pabda*, *Hilsa toil*, *Puntius sarana*, *Notopterus chitala*, *Mustus aor*, *Rita rita*, *Nandus nandus*, *Eutroeiichthys vacha*, *Notopterus notopterus*, *Wallago attu*, *Channa marulius*, *Labeo bata*, *Pangus pangus*, *Bagarius bagarius*, *Rasbora rasbora*, *Puntius ticto*, *Rohtee cotio*, *Labeo calbasu* and *Chanda nama*). In summer, 30 species and in winter, 43 species were more available and the rest of the species were found all the year round. On the basis of abundance, Carp species, *Lates calcarifer*, *Pelamys chiliensis*, *Trichiurus haumela*, *Katengus typus*, *Penaeus monodon* and *Scylla serrata* were recorded most abundant, respectively.

Key words: Species, fish landing center, inland and marine water, fresh and brackish water, crustaceans, fin fish, exotic fish, endangered species

INTRODUCTION

In Bangladesh, fisheries sector has an important and potential contribution in the agro-based economic development (5-6% in GDP), poverty elevation, employment, supplying of animal protein (63%) and earning the foreign currency[1]. On the basis of fish species number and abundance Bangladeshi fisheries resource is one of the largest and diversified natural resource of the world[2]. There are 260 fresh water fish species[3] and 475 marine water fish species[4] are available in the water area of Bangladesh.

Fish landing center is a place where different types of fresh fish and fisheries commodities are accumulated from different sources like river, beel, pond, gher, estuaries and sea. These fishes are transferred from here to consumption markets via different channel. Fish landing center plays a vital role in quick and smooth disposal of fresh fish[5]. Fish are transported to different parts of the country and also to other countries through landing center.

Recent estimates suggested that worldwide 20% of all fresh water species are extinct, endangered or vulnerable[6]. As a result, fish stocks particularly those dwelling in inland open water areas, have gradually become endangered. IUCN, Bangladesh[7] has documented about 54 fresh water species critically or some what endangered.

Khulna region is recognized as the fisheries zone of our country. It is close to the Bay of Bengal. Many varieties of fish species are available in the fish landing centers of Khulna district. Both inland (fresh and Brackish) and marine water fish species are found in the landing centers of Khulna district. But up to now no or less work has been done on the species availability in the fish landing centers of Khulna district though it is very important for the consumers.

Study about the species availability helps to know the present status of fresh water, brackish water and marine species variety and their relative abundance in the respective water bodies. It also helps to identify the species which are extinct or about to extinct and to take the necessary measures if required.

Any how, the survey was carried out to know the fish species availability observed in the fish landing centers of Khulna district.

MATERIALS AND METHODS

Study area: The survey work was carried out in Khulna district of Bangladesh. All the thanas under this district were included in the study area. Data were collected from

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all the major fish landing centers of Khulna district. The landing centers are located at Khulna Sadar, Rupsha, Terokhada, Degholia, Daulatpur, Fultala, Dumuria, Batiaghata, Dakop, Paikgacha and Kaira Thana in Khulna district.

Data collection and analysis: In order to collect data on fish landing center, one year field visit was made in 11 thana of Khulna district. In addition, relevant information was also collected from primary and secondary sources. The primary data were assembled through field survey at the thana level by using a prescribed questionnaire. The questionnaire form was filled in by interviewing the organizers, aratdars (assembler) and fishermen directly from the field. All the collected data were analyzed and the species observed in the landing centers were grouped in different categories.

RESULTS AND DISCUSSION

Species composition: Both inland (Fresh, brackish) and marine water species were found in the fish landing centers of Khulna district. A total of 139 freshwater, brackish water and marine water fish and crustacean species were available. Out of 139, 126 species belonged to fin fish and the rest 13 species to crustacean. Amongst the fin fish species, 53 were fresh water (Table 1), 23 were brackish water species (Table 1), 11 exotic species (Table 2) and 39 marine water species (Table 3) were available. Brackish and marine water species were abundant in Khulna district because it is close to the Bay of Bengal. It is the central market of fish and fisheries commodities in the south-west region of Bangladesh. Almost all the marine water species were not found in the fish landing centers of Khulna district because many of the unconventional marine species of fish that were not eaten by the Muslims or by the Hindu communities were not available in the market as the fishermen did not carry those in the market and disposed them in the sea.

Crustacean: A total of 13 crustacean species were founded in the fish landing centers of Khulna district (Table 4). According to FAO nomenclature, fresh water pleomonids are referred to as Prawn and marine penaeids and pleomonids are called shrimp, *Paenius monodon*[8]. In Bangladesh, 36 shrimp species[3] are available. From the

Table 1: Inland water fish species available in fish landing centers of Khulna district

Serial No.	Local name	English name	Scientific name	Distribution
1*	Bhetki/Koral	Barramundi/Vetki	*Lates calcarifer*	Estuaries and Rivers
2	Bajari-tengra/Kalo bujuri	Tengra mystus	*Mystus tengra*	Wide
3	Tengra	Striped dwarf catfish	*Mystus vittatus*	Wide
4	Golsha tengra	Gangetic mystus	*Mystus cavasius*	Wide
5	Rui	Rohu	*Labeo rohita*	Wide
6	Catla	Catla	*Catla catla*	Wide
7	Mrigel	Mrigal	*Cirrhinus mrigala*	Wide
8	Tara baim	One-stripe spinyeel	*Macrognathus aculeatus*	Wide
9	Baim/Guchi	Striped spinyeel	*Macrognathus pancalus*	Wide
10	Bele/Bailla	Tank goby	*Glossogobius giuris*	Wide
11	Magur	Air breathing catfish	*Clarias batrachus*	Closed water bodies
12	Boal	Freshwater shark	*Wallago attu*	Wide
13	Pabda	Indian butter catfish/Pabo catfish	*Ompok pabda*	River and closer water bodies
14	Koi	Climbing perch	*Anabas testudineus*	Wide
15	Shol	Striped or banded snakehead	*Channa striatus*	Closed water bodies
16	Gazar	Giant snakehead	*Channa marulius*	Wide
17	Taki, lata	Spotted snakehead	*Channa punctatus*	Closed water bodies
18	Telo taki/Cheng	Asiatic snakehead	*Channa orientalis*	Closed water bodies
19	Roina/Bheda meni	Mud perch	*Nandus nandus*	Wide
20	Ayre/Aor	Long-whiskered catfish	*Mystus aor*	Wide
21	Foli	Grey featherback	*Notopterus notopterus*	Wide
22	Chital	Humped featherback	*Notopterus chitala*	Wide
23*	Ilish	Hilsa	*Hilsha ilisha*	Estuaries and rivers
24*	Chandana ilish	Toli shad	*Hilsa toil*	Estuaries and rivers
25	Tit puti	Ticto barb/Two-spot barb	*Puntius ticto*	Wide
26	Punti/Jat punti	Spotfin swamp barb	*Puntius sophore*	Wide
27	Sarputi	Olive barb	*Puntius sarana*	Wide
28	Shing	Stinging catfish	*Heteropneustes fossilis*	Closed water bodies
29	Chapila	Indian river shad	*Gudusia chapra*	Wide
30	Khailsha	Striped gourami	*Colisa fasciatus*	Wide
31	Mola/Maya	Indian carplet	*Amblypharyngodon mola*	Wide
32	Dhela	Cotio	*Rohtee cotio*	Wide
33	Kalibaus	Black rohu	*Labeo calbasu*	Wide
34	Darkina	Rasbora	*Rasbora rasbora*	Wide
35	Kakila	Needle fish	*Xenentodon cancila*	Wide

Table 1: Continue

Serial No.	Local name	English name	Scientific name	Distribution
36	Chanda	Elongate glass-perchlet	*Chanda nama*	Wide
37	Sada chawa	Burrowing goby	*Trypauchen vagina*	Rivers, streams, canals
38*	Pungus	River pangus	*Pangasius pangasius*	River/estuaries
39	Ek thota	Congaturi halfbeak	*Hyporamphus gaimardi*	River (south-east)
40*	Tepa/Potka	Gangetic puffer fish	*Tetrodon Patoca*	Tidal river and estuaries
41*	Kukur jib	Fingerlip tonguesole	*Paraplagusia bilineata*	River/estuaries
42*	Churi	-	*Trichiurus muticus*	River and estuaries
43*	Kuli/Budh baila	Dusky sleeper	*Eleotris fusca*	Estuaries and rivers
44*	Tapasi/Muni/Rishi	Paradise threadfin	*Polynemus paradiseus*	Estuaries and rivers
45*	Lakhua	Indian threadfin	*Polydactylus indicus*	Estuaries
46*	Khorsula/Bata/Khalla	Corsula mullet	*Rhinomugil corsula*	Estuaries and rivers
47*	Parsia	Goldspot mullet	*Liza parsia*	Estuaries
48*	Poa	Pama	*Pama pama*	Estuaries and rivers
49*	Sumudra koi	Tripletail	*Labotes surinameusis*	Estuaries and rivers
50*	Rup chanda	-	*Pampus chineusis*	Estuaries
51*	Tular dandi	Gangetic sillago	*Sillaginopsis panijus*	Estuaries and rivers
52	Kuicha/Kunche	Gangetic mudeel/cuchia	*Monopterus cuchia*	Wide
53	Gang magur/Kan magur	Canine catfish-eel	*Plotosus canius*	Estuaries and closed water bodies
69*	Ghagra	Gagora catfish	*Arius gagora*	Estuaries and rivers
70*	Rita	Rita	*Rita rita*	Estuaries and rivers
71*	Chela	Silver razorbelly miunow	*Salmostoma acinaces*	River
72*	Bhangon bata/Bata	Bata labeo	*Labeo bata*	Rivers
73*	Phasa	Gangetic hairfin anchovy	*Setipinna phasa*	Estuaries and rivers
74*	Choukka	Indian pellona	*Pellona ditchela*	Estuaries
75*	Kachki	Ganga river-sprat	*Corica soborna*	Rivers
76	Bashpata	-	*Danoio devaria*	Wide

* Brackish water fishes wide: Open and closed fresh water bodies

Table 2: Exotic species available in the fish landing centers of Khulna district

Local name	Scientific name
Bighead carp	*Aristichthys nobilis*
Grass carp	*Ctenopharyngodon idellus*
Common carp	*Cyprinus carpio*
Mirror carp	*Cyprinus carpio* Var. *specularis*
Black carp	*Mylopharyugodon piceus*
Silver carp	*Hypophthalmichthys molitrix*
Silverbarb/Rajputi/Thai sarputi	*Puutius gonionotus*
African magur	*Clarias gariepinus*
Tilapia	*Oreochromis mossambica*
Nilotica	*Oreochromis niloticus*
Thai pungus	*Pangasius suchi*

point of view of economic importance, Bagda (*Paenius monodon*) is the remarkable species which is extensively cultured in Khulna district. In case of crab, there are 12 species available in the Sundarban region[9]. Shela kakra (*Scylla serrata*) are collected from Sundarban area. It is also cultured in Khulna district and exported to foreign countries in a plenty. Table 4 shows the commercially important crustaceans available in the fish landing centers in Khulna district.

Species variation in different season: A total 30 fish species were more available in summer season, 43 in winter and 23 fish species were available in throughout the year (Table 5). During survey it was observed that all species were not available in all season. There were some species which were more available in summer but not in winter. There are some species that were found throughout the year. Supply of fish varies from season to season depending on the demand and production. In case of winter season fish supply is comparatively high than the rest of the season because the sea remains calm in winter season and the water level in fresh water bodies decreased or dry up.

Exotic species: Eleven exotic fish were found in the fish landing centers of Khulna district which were imported from other countries with a view to experimental culture. There are 14 exotic species available in our country[3] and cultured in the closed water bodies as a result exotic species are found all the year round and they have a good market demand in this district. Table 2 shows the list of the exotic fish species.

Endangered species: There are some species that were available at least 5-10 years ago but now they are endangered or about to extinct. Seventeen species were detected critically or somewhat endangered. Table 6 shows the list of endangered fish species recorded from Khulna district. It is very essential to conserve those species otherwise they will completely extinct.

Variation in species abundance: During the survey it was observed that some fish and crustacean species were abundant and some were less abundant in the fish landing centers in Khulna district. Incase of freshwater species, silver carp species were most abundant and Mystus tengra was least abundant. Incase of marine water species, *Pelamys chiliensis* was most abundant and

Table 3: Marine water fish species available in fish landing centers of Khulna district

Serial No.	Local name	English name	Scientific name
1	Chitra/Bistara	Spotted butterfish	*Scatophagus urgus*
2	Java	-	*Siganus javus*
3	Tular dandi	Ladyfish	*Sillago domina*
4	Med	Giant sea cat fish	*Katengus typus*
5	Vola/Lal poa	Silver jew	*Johnius argentatus*
6	Konkon	-	*Pelamys chilieusis*
7	Churi	Ribbon fish	*Trichiurus haumela*
8	Phasa	Anchovies	*Thryssa mystax*
9	Datina/Sada datina	Silver bream	*Pomadasys hasta*
10	Kain magur	Canine eeltail catfish	*Plotosus lineatus*
11	Rup chanda	Chinese pomfret	*Pampus chineusis*
12	Cheowa	Torpedo trevally	*Taenoides anguillaris*
13	Shaplapata/Haush	Stringray	*Himantura uarnak*
14	Bhangan	Mullet	*Mugil cephalus*
15	Rekha	Four barred fingerfish	*Corius quadrifasciatus*
16	Loitta	Bombay duck	*Harpadon nehereus*
17	Foli chanda	Silver pomfret	*Pampus argenteus*
18	Maitya	Jack and pompanos	*Cybium gnttatum*
19	Lakhua	Indian salmon	*Polynemus indicus*
20	Sada poa	Silver jew	*Otolithes argentatus*
21	Gongonia	Grunting toadfish	*Allenbatrachus grunnieus*
22	Amadi	Pointed tail anchovy	Coilia dussumieri
23	Bashpata/knkurjib	Sole	*Cynoglossus macrostomus*
24	Kamot hangor	Requiem shark	*Carcharhinus gangetica*
25	Tuna	Bom mitta	*Euthynnus affinis*
26	Bata	-	*Mugil cephalus*
27	Ghagra bele	-	*Gobius personatus*
28	Ghagra	Gagora catfish	*Arius gagora*
29	Sumudra koi	Tripletail	*Labotes surinameusis*
30	Bhut bele, Nondi bele	-	*Paragobiodon echinocephalus*
31	Samudra chela	-	*Thryssa purava*
32	Potka	-	*Arothron immaculatus*
33	Lambu/Bara poa	Long jew fish	*Sciaenoides brunneus*
34	Foton maach	-	*Uranoscopus guttatus*
35	Ruppan	Thread fin bream	*Nemipterus japonicus*
37	Moori	-	*Caranx speciosus*
38	Chonkka	Indian pellona	*Pellona indica*
39	Kawa	Hard tail	*Megalaspis cordyla*

Scientific names following FAO species identification sheet as given in BOBP[10]

Table 4: Cmstaceans available in the fish landing centers of Khulna district

Serial No.	Local name	English name	Scientific name
Prawns			
1	Golda chingri	Fresh water prawn	*Macrobrachium rosenbergii*
2	Chatka chingri	-	*Macrobrachium malcolmsonii*
3	Goda/Shola chingri	-	*Macrobrachium rude*
4	Gura chingri	Spider prawn	*Nematopalaernon tenuipes*
Shrimp			
5	Bagda chingri	Giant tiger shrimp	*Penaeus monodon*
6	Chaka chingri	Indian white shrimp	*Penaeus indicus*
7	Chapra chingri	Oriental shrimp	*Penaeus orientalis*
8	Horina chingri	Brown shrimp	*Metapenaeus monoceros*
9	Chali chingri	Yellow shrimp	*Metapenaeus bravicornis*
Crabs			
10	Shela kakra	Mud crab	*Scylla serrata*
11	Zaji kakra	Blue swimmer crab	*Neptnnus pelagicus*
12	Sataru kakra	Swimmer crab	*Neptnnus sanguinolentu*
13	Sagor kakra,	Horseshoe crab	*Carcinoscorpi s rotundicaud*

Table 5: Season wise species variation in the fish landing centers of Khulna district

Serial No.	Only available in summer	Only available in winter	Available throughout the year
1	*Clarias batrachus*	*Mystus tengra*	*Lates calcarifer*
2	*Ompok pabda*	*Mystus vittatus*	*Labeo rohita*
3	*Channa striatus*	*Mystus cavasius*	*Catla catla*
4	*Channa marulius*	*Macroguathus aculeatus*	*Cirrhinus mrigala*
5	*Channa punctatus*	*Macroguathus pancalus*	*Puntius sarana*
6	*Channa orientalis*	*Glossogobius giuris*	*Colisa fasciatus*
7	*Nandus nandus*	*Wallago attu*	*Labeo calbasu*

Table 5: Continue

Serial No.	Only available in summer	Only available in winter	Available throughout the year
8	*Hilsha ilisha*	*Mystus aor*	*Pangasius pangasius*
9	*Hilsa toli*	*Notopterus notopteru*	-
10	*Puntius ticto*	*Notopterus chitala*	*Tetrodon Patoca*
11	*Salmostoma acinaces*	*Gudusia chapra*	*Siganus javus*
12	*Puntius sophore*	*Rasbora rasbora*	*Johnius argentatus*
13	*Heteropneustes fossilis*	*Xenentodon cancila*	*Pelamys chilieusisw*
14	*Plotosus canius*	*Chanda nama*	*Trichiurus haumela*
15	*Danoio devaria*	-	*Pampus argenteus*
16	*Amblypharyngodon mola*	*Trypauchen vagina*	*Allenbatrachus grunnieus*
17	*Rohtee cotio*	*Hyporamphus gaimardi*	Cynoglossus macrostomus
18	*Paraplagusia bilineata*	*Eleotris fusca*	*Carcharhinus gangetica*
19	*Trichiurus mnticus*	*Polynemus paradiseus*	*Arius gagora*
20	*Liza parsia*	*Polydactylus indicus*	*Thryssa purava*
21	*Pama pama*	*Rhinomugil corsula*	*Arothron immaculatus*
22	*Monopterus cuchia*	*Labotes surinameusis*	*Sciaenoides brunneus*
23	*Scatophagus urgus*	*Pampus chineusis*	*Pellona indica*
24	*Katengus typus*	*Sillaginopsis panijus*	-
25	*Coilia dussumieri*	*Arius gagora*	-
26	*Nemipterus japonicus*	*Rita rita*	-
27	*Thryssa mystax*	*Labeo bata*	-
28	*Pomadasys hasta*	*Setipinna phasa*	-
29	*Plotosus lineatus*	*Pellona ditchela*	-
30	*Mugil cephalus*	*Corica soborna*	-
31	-	*Sillago domina*	-
32	-	*Taenoides anguillaris*	-
33	-	*Himantura uarnak*	-
34	-	*Corius quadrifasciatus*	-
35	-	*Harpadon nehereus*	-
36	-	*Cybium guttatum*	-
37	-	*Polynemus indicus*	-
38		*Otolithes argenteus*	-
39	-	*Paragobiodon echinocephalus*	-
40	-	*Uranoscopus gnttatus*	-
41	-	*Caranx speciosus*	-
42	-	*Enthynus affinis*	-
43	-	*Labotes surinameusis*	-

Table 6: Endangered species detected in the Khulna district

Serial No.	Local name	English name	Scientific name
1	Pabda	Eurasian catfish/Pabo catfish	*Ompok pabda*
2	Chandana ilish	Toli shad	*Hilsa toli*
3	Sarputi	Olive barb	*Puntius sarana*
4	Chital	Humped featherback	*Notopterus chitala*
5	Ayre	Long-whiskered catfish	*Mustus aor*
6	Rita	Bagrid catfish	*Rita rita*
7	Veda, Meni, Roina	Leaf fish	*Nandus nandus*
8	Bacha	Achilbeid catfish	*Eutroeiichthys vacha*
9	Foli	Grey featherback	*Notopterus notopterus*
10	Boal	Eurasian catfish	*Wallago attu*
11	Gazar	Snakehead	*Channa marulius*
12	Bhangan bata	Bata labeo	*Labeo bata*
13	River pangus	Pangus	*Pangus pangus*
14	Baghair	Gangetic goonch	*Bagarius bagarius*
15	Darkina	Rasbora	*Rasbora rasbora*
16	Tit puti	Ticto barb/Two-spot barb	*Puntius ticto*
17	Dhela	Cotio	*Rohtee cotio*
18	Kalibaus	Black rohu	*Labeo calbasu*
19	Chanda	Elongate glass-perchlet	*Chanda nama*

Table 7: Abundance of freshwater, marine water and crustaceans species at the fish landing centers in Khulna district (chronologically abundant from the top)

Fresh water species	Marine water species	Crustacean
Hypophthalmichthys molitrix	*Pelamys chilieusis*	*Penaeus monodon*
Labeo rohita	*Hilsha ilisha*	*Macrobrachium rosenbergii*
Pangasius sntchi	*Lates calcarifer*	*Scylla serrata*
Catla catla	*Mugil parsias*	-
Cirrhina mrigala	*Arius thalassinus*	-
Ctenopharyhgodon ideila	*Trichiurus haumela*	-
Oreochromis mossambicus	*Harpadon nehereus*	-
Mystus tengra	*Pomadasys hasta*	-
Chaina puti	*Stomateus chineusis*	-
-	*Plotosus lineatus*	-

Plotosus lineatus was least abundant. Incase of crustacean species, *Penaeus monodon* was most abundant and *Scylla serrata* was least abundant. Chronological list of the species on the basis of abundance is shown in Table 7.

Some species were detected as endangered species. Considering consumer's preference and market value and to conserve species diversification of different fish, these threatened species should be protected from being extinct. Remarkable changes were observed in many natural fish population, either in stock erosion or through loss of genetic diversity. To conserve the valuable native endangered species some management measures such as more new policies and strategies should be taken.

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