



Short Communication

Fish fauna of the Seeta river in Udupi district, Karnataka, Western Ghats, India

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Abstract

An attempt has been made to understand the diversity of freshwater fishes in the Seeta river of Udupi district (Karnataka). A total number of 20 species belonging to 11 different families (Cyprinidae, Bagridae, Siluridae, Claridae, Belonidae, Ambassidae, Lobotidae, Haemulidae, Cichlidae, Channidae and Mastacembelidae) was identified from five different stations of this river over a period of August 2007-February 2008. However, for species, which are rare in the catch, the descriptions were based on fewer specimens. In the present study, the largest fish was *Clarias dossumieri* (37 cm) and the smallest fish was *Etroplus suratensis* (8.6 cm). The habitats of fishes are changed drastically due to they are under serious threat. The study provides an overall view of all such information to understand the availability of the fishes in the Seeta river.

Keywords: Endangered species, Western Ghats, Seeta river, Udupi.

Introduction

India is one of the 12 mega biodiversity countries having two biodiversity hotspots namely the Western Ghats and the Eastern Himalayas Myers N, et.al¹. These are included amongst the top eight most important hotspots in the world and it also has rich freshwater fish fauna diversity. The Western Ghats forms being the source of 37 west flowing rivers and their numerous tributaries. Rivers and streams in the southern parts of the Western Ghats tend to support greater diversity than those in the east and north flowing rivers have richer fish fauna than west flowing ones. The endemic fishes from various streams and rivers in the Western Ghats mountain ranges have been studied by Ponnaiah, et.al². Udupi district of Karnataka comprises nearly 63 fishing villages.

Fish being an important commercial commodity is exploited from both inland and marine waters. There is no proper documentation of sources of freshwater fishes of India due to irrational fishing practices, water abstraction, increased sedimentation and pollution over the years.

Recent studies have been conducted by several researchers in Karnataka based on different habitats of fishes in tanks^{3,4}, Gurple river⁵, Kagina river⁶, Bheema river⁷, Bhadar river/reservoir^{8,9}, Nandini river¹⁰, Mullameri river¹¹, Addahole stream¹² and lakes¹³. Considering the lacunae on the fish diversity of Udupi district of Karnataka, a study was aimed to survey and find the distribution of fishes in the Seeta river.

Materials and Methods

The coastal district, Udupi (Karnataka) falls along the south west coast of the Peninsular India. The region is separated from the rest of Peninsula by towering high Western Ghats. The district lies between 12°59' and 13°48' North latitude and 74°35' and 75°12' East longitude. The area of this region is 3575 sq. km. It is about 88 km in length and about 80 km in the widest part. This area experiences a typical maritime climate with an average temperature of 26.5°C. The bulk of the rainfall, i.e., over 85% occurs during the south west monsoon season in this coastal district. The altitude varies from 75 to 870 m, temperature varies from 20 to 37°C and mean annual rainfall is 4000 mm.

The Seeta river is located in Udupi district of Karnataka. Five stations from this river were fixed to collect fishes. The stations were Ekkodlu, Selenje, Hanumangundi, Jomlu and Kuchhoor. Collection of fish was done between August 2007 to February 2008. Fishes were collected using gill nets (10-50 mm) and cast nets with the help of fishermen. The collected fishes were preserved in a solution of 5% formalin. The specimens were identified based on morphological characters and body marking based on the key provided by Talwar and Jhingran¹⁴ and Jayaram¹⁵. The specimens were tagged with identification details, indicating station number, serial number, exact locality, date and the time of collection. Field information was also noted for the collected species. Noted the total length measurement for each fish.

Results and Discussion

Twenty species belonging to 11 different families collected from the five different stations on the Seeta river. Table-2 shows local names and common name of the collected species followed by ecological status. Freshwater fauna in the Seeta river of Udupi district are quite diverse. From the present work, the maximum number of species was reported belonging to Cyprinidae family (9 species) followed by Bagridae (2 species). However, only one species occurred in each family, i.e., Siluridae, Claridae, Belonidae, Ambassidae, Lobotidae, Haemulidae, Cichlidae, Channidae and Mastacembelidae. In the present study, the largest fish was *Clarias dossumieri* (37 cm) and the smallest fish was *Eutroplus suratensis* (8.6 cm). Shivashankar and Venkataramana⁹ and Naik *et al.*¹⁶ reported that the genera like *Puntius* and *Mystus* are commonly distributed in Karnataka and other parts of the Western Ghats. *Puntius filamentosus*, *P. chola*, *P. dorasalis*, *Cirrhinus mrigala* and *Mystus monatanus* were the most common and uniformly distributed fishes in the Seeta river. *Tor khudree*, *Barilius bendelisis*, *Labeo chrysophekadion*, *Horabagrus nigricollaris* and *Pomadasys olivaceum* were comparatively rare (CR). The present study indicates that cyprinids show a wide range of distribution. In fact, this is a single largest family of fishes. *Puntius spp.* and *L. chrysophekadion* are bottom feeding and mid water swimming fishes respectively. *Amblypharyngodon mola* and *Garra mullya* were reported from Karnataka recently KBSAP¹⁷. *T. khudree* and *H. nigricollaris* are the endangered species based on the list of IUCN¹⁸. *L. chrysophekadion* are upstream migratory fishes during rainy season and downstream migration from March to August. This species was reported from Ekkodlu. This species is not reported elsewhere in Karnataka and a popular aquarium fish. *H. nigricollaris* of the family Bagridae (black collared catfish) was reported to be endangered species and also found in south and north Kerala W.S Lakra¹⁹. *M. monatanus* is striped catfish moving along the bottom of streams and ponds. These fishes are more in number throughout the Western Ghats. This species was also reported from Karnataka recently KBSAP¹⁷. These species are widely distributed in the study areas (Table-1).

Ompok malabaricus of the family Siluridae was introduced in the Seeta river. It is a voracious feeder. These are widespread in India. *Clarias dossumieri* of the family Claridae are air breathing cat fishes. It is also very common in India. This species was found in our study areas, Hanumangundi and Jomlu only. From Shivamogga district of Karnataka, another species (*Clarias batrachus*) was found out recently Kiran B.R.²⁰. Catfishes occur rarely in natural environment. *Xenentodon cancellae* was found more number in all the sites except Hanumangundi and Kuchhoor.

Perhaps, it is due to human disturbance at these two sites where human settlement appeared. During the study period, *Ambassis commersoni* (Family: Ambassidae) was reported in all the stations except Hanumangundi. *Lobotes surinamensis* of the

family Lobotidae inhabits inshore salt water as well as brackish freshwater. This species was reported from Aghanashini estuary (Uttara Kannada)²¹ *Pomadasys olivaceum* (Family: Haemulidae) was not available in all the study areas except Kuchhoor. These species generally occur around rocks or among weeds. This species occurred rarely in the study area. *Eutroplus suratensis* of the family Cichlidae was collected and identified from Ekkodlu, Hanumangundi and Jomlu. It is distributed throughout India and found more in the study areas. From Aghanashini and Kali estuaries of Karnataka, this was reported by Bhat *et al.*²¹ and Thomson²² respectively. *E. suratensis* was the only true estuarine species. *Channa punctatus* (Family: Channidae), it is commonly called as a snake-headed fish. It is distributed throughout the Seeta river. They can stay out of water for longer periods of time. This was reported recently from Mysore Prasad¹³ and Chickmagalur²³ in Karnataka recently. *Mastacembelus aramatus* was found more in number in all the study areas except Kuchhoor. Shreekanta *et al.*²⁴ and Ahmad *et al.*⁴ reported this species from Linganamakki reservoir, and Sogane and Santhekadur tanks in Shimoga district respectively. Of all the fishes reported, *Puntius spp.*, *C. Mrigala* and *M. monatanus* are more in number and found all over the study areas.

Out of the 20 species recorded, 2 species are considered to be as an endangered species in Karnataka. They are *Tor khudree*, and *Horabagrus nigricollaris*. From the above observation, it can be postulated that survey made in the present attempt need to be monitored further in Udupi district and to avoid over exploitation and activity of fishing. Nutrient availability, optimum salinity, temperature, pH, less human activities and other favourable conditions are suitable in the survival of the fishes^{9, 25}. Naik *et al.*²⁶ stated that the fishermen of Bidar district of Karnataka are partially or entirely depended on the fisheries. Due to multiple uses of fisheries resources, fishing has become a major industry. Therefore, a large number of these communities are under threat. This is in agreement with the findings of our present study. Therefore, we can maintain or avoid the loss of habitat as well as loss of species.

Conclusion

Being one of the important rivers of Udupi district, it supports different species of fish fauna. Each species often consists of several indigenous groups in our study. There are uncertainties with regard to predation, fishing pressure, aquatic ecosystem productivity and climate change. Government and NGOs may look after further studies on the fish fauna of Seeta river and formulate suitable management of the fisheries resources in Karnataka.

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Table-1
Abundance of fishes collected from different sites of the Seeta river

Family	Species	Ekkodlu	Selenje	Hanumangundi	Jomlu	Kuchhoor
Cyprinidae	1. Puntius filamentosus (10.7 cm)	+++	++	+++	++	+
	2. Puntius chola (15.2 cm)	++	++	++	+++	+
	3. Puntius dorsalis (17.5 cm)	+	+	++	++	-
	4. Cirrhinus mrigala (24.5 cm)	+++	++	++	+++	+++
	5. Tor khudree (15 cm)	+	-	-	-	-
	6. Barilies Bendelisis (11.4 cm)	-	+	-	-	-
	7. Amblypharyngodon mola (9 cm)	+	+	-	+	-
	8. Garra mullya (17.8 cm)	++	+	-	+	+
	9. Labeo chrysophekadion (15.3 cm)	+	-	-	-	-
Bagridae	1. Mystus monatanus (17 cm)	+++	++	++	+	+
	2. Horabagrus nigricollaris (29.5 cm)	-	-	+	-	-
Siluridae	Ompok malabaricus (23.7 cm)	+	++	-	-	+
Claridae	Clarias dossumieri (37 cm)	-	-	+	+	-
Belonidae	Xenentodon cancila (16.8 cm)	++	++	-	+	-
Ambassidae	Ambassis commersoni (13.5 cm)	+	+	-	+	+
Lobotidae	Lobotes surinamensis (13.5 cm)	++	++	-	+	-
Haemulidae	Pomadasys olivaceum (18.0 cm)	-	-	-	-	+
Cichlidae	Etilapia suratensis (8.6 cm)	++	-	+	++	-
Channidae	Channa punctatus (32 cm)	+	+	+	+	-
Mastacembelidae	Mastacembelus aramatus (38 cm)	++	++	+	+	-

Table-2
Local and common names of fishes and ecological status of the freshwater fishes

Family	Species	Local name	Common name	*Ecological status
Cyprinidae	1. Puntius filamentosus	Karse	Filament barb/Threadfin silver biddy	LC
	2. Puntius chola	Karse	Swamp barb/chola barb	LC
	3. Puntius dorsalis	Marpakke	Long shouted barb	LC
	4. Cirrhinus mrigala	Mrigal	Red tailed carp	LC
	5. Tor khudree	Bilimeenu	Yellow masheer	EN
	6. Barilies bendelisis	Bilcha	Hamitons barila	LC
	7. Amblypharyngodon mola	Enapu-pakke	Mola carpet	LC
	8. Garra mullya	Pandipakka	Mullya garra	LC
	9. Labeo chrysophekadion	Kamunu	Black shark	LC
Bagridae	1. Mystus monatanus	Cheenkte	Striped dwarf catfish	DD
	2. Horabagrus nigricollaris	-	Black collared catfish	EN
Siluridae	Ompok malabaricus	Bakmunu	Catfish	LC
Clariidae	Clarias dossumeri	Mugudu	Walking catfish	DD
Belonidae	Xenentodon cancila	Konti	Freshwater garfish	LC
Ambassidae	Ambassis commersoni	Burante	Commerson's glassy perchlet	DD
Lobotidae	Lobotes surinamensis	Pavade	Triple tail	DD
Haemulidae	Pomadasy olivaceum	Kemberi	Grunt	DD
Cichlidae	Etroplus suratensis	Erpe	Pearl-spot	LC
Channidae	Channa punctatus	Madanji Kuchi	Spotted snake wad	LC
Mastacembelidae	Mastacembelus aramatus	Havu/Munu	Spiny cell	LC

*IUCN Red list; Abbreviation: LC-Least Concerned; EN-Endangered; DD-Data deficient

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