

Checklist of Fish Species Richness of Jai Prakash Narayan Bird Sanctuary, Suraha Lake, Ballia, U.P., India

P.K. Srivastava* and S.J. Srivastava

Fish Biology Lab., Department of Zoology, S.M.M.T.D. College Ballia, U.P., India
*E-mail: pksrivastava17@yahoo.co.in

Received: 21.01.2009, Accepted: 09.04.2009

Abstract

Present paper deals with the fish species richness of the Suraha Lake. The study was made during August 2002-July 2004. In the course of investigation at three sampling spots Mairitar, Surajpura and Basantpur, 54 fish species were recorded under 7 orders and 20 families. Twentyone species of Cypriniformes, 12 species of Siluriformes, 3 species of Symbrachiformes, 13 species of Perciformes, 1 species of Tetradontiformes, 3 species of Clupeiformes and 1 species of Beloniformes have been recorded.

Key words: *Jai Prakash Narayan Bird Sanctuary, Suraha lake, fish species richness*

Introduction

Suraha Lake is an important natural resource for fisheries in the Ballia district in eastern Uttar Pradesh. It is a good resource for capture fisheries in this region; it forms the lifeline for rural economy and environment of this area. It has a great recreational value and it also supports local agriculture, irrigation and tourism. It is an open type oval 'U' shaped ox-bow natural (river meandering) lake in the flood plain of river Ganga, located 8 km north to the district head quarters of Ballia (Figure 1). It is a perennial meander of the river Ganga with an area of 2602.18 ha. During monsoon season it covers about 3642.25 ha. It is situated in between 25°48' to 25°52'N and 84°8' to 84°13'E; altitude 166 msl. The lake circumference is about 25.6 km. The lake has openly connected with river Ganga through Katehar nullaha, its length is about 32.6 km which is drained and filled according to the water level of the river. It also receives huge amount of runoff water

from adjoining area through Madha and Garari nullahas. The lake water drains out by Nakta and Suraha tal canal system.

Materials and methods

During the period of study, intensive faunistic surveys of the lake were carried out by monthly sampling from August 2002 to September 2004. Fish collection was made from the catches of fishers from the three spots of the lake i.e., Mairitar, Surajpura and Basantpur. The fishing was done by gill net, trap and angling. After the collection of fish, the small specimens were immediately preserved in 10% formalin and brought to lab for identification. The identification was made with the help of taxonomic references from Jhingran (1975), Linderberg (1976), Day (1978), Srivastava (1986), Talwar and Jhingran (1992) and Jayaram (1999).

Results and discussion

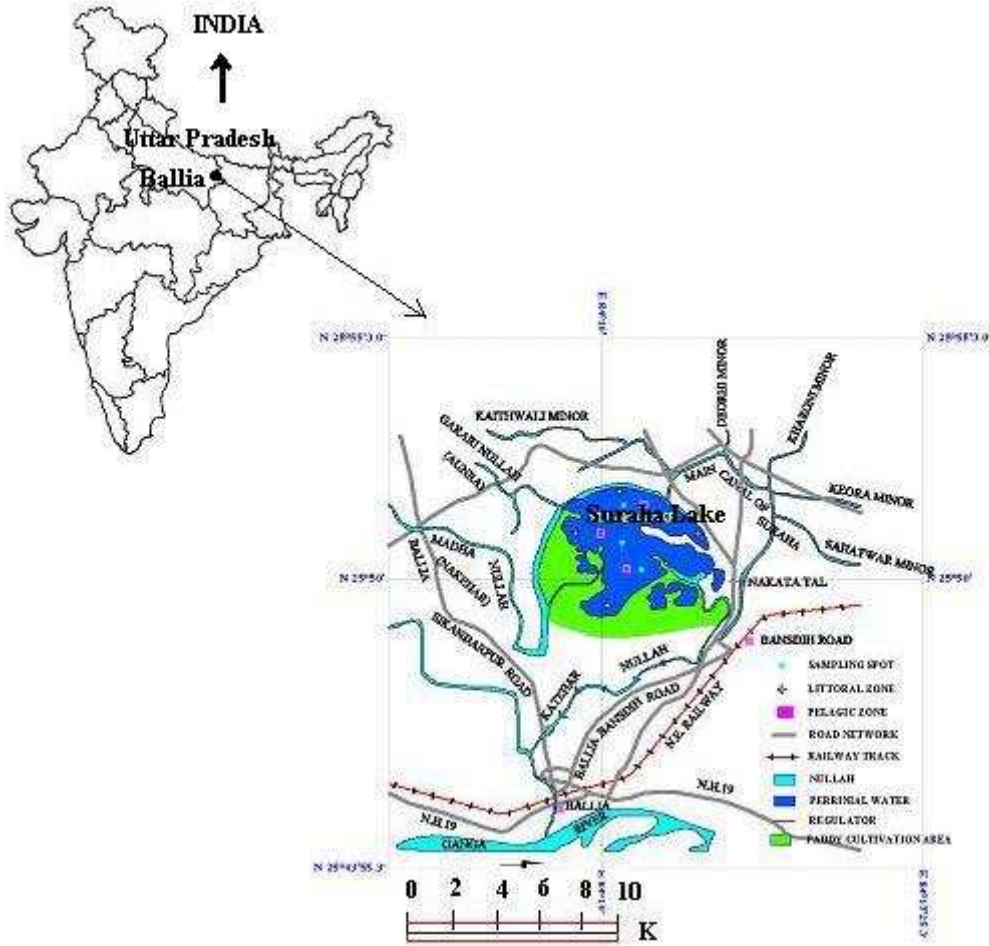


Figure 1. Schematic map of Jai Prakash Narayan Bird Sanctuary (Suraha Lake)

Table 1. Taxonomic list of fish species recorded from Suraha Lake.

S.N.	Taxonomic position and scientific name	Vernacular name	Spot I	Spot II	Spot III
	Order: Cypriniformes				
	Family: Cyprinidae				
1.	<i>Catla catla</i> (Hamilton)	Bhakur	√	-	√
2.	<i>Cirrhinus mrigala</i> (Hamilton)	Nain	-	√	-
3.	<i>Cirrhinus reba</i> (Hamilton)	Raeya	√	-	√
4.	<i>Ctenopharyngodon idella</i> (Valenciennes)	Grass	-	√	-
5.	<i>Cyprinus carpio</i> (Linn.)	Silver	√	√	√
6.	<i>Labeo bata</i> (Hamilton)	Bata	√	-	-
7.	<i>Labeo calbasu</i> (Hamilton)	Karauchar	√	-	-
8.	<i>Labeo gonius</i> (Hamilton)	Kursa	√	√	-
9.	<i>Labeo rohita</i> (Hamilton)	Rohu	√	√	-
10.	<i>Osteobrama cotio</i> (Hamilton)	Gurda	√	-	√

11.	<i>Puntius chola</i> (Hamilton)	Sidhari	√	√	-
12.	<i>Puntius sarana</i> (Hamilton)	Darhi	√	√	-
13.	<i>Puntius sophore</i> (Hamilton)	Sidhari	-	√	√
14.	<i>Puntius ticto</i> (Hamilton)	Sidhari	-	√	√
15.	<i>Rasbora daniconius</i> (Hamilton)	Dadula	-	√	-
16.	<i>Salmostome bacaila</i> (Hamilton)	Chalhawa	√	-	-
17.	<i>Securicula gora</i> (Hamilton)	Dariyae chalhawa	-	√	-
18.	<i>Amblypharyngodon mola</i> (Hamilton)	Dhawaie	√	-	√
19.	<i>Aspidoparia morar</i> (Hamilton)	Kaywachi harda	-	√	√
	Family: Cobitidae				
20.	<i>Lepidocephalichthys guntea</i> (Hamilton)	Nakhi	√	-	-
21.	<i>Botia dario</i> (Hamilton)	Bghau	-	√	-
	Order: Siluriformes				
	Family: Bagriidae				
22.	<i>Seperata aor</i> (Hamilton)	Dariyae tengar	√	√	-
23.	<i>Mystus vittatus</i> (Bloch)	Tangara	√	-	√
24.	<i>Mystus tengara</i> (Hamilton- Buchanon)	Tangara	√	√	-
25.	<i>Mystus bleekeri</i> (Day)	Baikhari	√	√	-
	Family: Siluridae				
26.	<i>Ompok bimaculatus</i> (Bloch)	Jalkapur	-	√	√
27.	<i>Wallago attu</i> (Bloch & Schneider)	Barari	-	-	√
	Family: Schilbeidae				
28.	<i>Ailia coila</i> (Hamilton)	Patasi	√	-	-
29.	<i>Clupisoma garua</i> (Hamilton)	Baykari	√	-	√
30.	<i>Eutropiichthys vacha</i> (Hamilton)	Bhayghu	-	-	√
31.	<i>Pseudotropius buchmanii</i> (Valenciennes)	Barusa	-	√	√
	Family : Clariidae				
32.	<i>Clarias batracus</i> (Linnaeus)	Magur	√	√	√
	Family : Heteropneustidae				
33.	<i>Heteropneustes fossilis</i> (Bloch)	Shinghi	-	-	√
	Order : Synbranchiformes				
	Family : Mastacembelidae				
34.	<i>Mastacembelus armatus</i> (Lacepede)	Bam	√	√	√
35.	<i>Mastacembelus punctatus</i> (Hamilton)	Patya	√	-	-
	Family : Synbranchidae				
36.	<i>Monopterusuchia</i> (Hamilton)	Anha bam	√	√	√
	Order : Perciformes				
	Family : Channidae				
37.	<i>Channa marulius</i> (Hamilton)	Saur	√	-	-
38.	<i>Channa punctatus</i> (Bloch)	Girae	-	√	√
39.	<i>Channa striatus</i> (Bloch)	Saur	√	√	-
40.	<i>Channa gachua</i> (Hamilton)	Chanaga	-	√	-
41.	<i>Channa orientalis</i> (Bloch & Schneider)	Chanaga	√	-	√
	Family : Osphronemidae				
42.	<i>Colisa fasciata</i> (Bloch & Schneider)	Khosti	√	√	√
43.	<i>Colisa latius</i> (Bloch)	Khosti	√	√	-
	Family : Chandidae				
44.	<i>Chanda nama</i> (Hamilton)	Chanari	-	-	√
45.	<i>Parambassis ranga</i> (Hamilton)	Chanari	-	√	√
	Family : Anabantidae				
46.	<i>Anabas testudineus</i> (Bloch)	Sumha	√	√	-
	Family : Nandidae				
47.	<i>Nandus nandus</i> (Hamilton)	Dhebari	√	-	√

	Family : Gobiidae		√	√	√
48.	<i>Glossogobius giuris</i> (Hamilton)	Bulla			
	Family : Sciaenidae				
49.	<i>Johnius coitor</i> (Hamilton)	Bhola	√	-	√
	Order : Tetrodontiformes				
	Family : Tetrodontidae				
50.	<i>Tetradon fluviatilis</i> (Hamilton)	Beng macharia (Galari)	√	-	-
	Order: Clupeiformes				
	Family: Clupeidae				
51.	<i>Gudusia chapra</i> (Hamilton)	Suhia	√	-	√
52.	<i>Gonialosa maminna</i> (Hamilton)	Maghali suhia	√	-	-
	Family: Engraulidae				
53.	<i>Setipinna phasa</i> (Hamilton)	Phasi	√	-	√
	Order: Beloniformes				
	Family: Belonidae				
54.	<i>Xenentodon cancila</i> (Hamilton)	Kauwa	√	√	√
	Prawn				
55.	<i>Macrobrachium lamarrei</i> (H.Milne-Edwards)	Jhinga	√	-	-

Spot I= Mairitar, Spot II= Surajpura, Spot III= Basantpur

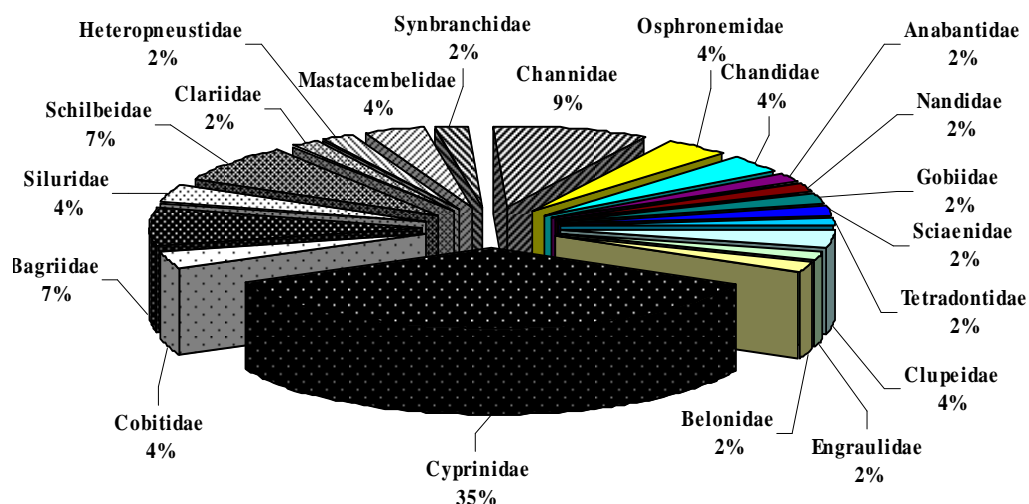


Figure 2. Percent contribution of families.

Total 53 fish species were recorded at three spots during the study, taxonomic position, local name and spot of collection of the individual fish species are listed in Table 1. The maximum number of 37 fish species were recorded from the Maritar and minimum number 28 fish species recorded from Basantpur. During the period of investigation 21 species of Cypriniformes (including 2 exotic species i.e. *Cyprinus*

carpio and *Ctenopharyngodon idella*) from the lake, 12 species from Siluriformes, 3 species from Symbranchiformes, 13 species from Perciformes, 1 species from Tetrodontiformes, 3 species from Clupeiformes and 1 species from Beloniformes (Figure 2). Cypriniformes contributed maximum of 36% fish species. The catch composition of lake was Indian major carps 15-20%, minor carps 2-5%, catfishes and fetherbacks 35-

40%, live fishes 5-10%, forage fishes 15-20%. Unfortunately, the Indian Major Carps have declined sharply in the last one decade with forage and catfishes increasing dramatically in the lake. The maximum fish species were collected during the summer season. The climatic factors may have directly affected the availability of fish species. Previously, Swarup and Singh (1975) listed 51 fish species in the same lake. The fish composition showed similarity with the species of the Ganga river system because it openly connected with river and provides good breeding and nursery ground for fishes and spawns. Indiscriminate fishing has been observed during the entire study period which might have resulted in tremendous decrease of major carps. Many workers worked on fish species richness of the different aquatic system in India. Menon (1974) has listed 141 species, belonging to 72 genera, 30 families and 11 order from Ganga river system.

According to fishers assumption, the fish catch of the Suraha lake has been declined during the last two decades, may be due to climate change, indiscriminate fishing of brood stock in the spawning ground and use of smaller mesh size of fishing net.

Suggestions

Fish sanctuary should establish to preserve fish stock and indigenous brooder. Fishery regulation should strictly apply for protection of fish species and enhanced the fish production especially Indian major carps. Indian major carps are highly priced fishes, but their stocks are going to decline; to conserve the Indian major carp less than 2 cm. mesh size nets should be strictly banned in this lake. Pen and cage culture should practiced for enhance the carp production.

Fishermen have reported that due to declination of fish catch many of them have forced to migrate and change their profession. During this study it has also been observed that water area has been heavily choked with macrophyte vegetation and encroached by farmers for protection of this lake local govt. should take care and apply some rules because good habitat is an essential for fishery improvement.

Acknowledgements

The authors are highly grateful to Dr. M.K. Das, Principal Scientist and Head, Fish Health and Environment Division, Central Inland Fisheries Research Institute, Barrackpore, Kolkata for critically going through the manuscript and his valuable suggestions.

References

- Day, F. 1978. *The fishes of India being a natural history of the fishes known to inhabit the seas and freshwater of India, Burma and Ceylon*, Vol. I & II, William Dawson and Sons Ltd., London, pp. 20-778.
- Jayaram, K.C. 1999. *The freshwater fishes of the Indian region*. Narendra Publishing House, Delhi. 571p.
- Jhingran, V.G. 1975. *Fish and fisheries of India*. Hindustan Publishing Corporation (India). 954p.
- Linderberg, G.V. 1976. *Fishes of the world*. A key to families and checklist. John Wiley and Sons, New York. 545p.
- Menon, A.G.K. 1974. *A check list Fishes of Himalayan and the Indo-Gangetic plains*. Special publication IFSI. **1**: 1-136.
- Srivastava, G.L. 1986. *Fishes of Eastern Uttar Pradesh*. Vishwavidyalaya Prakashan, Varanasi. 163p.
- Swarup, K. and S.R. Singh 1975. The fisheries of Suraha Tal, Ballia, Uttar Pradesh. *J. Zoo. Soc. of India*. pp. 180-184.
- Talwar, P.K. and A.K. Jhingran 1992. *Inland fishes of India and adjacent countries*. Vol. 1. A.A. Balkema/Rotterdam. 1177p.