



Fish diversity of Semara Taal, A Wetland of District Siddharthnagar (U. P.), India

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Abstract

A detailed survey was under taken to study the occurrence and diversity of fishes in Semara taal, a naturally occurring wetland near Shohratgarh of Siddharthnagar district of Uttar Pradesh. The present survey was conducted from Jan 2018 to Dec 2018 to find out the ichthyo-diversity of Semara taal. A total of 29 species of fishes belonging to 20 genera, 15 families and 8 orders were identified during entire survey and observation. This was the first systematic survey on the fish diversity of this wetland. Order Siluriformes was found most dominant represented by 10 species, followed by Cypriniformes with 7 species; Perciformes and Ophiocephaliformes are with 3 species; Osteoglossiformes, and Synbranchiformes with 2 species while Clupeiformes and Beloniformes representing by only one species.

Keywords: semara taal, fish biodiversity, siluriformes, cypriniformes

Introduction

Fishes are cold blooded, aquatic vertebrates having cartilaginous or bony vertebral column, tubular nerve chord, ventral muscular two-chambered Venus heart, paired and unpaired fins for locomotion and gills for breathing. They constitute about half of the total number of vertebrates in the world. The fishes are used not only as food, medicine but also as bio-indicators, research models, and active links between ecosystems, entertainment and to mitigate vector borne diseases.

The Semara taal, a wetland is situated near the Shohratgarh of Siddharthnagar district of Uttar Pradesh. The total area of this taal is 466.66 acre. The maximum depth of water in the pond is 15 feet during monsoon and minimum in summer. It has good biodiversity as it is rich both in flora and fauna and the occurrence of good bio-diversity is an index of healthy, growing, dynamic and economically efficient water body. The climatic change influences to its vast openness, landscape ecology and biodiversity. The sources of water supply to the taal are drainage water from Banganga river. The taal is enriched with several type of vegetation. The margin of the taal is heavily infested by *Eichornia crassipes* and the organic deposition causes its sedimentation.

Wetlands are important components of watersheds and provide many valuable functions to environment and to society. According to Ramsar Convention (2006), wetlands are world's most productive environment with stunning biological diversity. Wetlands are often described as "Kidneys of land scope" (Kumar *et al.*, 2015) [4]. Around 4-6% of earth surface is covered by wetlands.

Prakash *et al.*, (2015 and 2016) [5] and Verma *et al.*, (2016) [6]

performed the limnological and ichthyological studies of Alwara Lake of Kaushambi (U.P.). A huge number of studies have been made by different researchers on limnology and fish diversity of various fresh water bodies in India during the last few decades including Jhingran (1991) [3], Bhat (2003) [1], Shukla *et al.*, (2013) [7], Verma (2016a, 2016b, 2016c, 2016d, 2017a, 2017b, 2018, 2019a, 2019b and 2019c) [6] and so on. Therefore, the present study is aimed to systematic survey on the fish diversity of this taal.

Study Area

The wetland (photograph 1) under exploration is situated in Shohratgarh tahsil of district Siddharthnagar of Uttar Pradesh (image 1). The taal is more than 3 km away from Shohratgarh, 28 km from Naugarh (headquarter of district Siddharthnagar) and about 370 km from Lucknow. Its nearest railway station is Shohratgarh. It is situated between the latitude 27.4025°N- 82.9597°E

Materials and Methods

Fishes were caught and collected for the present study from three sites of this pond by hand-nets, gill nets, cast nets, hooks, drag nets with the help of local people and fisherman mainly during the time of fishing. Investigations regarding fish capture and collection were conducted fortnightly *i.e.* twice in a month for the period of one year from January 2018 to December 2018.

Fishes were identified by using the standard keys of Day (1989), Jhingran (1991) [3] and Srivastava (1998) [8]. Interaction with local people also assisted the authors in various ways for data collection and identification.



Image 1: Location of study area in Siddharthnagar district of U.P.



Photograph 1: A view of Semara Taal, Wetland of Siddharthnagar district of U.P.

Results and Discussion

Fish specimens were collected from three sampling sites of the Samara taal. During the entire survey period, a total of 29

species of freshwater fishes belonging to 8 orders, 15 families and 20 genera were collected. The collected fish species including their family and order are shown in the table given.

Table 1: Different fish species recorded from Semara Taal during 2018

S. No.	Zoological name of fish	Family	Order
1.	<i>Catla catla</i>	Cyprinidae	Cypriniformes
2.	<i>Labeo rohita</i>	Cyprinidae	Cypriniformes
3.	<i>Labeo calbasu</i>	Cyprinidae	Cypriniformes
4.	<i>Cirrhinus mrigala</i>	Cyprinidae	Cypriniformes
5.	<i>Cirrhinus reba</i>	Cyprinidae	Cypriniformes
6.	<i>Puntius ticto</i>	Cyprinidae	Cypriniformes
7.	<i>Amblypharyngodon mola</i>	Cyprinidae	Cypriniformes
8.	<i>Mystus seenghala</i>	Bagridae	Siluriformes
9.	<i>Mystus cavasious</i>	Bagridae	Siluriformes
10.	<i>Mystus vittatus</i>	Bagridae	Siluriformes
11.	<i>Mystus aor</i>	Bagridae	Siluriformes
12.	<i>Wallago attu</i>	Siluridae	Siluriformes
13.	<i>Ompak pabda</i>	Siluridae	Siluriformes
14.	<i>Clarias batrachus</i>	Clariidae	Siluriformes
15.	<i>Heteropneustes fossilis</i>	Saccobranchidae	Siluriformes
16.	<i>Ailia coila</i>	Schilbeidae	Siluriformes
17.	<i>Pangasius pangasius</i>	Schilbeidae	Siluriformes
18.	<i>Channa gachua</i>	Ophiocephalidae	Ophiocephaliformes
19.	<i>Channa punctatus</i>	Ophiocephalidae	Ophiocephaliformes
20.	<i>Channa marulius</i>	Ophiocephalidae	Ophiocephaliformes
21.	<i>Glossogobius giuris</i>	Gobiidae	Perciformes
22.	<i>Anabas testudeniis</i>	Anabantidae	Perciformes
23.	<i>Colisa fasciatus</i>	Osphronemidae	Perciformes
24.	<i>Notopterus notopterus</i>	Notopteridae	Osteoglossiformes
25.	<i>Notopterus chitala</i>	Notopteridae	Osteoglossiformes
26.	<i>Gudusia chapra</i>	Clupeidae	Clupeiformes

27.	<i>Xenentodon cancila</i>	Belonidae	Beloniformes
28.	<i>Mastacembelus armatus</i>	Mastacembeleidae	Synbranchiformes
29.	<i>Mastacembelus aculeatus</i>	Mastacembeleidae	Synbranchiformes

Fish fauna of the Semara taal studied belong to 8 orders namely Cypriniformes, Siluriformes, Ophiocephaliformes, Perciformes, Osteoglossiformes, Clupeiformes, Beloniformes and Synbranchiformes.

In present survey, Siluriformes order is the most dominant group representing 10 species followed by Cypriniformes order representing 7 species. The order Perciformes and Ophiocephaliformes are represented by 3 species; Osteoglossiformes, and Synbranchiformes are represented by 2 species while Clupeiformes and Beloniformes representing by only one species. Thus, author recorded 29 different species from this natural wetland.

Conclusion

Present study is the first ever documentation of ichthyo-fauna of the Semara taal, a wetland of Siddhrath Nagar, U.P. The 29 fish species collected and identified from this wetland during the survey which belong to 8 orders viz., Siluriformes, Cypriniformes, Perciformes, Osteoglossiformes, Ophiocephaliformes, Clupeiformes, Beloniformes and Synbranchiformes.

Acknowledgements

Author is highly grateful to the Principal M.L.K. P.G. College, Balrampur (U.P.) for providing necessary laboratory facilities. The author is also obliged to local authorities of district administration Siddharth Nagar Uttar Pradesh for their co-operation during entire survey programme.

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