



International Journal of Fauna and Biological Studies

Available online at www.faunajournal.com

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International
Journal of
Fauna And
Biological
Studies

ISSN 2347-2677

www.faunajournal.com

IJFBS 2020; 7(3): 21-24

Received: 20-03-2020

Accepted: 24-04-2020

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Conservation status of fishes reported from Semara Taal of District Siddharthnagar (U. P.), India

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Abstract

An attempt was made to study the conservation status of the fishes naturally occurring in Semara taal, near Shohratgarh of Siddharthnagar district of Uttar Pradesh. The study was conducted during Jan. to Dec. 2018. During exploration, a total of 29 species of fishes belonging to 20 genera, 15 families and 8 orders were identified. As per latest version of IUCN Red List, out of 29 species of fishes identified, 1 species comes under EN (endangered), 3 species come under NT (near threatened), 19 under LC (least concern) and 6 species are NE (not evaluated) so far.

Keywords: Pisces, Fish species, Red list, Conservation status, Semara taal.

Introduction

Fishes are not only source of low-fat, high-quality proteinous food for human being but also a good source of omega-3 fatty acids, vitamin D, vitamin B₂, calcium, phosphorus, iodine, iron, zinc, magnesium and potassium. The fish diversity is subjected to the changes in land and water resulting into substantial losses of fishes and remaining species may be at a risk. Fish species inhabiting in lentic fresh water bodies have to live under harsher and more variable conditions and they may put to extra ordinary stress because of human interventions. Natural water has more stable conditions under which the fish evolve, hence enlisting biodiversity and its distribution over time and space becomes important. Until one knows the diversity and variations over time and space, it is difficult to plan conservation and the development projects related to water resources.

Wetlands are important components of watersheds and provide many valuable functions to environment and to society. Ramsar convention concluded that wetlands are world's most productive environment with stunning biological diversity. These are considered to be one of the richest sources of biological diversity. Due to urbanization and anthropogenic pressure, most of the wetlands are succumbed to greater degree of biologically active nutrient accumulation (Verma and Prakash, 2018) ^[19, 26].

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 biodiversity is an index of healthy, growing, dynamic and economically efficient water body. The climatic change influences 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 types of vegetation. The margin of the taal is heavily infested by *Eichornia crassipes* and the organic deposition causes sedimentation of the taal.

Prakash *et al.* (2015a, 2015b, 2015c, 2016 and 2019) ^[6, 7, 8], Verma *et al.* (2016a and 2016b) ^[13, 25] and Verma (2016a, 2016b, 2016c, 2016d, 2016e, 2017a, 2018, 2019a and 2019b) ^[13, 24, 14, 25, 15, 16, 17, 20, 21] conducted the limnological studies as well as studies on fish biodiversity in a fresh water body. Prakash (2020) ^[5] for the first time studied the distribution of fishes in this pond.

The present study is an effective attempt to study the conservation status of the fishes naturally occurring in samara taal, a wetland of Shohratgarh, Siddharthnagar district of Uttar Pradesh.

Study Area

The wetland under exploration is situated in Shohratgarh tahsil of district Siddharthnagar of Uttar Pradesh (Image 1-3). 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

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railway station is Shohratgarh. It is situated between the latitude 27.4025⁰N- 82.9597⁰E.

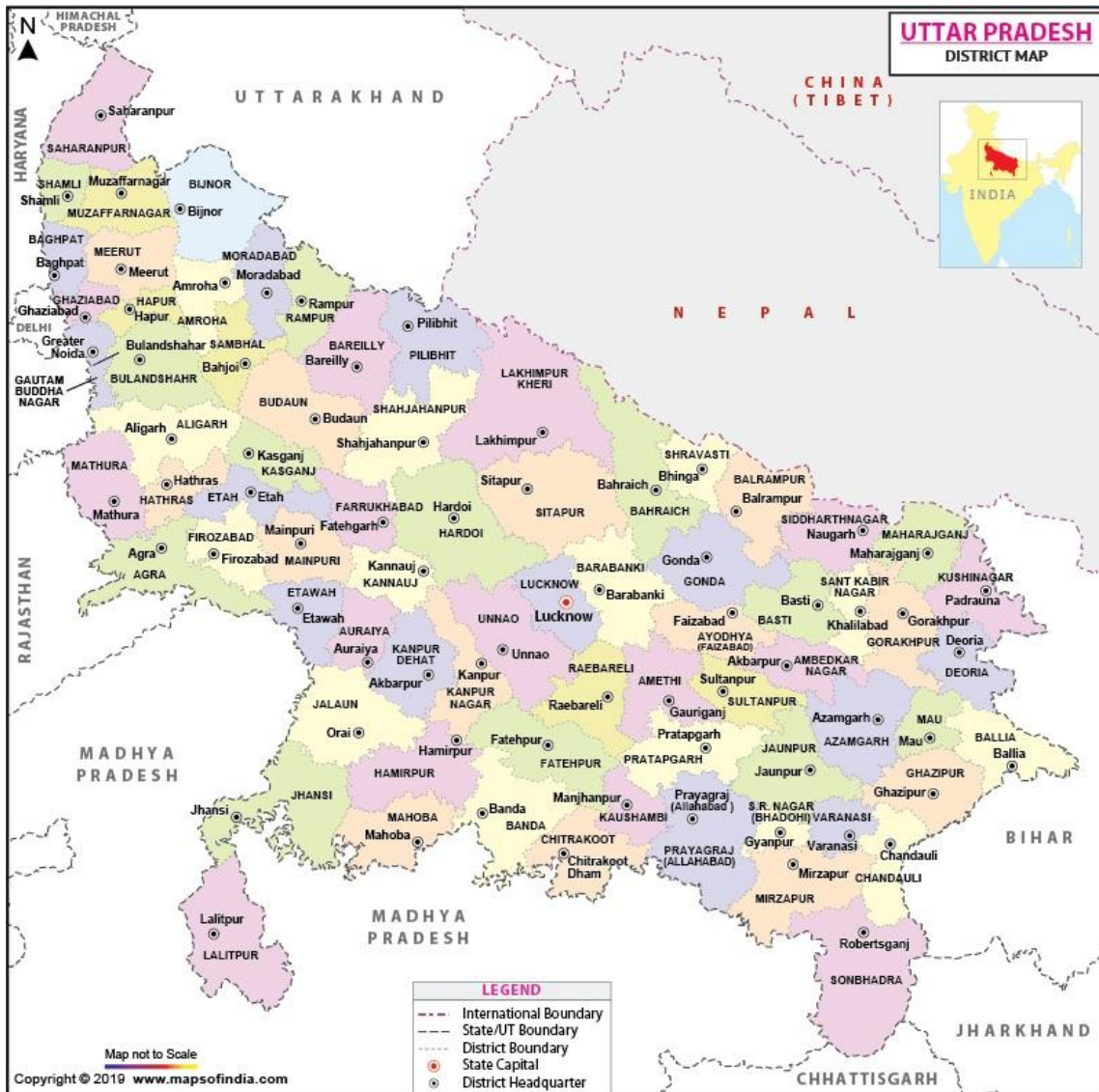


Image 1: Map of U.P. showing location of Siddharthnagar district

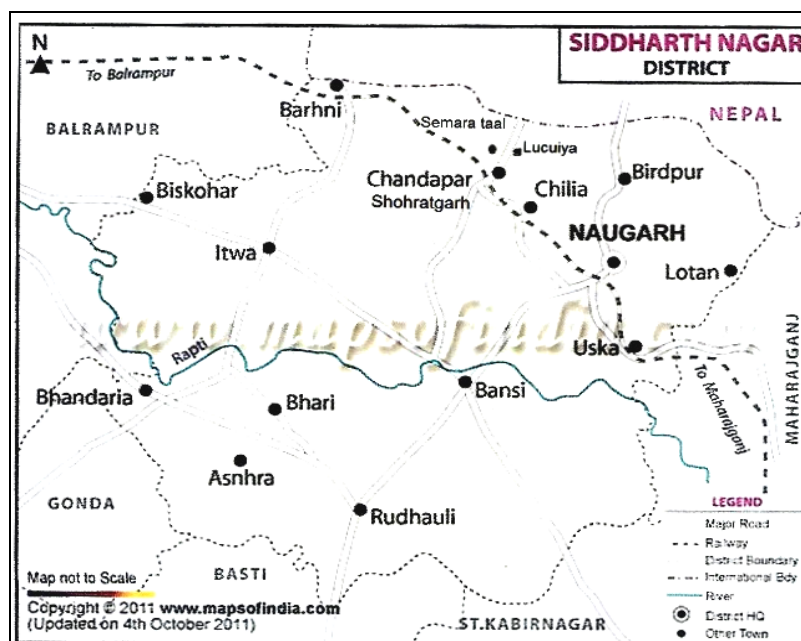


Image 2: Map of Siddharthnagar district Location of study area



Image 3: Satellite view of Semara Taal, a wetland

Materials and Methods

Fishes were caught and collected for the present study from two 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 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 Mishra (1959) [4], Day (1989) [1], Jhingran (1991) [3], Jayaram (1999) [2] and Srivastava (1998) [11]. Interaction with local people also

assisted the authors in various ways for data collection and identification.

Results and Discussion

A total of 29 species of fishes belonging to 20 genera, 15 families and 8 orders were identified during entire study period. Zoological names of these 29 different species of fishes recorded, with family, order and conservation status are shown in the table given.

Table 1: Different fish species with conservation status recorded during 2018

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

On the basis of rate of decline, population size, area of geographic distribution and degree of population, distribution fragmentation etc., IUCN (International Union for Conservation of Nature) Red List (2016) classified the species into nine groups including EN (Endangered), VU (Vulnerable), NT (near threatened), LC (least concern) and NE (not evaluated).

During survey, a total of 29 species of fishes belonging to 20 genera, 15 families and 8 orders were identified. As per latest version of IUCN Red List, out of 29 species of fishes identified, 1 species comes under EN, 3 under NT (near threatened), 19 under LC (least concern) and 6 species are NE (not evaluated) so far. Almost similar type of result was also obtained by Verma (2017b and 2019c)^[18, 22].

Conclusion

Fishes are very important components of the wetlands and they play an important role in food web. The occurrence of fishes attracts many piscivorous migratory birds to this wetland. The gradual degradation of wetland due to numerous factors can cause lot of this fish diversity. Therefore, ecological point of view a detailed study of biodiversity of this wetland is required so that effective conservation and management action plan can be designed and implemented for sustainable development (Verma 2019d)^[23] of this wetland.

Acknowledgements

Author is highly grateful to the Principal M.L.K. P.G. College, Balrampur for providing necessary laboratory facilities. I am also obliged to local authorities of district administration Siddharthnagar, Uttar Pradesh for their co-operation during entire survey period.

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