



International Journal of Fisheries and Aquatic Studies

E-ISSN: 2347-5129

P-ISSN: 2394-0506

(ICV-Poland) Impact Value: 5.62

(GIF) Impact Factor: 0.549

IJFAS 2021; 9(4): 346-347

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www.fisheriesjournal.com

Received: 06-05-2021

Accepted: 19-06-2021

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Fish biodiversity of Gonda District of U.P., India

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Abstract

An attempt has been made to study the fish fauna naturally occurring in the freshwater bodies Gonda district of Uttar Pradesh. The survey was focussed mainly on fish biodiversity and undertaken during July, 2020 to June, 2021. A total of 53 species of fishes belonging to 32 genera, 17 families and 8 orders were identified. Cyprinidae were found most dominant family represented by 22 species followed by Bagridae with 6 species, Ophiocephalidae with 4 species. Rest other families were represented by 2 or 1 species.

Keywords: Fish diversity, fish fauna, Conservation, Gonda

Introduction

India has one of the mega biodiversity countries in the world and occupies the 9th position in terms of freshwater biodiversity. In India, there are about 2,500 fish species, of which, about 1,570 are marine and 1027 freshwater fish species. The freshwater fishes are categorized into primary, secondary and alien fishes. Among them, primary freshwater fishes include 858 species belonging to 167 genera, 40 families and 12 orders. Further, 137 species of secondary freshwater fishes that frequently enter and thrive in freshwater reaches of rivers are also known from India (Gopi *et al.* 2017) ^[2]. The fisheries sector in India has third in the world in total fish production and contributes around 1.07% of the country's GDP and 5.34% of the agricultural GDP. With the third position in fisheries, the country has high potential in this sector for rural development, nutritional security and employment generation (Prakash, 2021; Verma, 2021) ^[4, 8].

Uttar Pradesh, one of the largest states in India, has vast potential of aquatic freshwater resources and offers a considerable scope of culture as well as capture fisheries development. Therefore, there lies the scope for utilization of these vast resources for fishery development. In spite of vast freshwater resources, the fishery has been assigned the least priority among the long chain of stakeholders of U.P. The presence of many natural wetlands in the form of taals and ponds in the Tarai region of eastern Uttar Pradesh offers immense scope and potential for inland fishery development. A number of researchers including Verma (2016, 2019) ^[6, 7], Prakash and Verma (2017) ^[5], Verma and Prakash (2016, 2020) ^[9, 10] did a lot on hydrobiological studies and fish diversity of fresh water bodies. Before utilizing these freshwater bodies in fish culture practices, it is of utmost importance to have knowledge of the existence of fish fauna. Therefore, the aim of the present study is to deal with the status of fish diversity of Gonda district of Davipatan division of U.P.

Materials and Methods

Fishes were caught and collected for the present study from local freshwater bodies by hand-nets, gill nets, cast nets, hooks, drag nets with the help of local people and fisherman mainly during the time of fishing as well as also collected from local fish market. Investigations regarding fish capture and collection were conducted randomly for the period of one year from July, 2020 to June, 2021.

Fishes were identified with the help of its shape, colour, the pattern of scales, fins, mouth pattern and other morphological characters and after following standard taxonomic keys for fishes (Day, 1889; Datta Munshi and Srivastava, 1988; Menon, 1992; Srivastava, 2002; and Jayaram, 2010) ^[4, 1, 3].

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Results and Discussion

During the study period, a total of 53 species of freshwater fishes belonging to 8 orders, 17 families and 32 genera were recorded from the freshwater bodies of Gonda district. The collected fish species including their order, family and zoological names are shown in the table given.

Table 1: Different fish species collected from freshwater bodies of Gonda districts during July, 2020 to June, 2021

S. No.	Order	Family	Zoological name
1.	Cypriniformes	Cyprinidae	<i>Catla catla</i>
2.			<i>Labeo rohita</i>
3.			<i>Labeo calbasu</i>
4.			<i>Labeo bata</i>
5.			<i>Labeo dera</i>
6.			<i>Cirrhinus mrigala</i>
7.			<i>Cirrhinus reba</i>
8.			<i>Cyprinus carpio</i>
9.			<i>Amblypharyngodon mola</i>
10.			<i>Tor tor</i>
11.			<i>Barilius modestus</i>
12.			<i>Barilius bendelisis</i>
13.			<i>Barilius bota</i>
14.			<i>Puntius sophore</i>
15.			<i>Puntius ticto</i>
16.			<i>Puntius sarana</i>
17.			<i>Puntius chola</i>
18.			<i>Rasbora daniconius</i>
19.			<i>Chaguius chagunio</i>
20.			<i>Danio devario</i>
21.			<i>Oxygaster bacaila</i>
22.			<i>Oxygaster gora</i>
23.	Siluriformes	Bagridae	<i>Mystus seenghala</i>
24.			<i>Mystus cavasious</i>
25.			<i>Mystus bleekeri</i>
26.			<i>Mystus tengara</i>
27.			<i>Mystus vittatus</i>
28.			<i>Rita rita</i>
29.		Siluridae	<i>Wallago attu</i>
30.			<i>Ompak pabda</i>
31.		Sisoridae	<i>Bagarius bagarius</i>
32.		Clariidae	<i>Clarias batrachus</i>
33.			<i>Clarias gareipinous</i>
34.		Saccobranchidae	<i>Heteropneustes fossilis</i>
35.		Schilbeidae	<i>Ailia coila</i>
36.	Ophiocephaliformes	Ophiocephalidae	<i>Channa punctatus</i>
37.			<i>Channa gachua</i>
38.			<i>Channa marulius</i>
39.			<i>Channa striatus</i>
40.		Gobiidae	<i>Glossogobius giuris</i>
41.	Perciformes	Centropomidae	<i>Chanda nama</i>
42.			<i>Chanda ranga</i>
43.		Nandidae	<i>Nandus nandus</i>
44.			<i>Badis badis</i>
45.		Anabantidae	<i>Anabas testudeniensis</i>
46.			<i>Colisa fasciatus</i>
47.	Synbranchiformes	Amphipnoidae	<i>Amphipnous cuchia</i>
48.	Clupeiformes	Notopteridae	<i>Notopterus notopterus</i>
49.			<i>Notopterus chitala</i>
50.		Clupeidae	<i>Gudusia chapra</i>
51.	Beloniformes	Belonidae	<i>Xenentodon cancila</i>
52.	Mastacembeliformes	Mastacembeleidae	<i>Mastacembelus armatus</i>
53.			<i>Mastacembelus aculeatus</i>

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

In present investigation Cyprinidae family was the most dominant group representing 22 species followed by Bagaridae family representing 6 species and then by Ophiocephalidae family representing 4 species and families. Families, Siluridae, Clariidae, Centropomidae, Nandidae, Anabantidae, Notopteridae and Mastacembeleidae were represented by 2 species each while rest families was represented by only one species.

Conclusion

Present study is the first ever documentation of fish fauna of Gonda district of Uttar Pradesh. Though the water body is affected by different climatic and anthropogenic hazards including pollution, habitat degradation, predation etc. yet it has fish population in abundance and its diversity. Thus, Gonda district has a huge fishery development potential.

Acknowledgements

Author is highly grateful to the Principal L.B.S.P.G. College, Gonda for providing necessary laboratory facilities. We are also obliged to local fisherman for their co-operation during entire survey programme.

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