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An investigation of freshwater ichthyofaunal availability and abundance in Nibaran Sayer Lake (Locally known as Saheb Bandh Wetland) in the Purulia District of West Bengal, India's Lower Chota Nagpur Plateau

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Abstract
Recent research of the lesser-known important Wetland of Purulia, in West Bengal, India's Lower Chota Nagpur Plateau. Looked at freshwater fish fauna concerning the country's rare and endangered freshwater fish species. 59 species under 43 genera, 22 families, and 9 orders of fish diversity from Saheb Bandh wetland, Purulia, were found between March 2024 and May 2025 during a one-year, three-month survey study. It was found that, among the nine orders in total as collected, the order Cypriniformes (53%) was found to have made the largest contribution overall. The conservation status of the surveyed species found in Saheb Bandh wetlands, with 53 species classified as Least Concern (LC), 3 as Near Threatened (NT), and 2 as Vulnerable (VU), and one under the Endangered (EN) category. *Amblypharyngodon mola* was the most common, as shown in Table 1 and Fig. 6. Its dominance percentage was 5.87% and followed by the same percentage of two species, *Badis badis* and *Labeo rohita* (4.62%).

Keywords: Fresh water wetland, order-wise availability, Family-wise analysis, Ichthyofaunal diversity, Seasonal based, Relative abundance, Nibaran Sayer Purulia, West Bengal

1. Introduction
The freshwater lake ecology is extremely delicate and provides for human needs in many ways while maintaining a climate that is conducive to life on Earth. Lakes provide water for domestic use, drinking, agriculture, and cattle raising [1, 2]. Important sources of species diversity are wetlands, which are marshy regions of land with water-soaked soil. All life is supported by wetlands, which also serve practical purposes in preserving ecological harmony. Wetlands are regarded as a vital source of food and fodder for humans and their related allies because they are a unique ecosystem with a rich nutrient status, high carrying capacity, and enormous production potential. Wetlands are important to an area's ecology because they sustain various food chains and food webs, control the hydrological cycle, replenish groundwater, trap energy, and provide habitat for a wide variety of economically and ecologically beneficial plants and animals. Fish are cool-blooded aquatic vertebrates that use fins to propel and balance themselves while breathing via their pharyngeal gills. In essence, a river's fish diversity reflects the variety and quantity of its fish species. The river supports commercial fisheries by preserving a wide variety of fish species [3]. Several variables, including fish availability, time, material efficiency, and site selection, influence the effectiveness of fishing tactics. In some regions of the nation, using an attractant as a lure is common for successful fishing. In contrast to conventional methods, chemical poising, dynamiting, electrofishing, and other practices have gained popularity but are harmful to fish and the aquatic ecology [4]. The two most significant factors influencing fish distribution are dissolved oxygen and pH, which are crucial habitat characteristics associated with fish diversity [3]. Fish are important indicators of the ecosystem's health and water quality, and they are the keystone species that control the quantity and distribution of other organisms in the ecosystem they represent [5].

India is ranked ninth globally in terms of freshwater biodiversity overall. Worldwide, there are over 37,209 valid fish species, including 18,962 valid freshwater fish species [6]. Of the 2,500 fish species found in India, 1,570 are marine and 930 are freshwater [7]. Of the 610 species found in West Bengal, 403 are marine and 207 are freshwater [8]. The term "ichthyofaunal diversity" describes the range of fish species. It may relate to species of life forms within a fish community, to alleles or genotypes within fish populations, or species or life forms throughout aqua regimes, depending on the context and scale. One of the biggest obstacles to popularizing a little-known fish type in a given habitat is the lack of knowledge about the current ichthyofauna. In order to establish strategies for their production and efficient use, it is necessary to survey the fish fauna connected with their habitats [10].

Our current survey site is located in the lower part of the Chhota-Nagpur Plateau, in the Purulia district of southwest West Bengal. Purulia, often called "Manbhum metropolis," is a 6,259-square-kilometer area that was established in 1876 and is situated in the state of West Bengal, India, north of the Kasai River. The coordinates of Purulia are 23°20'N 86°22'E; 23.33°N 86.37°E. It is 228 meters (748 feet) above sea level on average. The area has lateritic soil and an unstable, dry, and rough climate, with temperatures ranging from 50°C in the summer to 5.6 °C in the winter. In addition to being a portion of the Ranchi peneplain, the district of Manbhum (now Purulia district of West Bengal, India) marks the beginning of the gradual drop from the high plateau of Chotanagpur proper to the lowlands of lower Bengal. The majority of the district was made up of hills and valleys, with Hazaribagh and Santhal Parganas to the north, Burdwan, Bankura, and Midnapore to the east, Singhbhum to the south, and Ranchi and Hazaribagh to the west [10]. Climate change, uncertainty in rainfall, and soil texture in the western half of the research area have led to a severe water crisis in the region's perennial aquatic systems. However, the ichthyofaunal diversity of the Purulia district has not been documented in any contemporary scientific studies. The study's goal was to gather up-to-date information on fish diversity and abundance in order to advance our understanding of the Purulia district's fish diversity. The wet monsoon season is when the majority of the rainfall happens. It is reported that Saheb Bandh, a 110-acre man-made lake in Purulia, was built in the middle of the 1800s. Convicts are alleged to have excavated this body of water at the request of Colonel Tikley during the British Raj. 1843 marked the beginning of this process, which took five years to finish. Due to intense biotic pressure around the perimeter, these activities have evolved into a eutrophic stage.

People in the Purulia district are mostly concerned about water in the case of Lake Saheb Bandh because the area is extremely hot and dry for the majority of the year. In addition to continuously mixing wastewater and household solid waste with the lake water, the locals often use the lake water for drinking and fishing. Because of the frequent disposal of the lake has become extremely eutrophic due to residential sewage [11]. Saheb Bandh has seen the emergence of several automobile repair shops, garages, nursing homes, private residences, housing complexes, bathing ghats, amusement parks, etc., in recent years. This lake is a vital supply of water in this region that is experiencing drought. Due to the high demands of urbanization and irrigational problems in Purulia town one of the major important lake is always affected by water pollution and discharges from water from Purulia town drainage systems, and due to this, it is mostly affected circumstances for the fresh fish diversity of this major lake of the lower Chota-Nagpur Plateau. Important details about this lake's fish diversity and abundance properties will be revealed by this. There was no proper ichthyofaunal diversity and abundance assessment report previously available for this Lake in Purulia. This current research will provide a milestone in the development of fisheries data for this particular wetland in the district.

2. Methods and Materials

2.1 Study Area

The Lake Saheb Bandh (Nibaran Sayar) in Purulia district, depicted in Fig. 1, is a common wetland and freshwater lake in West Bengal that is rich in biodiversity. The lake's total land and water area is about 110 acres. Under Purulia's administrative jurisdiction, the water is mostly used for drinking and household uses. Municipal Corporation (PMC), and is utilized all year round for sports, leisure, fishing, and cultural activities. Because of its biological diversity, scenic appeal, and multifunctional uses for boating, fishing, bathing, and other activities, it is a significant wetland habitat. In addition to the water-spread area, the open landmass around the lake is an integral component of the ecosystem, offering a variety of recreational and cultural possibilities.

Fig 1: Ichthyo-faunal investigation site Saheb Bandh wetland, Purulia, with sampling zones

2.1.1 Selection of Sampling Station

From March 2024 to May 2025 on the Saheb Bandh Lake, Purulia. The study included four sampling sites: East face (site 1), West face (site 2), North face (site 3), and South face (site 4) of the lake. Fishermen assisted with monthly sampling. A gill net and cast net were utilized throughout the survey. The gill net measured 10 feet long and 3 feet high, with a mesh size of 2 cm. Caste covers an area of 78 square feet with a 1cm mesh size. A cast net was used to collect ten hauls from each sampling site for each period. The Mobile UTM Geo map system for GPS (Global Positioning System) coordinates was used to capture the exact location of the sampling sites, as seen in Figure 3 [12].

2.1.2 Fish Sample Collection and Identification:

The current work was based on an investigation conducted over a full year, from March 2024 to May 2025. Fish species were collected from the designated sites seasonally during pre-monsoon, monsoon, post-monsoon, and summer or lean periods between the periods mentioned above. The fish specimens came directly from local fishermen. Fish samples were collected from ten distinct sampling locations each month. A range of fishing equipment, such as scoop nets, drag nets, lift nets, cast nets, gill nets, and trap nets, was used to catch the fish. Following their collection, the fish were put on a sterile sheet and photographed using a scale that ran the length of the specimen [13]. Each fish specimen was further preserved separately in 10% formalin for taxonomic identification and closer examination [14]. The fish were identified and classified using standard taxonomic keys [15, 16] and an online database (https://fishbase.se/home.htm).

2.1.3 Secondary Data

Secondary data were gathered through observation and conversation with residents and fishermen. Fish species were also noted not collected directly from the sampling locations [17]. The fishermen and locals provided information on local names, food value, and traditional fishing techniques. The IUCN Red List has been used to categorize the conservation status [18].

3. Results

3.1 Fish Community with IUCN Status

Presently, 59 species under 43 genera, 22 families, and 9 orders of fish diversity from Saheb Bandh wetland, Purulia, were found between March 2024 and May 2025 during a one-year, three-month survey study. The fish species found at the current study site are listed in Table 1. On the Fish Base version (05/2025), a new fish nomenclature was introduced. (https://fishbase.se/home.htm). It was found that, among the nine orders in total as collected, the order Cypriniformes (53%) was found to have made the largest contribution overall, followed by Siluriformes (13%), Anabantiformes (11%), Cichliformes (6%), Perciformes (5%), Synbranchiformes (4%), Beloniformes (3%), Anguiliformes (3%) and Osteoglossiformes (2%) as shown in Fig. 2. According to family level Cyprinidae made up 35% of the contribution, followed by Danionidae (9%) Cichlidae (8%), Channidae (7%), Badidae (5%), Siluridae (4%), Anabantidae (3%), Anguillidae (3%), Bagridae (3%), Belonidae (3%), Clariidae (3%), Dorosomatidae (3%), Xenocyprididae (3%), Ambassidae (2%), Cobitidae (2%), Mastacembelidae (2%), Notopteridae (2%), Synbranchidae (2%), Gobiidae (1%), Heteropneustidae (1%), Pangasiidae (1%), and Ritidae (1%) as shown in Figure 3. Compared to other orders, Cypriniformes had the most species (1480 species), followed by Siluriformes (361 species), and so on, from the Saheb Bandh wetland. Figure 4 illustrates the conservation status of the surveyed species found in Saheb Bandh wetlands, with 53 species classified as Least Concern (LC), 3 as Near Threatened (NT), and 2 as Vulnerable (VU), and one under the Endangered (EN) category. Freshwater ecosystems are under serious threat (2%), Cobitidae (2%), Mastacembelidae (2%), Notopteridae (2%), Synbranchidae (2%), Gobiidae (1%), Heteropneustidae (1%), Pangasiidae (1%), and Ritidae (1%), as shown in Fig. 3. Compared to other orders, Cypriniformes had the most species (1480 species), followed by Siluriformes (361 species), and so on, from the Saheb Bandh wetland. Figure 4 illustrates the conservation status of the surveyed species found in Saheb Bandh wetlands, with 53 species classified as Least Concern (LC), 3 as Near Threatened (NT), 2 as Vulnerable (VU), and one under the Endangered (EN) category. Freshwater ecosystems are under serious threat globally, and over 36% of freshwater fish species are listed as endangered. Despite this, attempts to safeguard freshwater ecosystems are not adequately developed [19]. Excessive human usage and changes to freshwater structures continue to be the main causes of freshwater biodiversity distortions worldwide [20] Apart from this, the seasonal i.e.; (Pre monsoon, monsoon, Post monsoon and Lean periods) diversity of Saheb Bandh wetland showed in Figure 5, here also illustrated that Monsoon period is very productive and active for fishes found in Wetland, and Lean period is very low in availability and activity of fishes. Ichthyofaunal availability, along with their local and common names, IUCN status, and native or exotic habitat, is also provided based on the survey examination (Table 2). Globally, and over 36% of freshwater fish species are listed as endangered. Despite this, attempts to safeguard freshwater ecosystems are not adequately developed [19].

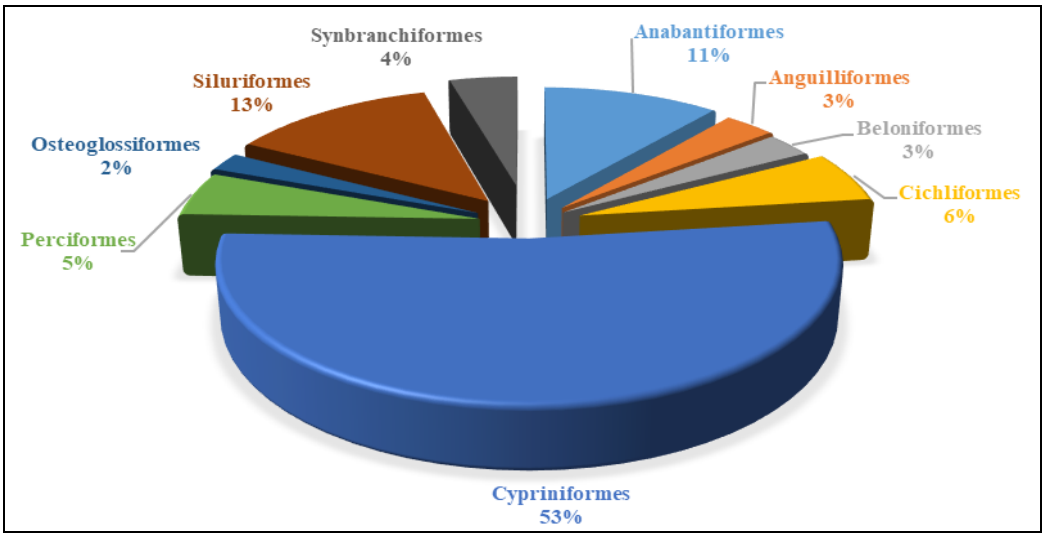

Fig 2: Fish species order distribution is shown in percentage through a Pie chart of the Saheb Bandh Wetland, Purulia

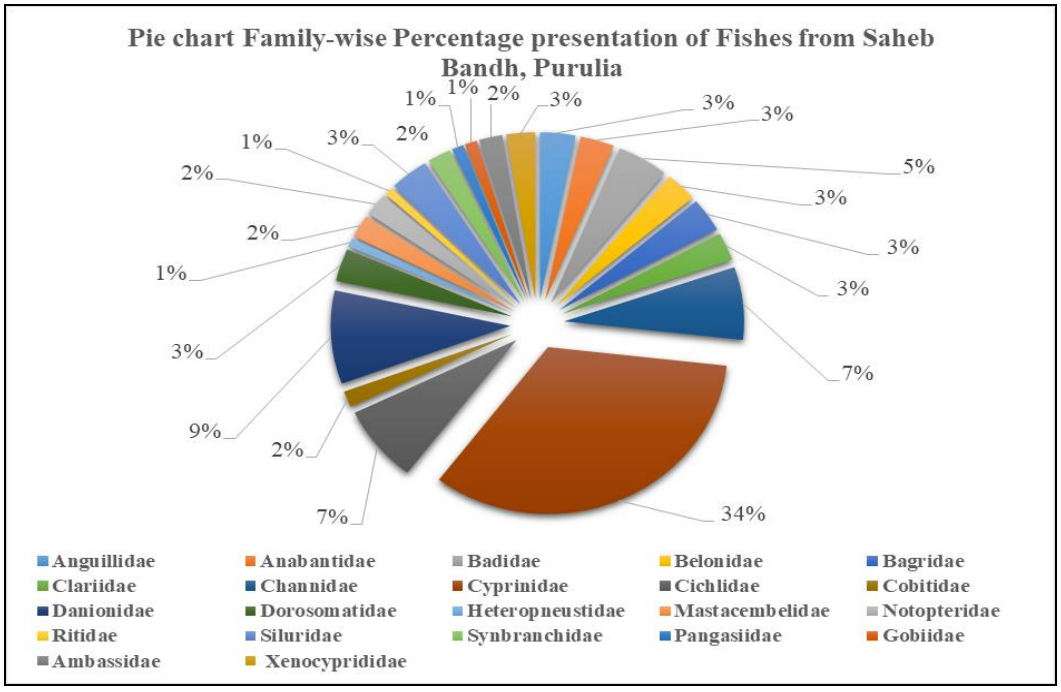

Fig 3: Fish species Family-wise distribution is shown in percentage through a Pie chart of the Saheb Bandh Wetland, Purulia

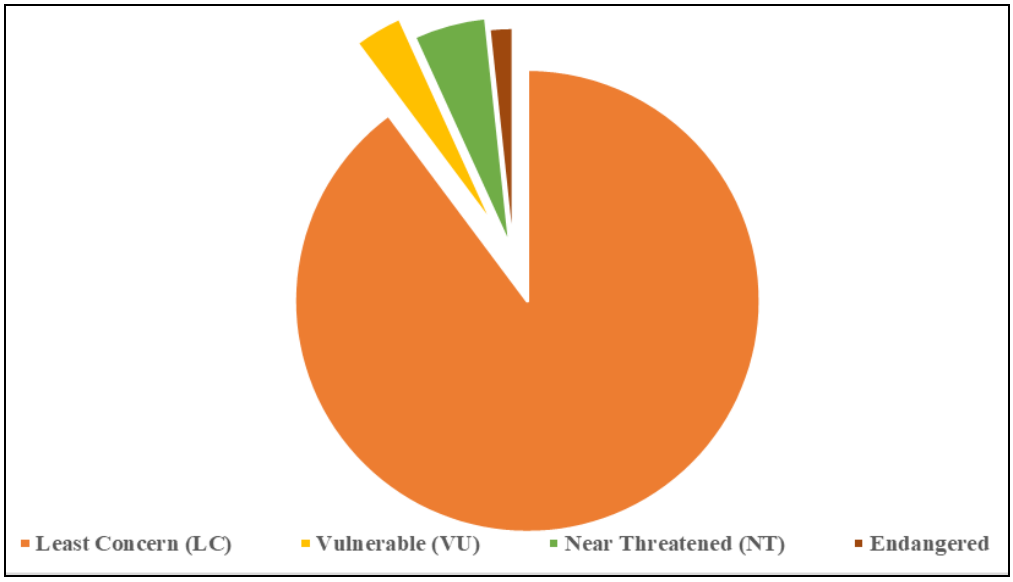

Fig 4: Fish species classified by IUCN Status distribution are shown through a Pie chart of the Saheb Bandh wetland, Purulia

Table 1: Percentage of Relative abundance of Fishes from Saheb Bandh wetland, Purulia

SL No.	Fish Species	Pre Monsoon	Monsoon	Post Monsoon	Lean Period	Total Abundance	% of Relative Abundance
1	*Anguilla bengalensis*	18	54	11	6	89	3.16%
2	*Badis badis*	54	43	21	12	130	4.62%
3	*Channa striata*	11	19	8	7	45	1.60%
4	*Channa gachua*	11	19	9	3	42	1.49%
5	*Channa punctatus*	17	54	13	8	92	3.27%
6	*Xenentodon cancila*	9	44	21	7	81	2.88%
7	*Cirrhinus reba*	11	16	9	3	39	1.39%
8	*Gudusia chapra*	13	32	33	11	89	3.16%
9	*Cabdio morar*	8	5	3	0	16	0.57%
10	*Raiamas bola*	4	17	11	2	34	1.21%
11	*Opsarius bendelisis*	9	5	9	2	25	0.89%
12	*Opsarius barna*	9	13	10	3	35	1.24%
13	*Lepidocephalichthys guntea*	7	17	15	5	44	1.56%
14	*Salmostoma bacaila*	6	9	2	1	18	0.64%
15	*Rasbora daniconius*	11	23	9	6	49	1.74%
16	*Danio rerio*	11	33	23	6	73	2.60%
17	*Cyprinus carpio*	16	35	21	8	80	2.84%
18	*Amblypharyngodon mola*	34	76	32	23	165	5.87%
19	*Labeo rohita*	33	56	29	12	130	4.62%
20	*Labeo catla*	21	44	14	8	87	3.09%
21	*Labeo bata*	17	20	11	9	57	2.03%
22	*Labeo gonius*	4	8	7	1	20	0.71%
23	*Esomus danrica*	12	18	10	8	48	1.71%
24	*Puntius chola*	10	22	6	5	43	1.53%
25	*Pethia conchonius*	7	11	4	2	24	0.85%
26	*Pethia ticto*	8	14	11	2	35	1.24%
27	*Puntius sophore*	3	9	2	1	15	0.53%
28	*Labeo calbasu*	12	20	7	5	44	1.56%
29	*Labeo boga*	3	6	8	3	20	0.71%
30	*Tariqilabeo latius*	2	5	1	0	8	0.28%
31	*Systomus sarana*	18	32	6	4	60	2.13%
32	*Laubuka laubuca*	3	9	2	1	15	0.53%
33	*Devario aequipinnatus*	3	6	2	0	11	0.39%
34	*Ctenopharyngodon idella*	17	22	9	2	50	1.78%
35	*Salmostoma phulo*	2	11	8	3	24	0.85%
36	*Lepidocephalichthys guntea*	3	8	11	3	25	0.89%
37	*Osteobrama cotio*	2	7	11	6	26	0.92%
38	*Notopterus notopterus*	9	22	12	18	61	2.17%
39	*Rita rita*	8	11	2	1	22	0.78%
40	*Mystus vittatus*	9	17	8	2	36	1.28%
41	*Sperata seenghala*	8	12	7	4	31	1.10%
42	*Mystus tengara*	2	8	4	1	15	0.53%
43	*Sperata aor*	3	6	1	0	10	0.36%
44	*Clarias magur*	11	27	21	18	77	2.74%
45	*Ompok bimaculatus*	16	22	8	4	50	1.78%
46	*Ompok pabda*	11	9	7	3	30	1.07%
47	*Wallago attu*	5	9	9	4	27	0.96%
48	*Pangasius pangasius*	11	8	3	8	30	1.07%
49	*Heteropneustes fossilis*	9	7	5	3	24	0.85%
50	*Gagata cenia*	2	5	2	0	9	0.32%
51	*Anabas testudineus*	13	27	17	8	65	2.31%
52	*Chanda nama*	17	21	12	9	59	2.10%
53	*Glossogobius giuris*	5	10	3	2	20	0.71%
54	*Oreochromis mossambicus*	34	43	18	9	104	3.70%
55	*Oreochromis niloticus*	11	32	9	11	63	2.24%
56	*Macrognathus pancalus*	2	7	5	6	20	0.71%
57	*Macrognathus aral*	5	6	2	1	14	0.50%
58	*Mastacembelus armatus*	10	9	5	4	28	1.00%
59	*Monopterus cuchia*	10	21	19	9	59	2.10%
	Total	667	1218	609	319	2813	100.00%

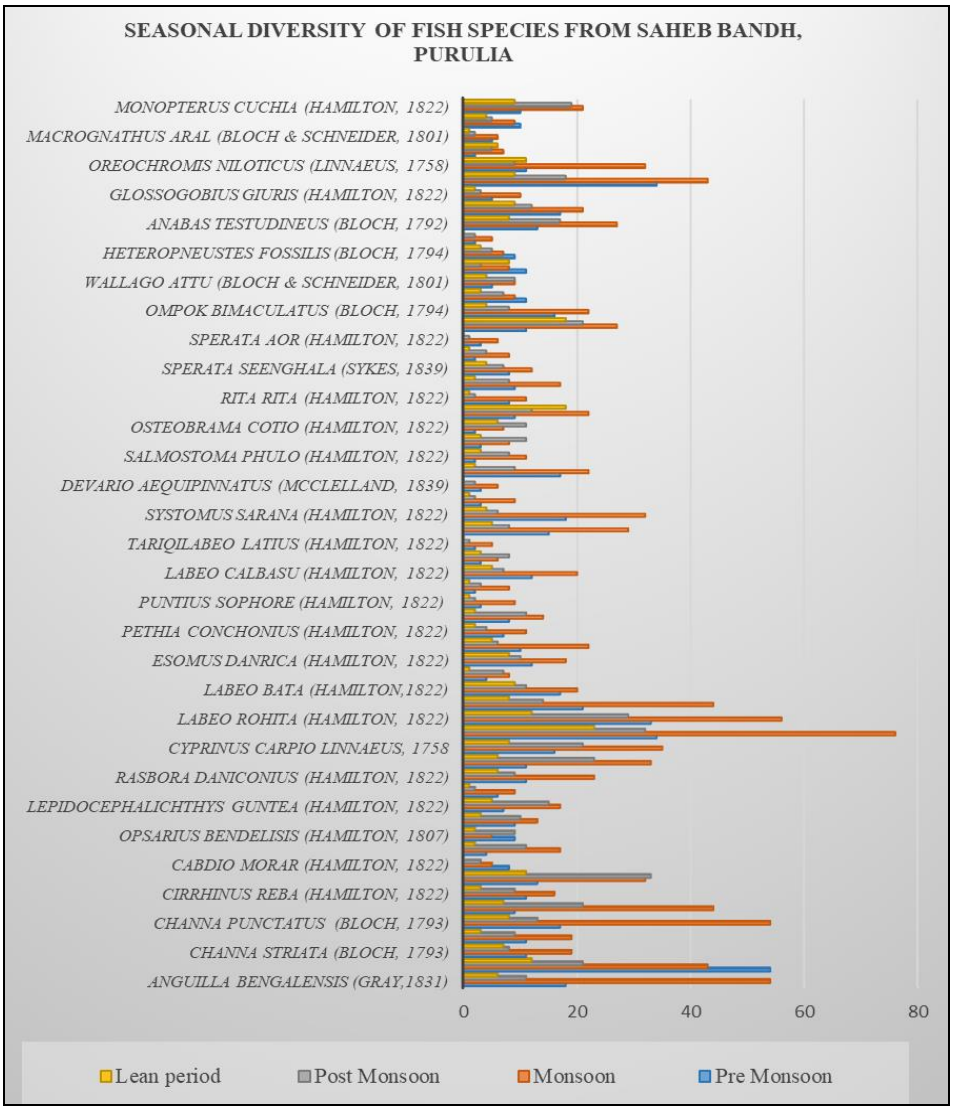

Fig 5: Seasonal Ichthyo-faunal availability from Saheb Bandh wetland, Purulia, West Bengal

3.2 Abundance

Among the 59 fish species observed in the Saheb Bandh Wetland, *Amblypharyngodon mola* was the most common, as shown in Table 1 and Fig. 6. Its dominance percentage was 5.87% and followed by the same percentage of two species, *Badis badis* and *Labeo rohita* (4.62%). *Oreochromis mossambicus* (3.7%) was the third highest dominant species, and so on. In contrast, *Gagata cenia* (0.32%) and *Sperata aor* (0.36%) had the lowest dominance percentages, seasonally.

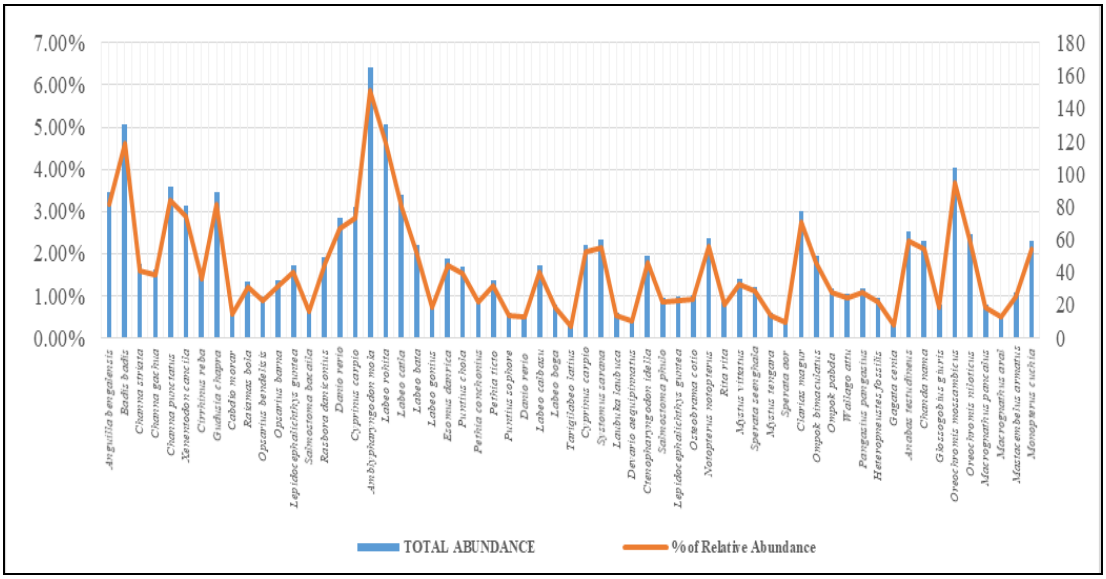

Fig 6: 2-D Graph displaying the Total Abundance and% of Relative Abundance of the fish diversity of Saheb Bandh wetland, Purulia

Table 2: Fish species found in the Saheb Bandh Wetland, Purulia, along with information about their Order, Family, Common name, Local name, IUCN status, and Foreign and native species

SL No.	Order	Family	Local name	Common name	Scientific name of the fish species	IUCN Status	Native/Exotic
1.	Anguilliformes	Anguillidae	Ban	Indian Mottled Eel	*Anguilla bengalensis* (Gray,1831)	Near Threatened (NT)	Native
2.	Anabantiformes	Badidae	Kalo koi	Gouramies	*Badis badis* (Hamilton,1822)	Least Concern (LC)	Native
3	Anabantiformes	Channidae	Shol	Striped snakehead	*Channa striata* (Bloch, 1793)	Least Concern (LC)	Native
4	Anabantiformes	Channidae	Cheng	Red seam snakehead	*Channa gachua* (Hamilton, 1822)	Least Concern (LC)	Native
5	Anabantiformes	Channidae	Goroi	Spotted snakehead	*Channa punctatus (*Bloch, 1793)	Least Concern (LC)	Native
6	Beloniformes	Belonidae	Kakle/Bok mach	Freshwater garfish	*Xenentodon cancila* (Hamilton, 1822)	Least Concern (LC)	Native
7	Cypriniformes	Cyprinidae	Rubi Rui	Reba carp	*Cirrhinus reba* (Hamilton, 1822)	Least Concern (LC)	Native
8	Cypriniformes	Dorosomatidae	Khoyra	Indian river shad	*Gudusia chapra* (Hamilton, 1822)	Least Concern (LC)	Native
9	Cypriniformes	Danionidae	Buk bangha	Morari	*Cabdio morar* (Hamilton, 1822)	Least Concern (LC)	Native
10	Cypriniformes	Cyprinidae	Goha/Bol	Trout barb	*Raiamas bola* (Hamilton, 1822)	Least Concern (LC)	Native
11	Cypriniformes	Cyprinidae	Khoksa	Indian Hill Trout	*Opsarius bendelisis* (Hamilton, 1807)	Least Concern (LC)	Native
12	Cypriniformes	Cyprinidae	Ghol	Hill Barna	*Opsarius barna* (Hamilton, 1822)	Least Concern (LC)	Native
13	Cypriniformes	Cobitidae	Puia	Guntea loach	*Lepidocephalichthys guntea* (Hamilton, 1822)	Least Concern (LC)	Native
14	Cypriniformes	Danionidae	Chela	Large razorbelly minnow	*Salmostoma bacaila* (Hamilton, 1822)	Least Concern (LC)	Native
15	Cypriniformes	Danionidae	Darkina	Slender rasbora	*Rasbora daniconius* (Hamilton, 1822)	Least Concern (LC)	Native
16	Cypriniformes	Danionidae	Banspata	Zebra danio	*Danio rerio*(Hamilton, 1822)	Least Concern (LC)	Native
17	Cypriniformes	Cyprinidae	Mourola	Mola carplet	*Amblypharyngodon mola* (Hamilton, 1822)	Least Concern (LC)	Native
18	Cypriniformes	Cyprinidae	Rui	Roho labeo	*Labeo rohita* (Hamilton, 1822)	Least Concern (LC)	Native
19	Cypriniformes	Cyprinidae	Katla	Catla	*Labeo catla* (Hamilton, 1822)	Least Concern (LC)	Native
20	Cypriniformes	Cyprinidae	Bata	Bata	*Labeo bata* (Hamilton,1822)	Least Concern (LC)	Native
21	Cypriniformes	Cyprinidae	Rui	Kuria labeo	*Labeo gonius* (Hamilton, 1822)	Least Concern (LC)	Native
22	Cypriniformes	Danionidae	Dankya	Flying barb	*Esomus danrica (Hamilton, 1822)*	Least Concern (LC)	Native
23	Cypriniformes	Cyprinidae	Chela Puti	Swamp barb	*Puntius chola* (Hamilton, 1822)	Least Concern (LC)	Native
24	Cypriniformes	Cyprinidae	Kanchan Puti	Rosy barb	*Pethia conchonius* (Hamilton, 1822)	Least Concern (LC)	Native
25	Cypriniformes	Cyprinidae	Chit Puti	Ticto barb	*Pethia ticto* (Hamilton, 1822)	Least Concern (LC)	Native
26	Cypriniformes	Cyprinidae	Puti	Pool barb	*Puntius sophore* (Hamilton, 1822)	Least Concern (LC)	Native
27	Cypriniformes	Cyprinidae	Baspata	Zebra danio	*Danio rerio* (Hamilton, 1822)	Least Concern (LC)	Native
28	Cypriniformes	Cyprinidae	Kalbose	Orangefin labeo	*Labeo calbasu* (Hamilton, 1822)	Least Concern (LC)	Native
29	Cypriniformes	Cyprinidae	Boga	Boga rohu	*Labeo boga (Hamilton, 1822)*	Least Concern (LC)	Native
30	Cypriniformes	Cyprinidae	Kalabata	Gangetic latia	*Tariqilabeo latius* (Hamilton, 1822)	Least Concern (LC)	Native
31	Cypriniformes	Cyprinidae	Sor puthi	Olive barb	*Systomus sarana* (Hamilton, 1822)	Least Concern (LC)	Native
32	Cypriniformes	Danionidae	Dankena	Indian glass barb	*Laubuka laubuca* (Hamilton, 1822)	Least Concern (LC)	Native
33	Cypriniformes	Danionidae	Chebli	Giant danio	*Devario aequipinnatus* (McClelland, 1839)	Least Concern (LC)	Native
34	Cypriniformes	Xenocyprididae	Grass Carp	Grass Carp	*Ctenopharyngodon idella* (Valenciennes, 1844)	Least Concern (LC)	Exotic
35	Cypriniformes	Danionidae	Phul chela	Finescale razorbelly minnow	*Salmostoma phulo* (Hamilton, 1822)	Least Concern (LC)	Native
36	Cypriniformes	Cyprinidae	Dhela	Hafo	*Osteobrama cotio* (Hamilton, 1822)	Least Concern (LC)	Native
37	Osteoglossiformes	Notopteridae	Pholat	Bronze featherback	*Notopterus notopterus* (Pallas, 1769)	Least Concern (LC)	Native
38	Siluriformes	Ritidae	Rita	Rita	*Rita rita* (Hamilton, 1822)	Least Concern (LC)	Native
39	Siluriformes	Bagridae	Tengra	Striped dwarf catfish	*Mystus vittatus* (Bloch, 1794)	Least Concern (LC)	Native
40	Siluriformes	Bagridae	Boro Singi	Giant river-catfish	*Sperata seenghala* (Sykes, 1839)	Least Concern (LC)	Native
41	Siluriformes	Bagridae	Choto Tangra	Tengara catfish	*Mystus tengara* (Hamilton, 1822)	Least Concern (LC)	Native
42	Siluriformes	Bagridae	Aar	Long-whiskered catfish	*Sperata aor* (Hamilton, 1822)	Least Concern (LC)	Native
43	Siluriformes	Clariidae	Magur	Magur	*Clarias magur* (Hamilton, 1822)	Endangered (EN)	Native
44	Siluriformes	Siluridae	Pabda	Butter catfish	*Ompok bimaculatus* (Bloch, 1794)	Near Threatened (NT)	Native
45	Siluriformes	Siluridae	Pabda	Pabdah catfish	*Ompok pabda* (Hamilton, 1822)	Near Threatened (NT)	Native
46	Siluriformes	Siluridae	Boal	Wallago	*Wallago attu* (Bloch & Schneider, 1801)	Vulnerable (VU)	Native
47	Siluriformes	Pangasiidae	Pungas	Pangas catfish	*Pangasius pangasius* (Hamilton, 1822)	Least Concern (LC)	Native
48	Siluriformes	Heteropneustidae	Singi	Stinging catfish	*Heteropneustes fossilis* (Bloch, 1794)	Least Concern (LC)	Native
49	Siluriformes	Sisoridae	Jungla	Indian gagata	*Gagata cenia* (Hamilton, 1822)	Least Concern (LC)	Native
50	Perciformes	Anabantidae	Koi	Climbing perch	*Anabas testudineus* (Bloch, 1792)	Least Concern (LC)	Native
51	Perciformes	Ambassidae	Chanda	Elongate glass-perchlet	*Chanda nama* Hamilton, 1822	Least Concern (LC)	Native
52	Perciformes	Gobiidae	Bele	Tank goby	*Glossogobius giuris* (Hamilton, 1822)	Least Concern (LC)	Native
53	Cichliformes	Cichlidae	Tilapia	Mozambique tilapia	*Oreochromis mossambicus* (Peters, 1852)	Vulnerable (VU)	Exotic
54	Cichliformes	Cichlidae	Nilontica tilapia	Nile tilapia	*Oreochromis niloticus* (Linnaeus, 1758)	Least Concern (LC)	Exotic
55	Synbranchiformes	Mastacembelidae	Pankal	Barred spiny eel	*Macrognathus pancalus* Hamilton, 1822	Least Concern (LC)	Native
56	Synbranchiformes	Mastacembelidae	Pankal	One-stripe spinyeel	*Macrognathus aral* (Bloch & Schneider, 1801)	Least Concern (LC)	Native
57	Synbranchiformes	Mastacembelidae	Pankal	Zig-zag eel	*Mastacembelus armatus* (Lacepède, 1800)	Least Concern (LC)	Native
58	Synbranchiformes	Synbranchidae	Kuche	Cuchia	*Monopterus cuchia* (Hamilton, 1822)	Least Concern (LC)	Native
59	Cypriniformes	Cyprinidae	Latia	Gangetic Latia	*Tariqilabeo latius* (Hamilton, 1822)	Least Concern (LC)	Native

4. Discussion

The purpose of the current study was to evaluate the ichthyofaunal diversity and abundance from various sites within the Saheb Bandh Wetland, Purulia. It is a significant wetland situated in the heart of Purulia City, and this study presents findings from the survey collection of fish and their availability in this wetland throughout the study period. The Saheb Bandh is located in the hot and subtropical weather zone of the Chota-Nagpur plateau. This fish fauna study indicates that several important and ornamental fish species are present in this wetland. Additionally, exotic fish species are available, and the fish community is diverse with various species associations. For this reason, there is potential to enrich the wetland with other plankton and zooplankton, making it a valuable aquatic zone and a better habitat for fish breeding.

5. Conclusion

The diversity, richness, and composition of the fish community in the Saheb Bandh wetland are highly significant

due to the varied makeup of the fish species. The primary threats to the diversity of fish species in the Saheb Bandh aquatic ecosystems include the amount of polluted water discharged by the urban areas of the city through the drainage system, leading to the wetland. The municipality and other management bodies will need to act to ensure that this uncontrolled wastewater is monitored. Various chemicals and pesticides are also linked to this wetland. As a result of habitat loss, water pollution, overfishing, and illegal fishing contribute to a decline in fish diversity. Furthermore, the richness and makeup of fish communities residing in the freshwater ecosystem are primarily influenced by the size of the catchment area and the variety of aquatic habitats accessible to fish. Consequently, it is recommended that more reliable research programs be established to study the fish biodiversity of the wetland. The Saheb Bandh, along with its surrounding urban development, also plays a significant role in impacting the aquatic environment, and other bodies of water are intended to conserve the diversity of current fish species while implementing effective management practices to optimize the valuable fishery resources of Purulia's inland waters sustainably. This is likely the first study of its kind on Purulia, W.B.'s significant urban wetland ichthyofaunal variety and abundance analysis. It will also be useful for future fisheries or aquatic diversity analyses and for better conserving the wetlands for conservation plans.

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